

# An Energy Action Plan for **Littleton, Colorado**



Supported by



*July 2016*



# LITTLETON ENERGY ACTION PLAN

## EXECUTIVE SUMMARY

### Our Commitment

Littleton will further its economy and sustainability by engaging businesses, residents, and community collaborators in the widespread adoption of practices that improve energy efficiency, increase use of renewable energy sources, and position Littleton as a regional energy leader.

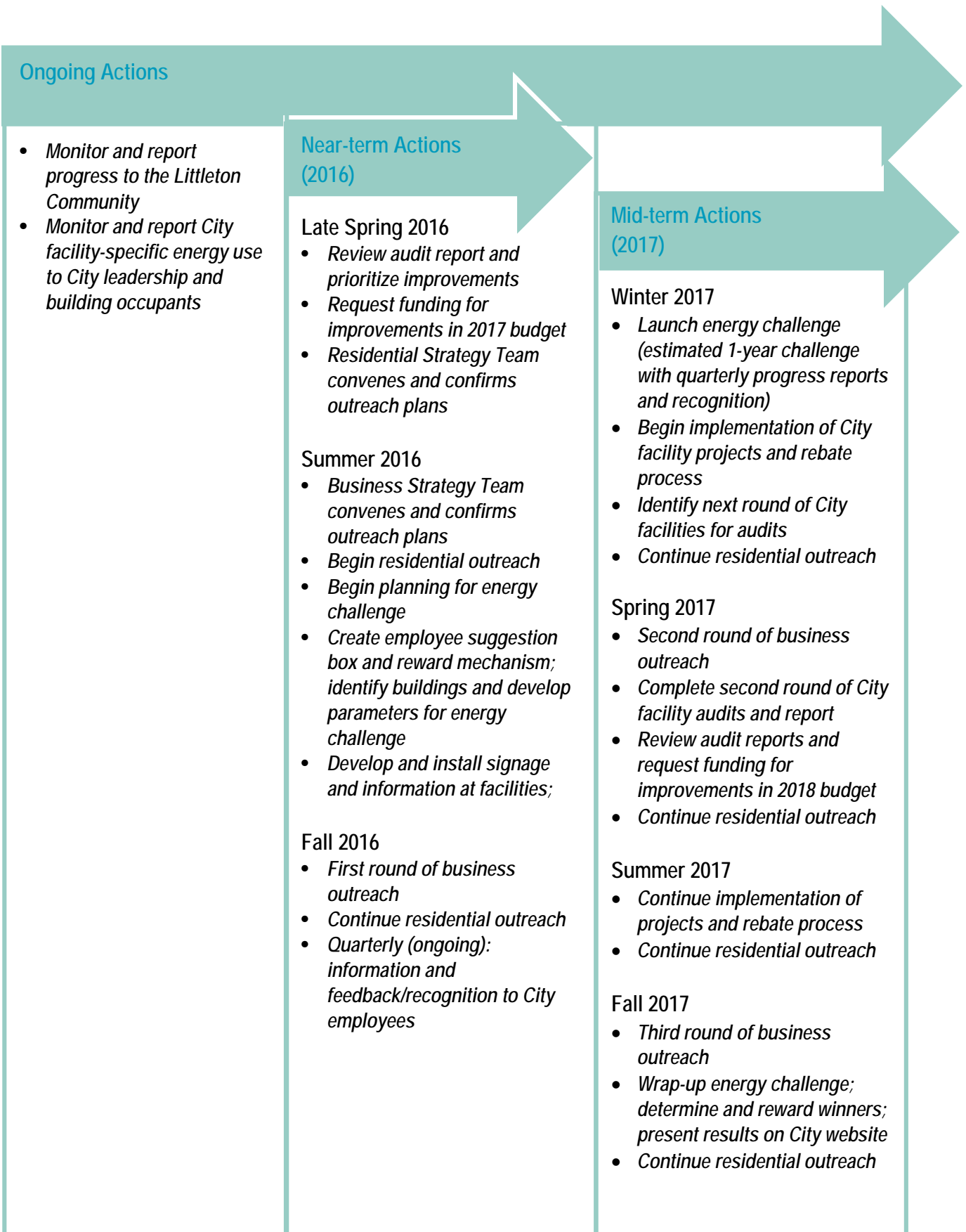
While the principal focus area for the planning process was municipal facilities, additional focus areas were explored on a preliminary basis, namely residential homes and small businesses. The goals established for Littleton's municipal facilities include a 5% reduction from 2014 energy consumption levels by 2017, and a 10% reduction from 2014 energy consumption levels by 2020. For residential homes and businesses, Littleton aims to double participation in targeted residential and commercial demand side management programs by 2018 and sustain those levels of participation through 2020 to help residents and businesses reduce their energy use, save on energy costs, and take advantage of various rebates and incentives.

**How Will We Get There?** Littleton will focus on these priority areas:

<b>Municipal Facilities</b>	<b>Strategies:</b> Building Tune-Ups (Recommissioning) Occupant Engagement Leadership by Example New Construction
<b>Residential Homes</b>	<b>Strategy:</b> Residential Outreach Campaign
<b>Businesses</b>	<b>Strategy:</b> Business Outreach Campaign



# Playbook for Achieving Our Goals



## Table of Contents

<b>Introduction .....</b>	<b>1</b>
Xcel Energy Partners in Energy.....	1
<b>Littleton Overview .....</b>	<b>2</b>
Population and Demographics .....	2
Neighborhoods and Housing.....	3
Businesses and Economy .....	3
Commitment to Sustainability .....	5
The Case for a Community Energy Action Plan .....	5
<b>Where Are We Now? .....</b>	<b>7</b>
Baseline Energy Analysis .....	7
Existing Energy Practices .....	10
Local Outreach and Communication Channels .....	11
<b>Where Do We Want to Go? .....</b>	<b>12</b>
Our Energy Vision .....	12
Focus Areas and Goals .....	12
Focus Area 1: Municipal Facilities.....	13
Focus Area 2: Residential Homes.....	15
Focus Area 3: Businesses.....	17
<b>How Are We Going to Get There? – Strategies.....</b>	<b>19</b>
Municipal Facility Strategies.....	19
Residential Strategies .....	30
Business Strategies .....	32
<b>How Are We Going to Stay On Course? – Monitoring and Reporting.....</b>	<b>35</b>
Operational Actions and Tracking.....	35
Communication and Reporting .....	35
Changing Course: Corrective Action .....	35
Ongoing Planning Team Support .....	36
Recognition for Achieving Goals.....	36
Beyond the Plan Horizon .....	36
<b>Appendix A: Glossary of Terms.....</b>	<b>37</b>
<b>Appendix B: City of Littleton Facility Energy Usage.....</b>	<b>38</b>
2014 Electricity Usage.....	38
2014 Natural Gas Usage .....	39

## *Littleton's Energy Action Planning Team*

Many thanks to the municipal representatives and the Littleton community who spent considerable time and effort developing this Energy Action Plan.

### **Action Planning Team Organization\**

- Tim Aston, Colorado State University Extension, Arapahoe County
- Mike Braaten, Deputy City Manager

### **City of Littleton Staff Members**

- Chris Denike, Facilities Maintenance Administrative Coordinator
- Meredith Gipson, Library Administrative Coordinator
- Garrett Graybeal, City of Littleton Economic Development Specialist
- Tim Nimz, Library and Museum Director
- Dave Stacey, Facilities Maintenance Supervisor
- Anastasia Urban, Development Services Manager
- Tim Weaver, Public Works Traffic Analyst
- Keith Wynkoop, Museum Facilities Technician

### **Community Representatives**

- Brad Leitner (Littleton Public Schools)
- Jason Nefs (LONG Building Technologies)
- Steve Nelligan (Littleton Resident)
- Cindy Somers (Arapahoe Community College)
- Sean Thorp (King Soopers)
- Kelly Webb (e2e Sustainability Consulting)

### **Xcel Energy Representatives**

- Tami Gunderzik, Xcel Energy Partners in Energy Program Manager
- Michelle Beaudoin, Xcel Energy Account Manager
- Tom Henley, Xcel Energy Area Manager, Community and Local Government Affairs
- Shelby Sommer, Partners in Energy Facilitator
- Cullen Choi, Partners in Energy Facilitator

## Introduction

Xcel Energy's Partners in Energy program was introduced to Littleton through Colorado State University's Extension Program in Arapahoe County. Together, Littleton, Arapahoe County Extension, and the Xcel Energy convened a planning team with the intent of developing an Energy Action Plan for Littleton. The plan's primary emphasis is on municipal operations, and a secondary emphasis is on introducing the energy vision and goal-setting concepts to the community at-large.

Littleton's planning team was established to include a mix of City staff members and a sampling of other community stakeholders and organizations including the education and business sectors, neighborhood advocates, Xcel Energy representatives, and community facilitators. The planning team participated in six workshops between September and April 2016.

The first two workshops included representatives from the full planning team. These workshops focused on building understanding of baseline conditions, developing a community energy vision, and identifying preliminary energy focus areas and goals.

The second two workshops included a smaller subset of City staff members, Energy Action Team members, and Xcel Energy representatives focused on action planning for municipal operations.

The final workshops focused on establishing goals for Littleton's residential and commercial sectors, and the development of strategies to increase participation in programs that will help residents and businesses reduce their energy use, save on energy costs, and take advantage of various rebates and incentives.

## Xcel Energy Partners in Energy

Xcel Energy is the main electric and gas utility serving Littleton. In the summer of 2014, Xcel Energy launched Partners in Energy to support communities, such as Littleton, in developing and implementing energy action plans. The content of this plan is derived from a series of planning workshops held in the community. The process is supported with information around energy use and past program participation from Xcel Energy, facilitation services, and development of this Energy Action Plan.

Xcel Energy will work with Littleton to coordinate support for implementing the plan and will develop a Memorandum of Understanding that outlines specific support Xcel Energy will provide to help Littleton deploy its strategies and achieve its goals.

