Boulder City Council
STUDY SESSION
Study Session is Televised

Thursday
July 30, 2015

Briefing 5:30-6 PM
Civic Area Park Site Plan Update

6-7:30 PM
Climate Commitment Goal and Strategy Proposal

7:30-9 PM
West Fourmile Canyon Creek Planning Project Update
(Revised 07-29-2015)

Council Chambers
Municipal Building
1777 Broadway

Submit Comments to City Council
Email: council@bouldercolorado.gov or
Attention: Alisa Lewis, City Clerk
PO Box 791, Boulder, CO 80306
Fax: 303-441-4478

Study Session
MEMORANDUM

TO: Members of City Council

FROM: Jane S. Brautigam, City Manager
David Driskell, Executive Director of Community Planning and Sustainability
Susan Richstone, Deputy Director of Community Planning and Sustainability
Heather Bailey, Executive Director of Energy Strategy and Electric Utility Development
Chris Hagelin, Senior Transportation Planner
Sarah Huntley, Media Relations/Communication Manager
Brett KenCairn, Senior Environmental Planner
Jonathan Koehn, Regional Sustainability Coordinator
Yael Gichon, Energy Sustainability Coordinator
Kendra Tupper, Energy Services Manager/Lead Strategist

DATE: July 30th, 2015

SUBJECT: Study Session: Climate Commitment Goal and Strategy Discussion

I. Purpose

The purpose of the study session is to discuss and obtain the City Council's feedback on options and recommendations for finalizing a community greenhouse gas emissions (GHG) reduction goal and associated implementation strategy.

Also provided with this memo:
Attachment A, is the recently completed staff report on the 2012 Community GHG Inventory. This information forms a basis for an ongoing assessment of community emissions reduction achievements;
Attachment B includes a table showing the more detailed metrics proposed for tracking progress towards the city's proposed long-term GHG reduction goal, including interim targets;
Attachment C provides an overview of the communications strategy designed to launch community outreach and engagement around refinement and adoption of the Climate Commitment strategy; and
Attachment D provides a draft of the Climate Commitment Strategy Framework. (TO BE DELIVERED 7/30/15)

II. Questions for the City Council

1. Does Council support the proposed emissions reduction goal of 80 percent below 2005 levels by the year 2050; the overall framing and strategies associated with Boulder's Climate Commitment; and the proposed targets and actions identified as the focus of city efforts in the 2015-2020 time period?
2. Are there key emissions reduction actions not represented in the city's current programs and strategies that should also be considered?
3. Does Council have feedback and/or additional ideas on the plan for communications and engagement as outlined in the Climate Commitment Communications Plan (Attachment C)?

III. Feedback from Advisory Boards

The draft Climate Commitment memo, including the GHG inventory results and draft targets and metrics, was presented to three boards in order to provide an opportunity for discussion and feedback prior to the council' study session. While full minutes of these discussions are not yet available, following is a brief summary of the key points of input from each board.

Environmental Advisory Board (7/1/15)

Support for the Goal—Three of the five board members expressed reservations about the 80% reduction goal based on concerns that it was abstract, too distant, and even more ambitious than the previous Kyoto goal that wasn't met. Two board members were supportive. All felt that it was important to emphasize shorter term, achievable goals that are measured in ways relevant to the larger community. The potential impact of growth and the need to recognize and incorporate this into any goal setting was also emphasized.

Additional Strategies—Several board members emphasized growth and development management strategies such as the 15 minute neighborhood planning approach. Also noted was the need for a stronger emphasis on EV adoption and developing explicit city policies/strategies to support adoption. Several board members noted the importance of integrating energy efficiency requirements around time-of-sale for residential properties. The need for waste reducing procurement policies was also noted.

Engagement—All members agreed that identifying clear, actionable steps that community members can take and see progress in is essential. They also emphasized the importance of describing the evolution of the city's approach to this issue so that it doesn't appear that the city keeps doing the same thing that isn't having an impact. Other topics included:

- focus on opportunity rather than peril;
- show how individual actions sequentially lead to greater and greater impacts that also save money and create other personal benefits;
- track the money retained in the community through developing more local energy generation and efficiency to show the economic and financial benefits;
- conduct focus groups with business and other key groups to understand how these groups are relating to the issue;
- use scenarios to portray likely future conditions.

Transportation Advisory Board (7/13/15)

Support for the Goal--There was a diversity of opinion within the board regarding support for the 80% emissions reduction by 2050 goal. Several members supported the goal, one board member felt the goal may be too ambitious and setting the community up for failure, and another expressed active opposition and proposed instead that the city establish a clear carbon budget and commit itself to staying within that gradually decreasing carbon emission limitation.

Additional Strategies—Most board members emphasized the importance of continuing to use a diversity of strategies that include both incentives and mandatory measures.

Community Engagement—The board noted the importance of finding ways to create clear and relatively simple choices that enable community members to take meaningful and personally beneficial action.

Planning Board (7/16/15)

Support for the Goal—There was broad support for the goal among the planning board. A number of board members emphasized the importance of representing the goal as both total emissions reduction and per capita emissions reductions, and having comparative benchmarking with other cities. There was also

recognition of the importance of continuing to track consumption-based emissions impacts even though they aren't directly included in the current inventory protocol.

Additional Strategies—Several board members emphasized continuing to look for ways to support materials reuse and consumption reduction. Other suggestions included: look for ways to use land use as an emissions reduction tool; more explicitly outline a "Plan B" if the city does not proceed with municipalization; make our strategies exportable so that we can benefit the larger world outside of Boulder.

Engagement—The board had a number of suggestions around engagement including:

- focus on what each person can do;
- emphasize the importance of everyone needing a transition plan (43,000 climate/energy plans--one for each household, business and institution);
- get young people involved in this discussion;
- emphasize collaboration and partnerships and connect to groups already working on this effort ("Racing Extinction" Screening and community follow-up);
- use the exciting work coming out of the Boulder Energy Challenge (SNUGG Pilot on household EE/EV/PV) to bring the opportunity and benefits to the household level.

IV. Background and Updates

Two prior City Council study sessions have been held to discuss the development of Boulder's post-Kyoto[1] climate action goal. The July 29, 2013 Study Session presented an analysis of a range of potential emissions reduction goals ranging from an 80 percent emissions reduction by 2030 to a 100 percent emissions reduction by 2050. Council provided staff direction at this meeting to conduct further analysis on the viability of implementing an 80 percent emissions reduction below 1990 levels by 2050. At the November 12, 2014 Study Session, staff presented council with a detailed assessment of the emissions reduction potentials of existing and anticipated city programs to determine the likelihood that these programs could achieve this 80 percent emissions reduction goal. This analysis indicated that a combination of full implementation of all existing and anticipated building and transportation emissions-reduction programs, coupled with an electric utility providing 100 percent clean electricity, could meet or achieve this emissions goal. Staff also recommended changing the baseline year to 2005 to better align the city's reporting with both the state and a growing number of cities in the US and internationally. Subsequent to these study sessions, staff has continued to refine the city's emissions analysis, projection tools and proposed strategies, as described below.

GHG Inventory

In early 2015, staff completed a new community GHG emissions inventory using a more comprehensive inventory protocol (ICLEI US Community Inventory Protocol) and an enhanced inventory system developed to align the city's methodology with national and international standards. Given the ongoing challenges in acquiring energy use data from Xcel, the city relied on energy data acquired through legal discovery. The most recent year for which the city could compile all of the necessary energy use information was 2012. A full review of the inventory process and results are included as **Attachment A** to this memo. The summary results of the inventory have also been compiled as an infographic intended to make the findings more

[1] In 2002 Boulder's City Council adopted the Kyoto Protocol goal of reducing greenhouse gases by 7 percent below 1990 levels by 2012.

comprehensible and useful to the community[2].
Key findings of the inventory are summarized in the sidebar. As part of the inventory analysis, staff adopted a 2005 emissions baseline year (previously 1990), as discussed at the Nov 2014 study session. This will create better alignment between the GHG inventories of the city organization and the larger community, and uses the same baseline year as the state of Colorado and a growing group of both US and international cities.

2012 Community GHG Inventory
Key Findings

- Overall emissions declined slightly (↓~1%) between 2005-2012
- During the same period, overall employment increased (↑2.7%) and economic activity grew (↑23%)
- Emission reductions were more significant in several sectors, including residential (↓4% per household), ground transportation (↓8%) and waste (↓8%)
- Emissions increased in the commercial and industrial (C&I) sectors, up by 13% in electricity and 27% in natural gas.

C&I emissions growth was likely the result of both significant increases in business activity and the addition of medical marijuana grow facilities, new data centers, and other added institutional and industrial processes such as CU's cogeneration plant being off-line (significant increase in electricity use).

Importantly, the 2012 GHG inventory does not reflect the impacts of efficiency program activities since 2012, which include a significant increase in the number of residential units investing in energy efficiency as well as continued expansion of installed solar capacity within the city.

Emissions Reduction Potential of Alternative Energy Source Change Scenarios

Previous and current analyses have all underscored the necessity of substantially shifting Boulder's electricity generation sources in order to achieve deep reductions in GHG emissions. Even with significant investments in improved energy efficiency and widespread adoption of technologies such as rooftop solar, the community's emissions will remain high as long as coal and natural gas remain a substantial part of the fuel mix used to generate Boulder's electricity.

To inform the current effort to define a viable "path to 2050" for achieving 80% or more reduction in Boulder's GHG emissions, staff has analyzed alternative fuel mix scenarios for Boulder's electricity supply to test the potential emission impacts of changes to energy source when combined with efforts related to energy efficiency and other "demand side" initiatives. The three scenarios analyzed are described below.

1 **Business As Usual**
Continuation of current fuel-switching trends and DSM investments, maintaining current utility target of 30% renewables portfolio and extending natural gas fuel switching reductions to 2050. This analysis relies on Xcel's published Electric Resource Plan (ERP) that projects its portfolio out to 2037. Staff then extended the emissions reduction trend projected through 2037 out to 2050. It uses Xcel's stated intention to set its renewables generation portfolio based on the current mandate of 30% renewables as outlined by the Colorado's mandated Renewable Portfolio Standard (RPS). The majority of emissions reductions achieved beyond 2020 are related to the retirement of coal plants and their replacement with natural gas-fired power plants.

2 **80% Renewables + DSM + NG replacement**
Achieving an 80% renewable electricity (RE) portfolio by 2050, with more aggressive demand side

[2] The infographic and additional information can be found at http://www.boulderclimate.com

management (DSM) and natural gas replacement (NG replacement). This analysis assumed a utility model that prioritizes higher levels of investment in renewable energy, utilizing wind, solar and hydro to generate electricity, with only 20% of generation relying on fossil fuels (natural gas). It also projects higher levels of investment in Demand Side Management (DSM) programs, represented by additional energy efficiency and distributed generation incentives, and resulting emission reduction impacts. Additionally, it assumes additional programmatic efforts to support replacement of natural gas-based heating and process uses in residential, commercial and industrial applications. The renewable electricity analysis draws on modeling completed for Boulder's exploration of creating a municipal electric utility which demonstrated that a significant shift towards renewable sources of energy is possible within existing energy markets.