## Littleton Overview

Littleton is a suburban community located in the greater Denver metropolitan area. It encompasses approximately 14 square miles within Arapahoe, Douglas, and Jefferson Counties, and the City is the county seat of Arapahoe County. Littleton is bisected by the US 85 (Santa Fe Drive) corridor, which runs vertically through the community. In general, the community's commercial corridors are flanked by residential neighborhoods, and there are plentiful parks and recreation opportunities in the area.

Littleton's historic main street and downtown are points of pride and investment areas in the community. Other community assets include Littleton's availability to the Regional Transportation District's light rail transit system, quality school system, access to the South Platte River, strong neighborhood partnerships and programs, and health and wellness focused residents and businesses.

## Population and Demographics

According to the US Census and Colorado Department of Local Affairs, Littleton has a growing population – the 2014 population was approximately 44,700 – an increase of approximately 7 percent from 2010. This is consistent with Denver metro area trends where the average population growth rate is approximately 1.5 percent per year since 2010. From an energy perspective, these trends could mean that overall energy use in Littleton could increase as the community accommodates more people and their energy demands.

While the overall population is growing due to in-migration, household sizes in Littleton are actually decreasing. In 2010 there were an estimated 2.25 persons per household, down from approximately 2.65 persons per household in 1980 (a period before which much of Littleton's housing stock was developed). The median age of Littleton residents is 47 – nearly a decade older than the metro Denver and national median ages (both 37). This older median age is consistent with another demographic trend in Littleton – a declining school age population. As of 2013, approximately 22 percent of the population was under age 18. In terms of energy, these demographic trends could lead to declining energy demands since there are fewer residents per household. However, as more people in the community age and retire, household energy demands could be driven up as they spend more time at home each day.

Littleton is also becoming increasingly diverse – approximately 8 percent of residents speak Spanish and 12 percent of the population identify primarily as Hispanic or Latino in origin. For planning purposes, the cultural and language norms of the community are important for outreach and education efforts.



## Neighborhoods and Housing

There are approximately 20,000 housing units in Littleton, 60 percent of which are single-family detached or attached structures. Like the population itself, housing units in Littleton are aging. Approximately 54 percent of the housing units in Littleton were built before 1980. Many of the community's older homes are relatively large (over 52 percent have 3 or more bedrooms), and due to this combination of age and size, they present tremendous opportunities for potential energy efficiency improvements and savings. Furthermore, Littleton's housing vacancy rates are very low, especially for homeowners (estimated at less than 1 percent in 2013), meaning that housing inventory is tight and there are few housing options available to residents looking to move within the community. This provides further evidence that energy efficiency updates for the older housing single-family stock could be well supported.

Large multi-family apartments (20 or more units) comprise a significant portion of Littleton's housing stock as well (17 percent). In several locations these large, aging multi-family apartment complexes have already been identified by the City as priority locations for revitalization. Similarly, the affordability of housing and utilities for renter households are of concern – approximately 53 percent of renter households spend 30 percent or more on their monthly income on housing and utility costs. Energy efficiency improvements in these aging apartment areas could likely support revitalization and reinvestment efforts, as well as provide savings for cost-burdened residents.

New residential construction in Littleton has been slow in recent years (an average of 8 new single-family residential permits and an average of 5 new multi-family residential units each year for the period between 2011 and 2014). However, new residential construction increased in 2015 with more than 75 new single-family permits and more than 12 new multi-family permits. As residential construction activity increases, energy codes, contractor training, and homeowner information are important elements in ensuring that these new homes use as little energy as possible.

For the past five years (2011 to 2015), an average of 250 permits have been issued for residential renovation projects each year. These trends reinforce the point that the residential market in Littleton is rebounding and reinvestment is occurring in many older homes and neighborhoods.

## Businesses and Economy

As with other parts of the metro Denver area, Littleton's economy is growing. The community has approximately 2,500 businesses and employs approximately 28,500 workers. Unemployment is approximately 8 percent and the median household income

is nearly \$60,000. Major industries in Littleton include information technology, manufacturing, retail, health care, and professional, scientific and technical services.

The City's 2013 Economic Plan identifies numerous priorities to grow the economy and support businesses in Littleton including the following:

- Create incentives for business investment
- Engage property owners and developers
- Inventory existing parking and additional options for the Downtown area accessibility
- Strategic revitalization along major corridors (Littleton Boulevard, Santa Fe and Broadway)
- Update aging shopping centers
- Restore or redevelop underperforming shopping centers to meet market demands
- Strategically expand retail options
- Diversification of revenue streams
- Expand employment opportunities
- Revitalize the Northeast Neighborhood
- Update and increase available housing with revitalization programs
- Increase senior housing options
- Attract more students for K-12 (Littleton Public Schools)

Many of these priorities also relate to energy action planning in Littleton, such as revitalization and energy efficiency improvements in shopping centers and along major corridors, updates to available housing, and creating incentives and savings opportunities.

Like the permit trends in the residential sector, the commercial and industrial sector in Littleton has experienced lower levels of new building permit activity (an average of 6 new commercial/industrial permits were issued per year from 2011 to 2015) compared the levels of renovation permit activity (an average of 138 commercial/industrial renovation permits per year). Again, these trends show that there is a lot of reinvestment happening in Littleton's businesses which present opportunities to address energy conservation and savings.

## Commitment to Sustainability

Littleton's commitment to sustainability may be best articulated through the vision described in the 2014 Citywide Plan:

*Littleton is a community that embraces its authentic small town qualities while enjoying the advantages of a metropolitan area. The city should continue to exemplify and promote a sustainable economy, environment, and society. Littleton will:*

- *Respect and build upon its history*
- *Foster its small-town, family-friendly character*
- *Be home to people of all ages and backgrounds*
- *Value livability, diversity, and progress*
- *Promote a vibrant economy for individuals, businesses, and the city as a whole*
- *Value the importance of its citizens and its natural resources*
- *Manage and direct change*
- *Strive for sustainability in economic, environmental, and social decisions*
- *Raise the bar to increase the quality of community and economic development*

In short, the community strives to become dynamic, outdoor-oriented, connected, and distinctive through its decisions and actions. Transformative actions and projects identified in the 2014 Citywide Plan include highlighting the river, focusing on activity areas, and directing Littleton's growth in ways that support the community vision.

## The Case for a Community Energy Action Plan

Littleton's 2009 Environmental Action Plan established a sustainability mission statement for Littleton's municipal operations, as follows:

*The daily activities of city government have a significant impact on the quality of Colorado's public health, environment, and natural resources. The City of Littleton takes a position of leadership in the new energy economy. The city will reduce energy consumption, increase the use of renewable energy sources, increase energy efficiency, decrease the environmental impact of the city vehicle fleet, and reduce waste.*

The 2009 plan also established sustainability targets and goals for various topic areas, including energy and leadership, as highlighted as follows.

**Energy Conservation:** *The city wishes to conserve energy, obtain a portion of electricity from a renewable source, and use energy efficiently in lighting, heating, cooling, weatherization, travel, technology, and equipment use.*

- **Goal:** *Reduce city building energy use 10 percent by 2010, using 2008 as a baseline (see plan for related objectives, actions, and measure of success).*

**Leadership, Education, Communication and Citizen Programs:** *The city complies with and strives to exceed compliance with all applicable regulations; share its practices with others; and support citizens, vendors, and customers who are committed to sustainability. Further, the city wishes to educate its citizens and employees about the city's sustainability practices and involve them in saving energy and reducing waste.*

- **Goal:** *Demonstrate the city's leadership in sustainability and communicate successes and opportunities to the community.*

This plan was aspirational and ambitious, but did not have any mechanisms for monitoring/verification of these goals. As such, it is difficult to tell whether Littleton was successful in its previous energy and sustainability planning efforts.

This Energy Action Plan presents a new opportunity for Littleton and the greater community to revisit this previous planning effort, confirm a new energy vision and focus areas, and establish new energy goals that can be implemented, monitored, and verified.

A successful plan will allow Littleton's municipal operations to truly lead by example and benefit from savings due to reduced energy usage. This plan will also help realign City staff around energy efficiency practices and targets – especially during a time of growth, transition, and many recent staffing changes. It will also set the foundation for another round of energy action planning, including identifying potential areas of focus, preliminary goals, and necessary stakeholders to engage.

At the community level, a successful Energy Action Plan will act as a rallying call for Littleton's residents, businesses, and organizations to engage in the energy conversation and take actions to reduce their own energy impacts. It will help connect them to programs and savings opportunities, and will support Littleton in efforts to become dynamic, outdoor-oriented, connected, and distinctive.

## Where Are We Now?

### Baseline Energy Analysis

The Xcel Energy Partners in Energy process started with a review of current energy use in Littleton. Electricity and natural gas data supplied by Xcel Energy show that Littleton had 19,126 residential accounts and 2,469 commercial and industrial accounts that used 384 million kWh of electricity and 20 million therms of natural gas in 2014. The following figures show the breakout of electricity and natural gas usage between residential and business accounts. The residential sector comprised 60 percent of natural gas consumption and about a third of electricity consumption. However, when looking at the premise account breakout for Littleton, it is clear that the commercial/industrial sector was responsible for the greatest share of energy usage as 11 percent of the accounts comprise 63 percent of the overall electric usage and 40 percent of the overall natural gas usage

Figure 1: Littleton Community Electricity Use in 2014

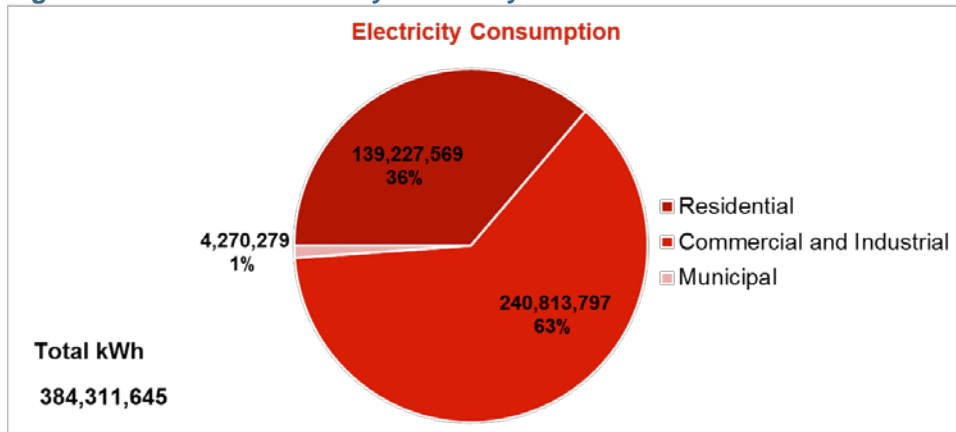


Figure 2: Littleton Community Natural Gas Use in 2014

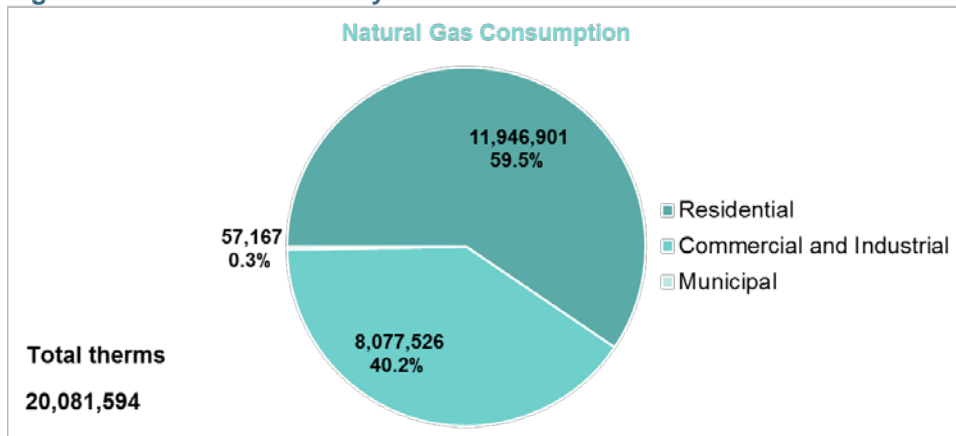
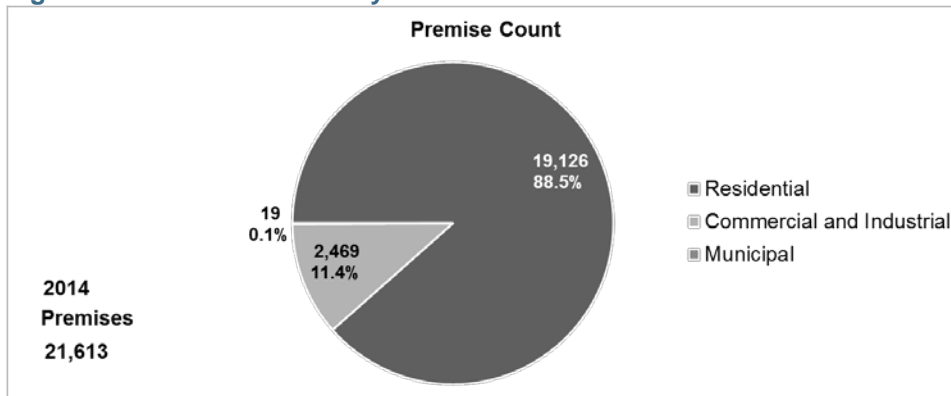


Figure 3: Littleton Community Premises in 2014



Trends in the energy consumption in the Littleton community are provided for 2012 to 2014 for both electricity and natural gas. Figure 4 and Figure 5 represent the energy consumed in regards to electricity and natural gas. In each figure, residential and commercial/industrial sub totals are provided as a function of year. Electricity usage for the Littleton community showed a slight decrease over the three-year period. Natural gas consumption for the Littleton community increased overall between 2012 to 2014, although 2013 experienced a relative spike in usage, which may be attributed to a colder than normal winter.

Figure 4: Littleton Community Electricity Usage

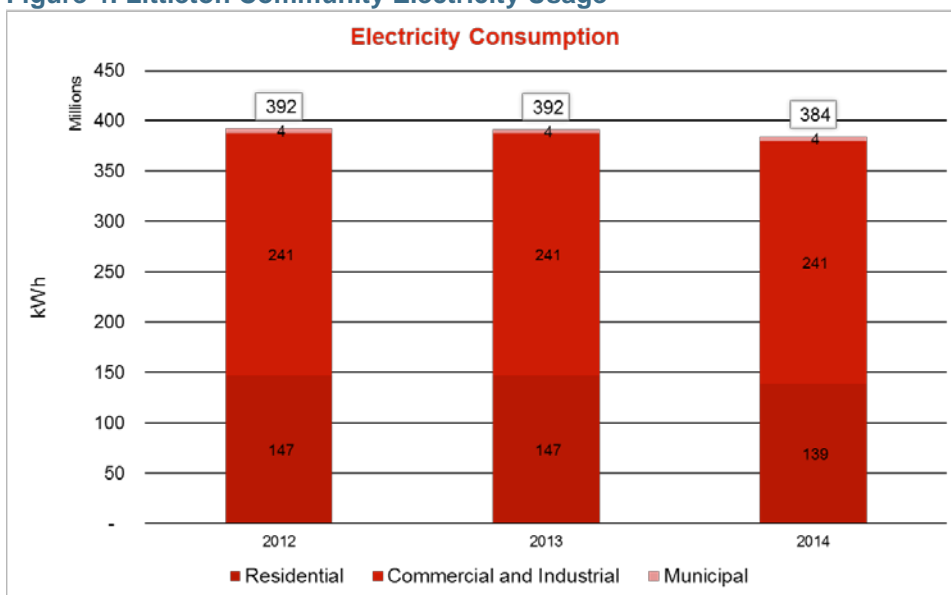
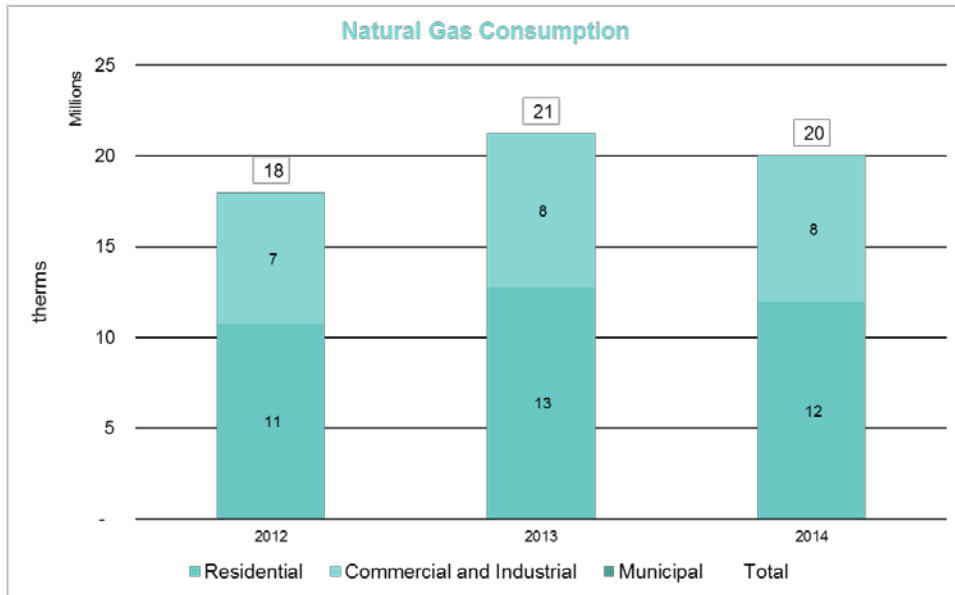
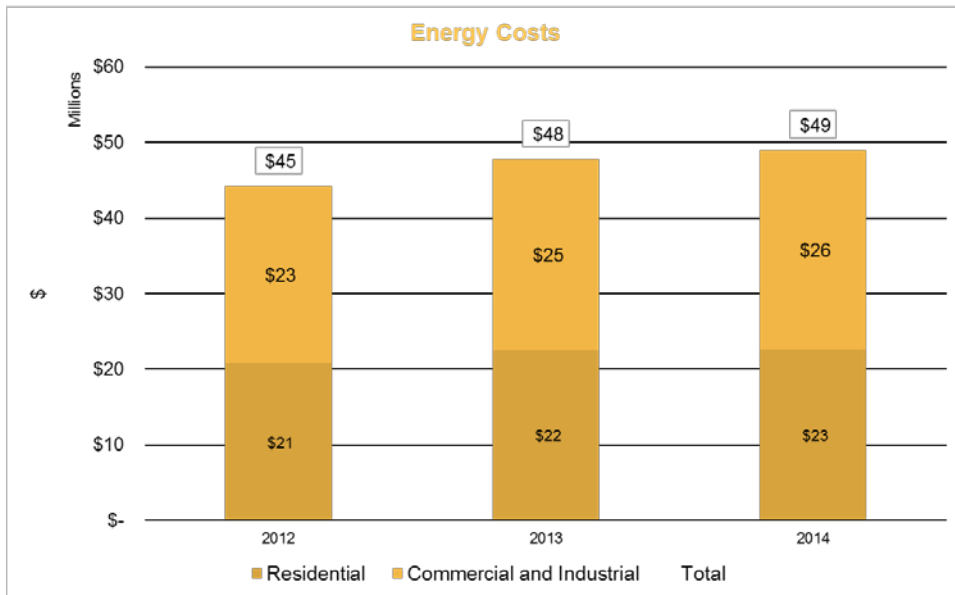


Figure 5: Littleton Community Natural Gas Usage



The energy costs for the community of Littleton are also illustrated in the figure below. Annual cost of energy for the Littleton community in 2014 was \$49 million.

Figure 6: Littleton Community Energy Costs



## Existing Energy Practices

This Energy Action Plan is the first of its kind for the Littleton community. In 2009, the City adopted an Environmental Action Plan with key sustainability targets and goals that included energy conservation, but subsequent action planning and monitoring of progress never materialized. That is not to say that Littleton has not taken any steps to practice energy conservation. Between 2012 and 2014, nine City of Littleton premises participated in Xcel Energy program offerings; during that same time period 423 commercial and industrial premises, and 2,621 residential premises participated in Xcel Energy's energy conservation programs.