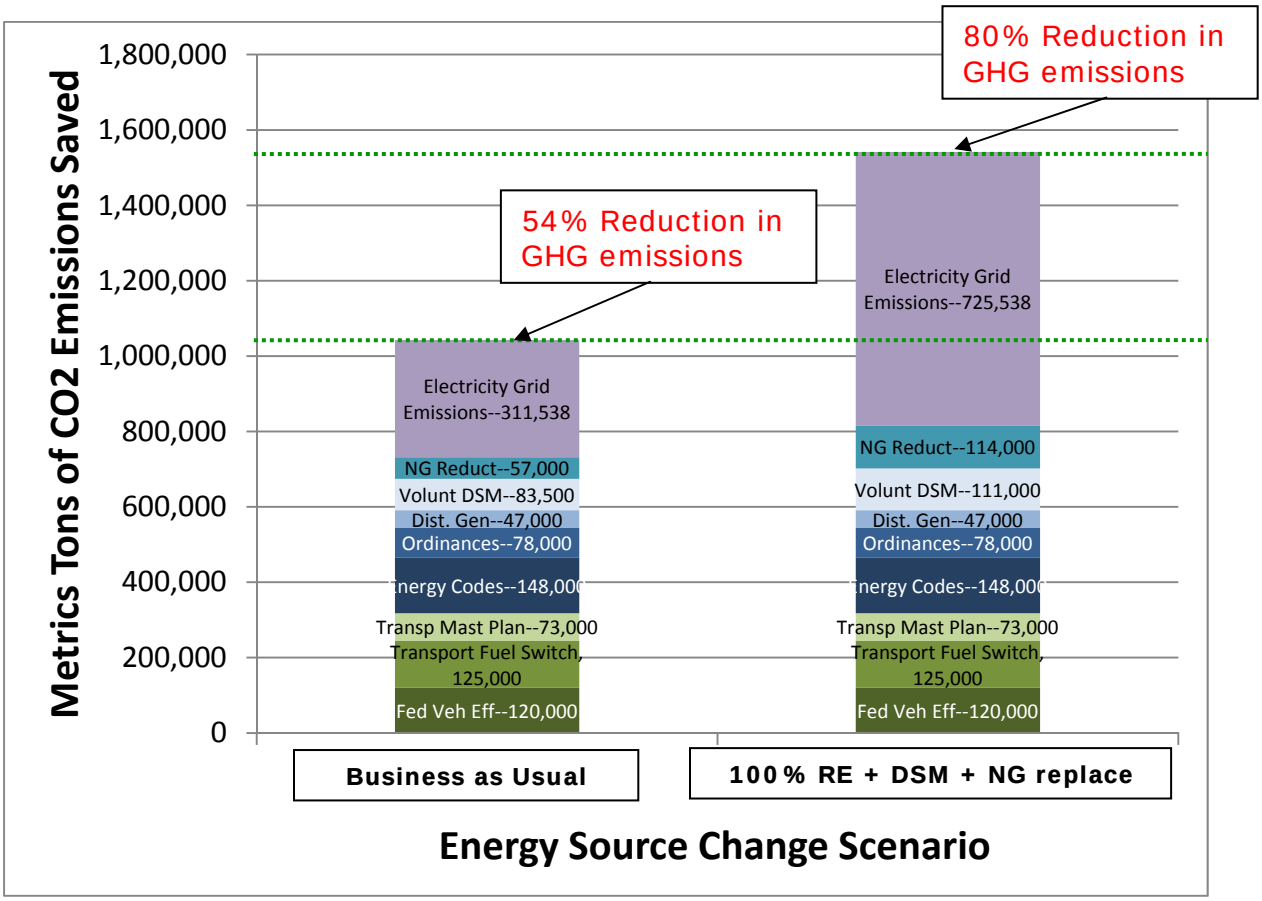
3 100% RE + DSM + NG replacement

Achieving a complete switch from fossil fuel generation to renewable electricity(RE) generation by 2050, with more aggressive demand side management (DSM) and natural gas replacement(NG replacement). This scenario assumed the augmented level of energy services, demand side management programs, and natural gas replacement modeled in scenario 2 (80% renewable), plus additional assumed changes in technology and investment such that the remaining 20% of energy is also provided by renewable sources. As shown in Figure 1, absent breakthroughs in other sectors, *this configuration is the only one that enables Boulder to achieve a full 80% reduction in all GHG emissions by 2050.*

Emissions Reduction Potential of Existing Policies and Programs

In November 2014, staff presented a preliminary assessment of the projected emissions reduction potential of the city's existing building and transportation-related policies and programs. Since then, assumptions and analyses have been refined and updated, including incorporation of the potential emission reductions that could be achieved through implementation of the proposed new commercial and industrial energy efficiency ordinance, now referred to as the Boulder Building Performance Ordinance. This analysis was combined with utility scenarios #1 (Business as Usual) and #3 (100% RE-DSM-NG replacement) to project the total emissions reduction potential of each. The results of this analysis are illustrated in Figure 1.

Figure 1 – 2050 Emissions Reduction Potential for Current Policies and Programs in Combination with Two Energy Source Change Scenarios



Glossary of Abbreviations

Electricity Grid Emissions—Reductions in emissions due to adding renewable energy generation sources
NG Reduct—Natural gas reduction programs assume some combination of fuel switching and efficiency. Additional reductions could be realized if alternative renewable fuels are developed.
Volunt DSM—Voluntary demand side management programs coordinated by the city—Energy Smart or similar, with enhanced program capabilities under municipal utility and actions taken by other institutions e.g. CU, BVSD, Boulder County, federal labs
Dist Gen—Promotion of on-site distributed generation
Ordinances—SmartRegs rental energy efficiency ordinance and the Boulder Building Performance Ordinance for commercial and industrial properties
Energy Codes—Both residential and commercial Net-Zero Energy ordinances
Trans Mast Plan—Transportation Master Plan efficiency related programs
Transport Fuel Switch—Electric Vehicle adoption and similar clean transport fuel programs
Fed Veh Efficiency—Federal vehicle efficiency standards (CAFE standards)

The projected reduction potential for each city policy/program area was determined through a modeling tool developed by the Brendle Group, combined with additional reduction projections from the ongoing improvement of energy systems and technology in natural gas uses and transportation[3]. The 2050 projected

[3] Transportation energy systems change was analyzed by the Southwest Energy Efficiency Project as part of analysis conducted for the 2014 Transportation Master Plan. Natural gas emission reductions were based on a projected

reductions, summarized in Table 1, are based on a 2005 baseline year. The highlighted areas are the major emissions reduction differences between the two utility configurations.

Table 1: Projected Emission Reductions from Current Policies/Programs under Two Utility Scenarios by 2050

Programs	Metric Tons Saved	
	Business as Usual	100% RE-DSM-NG replace
Energy Codes	148,000	148,000
Ordinances	78,000	78,000
Distributed Generation	47,000	47,000
Transportation Master Plan	73,000	73,000
Transportation Fuel Switching	125,000	125,000
Federal Vehicle Efficiency	120,000	120,000
Voluntary DSM	83,500	111,000
Natural Gas Reduct Programs	57,000	114,000
Electricity Grid Emissions	311,538	725,538
Total Emissions Saved	1,043,038	1,541,538
% Reduction from 2005 Levels by 2050	**54%**	**79%**

The Value of Conservation and Efficiency

The projected emission-reduction contributions of building-related efficiency measures vary significantly depending on the characteristics of the electricity provided by an electric utility. In scenarios such as "Business as Usual," the continued use of both coal and natural gas for a significant portion of generation capacity results in relatively "dirty" electricity, meaning that it has higher carbon per kilowatt (called the "carbon intensity factor"). Consequently, every kilowatt hour saved creates a relatively high number of pounds of carbon emissions reduced. As a result, without Demand Side Management efforts, the emission reductions for the "Business as Usual" scenario would likely be closer to 30 percent rather than 54 percent.

Conversely, as electricity sources become "cleaner" (more renewable energy that generates low-or-no carbon per kilowatt), the emissions reduction "value" of each kilowatt is reduced. In this case (as in the 100% Renewables scenario), while conservation and efficiency do not have a direct emission reduction benefit (because all of the power is essentially emission-free), they continue to be a worthwhile investment because they reduce the amount of renewable energy generation needed. Under current and projected pricing for development of renewable generation in comparison to the cost of efficiency and conservation, money spent to reduce demand (through high performance buildings and more efficient appliances, for example) will continue to be more cost effective than having to invest in additional solar or wind generation to power wasteful buildings and processes.

---

reduction in NG use of 30% below 2005 Business as Usual usage rates. Deeper reduction targets for NG will be considered as part of recently funded (Carbon Neutral Cities Alliance) NG replacement assessments being initiated in the fall of 2015.

V. Factors Shaping Boulder's Next Stage Climate Commitment

Boulder's climate action represents an evolving strategy based on the extensive efforts and investments made by the city and the larger community over the past decades. A brief summary of these efforts illustrates how Boulder's strategy has evolved and how past experiences are informing the strategy now in development.

Climate Action Gets Underway (~2002 to 2009)

A focus on incentive-driven behavior change and the country's first local carbon tax. While Boulder has been active in energy and environmental issues for many decades (dating back to the 1970s), the focus on climate change was formally launched in 2002 with passage of Resolution 906, adopting the Kyoto Protocol goal of a 7 percent reduction in greenhouse gas emissions by 2012. Similar to early climate action initiatives in most places, Boulder's initial climate action strategies focused on behavior change initiatives, with the emphasis primarily on individuals and households. A number of different educational and technical assistance initiatives were launched during this period. Importantly, in 2006 the community recognized the need for a dedicated source of funding to support these efforts and passed the country's first local carbon tax, establishing a surcharge on both residential and commercial/industrial electricity use. These funds were directed primarily towards providing incentives to encourage changes in energy use through behavior change (e.g., turning down thermostats, driving less) and efficiency investments (e.g., lighting retrofits and insulation).

Climate Action Matures (~2010 to 2015)

Analysis leads to program redesign, regulatory standards, integration, and a focus on energy source change. In 2009, analysis of progress in the city's climate action efforts led staff and community members to recognize that the substantial work taking place was not achieving the hoped for emission reductions. In response, several community working groups were formed to evaluate existing efforts and recommend changes, and council acted to increase the carbon tax to the maximum level previously approved by voters. As a result, several important new initiatives were launched, including:

- **"Two Techs and a Truck"—the quick-install and energy advisor model for efficiency services.** Based on ideas generated by a community working group, the city piloted a new approach to the design and delivery of its energy efficiency services, focusing on "quick install" actions that could be done in conjunction with energy audits (to act on "the low hanging fruit" right then and there) coupled with an "energy advisor" who could walk property owners through the audit process, help them understand results, connect them with financing and rebates, and even help select a pre-qualified contractor to do the work. Following the model's refinement, the program launched countywide as "EnergySmart" thanks to a federal grant (as part of the American Reinvestment and Recovery Act). The result has been a substantial increase in the reach and penetration of energy efficiency investments. With the purchase of private sector partner Populus by CLEAResults in 2014, the energy advisor model pioneered in Boulder is now being used by utilities and agencies nationwide.
- **Leading Edge Energy Codes and the "Path to Net Zero."** In 2013 to 2014 the city adopted new energy codes for commercial construction and renovation that are among the most stringent in the country, and will soon be working on the next update to the city's Green Points program for residential construction. As part of the recent update process, the Planning Board and council also expressed support for a proposed "path to net zero" that will guide continued code-related work, with the aim of achieving "net zero" energy in all new construction by 2030.