In terms of energy codes, Littleton has adopted the 2012 International Building Code and 2012 International Energy Conservation Code. The City also provides information on its website about submittal requirements, financing options, and other resources for community members interested in installing solar photovoltaic systems.

Lastly, Colorado State University Extension and its Arapahoe County office offers the Colorado Energy Master program – a series of courses that provides a deeper understanding of energy system topics.

### Community Energy Initiatives

#### *Environmental Action Plan: Key Energy Targets and Goals (2009)*

- *Energy Conservation: The city wishes to conserve energy, obtain a portion of electricity from a renewable source, and use energy efficiently in lighting, heating, cooling, weatherization, travel, technology, and equipment use.*
- *Reduce city building energy use 10 percent by 2010, using 2008 as a baseline*

#### *City of Littleton Energy Audit (2010)*

- *Energy audit of City facilities by Johnson Controls.*
- *Recommendations from the audit were not acted upon by City Council.*

#### *Colorado Energy Master Program*

- *Colorado State University Extension's Colorado Energy Master program offers participants an unbiased, comprehensive overview of energy challenges, potential solutions, and individual choices.*
- *The program offers up to 30 hours of coursework and is open to anyone, including those wishing to become certified Colorado Energy Masters.*



## Local Outreach and Communication Channels

Engaging the community is critical to reaching the Energy Action Plan's goals. Below are some of the ways that Littleton's residents and businesses currently receive information. These communication channels will be helpful during implementation efforts.

### LOCAL OUTREACH CHANNELS

#### Publications

- *The Littleton Report (bi-monthly)*

#### Media

- *Littleton 8 Live TV*
- *LittletonGov Youtube Channel*
- *Littleton Facebook Page*
- *@CityofLittleton Twitter Feed*
- *Littleton Instagram page*
- *Littleton eConnect email alerts*
- *City Text Messages*
- *Littlegongov.org website*
- *Littletonrocks.com website*
- *602littleton.com website*

#### Community Programs and Events

- *Neighborhood Partnership Program (ongoing)*
- *Neighborhood Congress (ongoing)*
- *Fire Rescue Fire and Injury Prevention Programs (ongoing)*
- *Spring Tree Program (April)*
- *Summer Cleanup and Recycling Program (June)*
- *Western Welcome Week (August 12-21, 2016)*
- *Leaf and Tire Recycling Events (October- November)*
- *Harvest Festival (October)*
- *Craft Fair (October)*

#### Community Spaces

- *Bemis Library*
- *Hudson Gardens and Event Center*
- *Littleton Center*
- *Museum*
- *Town Hall Arts Center*
- *Various South Suburban Parks and Recreation Facilities*

## Where Do We Want to Go?

Littleton’s energy vision statement is an expression of the community’s shared energy intentions. It draws on language from Littleton’s 2009 Environmental Action Plan – specifically its sustainability mission statement and energy conservation sustainability target. Moreover, the Littleton energy vision supports the community vision expressed in the 2014 Citywide Plan, in that it reflects that “the City should continue to exemplify and promote a sustainable, economy, environment, and society.”

Littleton’s energy vision was developed by the planning team, after consideration of previous planning efforts and visions statements, as well as new ideas related to Littleton’s potential and ideal future.

Some of the key words from the planning team’s vision discussion are illustrated in the word cloud above.



## Our Energy Vision

*Littleton will further its economy and sustainability by engaging businesses, residents, and community collaborators in the widespread adoption of practices that improve energy efficiency, increase use of renewable energy sources, and position Littleton as a regional energy leader.*

## Focus Areas and Goals

Littleton focused on municipal facilities during the early stages of its planning process as a way to test Partners in Energy and to demonstrate its commitment to energy leadership by example. While the principal focus area for the planning process was municipal facilities, additional focus areas were explored on a preliminary basis, namely single-family residential homes and small businesses. It is expected that this Energy Action Plan will be amended to include goals, strategies, and actions for these focus areas in the future. Other potential focus areas identified for future efforts included multi-family residential properties, all community businesses, and institutional uses (including schools, colleges, and medical facilities).

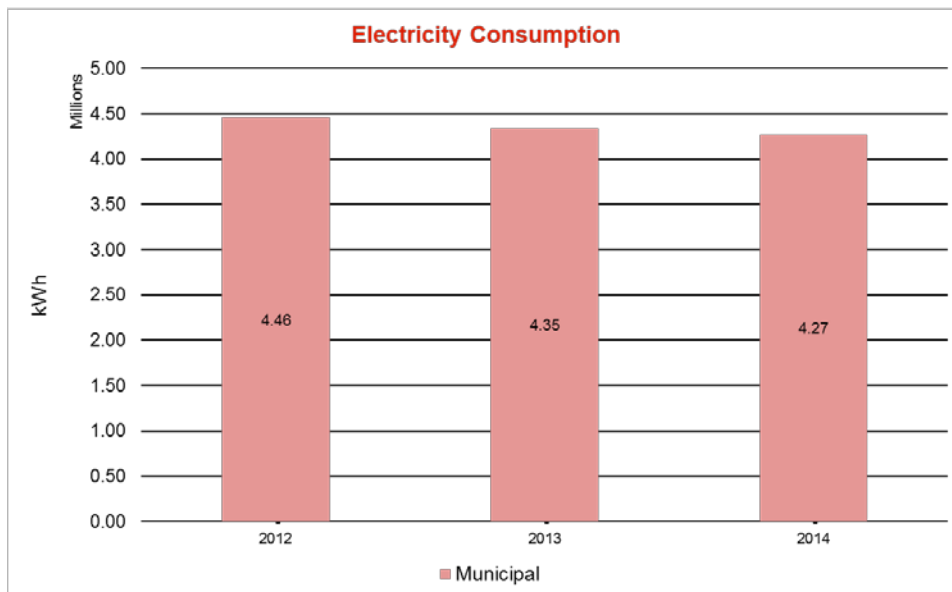
## Focus Area 1: Municipal Facilities

Because the City of Littleton authorized Xcel Energy to disclose its energy use data, additional analysis was completed by the planning team to develop a baseline of energy consumption for the City's municipal facilities. See Appendix B for a summary of energy usage for each City of Littleton facility.

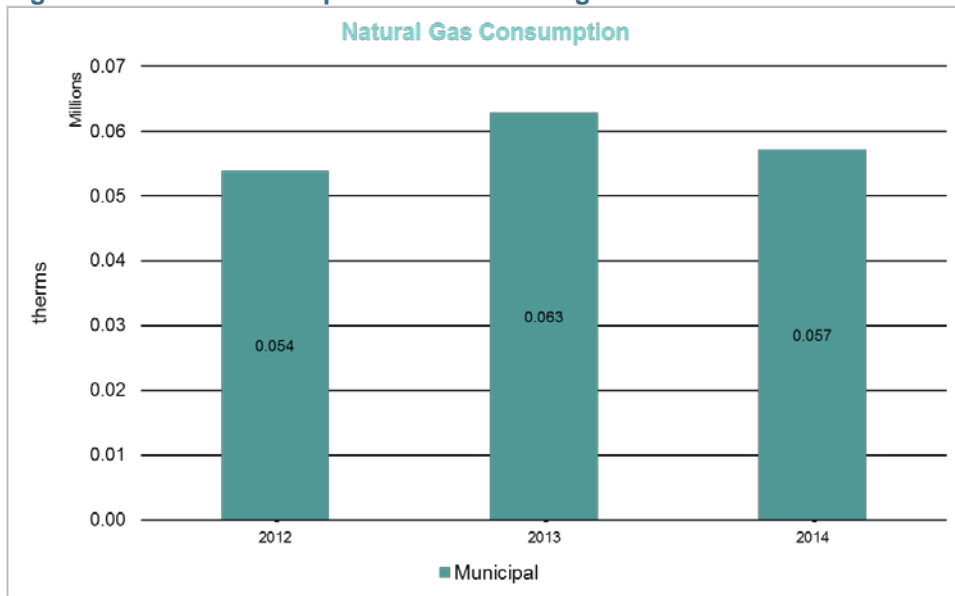
As illustrated in Figure 1 and Figure 2 on the previous pages, the municipal facilities represent 1 percent of the community's entire electricity usage and less than 0.5 percent of the natural gas consumption.

Trends in the usage for electricity and natural gas for municipal facilities is provided in Figure 7 and Figure 8. Electricity usage across the municipal sector decreased each year over the last 3 years. Natural gas however has had an increasing trend over the last 3 years as well but has not been as consistent in terms of usage as electricity. This may be the result of the winter season causing increased use in heating needs, which are more of a function of temperature than electricity requirements.

**Figure 7: Littleton Municipal Electricity Usage**

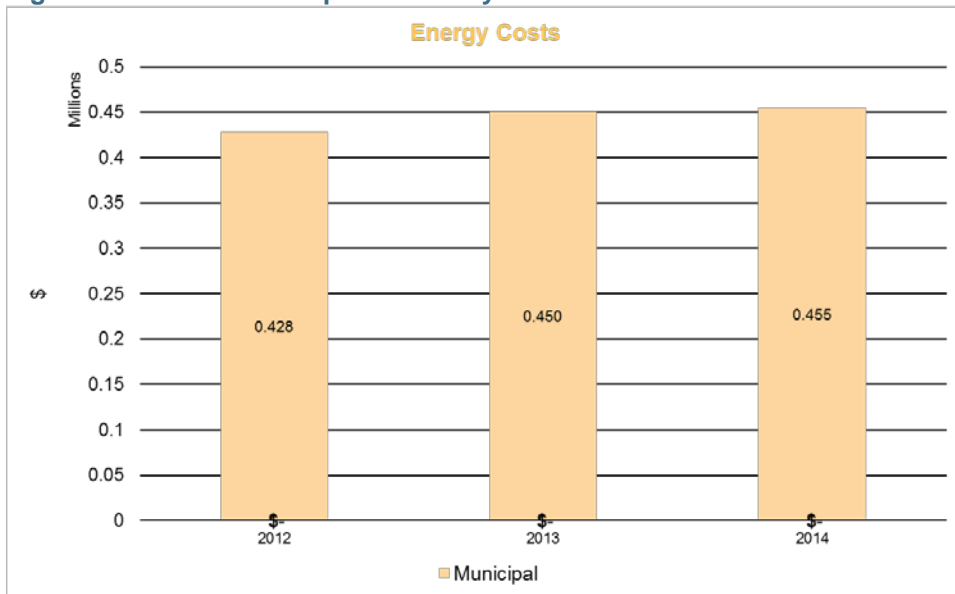


**Figure 8: Littleton Municipal Natural Gas Usage**



The energy costs for the municipal sector of Littleton are summarized in Figure 9. Littleton’s municipal facilities experienced increases in every year for both electric and natural gas costs. In 2014, Littleton spent approximately \$455,000 on energy including \$417,000 on electricity and \$38,000 on natural gas.

**Figure 9: Littleton Municipal Electricity Cost**

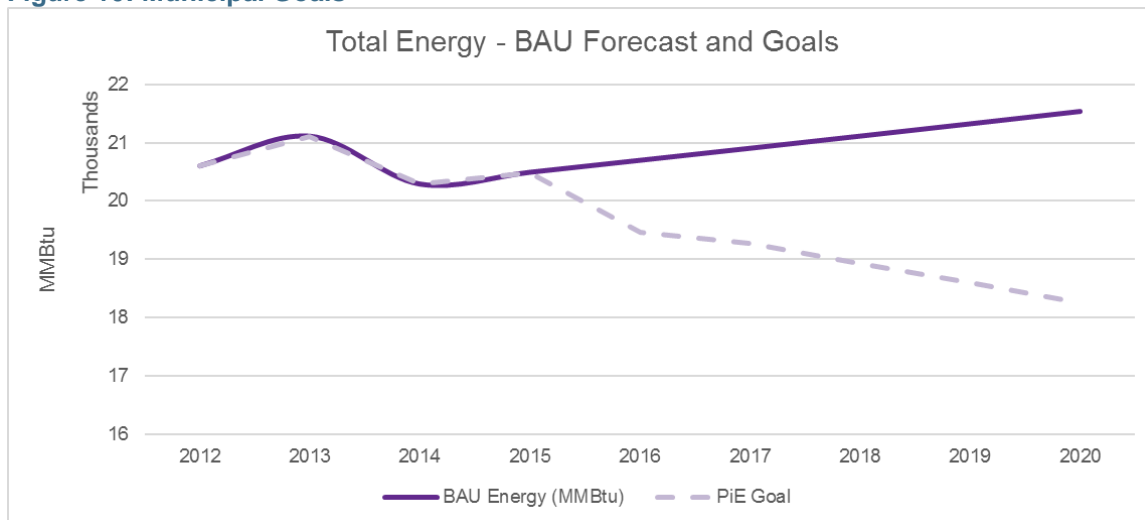


After reviewing previous municipal facility goals, revisiting the energy vision, and testing out different scenarios, consensus formed around the following energy goals for Littleton’s municipal facilities:

- **5 percent reduction from 2014 energy consumption levels by 2017**
- **10 percent reduction from 2014 energy consumption levels by 2020**
- **Energy use intensity below industry benchmarks as a goal for the construction of any new municipal facilities or major remodels to existing facilities, starting in 2017**

Figure 10 below illustrates these goals (dotted line) as they relate to historic energy usage for municipal facilities (2012 through 2014), assuming that business as usual (BAU) energy use for future years will increase at roughly one percent per year.

**Figure 10: Municipal Goals**



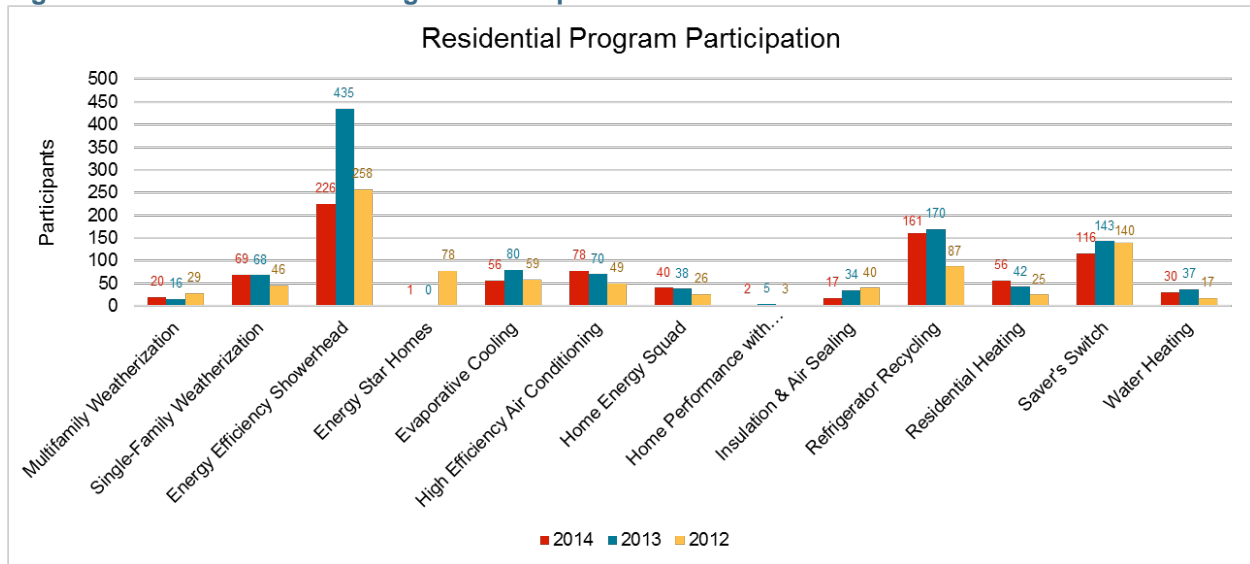
## Focus Area 2: Residential Homes

In addition to the goals set forth for municipal facilities, Littleton is seeking to aid residents in reducing their energy consumption. As illustrated in Figure 1 and Figure 2 on page 7, the residential sector comprised 60 percent of Littleton’s natural gas consumption and 36 percent of electricity consumption. There are approximately 19,092 residential premises in Littleton, and the average energy cost per premise (electricity and natural gas) is \$1,150 annually or approximately \$96 per month.

The planning team decided to focus on increasing average participation levels across all Xcel Energy Demand Side Management (DSM) rebate programs combined through community education as its energy goal for Littleton’s residences. This will enable Littleton’s households to save on energy costs as they take advantage of various rebates and incentives; keeping more of their hard-earned money for other purposes.

Figure 11 shows how many participants took advantage of Xcel Energy's programs in 2012 through 2014.

**Figure 11: Residential DSM Program Participation**



The energy goal for Littleton's residential sector is as follows:

- **Double participation in targeted residential DSM programs by 2018 and sustain those levels of participation through 2020.**

Targeted residential programs include those with high levels of historic participation and potentially significant energy savings including:

- [Air Conditioning](#)
- [Cooling](#)
- [Home Energy Squad](#)
- [Refrigerator Recycling](#)
- [Residential Heating](#)
- [Saver's Switch](#)
- [School Take Action Kits](#)

To calculate the potential energy savings associated with this goal, it was assumed that participation rates would double by 2018 and that level would be maintained through 2020. If these participation targets are achieved, Littleton will see year one (2017) savings of 676,000 kWh and 13,000 therms. With participation maintained at double the current levels through 2020, the cumulative savings will amount to 2,700,000 kWh and 50,000 therms.

This goal is realistic for Littleton to achieve, but also ambitious. For the past three years, an average of 479 residential premises have participated in the residential DSM programs listed on the previous page. For each year of implementation (2017 through 2020), approximately 957 household premises would need to participate each year (approximately 5 percent).

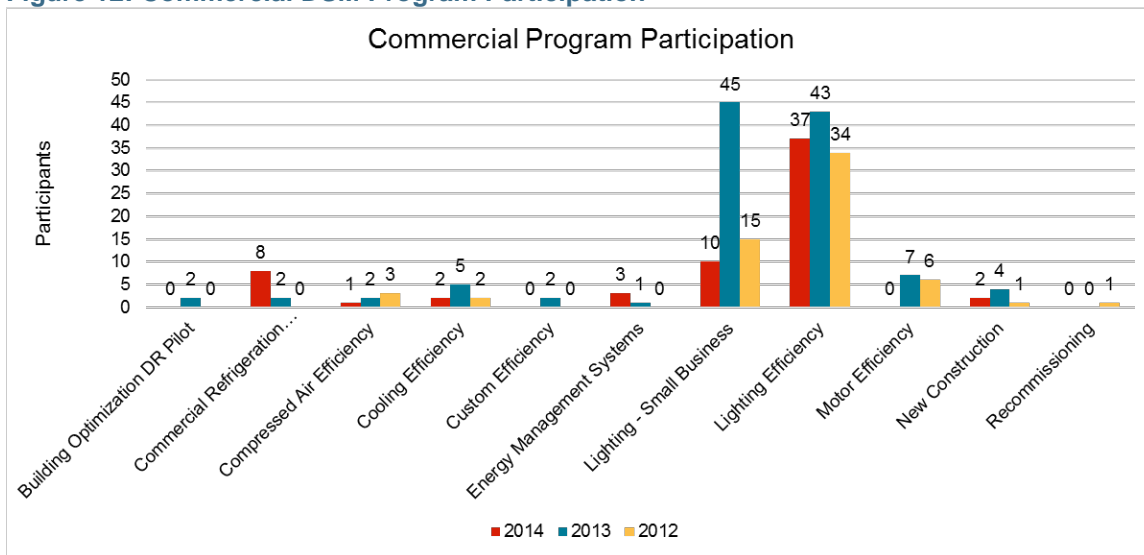
**Focus Area 3: Businesses**

As illustrated in Figure 1 and Figure 2 on page 7, the commercial and industrial sectors (businesses) comprised 63 percent of Littleton’s electricity consumption and 40 percent of natural gas consumption. There are approximately 2,469 business premises in Littleton, and the average energy cost per business premise (electricity and natural gas) is \$8,846 annually or approximately \$737 per month.