- **Innovative Efficiency Requirements.** Recognizing that incentives and services alone would not catalyze investment in situations where one party (the property owner) must make the investment and another party (the renter or tenant) realizes the benefit of lower utility bills, the city engaged a working group to develop baseline energy efficiency requirements for rental housing as a first-step toward addressing such "split incentive" situations. The result--"SmartRegs"--established efficiency requirements for all rental housing, with implementation linked to the city's existing Rental Housing Licensing Program. The combination of SmartRegs and new EnergySmart services has resulted in thousands of additional units implementing efficiency improvements[4]. In 2014 and 2015, a key focus has been on developing a rating and reporting requirement for commercial and industrial properties. The proposed Boulder Building Performance Ordinance[5], developed with significant input from another community working group, will be considered for adoption in the second half of 2015.
- **Energy Source Change and Municipalization**. Analysis in 2009 and 2010 made it clear that even the most aggressive energy efficiency efforts that could be conceived would not come close to achieving the community's emission reduction goals as long as coal and natural gas were the predominant fuels used to generate Boulder's electricity. As a result, Boulder voters decided to create a "Utility Occupation Tax" in order to allow the city's existing franchise with Xcel Energy to expire and to provide time for exploring alternatives that could achieve Boulder's energy future goals. Subsequently, following more analysis and discussion, voters also approved a tax to pay for the exploration of municipalization as a path to achieving deep emission reductions and other goals, and authorized City Council to create a municipal utility if certain conditions could be met. Recent analyses have confirmed that significant shifts toward a renewable energy supply are not only possible, but also economical. The effort to create a locally owned utility has been the most significant city work effort related to climate and energy, and--if successful--could realize significant GHG reductions through energy source shift, the impacts of which are described earlier in this memo.
- **Solar Friendly Community.** The city has continued to encourage and facilitate solar installations in the city, including large ground-mount solar gardens like the 1 MW installation at the wastewater treatment plant and rooftop installations at many city facilities, as well as the solar grants program and work to ensure that regulations are supportive of solar installations. Combined, these efforts recently earned the city a "platinum" rating as a Solar Friendly Community from the Colorado Solar Energy Industries Association. Since 2007, the installed solar capacity on residential, commercial and institutional buildings in Boulder has increased from less than 2MW in 2007 to over 15MW in 2015.
- **Energy Innovation Partnerships.** To stimulate market transformation and catalyze private and nonprofit sector innovation, the city has partnered to launch two pilot initiatives: Boulder's Energy Challenge, which provided $300,000 in seed money to six winning teams that had developed innovative ideas for achieving deep carbon reductions; and the Community Power Partnership, in collaboration with the Pecan Street Research Institute from Austin, to install and test 'behind the meter' circuit-level energy data readers in a sampling of Boulder homes and businesses. Evaluation of both pilot initiatives is now underway and next steps are being planned.
- **Transportation-related Emission Reductions.** A key focus of recent years has been to integrate emission reduction planning in relevant city master plans and other efforts. In 2014, this happened for

[4] Links to the following programs can be found here: Energy Smart Commercial, Energy Smart Residential, SmartRegs

[5] More information on the Boulder Building Performance Ordinance can be found here: https://bouldercolorado.gov/lead/boulder-building-performance

mobile emissions through the integration of climate analyses and actions in the update of the city's Transportation Master Plan, incorporating a variety of strategies and new pilots aimed at reducing vehicle use and associated emissions.

- **City Leadership.** The city initiated a major energy efficiency initiative for city facilities that achieved a more than 20 percent reduction in both energy use and overall GHG emissions. The project has also resulted in significant financial savings, demonstrating the economic benefits of efficiency measures capable of creating significant emissions reductions.
- **Carbon Tax Extended**. In 2012, city voters expressed their support for the city's climate work, and the clear priority of ongoing climate action, by re-approving the city's carbon tax until 2017 with 82 percent support.

Climate Action Seeks System Transformation (2015 and beyond)

Emerging focus on whole system thinking and transformative action, embracing a goal of comprehensive energy system decarbonization. As outlined above, significant community effort has created a foundation of community technical assistance, responsible energy use standards, and a pathway to local renewable electricity. Together, these efforts have the potential to significantly reduce emissions while creating substantive economic and social benefits. However, achieving a goal of 80 percent GHG reduction or more requires transformation of our energy systems in fundamental ways--not just in electricity, but also in thermal systems (natural gas) and transportation. Four major action areas will be integral to this energy transition:

1. **Maximize productivity and energy efficiency.** As conversion of the community's energy system to clean electricity proceeds (see #2, below), the most cost-effective way to minimize the need for new electricity generation (and thereby associated system expansion costs) is to maximize efficiency and system productivity. The substantial platform of energy efficiency services the city and county have jointly developed, and the enhanced demand side management services that could be offered by a new generation utility model, provide the foundation for development and delivery of these enhanced productivity and efficiency services.
2. **Rapidly transition to 100 percent clean electricity.** Electricity represents the one energy form that can currently be produced at large scale through renewable/non-fossil-fuel based systems. The rapid reduction in costs for both wind and solar--and rapidly improving technology and competitiveness for associated energy storage--have now made these sources cost competitive with conventional fossil fuel sources in a growing number of markets. Given the challenges of transitioning some existing forms of energy use away from fossil energy sources (air travel, heavy transport, some industrial uses), the transition to clean electricity is one of the areas that needs to achieve at or near 100 percent renewable energy adoption.[6]
3. **Retire natural gas systems (80 percent or greater) through equipment conversion.** Deep emissions reduction will require a rapid phase-out of existing equipment and systems that rely on natural gas, such as boilers, furnaces, water heaters, chillers and other natural gas process uses. This is a new area of focus for both technical and policy solutions. Boulder is taking a leading role in beginning to assess options in this area (see below).

4. **Replace petroleum-based transportation fuel with electric and other clean fuel options (80 percent or greater).** Transportation represents a total of 30 percent of Boulder's current emissions, with more than

[6] Numerous technical assessments have been conducted documenting the technical feasibility of achieving this level of renewable resource-based energy production, such as that outlined at http://thesolutionsproject.org/.

20 percent of this related to ground transportation. Of these ground transportation emissions, the majority are generated by light duty personal vehicles. The rapidly expanding electric vehicle marketplace already offers a growing range of options that are capable of replacing shorter range travel (less than 40 miles round trip), which represents more than 80 percent of the miles travelled in this vehicle class. Again, electricity—combined with solar and wind generation technology--is currently the most promising commercially viable energy source for large-scale petroleum systems replacement in the light duty vehicle fleet. However, technology in the transportation sector is rapidly evolving as the need and demand for clean energy alternatives expands.

This transition will need to take place at all levels of the community--households, businesses and institutions. Essential to this transition is the proactive anticipation of the natural replacement cycles of a significant portion of these energy assets—heating and cooling systems, and vehicles—in ways that leverage these already anticipated investments to build a new clean energy system. An important emerging role for the public sector will be the development of financial programs and standards that can support and enable this infrastructure transition. Boulder County's recent step to become the first Colorado county to implement the renewed, state-enabled Property Assessed Clean Energy financing (PACE) for commercial properties is an example of this kind of public sector financing mechanism. On-bill financing, in which efficiency and system replacement costs are financed and billed on the utility bill, is another increasingly popular mechanism to support private investment. There are also an increasing number of other public-private financing mechanisms designed to leverage private sector investment.

VI. Boulder's Climate Commitment, 2015 to 2020

The Climate Commitment strategy document provides a high level overview of Boulder's path to deep emission reductions, based on the goal of 80 percent or more reduction in GHG emissions by 2050—a goal based on what climate science currently indicates is needed *at a minimum* in order to avoid catastrophic changes to the Earth's climate. The Climate Commitment outlines not only what is necessary and possible, but also makes the case that fundamental transformation of our energy systems is a significant economic opportunity as well.

Consistent with the direction established in recent years, the Climate Commitment provides the overarching vision, direction and targets for Boulder's climate action efforts, emphasizing that emission reduction is not something that will be achieved by government alone: it is a community-wide, multi-sector effort, in which local government has an important role to play, along with regional, state and national bodies.

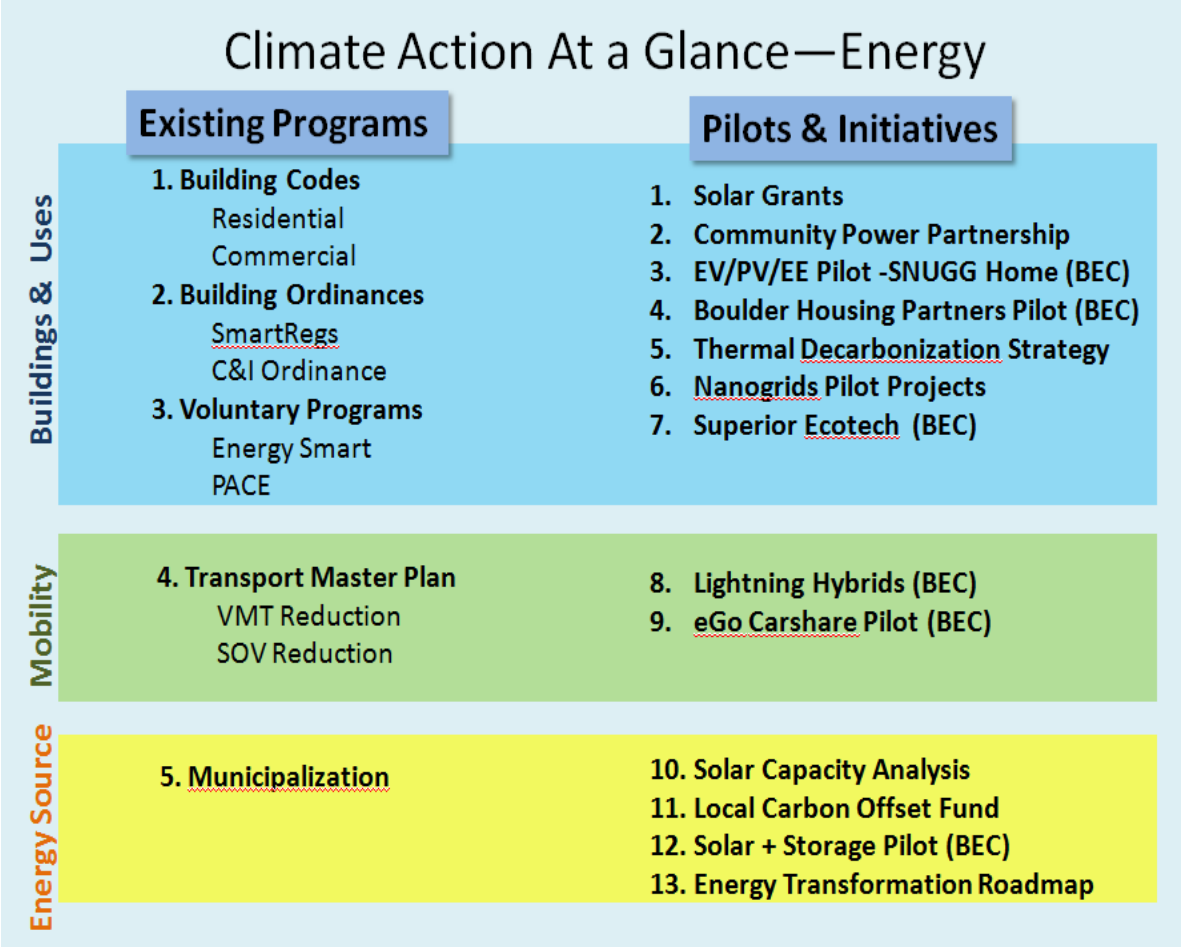
The document outlines a path to 2050, but focuses more specifically on actions needed in the next five years in order to make progress toward that long term goal. As outlined below, Boulder's five-year climate action plan builds on the foundation of experience and existing programs while integrateing additional pilot projects and initiatives to achieve deep emission reductions.