As with the residential sector, the planning team decided to focus on increasing average participation levels in commercial DSM programs as its energy goal for Littleton’s businesses. This will enable Littleton’s businesses to save on energy costs as they take advantage of various rebates and incentives.

Figure 12 below shows how many participants took advantage of Xcel Energy’s Demand Side Management programs in 2012 through 2014. The most popular programs are lighting efficiency for large and small businesses.

**Figure 12: Commercial DSM Program Participation**



The energy goal for Littleton's businesses is as follows:

- **Double participation in targeted business DSM programs by 2018 and sustain those levels of participation through 2020.**

Targeted business programs include those with high levels of historic participation and potentially significant energy savings including:

- [Commercial Refrigeration Efficiency](#)
- [Computer Efficiency](#) (no historic participation information available; target participation level 75 is businesses)
- [Cooling Efficiency](#)
- [Lighting Efficiency](#)
- [Lighting Small Business](#)

To calculate the potential energy savings associated with this goal, it was assumed that participation rates would double in 2017 and those levels would be maintained through 2020. Achieving these goals will result in year one savings of approximately 2,300,000 kWh in electricity savings and 3,054 therms in natural gas. Through 2020, if business participation goals are achieved, cumulative savings will be 9,100,000 kWh in electricity and 12,000 therms of natural gas.

This goal is realistic for Littleton to achieve, but also ambitious. For the past three years, an average of 69 business premises participated in the business DSM programs listed above. Combined with the new program offerings and targets established, this goal means that approximately 213 businesses would need to participate in these targeted programs each year.



## How Are We Going to Get There? – Strategies

Strategies are specific actions that Littleton plans to take to achieve its goals. In order to screen potential strategies, the planning team identified several criteria that are most important to the City organization and community. These criteria consisted of payback period, up-front investment, occupant comfort and productivity, visibility, and the ability to contribute meaningfully to the goal.

The planning team developed energy strategies by examining energy data, brainstorming and prioritizing possible actions, and assessing the potential impacts compared to the identified goals.

Each strategy identified has its own action plan that identifies a responsible party or group, outlines implementation steps and a timeline, considers the costs and benefits, identifies partners or resources, and assigns metrics for tracking progress.

### Municipal Facility Strategies

Littleton established goals of a 5 percent reduction from 2014 energy consumption levels by 2017 and a 10 percent reduction from 2014 energy consumption levels by 2020 across the municipal organization. In summary, Littleton will need to reduce total energy use by approximately 10,891 MM Btu between 2016 and 2020 in order to reach its goals.

In addition, the City established a supporting goal of energy-efficient new construction of City facilities, starting with any new facilities built after January 1, 2017. The strategies for achieving these goals include a mix of facility improvements and equipment upgrades through the building tune-up process, engaging occupants in energy conserving activities, committing to continue serving as a leader to the greater Littleton community through municipal actions and decision-making, and establishing energy targets for future new construction.

It should be noted that concurrent with the Xcel Energy Partners in Energy effort, Littleton and Xcel Energy entered into an agreement regarding the Xcel Energy-owned cobra head style street lights in the Littleton community. Under this agreement, Xcel Energy will convert approximately 1,513 high pressure sodium fixtures to LED technology over the next three to five years. These more energy efficient fixtures will save Littleton approximately 752,750 kWh and \$18,200 annually. This strategy is not included in the following section since it will be implemented by Xcel Energy and will not require additional action by the planning team.

Table 1 shows the estimated contribution of each strategy to support achievement of Littleton’s energy goals for municipal facilities. Note that actual total energy reductions are dependent upon the timing of implementation, and the programs, rebates, and equipment selected. This analysis shows that through a combination of efforts focused on building-tune ups, occupant engagement, and leadership by example, Littleton can realistically achieve its goals.

**Table 1: Municipal Strategy Energy Reduction Potential**

Strategy	Energy Reduction Potential per Year (MM Btu)					
	2016	2017	2018	2019	2020	TOTAL
Building Tune Ups (Recommissioning)	530	1,193	1,119	1,087	1,090	5,018
Occupant Engagement	-	508	457	365	256	1,586
Leadership by Example	704	1,523	1,523	1,523	1,523	6,798
Lighting	348	695	695	695	695	3,129
Motors & Drive Efficiency	112	340	340	340	340	1,472
Computer Efficiency	42	83	83	83	83	375
Cooling Efficiency	202	405	405	405	405	1,821
<b>Total Energy Reduction Potential</b>	<b>1,234</b>	<b>3,224</b>	<b>3,099</b>	<b>2,976</b>	<b>2,869</b>	<b>13,402</b>
<i>Amount needed to Reach Goal</i>	<i>1,084</i>	<i>1,629</i>	<i>2,176</i>	<i>2,725</i>	<i>3,277</i>	<i>10,891</i>

Implementation of all of the strategies for municipal facilities will be overseen by a **Municipal Strategy Team** led by Mike Bratten (City of Littleton) and Tim Aston (CSU Extension), and supported by the Partners in Energy community facilitation team. Representatives from the following City of Littleton departments will support implementation of the various municipal strategies:

- Facilities
- Communications
- Human Resources
- Public Works
- Economic Development

## Building Tune-Ups

### Description

Complete building tune-up audits on all City facilities to identify functional systems that can be “tuned up” to run as efficiently as possible through low or no cost improvements. Buildings that are between 5,000 and 75,000 square feet of conditioned space are eligible to participate (approximately 11 Littleton facilities).

An energy advisor will visit the facility to conduct a Building Tune-up audit. This service is provided through Xcel Energy’s Recommissioning Building Tune-up program. Following the audit, a detailed report will be generated that includes potential implementation measures. Additional implementation rebates may also be available and are identical to the full Recommissioning program rebates that cover up to 60 percent of the cost of implementation – up to \$0.08 per kWh or \$400 per summer peak kW saved (whichever is greater) and \$4 per Dth saved for paybacks of no less than one year. If recommissioning measure upgrades are selected, the Building Tune-Up energy advisor will serve as a liaison between the City and its contractor to ensure quality installation.

Customer costs range from \$250 to \$1,000, depending on the size of the facility (the service is valued at up to \$4,500; Xcel Energy covers the difference). The payback from measures implemented can range from less than a year to up to 10 years typically.

The potential impact of implementing this strategy would result in approximately 1,193 million Btu (314,370 kWh; 1,210 therms) in 2017.<sup>1</sup>

### Targets

- Audits and improvements at two facilities by 2017
  - Library and Museum buildings
- Audits and improvements at an additional nine facilities by 2020 (begin in 2016)
  - Bellview Service Center (BSC) buildings
  - Station 12
  - Courthouse
  - City Center / Station 11

<sup>1</sup> Assumed 25 percent reduction in realized energy savings per year thereafter. Assumed Library and Museum buildings participating in 2017 with an additional 9 City buildings participating in the following 3 years, through 2020.

## Building Tune-Ups

### Implementation Steps

1. Identify and apply for building tune up program and fill out applications for first two facilities
2. Energy advisor conducts audit and prepares a detailed report
3. Review report recommendations and prioritize improvements
4. Implement improvements and receive associated rebates
5. Monitor facility energy usage before/after improvements
6. Report progress on City's website
7. Identify second round of buildings to participate in building tune up program
8. Complete steps 1-8 for second round of facilities

### Responsible Parties

- Littleton Municipal Strategy Team
- Xcel Energy City of Littleton Account Manager and appointed energy advisor

### Timeline

- March 2016: Confirm first round of facilities, identify contact person, and apply for program
- April 2016: Complete tune-up audits
- April/May 2016: Review audit report and prioritize improvements
- June 2016: Request funding for improvements in 2017 budget
- Late Fall 2016 – Winter 2017: Begin implementation of projects and rebate process
- Winter-Spring 2017: Monitor and report progress, identify next round of facilities
- Spring 2017: Complete second round of audits and report review/recommendations
- June 2017: Request funding for improvements in 2018 budget
- Summer 2017: Continue implementation of projects and rebate process
- Late Fall 2017 – Winter 2018: Begin implementation of projects and rebate process
- Winter-Spring 2018: Monitor and report progress, identify next round of facilities

### Funding

- Audit costs: City of Littleton
- Audit review and recommendations: Xcel Energy Partners in Energy
- Improvement costs: City of Littleton annual budget
- Rebates: Xcel Energy

## Building Tune-Ups

### Outreach Channels

- City of Littleton website and social media

### Metrics

- Energy reduction (kWh and therms) as well as costs and savings by facility

## Occupant Engagement

### Description

This strategy engages municipal facility users (primarily employees) in energy conservation practices and education, including energy use feedback, and presentation of opportunities for energy savings through behavioral change, including recognition of accomplishments and positive feedback.

Costs associated with this program are minimal and involve staff time, communication materials, and small rewards. The payback from this program is immediate and can result in a 2 to 6 percent energy savings.

The potential impact of implementing this strategy would result in approximately 508 million Btu (106,310 kWh; 1,450 therms) in 2017. This is 16 percent of projected 2017 savings.<sup>2</sup>

### Targets

- At least one major City facility participating in an Energy Challenge by 2017
- Signage/information at all major City facilities sharing energy conservation tips

### Implementation Steps

#### Building Energy Information

1. Develop a suggestion box and recognition reward for City employees' energy saving ideas
2. Develop and distribute energy efficiency signage and resources for facilities
3. Track monthly City facility energy use using online Xcel Energy account

<sup>2</sup> Assumed energy savings decrease by 10 percent in all years thereafter. Assumed all buildings participating by 2020.