<u>Implementation of Existing Programs</u>

As summarized in the chart below, there are five major city program areas focusing primarily on energy-related emission reductions. These existing initiatives were the basis for the projected emissions reductions described in the Background and Updates section above. The city's waste-related emission reductions represent a sixth program area that is discussed in the Responsible Resource Use section of the Climate Commitment Strategy Framework.

Together, the five energy-related program areas represent a major investment of organizational resources across multiple city divisions and programs (Figure 2). A number of these programs are either recently implemented (e.g., SmartRegs, and the latest building energy codes), represent significant new investments (transportation), or are still in final development and have not yet reached implementation stage (e.g., Boulder Building Performance Ordinance, and municipalization).

Figure 2—City of Boulder Current Climate Action Programs



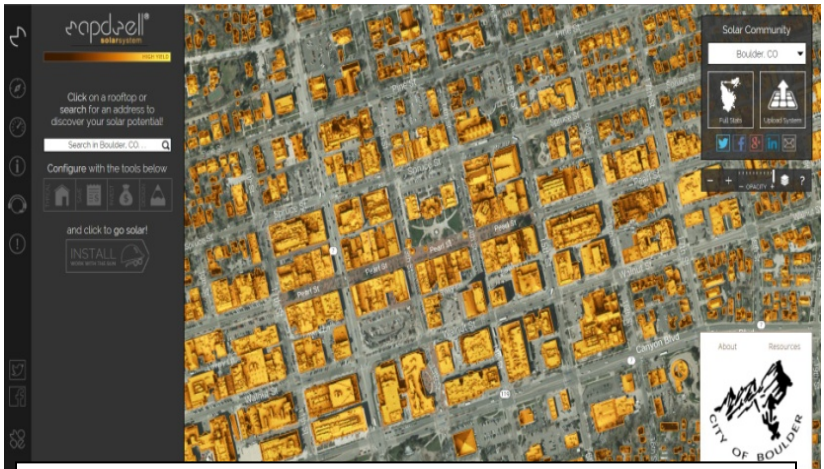
Full and effective implementation of this existing portfolio of emissions impacting programs will draw significantly on existing organizational resources and will likely require additional staffing as programs mature. In addition to these five major program areas, the city has initiated 13 related pilot projects or initiatives that are designed to explore and develop further emissions reduction opportunities. Together, these five program areas and 13 pilots and initiatives (including their next steps) constitute the primary areas of action and resource investment by the city over the 2015 to 2020 timeframe. A number of these initiatives are profiled below to illustrate emerging opportunity areas for additional climate action.

New Initiatives and Pilot Projects

Several new initiatives are described below to illustrate the type of work planned for the 2015 to 2020 time period, in addition to the emission-reduction work already in place.

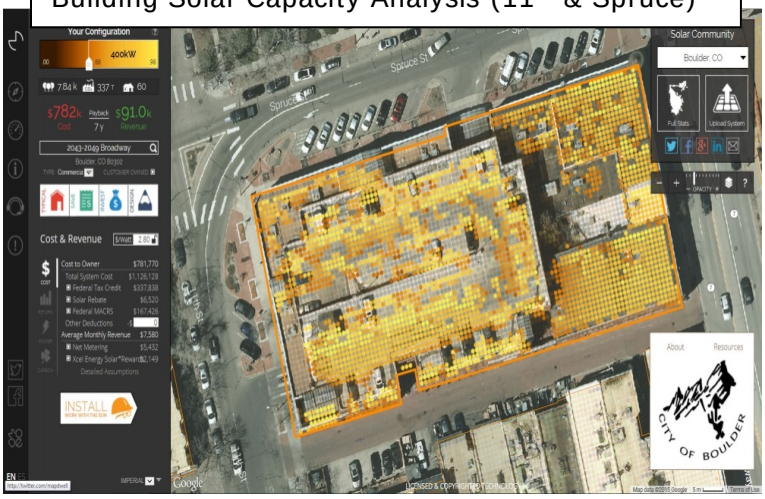
Solar Capacity Assessment – As part of the planning for implementation of a municipal utility, a local energy generation analysis has been initiated with a first stage focus on evaluation of local solar potential. In a collaborative assessment conducted with the National Renewable Energy Lab (NREL), the city integrated recently acquired high quality satellite imagery with NREL's solar capacity assessment capabilities to evaluate the solar energy potential for every roof surface witin the city limit of Boulder. This analysis included consideration of orientation to the sun, elevation, shading and minimum solar area suitable for a viable solar installation. Based on this preliminary analysis, NREL has projected a total potential solar generation capacity of over 600 MW of electricity during peak production. Given a variety of factors this total capacity is sometimes discounted by as much as 80% to account for factors like shading or imperfect aspect. However, this still indicates that Boulder has the capacity to produce a significant amount of energy locally, particularly as a strategy to reduce energy demand at a building level. Importantly, given that Boulder's peak electricity demand is during the hottest days of the summer, distributed solar is a particularly effective strategy for reducing and responding to peak demand. The capacity of onsite solar will be significantly enhanced as new storage technologies enable more of this energy to be captured and stored for later use. A second phase of this analysis will conduct a more in-depth assessment of the technical and financial feasibility of high potential solar sites to identify the constraints and opportunities for stimulating implementation.

Mapdwell Community Solar Map—A second solar capacity mapping project has also been initiated to provide all Boulder building owners with an initial solar capacity assessment. To conduct this project, the city has contracted with MIT spin-off Mapdwell to utilize its proprietary solar capacity assessment tools which are capable of generating site specific solar capacity information—including an initial financial viability assessment—for every building in Boulder. The images below show samples of a city-wide analysis (left) and how this information is made available at an individual building level. The community-accessible portal is scheduled to become available in late August of this year (2015).



Area Assessment—Boulder (10th-17th, Canyon to Pine)

Building Solar Capacity Analysis (11th & Spruce)



Whole Energy System Transition Analysis and Planning – Recognizing the need to achieve decarbonization of energy across all sectors (power, thermal and transportation), the city has leveraged its participation in several national and international collaborations to secure grant funding to evaluate renewable energy transition options from a "whole system" perspective, including the gradual replacement of both natural gas (for heating) and petroleum (for mobility). On July 22 and 23, the city will use grant funds received from the Urban Sustainability Directors Network to bring staff from five other leading US cities—Boston, Minneapolis, Seattle, Portland and San Francisco—to work together on the development of a set of tools cities can use to take a more active and influential role in creating low carbon energy systems. This gathering will also include technical specialists and leaders in energy policy. The event will include a public presentation and discussion at eTown Hall on July 22, 2015.

In two closely related projects, the city was recently awarded grants through the Carbon Neutral Cities Alliance[7] to lead teams of cities working on energy decarbonization projects. The first project will identify pathways to achieve whole energy system transition in different types of neighborhoods or districts within cities (e.g., residential, mixed use, commercial/industrial). The second project will identify specific renewable energy replacement strategies for natural gas-based heating systems in both residential and commercial/light industrial settings. Both of these projects are expected to be complete by mid-2016.

Energy Resilience Capacity Building – In early 2015, the city convened a public private partnership with several leading energy firms and the Colorado Clean Energy Cluster to pursue DOE funding as part of the Resilient Electricity Delivery Infrastructure (REDI) grant program. This project will support design and implementation of renewable energy systems that improve the ability of critical facilities to maintain operations during power disruptions. The lead project for this initiative is the installation of renewable energy back-up power systems at the city's Boulder Reservoir water treatment facility. Two additional projects are also being planned, one with Boulder Community Hospital and another with Boulder Housing Partners, to implement similar systems at their facilities. These projects are being designed to integrate new energy saving features that will create significant financial savings in addition to improving the ability to withstand energy disruptions. These projects will also provide valuable initial experience in support of a larger community-wide critical energy infrastructure resilience assessment being evaluated with technical assistance providers made available through the 100 Resilient Cities initiative.

VII. A Comprehensive Climate Commitment Framework

The preceding sections provide an overview of the energy-related initiatives that have been the primary focus of Boulder's climate action efforts to date, consistent with action strategies modeled in the most recent Intergovernmental Panel on Climate Change (IPCC) reports and numerous supporting assessments. However, these reports and a growing body of research and analysis are now pointing to two other broad areas that play a significant role in either the total production of emissions for which a community is responsible, or the ability of natural systems to stabilize community emission impacts. These two areas represent important focus areas as part of a comprehensive long-term community climate stabilization commitment.

[7] The Carbon Neutral Cities Alliance is a consortium of 17 of the world's leading cities who have all made commitments to deep emissions reduction. Boulder was invited to be a founding member of the CNCA in 2014.

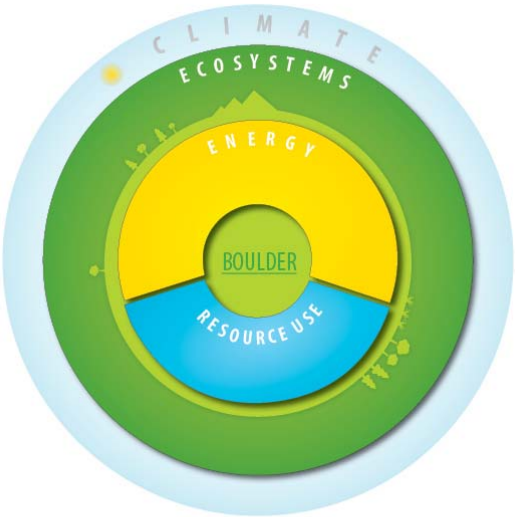
Resource Use – Currently the majority of internationally recognized community emission inventories measure only the emissions associated with energy use within defined boundaries. However a community's full emissions impacts include its use and consumption of resources—from food, water and material goods, to the energy-intensive streaming of digital media and the management of waste. Currently there is no standardized method for quantifying the impact of these resource based emissions beyond the landfill emissions allocated to organic waste streams--currently about 2% of Boulder's overall emissions inventory. These additional emission sources are being increasingly recognized as integral considerations for a community's overall emissions impacts and long-term sustainability. As appropriate methodologies for accounting for consumption-related emissions are developed and agreed to, it will be necessary to consider how they should be considered and incorporated in Boulder's ongoing climate work.

Ecosystems – While the majority of attention and climate action to date has been focused on emissions generation, the eventual stabilization of the climate will also depend on effective management of ecosystems. Ecosystems have two significant roles related to emissions. First, without effective management, large scale catastrophic events like wildfires can result in enormous carbon releases and degrade future capacities of ecosystems to maintain healthy carbon cycles. Second, there is a growing body of research indicating the potential to accelerate the capacity of natural systems to recapture (sequester) the excess amounts of carbon responsible for climate destabilization.

Presenting a Comprehensive, Integrated Climate Strategy

In recognition of these factors, the Climate Commitment Strategy Framework organizes and describes its next stage climate actions as three related broad goals: Clean Energy Future, Responsible Resource Use and Restorative Ecosystems. These are portrayed graphically in a way intended to both illustrate the relationships between these factors and simplify the often confusing complexity of the many factors implicated in climate change. Additional explanation of this approach is provided in the strategy document.