## Occupant Engagement

4. Begin reporting facility-specific energy information on a quarterly basis (including ranking of facilities) to City employees

### Energy Challenge

1. Identify facility to participate in occupant engagement challenges
2. Gain buy-in of department/administrators for energy challenge
3. Define challenge parameters, targets, and rewards
4. Provide employee information and training for challenge
5. Initiate challenge
6. Track progress and report to participants
7. Provide rewards and recognition to challenge winners
8. Present results and post to City web site

### Responsible Parties

- City of Littleton Municipal Strategy Team

### Timeline

- Fall 2016: Create employee suggestion box and reward mechanism; identify buildings and develop parameters for energy challenge
- Fall 2016: Develop and install signage and information at facilities; distribute information and training for energy challenge
- January 2017: Launch energy challenge (estimated 1-year challenge with quarterly progress reports)
- Ongoing 2017: Monitor challenge progress; communicate progress with participants
- Fall 2017/Winter 2018: Wrap-up energy challenge; determine and reward winners; present results on City website
- Quarterly (ongoing): monitor and report facility-specific energy information to City employees

### Funding

- Information/signage: City of Littleton/Xcel Energy Partners in Energy
- Digital Communications: City of Littleton/Xcel Energy Partners in Energy
- Energy Challenge: City of Littleton/Xcel Energy Partners in Energy

### Outreach Channels

- City employee website/email
- City of Littleton website and social media

## Occupant Engagement

### Metrics

- Number of buildings participating in challenge
- Number of occupants in buildings where energy challenges are occurring
- Energy reduction (kWh and therms) by facility and by occupant count

## Leadership by Example

### Description

This strategy ensures that all City of Littleton actions and decisions are demonstrative of the City's commitment to energy efficiency (e.g., purchasing, communications, internal processes, etc.). This strategy utilizes a combination of prescriptive programs from Xcel Energy which detail upgrades for energy saving equipment and financial rebates which are based upon any improvements in efficiency.

Applicable Xcel Energy DSM programs to leverage include:

- [Computer Efficiency](#): Xcel Energy also offers rebates for reducing your energy costs by installing high-efficiency computing equipment.
- [Cooling Efficiency](#): Cooling is the second largest user of electricity for most commercial buildings. New cooling equipment is at least 20 percent more efficient than 15-year-old units, and up to 52 percent more efficient than the minimum-rated models. On average, Xcel Energy's prescriptive rebates cover approximately 60 percent of the incremental costs incurred for purchasing high-efficiency equipment.
- [Motor & Drive Efficiency](#): Over 95 percent of the lifetime cost of a motor comes from the cost of the electricity needed to run the motor, not the up-front cost. Xcel Energy rebates for motors and drives can help reduce the remaining 5 percent capital cost, as well as the operating cost over the life of the motor.
- [Lighting Efficiency](#): By increasing lighting efficiency and taking advantage of valuable rebates, the City can save money, conserve energy, and improve the quality of lighting in municipal facilities. Rebates are available for a wide range of lighting projects and applications
- [Small Business Smart Thermostat Pilot](#): Xcel Energy is piloting a rebate program that provides an incentive to install a smart thermostat that will decrease load on cooling equipment, saving energy and money for the City.

## Leadership by Example

Costs associated with this program are dependent on the equipment impacted. The payback from this program may range from less than one year to around 7 years typically depending on the programs used.

The potential impact of implementing this strategy would result in approximately 1,523 million Btu (446,830 kWh) in 2017. This is 47% of projected 2017 savings.<sup>3</sup>

## Targets

- Semi-annual reporting of energy information to community

## Implementation Steps

See Building Tune-up strategy – results from audits will help inform potential leadership opportunities and upgrades to cooling, lighting, and motors. Also see Occupant Engagement strategy – building signage, suggestion box, and employee challenge will also provide opportunities for leadership.

1. Develop a list of potential candidate facilities for Smart Thermostat program and submit applications
2. Conduct a staff purchasing survey to determine current practices and opportunities for additional information or improvement
3. For buildings not participating in tune-ups, complete a study of potential cooling, lighting and motors to be upgraded or replaced
4. Develop optional guidelines to inform departmental purchasing practices (including but not limited to fleet, technology, and food and beverage practices)
5. Provide purchasing training focused on energy-related purchasing strategies
6. Implement identified lighting, cooling and motor strategies as budget allows and as equipment needs replacement
7. Explore and pursue grants and other opportunities for electric vehicle charging station(s) at municipal facilities
8. Explore opportunities for dedicated funding for energy improvements
9. Incorporate or clarify energy-related responsibilities to staff job descriptions
10. Publish information about energy-efficiency practices and opportunities via the City's communication channels

## Responsible Parties

- City of Littleton Municipal Strategy Team

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<sup>3</sup> Assumed energy savings persist in all years thereafter. Assumed lighting opportunities in all buildings except City Center. Motor opportunities in 8 buildings.



## Leadership by Example

### Timeline

- Spring 2016: Consider which facilities are good candidates and apply for Smart Thermostat program before cooling season begins
- Spring 2016: Submit requests for energy-related improvements (including estimated costs and savings) into annual budget
- Summer 2016: Develop and distribute staff purchasing questionnaire
- Fall 2016: Staff purchasing tips development and distribution
- Spring 2017: Submit requests for energy-related improvements (including estimated costs and savings) into annual budget
- Ongoing: Explore options for grants and other opportunities for electric vehicle charging station(s) at municipal facilities
- Ongoing: Explore options for dedicated funding for energy improvements
- Quarterly (ongoing): monitor and report all City facility energy information to public

### Funding

- Purchasing questionnaire and purchasing tips: City of Littleton/Xcel Energy Partners in Energy
- Energy improvements and funding: City of Littleton
- Energy rebates: Xcel Energy

### Outreach Channels

- City employee website/email
- City of Littleton website and social media

### Metrics

- Energy reduction (kWh and therms) by facility

## New Construction

### Description

This strategy focuses on ensuring that all new facilities and major remodels constructed after January 1, 2017 are designed to achieve an energy use intensity (EUI) below existing city building code (e.g. ASHRAE 90.1, 2010/IECC 2012).

Xcel Energy's Business New Construction program is comprised of two offerings. Energy Design Assistance (EDA) is ideal for large building construction (20,000 square feet or more) while the Energy Efficient Buildings (EEB) program may be more suitable for smaller facilities (5,000 square feet or more). Costs associated with this program are dependent on the design assistance that is covered and the equipment installed. Payback typically ranges from about 3-7 years depending on the programs used and measures implemented.

The potential impact of implementing this strategy was not calculated due to uncertainties about timing of any new facility construction.

### Targets

All new facilities and major remodels participate in EEB program.

### Implementation Steps

1. Convene facility design sub-team and hold a new facility design/management boot camp for all members when any new construction projects are under consideration
2. Apply for and participate in the EEB program
3. Track progress and report to facility design team and City leadership
4. Present results and post to City web site

### Responsible Parties

- City of Littleton Municipal Strategy Team

### Timeline

To be determined if/when any new facilities are proposed.

### Funding

- City of Littleton: funding of any new facilities
- Rebates: Xcel Energy

### Outreach Channels

### New Construction

- City of Littleton website and social media
- Littleton eConnect email alerts

### Metrics

- Energy use (kWh and therms) by facility: baseline scenario, forecasted with EEB program, and actual

## Residential Strategies

The planning team established the goal to double average participation levels in targeted DSM programs by 2018 and sustain those levels of participation through 2020.<sup>4</sup> This goal aims to engage more than 3,000 participants in residential DSM programs, including a mix of historic programs and new offerings from Xcel Energy each year. This effort would be in parallel to that of the business strategies as discussed in the previous section.

Implementation of all of the business strategies will be overseen by a **Residential Strategy Team** led by Tim Aston (CSU Extension) and supported by participants from the planning team and other neighborhood representatives and groups.

These strategies will be implemented via a multi-pronged residential outreach campaign. The campaign will feature various engagement tactics including seminars with neighborhood groups, appearances at community events, delivering information in stores, and providing information to local students via school curriculum and activities.

Targeted residential DSM programs are those with potential high levels of participation and/or potential impact:

- [Cooling Efficiency](#)
- [Evaporative Cooling](#)
- [Heating Efficiency®](#)
- [Home Energy Squad](#)
- [Refrigerator Recycling](#)
- [Saver's Switch](#)
- [School Take Action Kits](#)

### Residential Outreach Campaign

#### Description

This strategy focuses on building awareness of Xcel Energy's programs for residential customers through a targeted, multi-pronged outreach campaign that includes tapping into neighborhood groups, connecting with residents at community events and in stores, and providing tailored information for children in Littleton's schools.

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<sup>4</sup> Note that some programs are new offerings and do not have historic participation levels.

## Residential Outreach Campaign

### Targets

- Double participation rates in targeted programs by 2018
  - Cooling Efficiency (131 participants by 2018)
  - Evaporative Cooling (130 participants by 2018)
  - Heating Efficiency (82 participants by 2018)
  - Home Energy Squad (69 participants by 2018)
  - Refrigerator Recycling (279 participants by 2018)
  - Saver's Switch (266 participants by 2018)
  - School Education Kits (new program, 150 participants by 2018)
- One residential outreach event per month (an event may include a school visit)

### Implementation Steps

1. Convene strategy team, confirm outreach tactics
2. Develop outreach plan for each tactic, including applicable DSM program information and case study examples
3. Organize calendar of events and determine staffing needs
4. Coordinate with Xcel Energy to support event advertisement and staffing
5. Plan for and execute outreach plans
6. Share information to include in Littleton Report mailings

### Responsible Parties

- Littleton residential strategy team (includes Extension energy master and others)

### Timeline

- Spring 2016: Residential strategy team convenes and confirms calendar of events
- Spring 2016 to Fall 2017: Residential outreach

### Funding

- Residences: Improvements
- Event Materials: City of Littleton and Xcel Energy

### Outreach Channels

- Littleton Report
- City of Littleton website and social media
- Littleton eConnect email alerts
- Meet Greet and Eat events (with LED giveaways)

## Residential Outreach Campaign

### Metrics

- Annual DSM program participation
- Number of participants at seminars
- Number of contacts made at events

## Business Strategies

The planning team established the goal to double average participation levels in targeted DSM programs by 2018 and sustain those levels of participation through 2020.<sup>5</sup> Targeted commercial and industrial DSM programs with potential high levels of participation and/or potential impact from Littleton businesses include, but are not limited to the following:

- [Commercial Refrigeration Efficiency](#)
- [Computer Efficiency](#) (note that this is a new program, as such the target participation level 75 is businesses)
- [Cooling Efficiency](#)
- [Lighting Efficiency](#)
- [Small Business Lighting](#)

Implementation of all of the business strategies will be overseen by a **Business Strategy Team** led by Garret Graybeal, the Littleton Economic Development Specialist, and supported by Tim Aston (CSU Extension). Additional support will be provided by participants from the planning team and other businesses and groups.