- ***Clean Energy Future.*** This focus area encompasses the majority of efforts Boulder has identified as its primary climate action efforts. It is also the basis of the city's proposed 80 percent emissions reduction goal. In the attached Climate Commitment Strategy Framework, these actions are discussed in three sectors of activity: high performance buildings; clean mobility; and clean energy sources. Given the central importance of energy as a driving factor in climate change, energy related action areas will continue to be the primary focus of the city's climate action efforts, as described in the prior sections.



- ***Responsible Resource Use.*** In recognition of the importance of raising awareness about the connection between resource use and emissions, the city is focusing its resource related climate action efforts on three major resource use areas. These include:
  - *Water*—Boulder's long-standing water conservation efforts continue to explore the connection between water use, energy use and associated emissions.
  - *Waste*—The city's Zero Waste Master plan has both direct

and indirect influences on the city's climate impacts. The city's current GHG inventory indicates that approximately 2% of city emissions are directly attributable to methane releases caused by community organic waste streams. More extensive diversion of organic and recyclable materials, in addition to reduction through re-use and waste avoidance, could further reduce indirect emissions from the city's waste stream.

- *Food*—The growing interest and initiative around local foods and agriculture could also have emission consequences. The management of local agricultural lands in ways that either enhance or degrade ecosystem services—determining, for example the land's ability to sequester carbon. A second potential effect is the displacement of energy and water intensive agricultural products by more low emission local products. It should be noted that this is an area in which only limited quantitative research has been completed.

- ***Restorative Ecosystems.*** In addition to energy and resource use, ecosystems play a significant role in both maintaining and stabilizing climatic systems. Three areas of local ecosystem action are described in more detail in the Climate Commitment Framework:
  - *Urban Ecosystems* – The primary focus of this area is the management of urban landscapes in ways that mitigate climatic extremes (heat and cold) to reduce energy needs and their associated emissions. Boulder' urban forest plays a critical role in this process. These landscapes currently face a number of significant disruptive influences that could significantly impact their ability to provide these services including increased temperature extremes, water stress, and invasive species impacts e.g., Emerald Ash Borer.
  - *Natural Ecosystems* – The city's extensive open space system plays a significant role in maintaining stable ecosystem functions that provide substantial local ecosystem services (cooling, moisture retention, stormwater management) that could have serious negative energy and emissions impacts if damaged through wildfires, drought or other chronic stresses or disruptive events.
  - *Agro-ecosystems* – A growing body of information and research suggest that deliberate strategies to enhance the sequestration capacities of managed lands could achieve measurable carbon capture and holding benefits. This is an area of emerging consideration, particularly in the context of agricultural and other highly managed landscapes, such as parks.

VIII. Measuring Progress

The proposed 80 percent emissions reduction by 2050 goal is intended to provide the overall direction and long-term vision that guides the city's operations, work plan, and collaborations with the larger community. To measure interim progress towards achieving this goal, relevant divisions within the city have established shorter term metrics and targets that can be "rolled up" into cumulative emissions reduction objectives. These programmatic metrics and targets are summarized in **Attachment B.** The city is working on developing community-facing indicators that will enable community members to also track the city's progress. The form and content of these indicators will be a topic of discussion as part of the community outreach and engagement process to determine which indicators are most relevant to the community.

IX. Community Engagement

Achieving an 80 percent emissions reduction by 2050 will require coordinated and sustained action across all sectors of the Boulder community. Mobilizing and coordinating this action will require extensive collaboration

that leverages Boulder's innate creativity and innovation to develop a clean energy economy and lifestyle that grows economic vitality, social opportunity and environmental quality.

The development of the attached Climate Commitment Strategy Framework and the ratification of the emissions reduction goal are a starting point for the next steps in creating a community-wide discussion and development of an implementation strategy that honors a long-term commitment to maintaining a livable climate and acknowledges the more immediate and tangible concerns and considerations of daily community life.

Attachment C provides a more detailed overview of the proposed Climate Commitment Communications and Outreach Plan, which will kick-off this next stage of community dialogue and collaborative implementation plan development. This engagement phase is intended to take place from August through the end of 2015 and culminate in council's final approval of a Climate Commitment implementation strategy by year's end.

Highlights of this phase of outreach include the hiring of an experienced outreach fellow to expand staff's reach and capacity to go where people "already are" to give presentations and gather feedback both on the framework and more importantly, on ways the city can support individual action that is consistent with the framework. Another exciting area of activity will involve the Climate Culture Collaborative, a community-initiated effort to identify and coordinate the dozens of existing organizations and initiatives working on climate motivated initiatives. It is envisioned that this group will work in close coordination with the city to coordinate outreach efforts around the city's Climate Commitment Framework and assist with compiling feedback and identifying opportunities for collaboration around implementation activities. Staff will also be working with creative consultants to improve the web presence and information around this important area of work.

Community input gathered between August and December will be used to support council as it considers an implementation plan for the Climate Commitment as well as what is anticipated to be an action-centered outreach effort in 2016 encouraging individuals to plug in to the overall effort and strategies in meaningful ways.

ATTACHMENTS
A: 2012 GHG Inventory Report
B: Summary Table of Emission Reduction Metrics and Targets
C: Climate Commitment Communications and Outreach Plan

Attachment A: 2012 GHG Inventory Report

EXECUTIVE SUMMARY

The City of Boulder has completed an update to the communitywide greenhouse gas (GHG) inventory for the 2012 calendar year. This update was calculated in a new data reporting tool custom designed for the city by SWCA Environmental Consultants. The tool calculates emissions using ICLEI Local Governments for Sustainability U.S. Community Protocol, the new national standard for GHG emissions reporting. This protocol uses slightly different calculations and includes several new emissions sources as compared to previous inventories done by the city.[8] The data sources for this inventory are not consistent with past inventories as the city no longer receives franchise reports from its electric and natural gas utility, Xcel Energy. Using the new tool and omitting 2012 data sources for which data was not available in 2005, staff recreated Boulder's 2005 GHG baseline to create as accurate a comparison as possible between the baseline inventory and the current inventory.

Notwithstanding imperfect data, there are several key conclusions that can be drawn from the 2012 inventory. Since 2005, community emissions have remained fairly constant despite growth in population, jobs and economic activity. Boulder's biggest success in stabilizing emissions has been in the areas of waste, vehicle transportation and per capita residential energy use—all areas targeted by the city's climate programs and related initiatives between 2005 and 2012. The commercial and industrial sector (C&I)[9] represents the greatest opportunity for reductions, thus reinforcing the city's targeted approach in designing policies and programs for this sector. Several new policies and programs for the C&I sector are in development and will be implemented in 2016.

Moving forward, the city hopes that improved data availability, either through action with the Public Utilities Commission (PUC) to introduce a standardized Community Energy Report from energy utilities, or through municipalization efforts, will support more accurate and detailed future inventories using the new ICLEI Protocol and the SWCA tool. In any inventory year, factors such as heating and cooling degree days, economic trends, and significant local developments impact emissions, requiring careful attention to and consideration of these factors in mapping overall emission trajectories to measure progress and inform next steps in policy and action.

BACKGROUND

Importance of a Greenhouse Gas Inventory

In 2002, the Boulder City Council passed Resolution 906, committing the community to reducing its GHG emissions to the target established by the Kyoto Protocol, a 1997 international agreement to combat global climate change. As a result, Boulder launched a series of climate action efforts in 2002 with the goal of reducing community emissions 7 percent by 2012. Boulder's first GHG inventory was conducted in 2006 and was updated again in 2010. In 2013, the city adopted the ICLEI Local Governments for Sustainability U.S. Community Protocol for communitywide emissions reporting and built an inventory tool to compile and report emissions congruent with this new national standard. This report provides the results of the completion of the first full inventory conducted using the tool, for emissions generated in the 2012 calendar year.

---

8 Previous city inventories were calculated using the Greenhouse Gas Protocol Initiative's GHG Protocol Corporate Standard.

9 Two separate sectors that have been aggregated into one due to limited data availability.

What are emissions and why do they matter?

A greenhouse gas is defined as any gas that traps heat in the atmosphere. These heat trapping gases, including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), are essential to life on earth, maintaining the temperature of the planet and sustaining life. They are produced and released into the atmosphere through the everyday activities of the planet and its inhabitants: plants, animals and people. Since the Industrial Revolution, global GHG emissions have increased exponentially through the production and burning of fossil fuels and generated waste products. More than 70% of global emissions come from cities such as Boulder. The impacts of this exponential increase, referred to as "climate change," present significant current and projected, local and global issues.

In Colorado, the biggest concern is a shift in precipitation patterns, with more falling in the form of rain than snow. This results in smaller snow packs and thus increases the chance of drought, especially in late summer, as well as the likelihood of wildfires. More severe rain events could also increase the frequency of major flooding and landslides. On a global scale, it is predicted that areas subject to storms and flooding could see increases in intensity, frequency and duration of these events; that arid deserts could grow due to lack of available water; and that rising sea levels could inundate many coastal areas, including major population centers.

What can we learn from measuring emissions?

In 1992, the United Nations Framework Convention on Climate Change, an international environmental treaty, was negotiated with the objective to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.[10] In order to stabilize GHG concentrations to a manageable level, it is helpful to create an emissions baseline against which to set reduction targets. Based on data quality and availability, as well as consistency with other Front Range communities, Boulder has adopted a 2005 baseline. This baseline will be used for the communitywide emissions inventory as well as for the city's municipal GHG inventory (i.e., emissions from city operations). By measuring emissions and monitoring trends such as economic activity, weather patterns and technology shifts, Boulder can track its progress toward emission reduction goals, determine impacts of certain programs, policies and community efforts, and identify areas of largest opportunity for reductions. This creates a valuable feedback loop for fine-tuning the estimated impact of existing policies and programs on emissions trends as well as the estimated impact of prospective climate action efforts. It is also a helpful reminder of the areas in which the city and Boulder community have direct control and the areas which rely upon more external factors. Such a reminder played a key role in the city's decision to seek to change its energy source and council's vote in 2010 not to renew a 20-year franchise with Xcel Energy. The emissions measurement process with the updated data continues to support the path of finding cleaner ways to supply customers with electricity.

Accountability and leadership

The City of Boulder continues to be a viewed as a sustainability thought leader, with its innovative climate programs and policies. These include the Climate Action Plan tax, approved by voters in 2006 and renewed in 2012; SmartRegs, a program to establish a minimum level of energy efficiency in the city's roughly 20,000 rental units; and new construction and building energy codes that are among the most aggressive in the country. Recently, the city has worked to define a path toward a new, ambitious climate goal: an 80 percent emissions reduction from 2005 levels by 2050. The city has also begun to embed emission reduction strategies in key areas of planning, such as the recently updated Transportation Master Plan. By measuring progress on emissions reductions, developing new approaches to climate action policies and programs, engaging with community partners, and sharing efforts and best practices with others, the city hopes to catalyze climate action throughout Boulder and beyond. The city has a responsibility to lead by example and demonstrate innovation such as by piloting projects within city operations that may show promise for the community at

[10] "Status of Ratification of the Convention". United Nations Framework Convention on Climate Change. Retrieved 2015-04-25.

large. To this end, in 2009 the city hired an energy service company (ESCo) to recommend energy efficiency improvements and calculate payback costs and time. Projects implemented between 2009 and 2012 have reduced emissions from city buildings and facilities by 34 percent.

History of inventories

The city established 2005 as the baseline year against which to measure emissions reduction progress. This was the year for which inventory data was available to calculate community emissions in 2006 when WSP Environment & Energy was hired to create the first community emissions inventory for the city. In 2010, an update to the inventory was performed and results were published in a comprehensive report titled "Community Guide to Boulder's Climate Action Plan, 2010/2011 Progress Report." With the end of franchise reporting from Xcel Energy in 2010 and the introduction of new data privacy rules, it has become much more difficult to obtain the data necessary to perform ongoing inventories, resulting in a significant lag in time to generate the updated inventory for 2012. A franchise report provides standardized data formatting and currently offers the most accurate energy data to a franchisee. A Community Energy Report docket currently filed with the PUC and sponsored by a regional working group of municipalities interested in data reporting may provide the necessary reporting structure and data access to support more timely future inventories. Updates are intended to continue on a three year cycle. Contingent upon receiving the necessary data, the next update to the inventory is expected to be conducted in 2016 for the 2015 reporting year. Should the PUC docket be delayed or not adopted, however, it may be necessary to postpone the 2015 inventory until accurate data is available.

METHODOLOGY

In October of 2012, ICLEI Local Governments for Sustainability released the U.S. Community Protocol, the first national standard for municipalities to report on community greenhouse gas emissions. This standard was the result of collaboration between ICLEI and a number of local governments, and focuses on the categories of emissions that local governments have the most likelihood of influencing through programs or policies. In addition to measuring progress against community goals, this standardized methodology allows cities to benchmark against one another and avoids double counting by clarifying jurisdictional boundaries for emissions accounting, particularly within the transportation category. The ICLEI protocol expands on the five emissions source categories that Boulder had previously measured under the Greenhouse Gas Protocol Initiative's GHG Protocol Corporate Standard: electricity, natural gas, vehicle transportation, landfill and offsets. See **Table 1** for a comparison of categories reported in the 2010 update to the inventory versus those reported in the 2012 inventory under the new protocol.

Table 1. Categorical Comparison of Protocols 2010 v. 2012

Category	2010	2012
Electricity	Included	Included
Natural Gas	Included	Included
Vehicle Transportation	Included	Included
Solid Waste	Included	Included
Offsets	Included	Not included
Air travel	Not included	Included
Refrigerant and Fire Suppression Equipment Leakages	Not included	Included
Recycling and Compost	Not included	Included

The protocol also calculates emissions for several sources that are duplicated in another category or informational only (not included in total emissions), with the express purpose of allowing a municipality to better identify emissions reduction opportunities in areas that may otherwise go unnoticed. These sources

include regional travel, water treatment and transport, and recycling and compost. It is important to note that the ICLEI protocol also requires the calculation of emissions from electricity lost in transmission and distribution, which is then included in electricity totals. The protocol also separates emissions by sources and activities, rather than compiling all emissions into one comprehensive community summary. In order to compare the 2012 inventory and future inventories against pre-2012 inventories, a community summary report has been built into the city's greenhouse gas accounting software tool.

As a leader in the climate community, the city seeks to ensure that the Boulder community acknowledges and takes responsibility for the emissions it generates. Through this standardization of reported emissions data, Boulder can fully participate in several benchmarking efforts, including the Urban Sustainability Directors Network (USDN) and the Carbon Disclosure Project, the reporting platform of the Compact of Mayors and Carbon Neutral Cities Alliance.

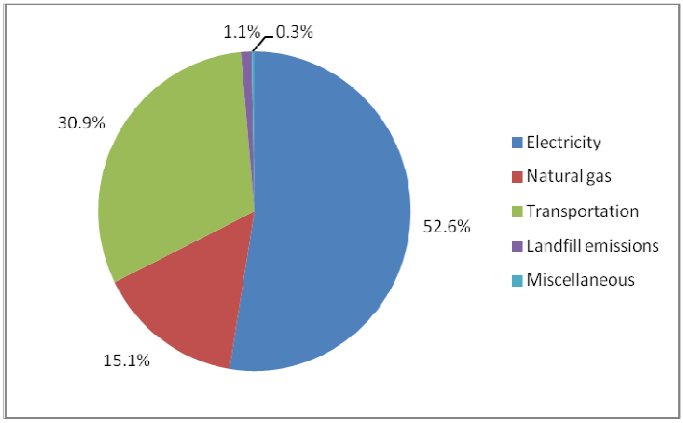
It is also important to note that with the change in methodology and the adoption of the new ICLEI protocol, the city has taken the opportunity to update some of its existing assumptions and conversion factors. For example, the city previously calculated CO_2 using the Environmental Protection Agency (EPA) eGrid carbon factor, a regional average of carbon emissions from power plants serving Colorado and portions of Wyoming, Nebraska and South Dakota. Due to the effort to calculate this carbon factor, the factor is updated every few years. By contrast, the city has now adopted Xcel Energy's Colorado emissions factor, which is calculated by Xcel every year and more accurately reflects the carbon intensity of electricity used in Boulder. Due to Colorado's Renewable Portfolio Standard, Xcel Energy's resource mix includes a higher percentage of renewables compared to the broader region, and thus is less carbon intensive. This is reflected in the results of the inventory and will be covered in more detail below.

EMISSIONS ANALYSIS

2012 Update to the Greenhouse Gas Inventory

The leading sources of emissions in Boulder's 2012 inventory remain consistent with previous inventories. These high-emissions sources include electricity and natural gas used in buildings and fuel used for transportation. Other sources worth noting include landfill emissions and emissions from the wastewater treatment process and from refrigerant and fire suppression system leakages.

Chart 1. Emissions by Source

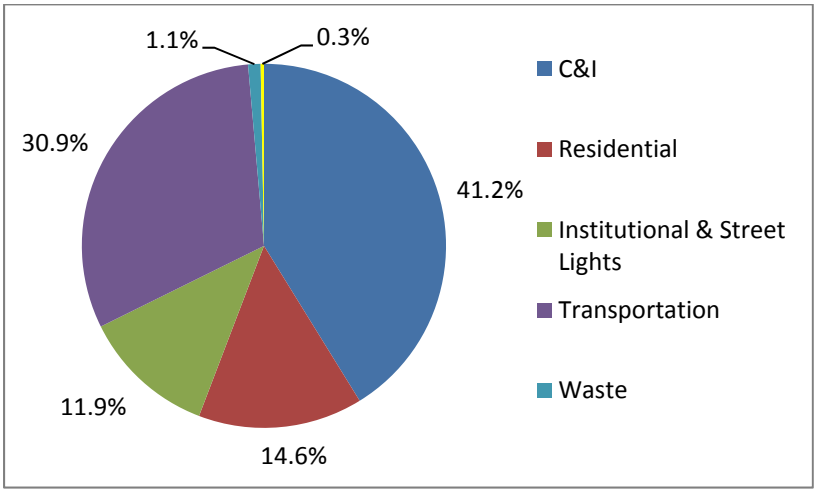


As shown in **Chart 1,** electricity and natural gas account for nearly 68 percent of all emissions, while transportation accounts for an additional 31 percent, bringing the total for these three sources to nearly 99 percent of Boulder's total emissions. Electricity and natural gas are the energy sources most commonly used to

power and heat or cool buildings, while transportation includes gasoline and diesel used in vehicles and jet fuels used in air travel by Boulder residents at the Boulder Municipal Airport and Denver International Airport.

Another way to visualize the results of the 2012 inventory is to look at emissions broken out by sector. In **Chart 2,** electricity and natural gas are divided by residential, C&I and institutional uses. This represents the same roughly 68 percent of emissions attributed to buildings in Chart 1, with energy use in C&I buildings accounting for the largest portion of the inventory at 41.2 percent. It is worth noting that nearly 12 percent of community emissions come from institutional buildings, which include city and county operations within city limits (including street lighting and signals), the Boulder Valley School District and the University of Colorado, Boulder. The federal labs are represented in the C&I sector, rather than institutional, as breakout data was unavailable.

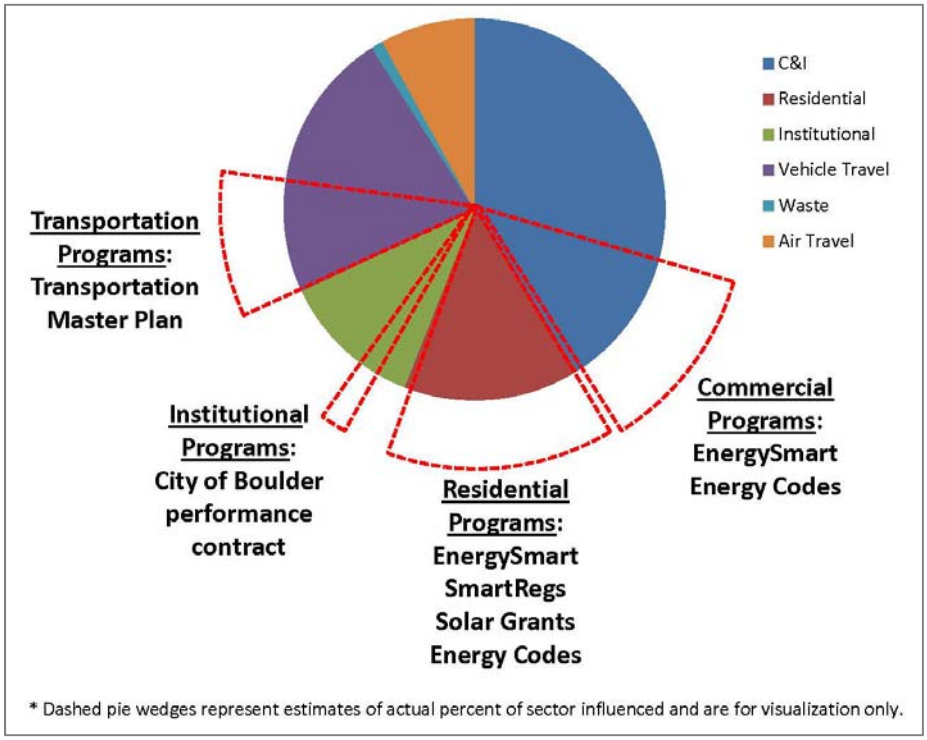
Chart 2. Emissions by Sector



In order to understand community emissions trends over time, the city recreated an estimate of the 2005 baseline using the new SWCA tool and ICLEI protocol and omitted data sources in 2012 for which data was not available in 2005. Every effort was made to create as accurate a comparison as possible; however, the data is imperfect. The inventory shows that emissions have remained fairly constant at a 0.5 percent increase from 2005 to 2012, despite significant growth in population, jobs and economic activity, which will be discussed further below.

Two areas targeted by the city's climate programs between 2005 and 2012 show some measure of success. These include a reduction in emissions associated with waste, which can be attributed to zero waste initiatives such as curbside compost and recycling programs, commercial incentives and rebates, and special events policies; per capita residential energy use, targeted by EnergySmart; and reduced vehicle miles traveled through prescribed efforts from the Transportation Master Plan. Because this inventory is for the 2012 calendar year, the impact of program activities since January 2013 is not reflected. As shown in **Chart 3**, city climate programs through 2012 impacted some but not all emissions inventory sectors. SmartRegs and the EnergySmart program have since facilitated upgrades in thousands of additional residential units. In 2016, new policies and programs for commercial and industrial buildings are expected to go into effect that will facilitate reductions in that sector while improving the quality of Boulder's building stock.

Chart 3. Emissions Sectors Influenced by Current City Programming



FACTORS INFLUENCING EMISSIONS

Quality of data dictates the quality of any emissions report. As previously stated, accurate energy data has become harder to attain without the aid of a franchise agreement with Boulder's utility provider, Xcel Energy, and due to the adoption of stricter customer data privacy rules by the PUC in 2012. Additionally, the change in methodology with the introduction of the new ICLEI protocol affects emissions inputs and calculations as well as the ability to compare this inventory to past inventories. To this effect, the most significant addition to this inventory is the source category of air travel, which had not previously been accounted for. Finally, changes in emissions factors, determined by the energy resource mix (coal, natural gas, wind, solar, hydropower, etc.) of the local electricity provider, have significant impacts on the outcome of an inventory.