These strategies will be implemented via targeted business outreach campaigns. The campaign will occur in three locations, focusing on providing targeted information and events in various business areas. Each stage will correspond to a different geographic area over a six month time-frame. The geographical areas are those associated with: SouthPark Owners Association, Downtown merchants, and aging shopping centers throughout Littleton.

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<sup>5</sup> Note that some programs are new offerings and do not have historic participation levels.

## Business Outreach Campaign

### Description

This strategy focuses on building awareness of Xcel Energy's programs for business customers through a targeted, multi-pronged outreach campaign that includes informational seminars, presence at community events, and tailored information for Littleton's businesses.

### Targets

- Double participation levels in targeted DSM programs by 2018:
  - Lighting Efficiency (47 participants annually)
  - Small Business Lighting (76 participants annually)
  - Cooling Efficiency (6 participants annually)
  - Commercial Refrigeration Efficiency (7 participants annually)
  - Computer Efficiency (note that this is a new program, as such the target participation level 75 is businesses)
- Three rounds of geographic outreach:
  - SouthPark Owners Association
  - Downtown merchants
  - Aging shopping centers

### Implementation Steps

1. Convene strategy team, confirm outreach locations and strategies
2. Develop outreach plan and messaging for each location, including applicable DSM program information and case study examples
3. Organize calendar of events and determine staffing needs
4. Coordinate with Xcel Energy to support event advertisement and staffing
5. Plan for and execute three rounds of area-specific events
6. Share information to include in Littleton Report mailings

### Responsible Parties

- City of Littleton business strategy team

## Business Outreach Campaign

### Timeline

- Spring 2016: Business strategy team convenes and confirms sectors
- Summer 2016: Develop sector-specific outreach plans and calendar of Events
- Fall 2016: First round of outreach (SouthPark Owners Association)
- Spring 2017: Second round of outreach (Downtown merchants)
- Fall 2017: Third round of outreach (aging shopping centers)

### Funding

- Businesses: Improvements
- Event Materials: City of Littleton and Xcel Energy

### Outreach Channels

- Littleton Report
- City of Littleton website and social media
- Littleton eConnect email alerts

### Metrics

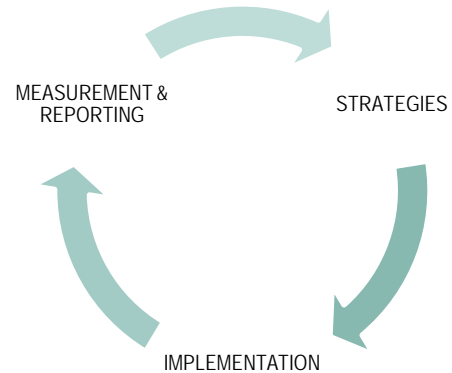
- Annual DSM program participation
- Number of participants at seminars
- Number of contacts made at events
- Xcel Energy recognition of businesses in Littleton Report



## How Are We Going to Stay On Course? – Monitoring and Reporting

### Operational Actions and Tracking

The planning team will continue to meet every 6 months through the end of 2017 to note progress, address challenges, and offer support and solutions. In addition, strategy teams have been formed and leaders identified. These teams will meet regularly in-person or via conference call to further plan and implement the strategies. A representative from each of the strategy teams will be represented at the 6-month planning team meetings to share progress, successes, and challenges. In between meetings, the planning team will stay up to date on implementation efforts using a shared site for resources, messaging, polling, and a group calendar.



**Figure 13: Implementation Process**

Xcel Energy will provide a tracking mechanism into which each strategy team can record progress on a regular (monthly or similar) basis. This tracking will also include Xcel Energy results related to DSM program participation and energy usage which will be provided at each six month planning team meeting.

### Communication and Reporting

To maintain enthusiasm and momentum for achieving the goals set out in this plan, residents, businesses, and community groups must be engaged in the process. Littleton (and Arapahoe County extension, to the extent applicable) will share progress updates via their websites, Littleton Report newsletters, and periodic press releases.

### Changing Course: Corrective Action

Even though this Energy Action Plan is designed for greatest impact over the next 18 months, the residual effect and momentum gained by reinforcing residential initiatives, developing collaborative networks, expanding business programs, and leveraging channels for information and resources will be cyclical and will have long-term positive implications. In addition, the nature of implementation requires staging, flexibility, and course adjustments when necessary to be successful and experience sustained progress.

To accommodate the fluid nature of action and implementation and learn from experience early in the process, the regularly scheduled strategy team meetings as well as the planning team meetings will be a forum for agreeing on course adjustments or new approaches necessary to hit plan targets.

Any adjustments will be documented and shared with the broader group as they occur.

### **Ongoing Planning Team Support**

The continued support and insight of the planning team is crucial for this plan's success. Individual members will be involved in advising and supporting individual strategies as well as engaging those beyond the planning team to get strategies off the ground. Their level of effort will include six month planning team meetings and participation on strategy teams for which they have volunteered. If a planning team member is not able to commit to continued participation, he or she will appoint an alternate to fill the role.

### **Recognition for Achieving Goals**

Each of the strategies outlined in this plan will have its own methods for recognizing participants and high performers; however, it will be important to let the community at-large know how things are progressing and also to recognize the collaborative efforts of those involved in hitting the plan targets. At critical milestones, Littleton and Xcel Energy will publish updates on progress, share successes, and congratulate participants and partners through the Littleton Report and City of Littleton website.

### **Beyond the Plan Horizon**

Littleton can be an example to other communities in Colorado that are hoping to engage their population, businesses, and institutions and reduce their energy consumption. To this end, Littleton intends to share its story, including successes and challenges, to inform best practices in energy planning in Colorado.

Furthermore, Littleton may want to consider an update to this Energy Action Plan once the Partners in Energy implementation period draws to a close to set new goals for subsequent years. One option would be to include future energy goals in any future updates to the City's Comprehensive Plan and/or Economic Development Strategy. This recursive planning approach incorporates all the lessons learned, new technologies, new programs, changing resources, and evolving priorities for the community.

## Appendix A: 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.

**DTh (Dekaherm):** a unit of natural gas consumption equal to 10 therms or one million British thermal units. For example, the 3-year average natural gas use for Littleton municipal facilities from 2012 to 2014 was 408 DTh per premise.

**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. For example, the 3-year average electricity use for residential premises within Littleton from 2012 to 2013 was 7,562 kWh per premise.

**MMBtu (Million British thermal units):** a unit of energy consumption common to electricity and natural gas. For example, the 3-year average natural use for the residential sector in Littleton from 2012 to 2014 was 1,182,393 MMBtu.

**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. For example, the 3-year average natural gas use for residential premises in Littleton from 2012 to 2014 was 619 therms per premise.

## Appendix B: City of Littleton Facility Energy Usage

### 2014 Electricity Usage

Premise	Location Description	Address	Total 2014 Electricity Usage (kWh)	2014 Costs
300684533	City Center	2255 W Berry Ave	1,702,995	\$166,672
301825644	Museum	6028 S Gallup	974,080	\$82,755
300693328	Library	6014 S Datura	498,111	\$49,787
301749253	Station 12	6529 S Broadway	198,240	\$17,472
301490837	Courthouse	2069 W. Littleton Blvd	174,720	\$18,860
302138053	BSC Bldg 5	1800 W Belleview Ave	158,240	\$18,904
300678355	BSC Bldg 1	1800 W Belleview Ave	156,400	\$15,962
300891514	THAC	2450 W Main	145,120	\$18,756
300678354	BSC Bldg 2 & 3	1800 W Belleview Ave	126,080	\$12,425
300920062	Museum Collections	6017 S Gallup	40,720	\$6,487
301728364	Historic Depot	5790 S Prince St	27,737	\$2,897
301221933	Museum Bldg	6028 S Gallup	27,059	\$2,538
300672586	BSC Bldg 7562	1800 W Belleview Ave	15,795	\$1,458
302113447	BSC Bldg 4	1800 W Belleview Ave	7,207	\$709
301888142	Museum Unit Crtrk	6028 S Gallup	6,456	\$640
300678349	BSC Bldg 7562	1800 W Belleview Ave	5,632	\$537
301524170	Museum Care	6028 S Gallup	5,119	\$514
301295842	THAC Unit B	2450 W. Main Unit B	406	\$37
300678353	BSC Bldg 1	1800 W Belleview Ave	404	\$37
301570931	BSC Bldg Sign	1800 W Belleview Ave	162	\$15

## 2014 Natural Gas Usage

Premise	Location Description	Address	Total 2014 Natural Gas Usage (therms)	2014 Costs
300678356	BSC Bldg 2	1800 W Belleview Ave	25,679	\$ 16,819
301749253	Station 12	6529 S Broadway	8,801	\$ 5,841
300678350	BSC Bldg 3	1800 W Belleview Ave	5,402	\$ 3,530
300891514	THAC	2450 W Main	5,195	\$ 3,452
300678352	BSC Bldg 1	1800 W Belleview Ave	4,112	\$ 2,684
300920062	Museum Collections	6017 S Gallup	3,889	\$ 2,537
302113447	BSC Bldg 4	1800 W Belleview Ave	1,822	\$ 1,197
300684534	City Center Police Addition	2255 W Berry Ave Unit C	899	\$ 599
300684534	Fire Station 11	2255 W Berry Ave	899	\$ 599
301888142	Museum Unit Crtkr	6028 S Gallup	875	\$ 576
304232663	City Center Police Addition	2255 W Berry Ave Unit C	493	\$ 327
301728302	Historic Depot	5790 S Prince St	-	\$ -