Air Travel

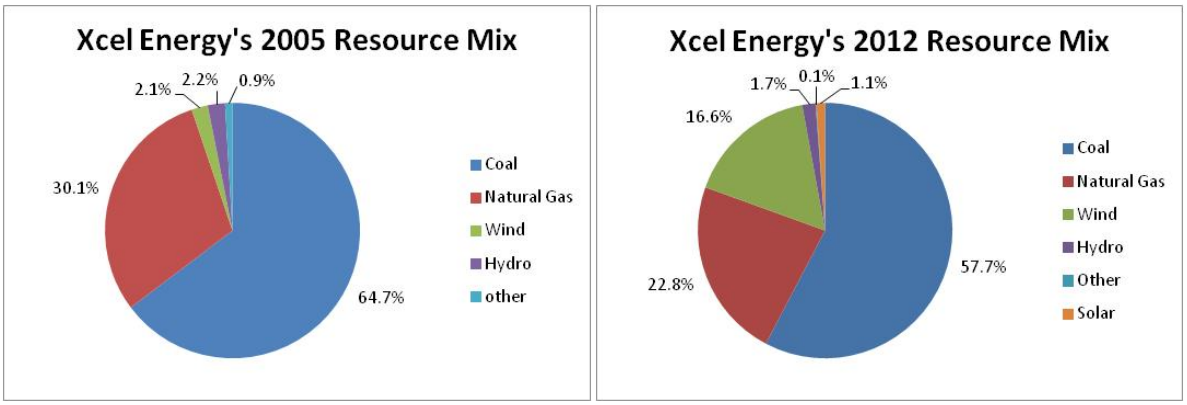
Air travel is an additional source category in the inventory under the new ICLEI protocol. The proxy measure for air travel of Boulder residents is the percent of total Denver International Airport travel represented by the population of Boulder as a percent of the greater metro-Denver area. This methodology does not provide an accurate accounting; however, absent better data, it provides a standard by which to account for this sector of emissions until better data becomes available. Based on the current methodology, air travel accounts for roughly one third of emissions produced by the transportation sector, or 8 percent of Boulder's total 2012 community inventory. This finding underscores the significance of air travel—a carbon-intensive activity—in terms of its contribution to Boulder's total emissions and climate impact. Total air travel has increased considerably since 2005, making this addition to the inventory quite substantive. To illustrate this point, the 2005 and 2012 inventories were compared with air travel removed as an emissions source. The result was a comparison calculation that showed Boulder's emissions had *decreased* by 3.4 percent rather than increased by 0.5 percent.

Emissions Factor for Xcel Energy's Electricity Mix

The Boulder community receives its electricity and natural gas from Xcel Energy. The types of energy Xcel incorporates into its electricity resource mix influence the carbon intensity of Boulder's electricity, and

therefore the greenhouse gas emissions related to energy use in buildings. A comparison of Xcel's Colorado-wide electricity resource mix in 2005 and 2012 is illustrated in **Chart 4.**

Chart 4. Comparison of Xcel Energy's Colorado-wide Electricity Resource Mix 2005 to 2012



With the increase in renewable energy resources mandated by the Colorado Renewable Portfolio Standard, Xcel's emissions factor related to electricity generation has decreased from 1849 pounds (lbs.) CO_2e in 2005 to 1561 lbs. CO_2e in 2012. This underscores the great potential of renewable energy to reduce greenhouse gases. The decrease in Xcel's carbon factor impacts Boulder's net emissions; carbon intensity went down even while overall electricity use increased. Energy consumption—for both power and thermal uses—is the other side of this emissions analysis.

ENERGY ANALYSIS

Because total emissions are dependent upon the emissions factor of grid electricity, it is important to analyze and compare actual energy use as a metric in order to evaluate Boulder's climate progress.

Table 2. Total Energy Use Comparisons—2005 to 2012

	Units	*2005*	*2012*	*% Change*
Residential Electric	kWh	244,648,421	247,876,097	1.3%
Residential Natural Gas	dTh	1,870,490	1,869,965	0.0%
C&I Electric (excluding CU)	kWh	870,465,652	979,845,533	13%
C&I Natural Gas (excluding CU)	dTh	2,208,664	2,796,898	27%
CU Boulder Electric	kWh	75,778,347	143,680,272	90%
CU Boulder Natural Gas	dTh	1,324,306	900,173	-32%
Grid Loss	kWh	63,474,566	66,375,852	5%
Total Electric	kWh	1,254,366,986	1,437,777,754	15%
Total Nat Gas	dTh	5,403,460	5,567,036	3%
Total Electric (without CU)	kWh	1,178,588,639	1,294,097,482	10%
Total Nat Gas (without CU)	dTh	4,079,154	4,666,863	14%

To help understand the impact of a significant change in the University of Colorado, Boulder (CU Boulder) plant operation, the table above separates out the energy use of the campus (see following section for more

information). Excluding CU Boulder, total electricity and natural gas consumption for the Boulder community from 2005 to 2012 has increased 10 percent and 14 percent, respectively. To explore this data further, the table below summarizes various metrics for energy use "effectiveness"— energy use per household, per employee and per floor area.

Table 3. Energy Use Effectiveness Comparisons—2005 to 2012

	Units	*2005*	*2012*	*% Change*
Residential Electricity per Household	kWh/HH	6,263	6,035	-4%
Residential Natural Gas per Household	dTh/HH	47.9	45.5	-5%
C&I Energy Use Intensity*	kBtu/sf	161	188	16%
C&I Electricity per employee*	kWh/FTE	8,997	9,858	10%
C&I Natural Gas per employee*	dTh/FTE	23	28	23%

** Excludes CU Boulder*

The data in the above table indicate the following key findings:

- From 2005 to 2012, Boulder reduced residential energy use per household (per capita reductions are similar). This reflects, in part, the impact of climate programs on waste reduction and residential energy efficiency (zero waste programs and facilities, EnergySmart residential and SmartRegs).
- In the C&I sector, total energy use intensity (energy per square foot of floor area) and energy use per employee has increased. While more recent efficiency program investments have targeted commercial and industrial energy uses, and achieved an estimated 8,500 mtCO_2e in savings, there is clear growth in this sector in the comparison of 2005 and 2012 inventory data.
- Despite a warmer winter (see following section), natural gas use in the C&I sector has increased even more than electricity. This indicates that the increase can likely be attributed to process loads in the industrial sector, which are not weather dependent. It is important to note that no existing city program addresses energy use in the industrial sector; however, a proposed C&I energy efficiency rating and reporting ordinance that would begin to address energy use in this sector may take effect as soon as 2016.

To fully understand what this data means, it is important to consider all of the factors that influence energy use and how they have changed from 2005 to 2012. Specifically with regard to C&I energy use, the economic recovery and expansion of economic activity could explain the increase in energy use intensity. This factor and additional factors are discussed in the following section.

FACTORS INFLUENCING ENERGY USE

The city and larger community have implemented a wide range of strategic and integrated efforts intended to address climate change by reducing energy use in residential and commercial buildings. As illustrated by the inventory, these efforts have had a positive overall impact. Distinct from these efforts, a range of other factors can significantly influence community energy use and emissions. This section provides an overview of some of the key factors that need to be considered and monitored as part of assessing both the overall trends in energy use over time and the impact of city programs.

Data Limitations

Due to the absence of franchise reports after 2010, which would have provided standardized reporting to the city, and stricter data privacy rules instituted in Colorado in 2012, the city used alternative sources to collect

the source data for this inventory. These sources were not in the same format as previous reports received from Xcel when the city was still under a franchise agreement. As a result, there may be differences in the data that could influence Boulder's reported energy usage for both electricity and natural gas from year to year. The data sources used in the 2012 inventory differ from those used in 2010 and will differ from data used in the next inventory. Although the city has tried to correlate numerous sources to confirm data accuracy, the challenges in securing this data from Xcel could continue to create uncertainties in the inventory unless the PUC requires utilities to use an aggregation standard that does not compromise the quality of data in community energy reports provided to local governments. An open docket on this issue was being deliberated by the PUC at the time this report was written.

Weather

The intensity of both summer and winter weather can significantly impact the amount of energy a community uses to maintain comfort and livability in its buildings. Warmer summers lead to an increase in the use of air conditioning, water use (and associated pumping), and other heat mitigation actions. This typically results in an increase in electricity usage. Given the majority of heating systems in Boulder utilize natural gas, colder winters lead to an increase in natural gas usage.

One metric for tracking these weather variables is known as degree days. Warmer temperatures in the summer lead to more cooling degree days (CDD) and more cold weather in the winter leads to more heating degree days (HDD). **Table 4** shows the difference between cooling degree days and heating degree days between 2005 and 2012 in the 80302 zip code of Boulder.

Table 4. Annual Total Heating and Cooling Degree Day Comparison—2005 to 2012[11]

2005		2012		Comparison Percentage	
HDD	CDD	HDD	CDD	HDD	CDD
5,227	745	4,664	1,126	-11%	51%

These results suggest that 2012 had a slightly warmer winter—and subsequent slight reduction in the need for natural gas for heating. This could partially explain the reduction of natural gas use per household (-5 percent) in the residential sector. As mentioned earlier, despite a warmer winter, natural gas use per employee in the C&I sector increased by 23 percent. This increase can likely be attributed to additional process loads in the industrial sector, which are not weather dependent.

Conversely, the significant increase in cooling degree days in 2012 suggests a hotter summer, which might have led to more electricity usage for cooling activities. This makes the 4 percent reduction in electricity use per household even more impressive, and could partially explain the increase in electricity use per employee in the C&I sector.

Population Growth and Economic Trends

The period between 2005 and 2012 encompasses the significant economic recession experienced by the U.S., and to a somewhat lesser extent, Boulder. By 2012, significant economic recovery had taken place and there was measurable growth in jobs and revenue compared to the 2005 baseline year – this must be considered when looking at the total energy usage.

[11] HDD and CDD calculated as deviations from a 65 degree balance point with a chosen geographic location of 80302 zip code. "A negative percentage means the Comparison Year was more mild than the Base Year. A positive percentage means the Comparison Year was more severe than the Base Year. Annual Total comparison percentages include all heating and cooling degree days." http://www.weatherdatadepot.com/

Table 5. Economic Activity Comparisons—2005 to 2012

	2005	2012	% Change
Retail Sales	$1,750,987,683	$2,279,823,724	23.2%
Population	98,526	101,169	2.6%
Employment	96,755	99,400	2.7%

Not captured in this economic activity data is the development of new, highly energy-intensive facilities in Boulder, such as medical marijuana (MMJ) grow and processing facilities and International Business Machine's (IBM) large data center[12]. While MMJ was legalized in Boulder in 2000, there were only a few small grow operations until the announcement that the federal government would not interfere in states where MMJ was legal (2010). The city began licensing medical marijuana facilities in 2010 and saw a marked increase in operations, with 43 facilities licensed in 2012. Because data centers and MMJ grow and processing facilities are between 20 and 100 times more energy intensive than office buildings, the city can reasonably postulate that the addition of new MMJ facilities and the addition of new industrial activities such as the large IBM data center are partially responsible for the significant increase in C&I electricity use since 2005.

University of Colorado (CU) Boulder's Cogeneration Plant

Cogeneration, also known as combined heat and power, is the simultaneous production of electricity and heat from a single fuel source, such as natural gas. CU Boulder had been running a natural gas driven cogeneration system that produced electricity from a turbine, and recovered and reused free waste heat from the process. In 2004, CU Boulder began to phase out the operation of its cogeneration facility due to the increased cost of natural gas (the majority of the "phasing out" occurred between 2005 and 2012). Taking the cogeneration system offline resulted in a corresponding drop in natural gas consumption, a significant increase in the amount of grid electricity CU consumed and a marked increase in CU Boulder's overall emissions, which significantly impacted the 2012 GHG inventory and may impact the next inventory, as well.

Since shutting down its ageing cogeneration system, CU Boulder has been designing and building a new $91 million campus utility system that should be fully operational by the end of 2015. This new campus utility system includes:

- A new heating and cooling plant
- Renovation of the existing 103-year-old campus utility system, including expansion of cogeneration capabilities
- Interconnection of the two plants with new and upgraded distribution

While CU Boulder and the city expect that this new system, in addition to a number of other efforts at CU, will reduce total emissions for the campus, these reductions will not be evident for several inventories.

Technology and Usage Change

Another emerging factor affecting energy usage, particularly the electricity sector, is the rapid proliferation of electronic devices that are adding additional plug loads. Despite the documented increase in residential plug load, including energy use from plasma televisions and the charging of more and more mobile devices, 2012 still saw a reduction in electricity use per household.

[12] While IBM's new data center was constructed to be extremely energy efficient, data centers are energy intensive by nature and this still represents a large new electric load.

In commercial buildings, plug loads are one of the fastest growing drivers of energy consumption and typically account for 30 to35 percent of the total electricity used in a given office building. Data from the Energy Information Administration's Annual Energy Outlook shows that plug load electricity use increased almost 20 percent from 2005 to 2012.[13]

Beyond plug load growth, there has been a trend in recent years to make more efficient use of space in commercial office buildings. New companies are adopting open office floor plans, which result in higher energy use intensities, but lower energy use per employee. Likewise, the typical workday has lengthened over time and commercial buildings are operating for more hours than ever before.

Though important anecdotal trends, the direct impacts of technology and plug load growth on energy use cannot be measured. Still, understanding these factors and trends helps the city design future programs that better address today's lifestyle.

Local Solar Growth

Local, or rooftop, solar electricity reduces the amount of electricity consumed and accounted for in the GHG inventory. Because the energy is consumed behind the main electric meter, local solar functions like reduced demand or energy efficiency in terms of accounting for electricity consumption. Boulder made important progress between 2005 and 2012 with regard to growth in local solar adding nearly 10 MW of permitted solar to the grid. Over three megawatts (MW) has been installed since 2012, and the city has plans to ramp up efforts to support the installation of more local solar on both residential and commercial buildings by providing residents better access to solar potential information.

Table 6. Rooftop Solar Permits – 2005 to 2012

	Solar Permits
2005	< 1.180 MW (prior to 2007)
2012	11.79 MW (through 2012)

CONCLUSIONS AND NEXT STEPS

The 2012 greenhouse gas inventory represents a new beginning in Boulder's inventory reporting, as Boulder increases accountability for its greenhouse gas emissions, adopts a new national reporting standard, takes ownership for additional emissions sources, and establishes new tools for measuring and projecting the impact of current and future community climate efforts.

As this is the first inventory performed according to the ICLEI U.S. Community Protocol using a more localized carbon factor and new data sources, it essentially represents a new baseline. This new baseline, however, will provide increased accountability for the emissions generated in Boulder and will enable the community to compare results to other communities in the U.S. and share best practices. Given better data availability and access, the inventory performed for 2015 will be a more accurate assessment of the overall trends in community emissions. The ability to conduct a 2015 inventory will be dependent upon the outcome of the PUC negotiation for a standardized Community Energy Report. In any inventory year, factors such as heating and cooling degree days, economic trends, and significant local developments (such as the CU Boulder cogeneration system and IBM data center) impact annual emissions, requiring careful attention to and consideration of these factors in mapping overall emission trajectories to measure progress and inform next steps in policy and action.

[13] http://www.eia.gov/oiaf/archive.html

A number of factors make it difficult to do a direct comparison between the 2012 inventory and past inventories. These include the difficulty to obtain standardized energy usage data from Xcel, restrictions imposed by data privacy rules and methodological changes in calculations and categories of information included with the introduction of a new protocol. Be that as it may, some general trends can be identified: although emissions appear to be holding constant, community energy use as a whole has increased. The energy results of 2012 compared to 2005 show reduced per capita residential energy use despite growing plug loads and a significantly warmer summer. This finding points to the success of residential energy efficiency programs such EnergySmart and SmartRegs, as well as zero waste and transportation efforts to reduce emissions. The majority of Boulder's increased energy use comes from the boost in energy use in the C&I sector. While the city has devoted significant resources to Commercial EnergySmart, this program does not target the highly energy intensive industrial businesses and manufacturers. To address the growth in electricity and natural gas use in the C&I sector, the city is proposing new requirements for rating and reporting for all C&I buildings greater than 20,000 square feet (sq ft.) These requirements will be brought to council in the form of an ordinance in Q3 of 2015. Still, there are limitations to how much the city can truly affect energy use in the industrial sector, which is responsible for the majority of the city's jobs and revenue. While many of the large industrial businesses have improved their energy productivity (the amount of energy related to their economic output), total energy use continues to rise with growth in business. The city will continue to strive to strike a balance between robust business activity and reducing GHG emissions.

Given the abstract nature of greenhouse gas emissions and the complex nuances of emissions data analysis, the city recognizes an inherent challenge in communicating the findings of the 2012 greenhouse gas inventory to the public in a way that is comprehensive, intelligible and engaging. To address this challenge, city staff has worked with a local design firm to develop an infographic that relies on visual components to convey the high-level takeaways from the this inventory. In addition to reporting the findings of the 2012 greenhouse gas inventory, the city intends to use this infographic to supplement climate education and engagement and to help the public connect existing and planned climate action efforts to the larger context of Boulder's climate footprint.

Attachment B: Summary Table of Emission Reduction Metrics and Targets[14]

		TARGETS BY DECADE		
	2015	2020	2030	2050
Overall CO2 Emissions				
Total CO2-MtCO2e		1,327,313	1,005,540	361,994
Per capita MtCO2e		11	8	3
Buildings & Related Uses				
Residential--kwh/HH/year		5,000	3,500	1,600
Residential Electricity Savings		10%	27%	70%
Residential--therm/HH/year		38,000	34,000	28,000
Residential NG savings		5%	15%	40%
Commercial EUI		85	70	65
Commercial Electricity Savings		-7.5%	3%	30%
Com & Industrial NG Savings		7%	13%	20%

	2015	2020	2030	2050
Energy Source Change				
% Clean Electricity		30%	60%	100%
MW Clean Electricity		75	150	300
% Clean Energy (all forms)		30%	50%	80%
MW Local Energy		30	60	150
% Local Energy		12%	22%	50%
Energy Cost/unit (all forms)				
Natural Gas replaced/reduced		5%	25%	80%
Petroleum replaced/reduced		5%	25%	80%
Community Infrastructure	60%	70%	80%	90%
% undergrounded utilities		75%	85%	95%
% of critical services facilities with islanding capability		5%	15%	30%
# of community solar gardens	60%	70%	80%	90%

[14] 2050 targets for a variety of programs including Transportation were created by extrapolating trends from 2035 to 2050. Continued reductions between 2035 to 2050 will require additional investment. Targets will continue to be refined over time.

	2015	2020	2030	2050
Transportation/Mobility				
Total VMT--Annual	883,000,00	846,000,000	757,000,00	579,000,000
VMT Per person				
Residents--miles per day	11	10	8	4
Non-residents--miles per day	14	14	12	9
Transit Mode Share				
Residents--% using transit	5%	6%	9%	14%
Non-residents--% using transit	9%	10%	11%	14%
Bike Mode Share				
Residents--% biking	19%	22%	27%	38%
Non-residents--% biking	1%	1.50%	2%	3%
Ped Mode Share-Residents--% walking	20%	21%	24%	29%
SOV Mode Share				
Residents--% driving alone	36%	32%	24%	8%
Non-residents--% driving alone	80%	75%	65%	45%
Neighborhood Accessibility—Residents	26%	40%	67%	100%
Light Duty Vehicle MPG equivalent	23mpg	36 mpg	50 mpg	74 mpg
# of electric vehicles		2,000	10,000	30,000
# of other zero carbon fuel vehicles (e.g. hydrogen)		250	2,000	5,000
# of business with workplace charging		25	200	500
# of chargers/employees		1/1,000	1/500	1/50
# of public and workplace charging stations		50	500	2,500

Attachment C: Climate Commitment Communications and Outreach Plan

August through December 2015

Objective: To build momentum around, and a better understanding of, Boulder's next-generation climate goals and the strategies necessary to achieve them while gathering community input about how the city can best support relevant individual action

Goals:

1. To help target audiences understand the need for more aggressive and impactful climate action
2. To communicate the goal that City Council chooses to adopt, whether it is an 80 percent reduction in emissions by 2050; a fossil-fuel future; or some hybrid
3. To describe the three focus areas of the city's proposed Climate Commitment and facilitate community feedback on this approach. The three areas are:
    a. Creating a Clean Energy Future
    b. Using Resources Wisely
    c. Encouraging Restorative Ecosystems
4. To explain how existing initiatives, including municipalization, energy efficiency standards and programs; and innovative pilots and partnerships fit into this framework
5. To identify what the city can do, what community partners can do and what individuals can do to help reach Boulder's goals

Target Audiences:

- Residents, including students/youth
- Business and property owners
- Institutional and non-profit partners
- Environmental allies and other communities working on similar goals
- Legislators and regulators
- Potential investors and grantors

Key Messages:

- Boulder has long been a leader in confronting climate change, and meaningful action is more important than ever. Our community and others are already experiencing the negative effects of climate change and it is important that we focus both on minimizing these and adapting to them (or building resilience to them).
- The strategies the city and partners adopt to confront this challenge are good for the environment, and they have many other benefits for Boulder, including an improved quality of life; energy independence and enhanced reliability of service; economic vitality; and a continued commitment to innovation. These benefits may, in fact, be better motivators for encouraging communitywide action.
- The three focus areas stem from our greenhouse gas inventories and our knowledge, acquired through the actions we have taken in Boulder since voters created the carbon tax in 2006, about the areas where the biggest impacts are possible and where we, as a community, can have the most local control.

- The first –Clean Energy Future--includes but is not limited to municipalization and is the area in which the most city resources have been devoted in recent years. This is because energy (both in terms of how we power our homes, businesses and other buildings and how we get around town) is the single largest source of Boulder's emissions.
- The city has valuable programs in the two other focus areas – Resources and Ecosystems – and plans to continue these both because they play a part in climate action and because they are consistent with other important community priorities and values.
- The climate commitment is a long-term initiative, and the second and third focus areas, in particular, are ripe for development of policies and programs that would tackle the emerging areas of consumption and carbon sequestration.
- There are steps the city can – and is taking – to address climate change, but we have the greatest opportunity of being successful through partnerships and regional, national and international coalitions. In addition to this, individual action remains a high priority. Each one of us has a role to play.
- Achievement of this aggressive, but necessary, goal will take significant individual action. We'd love to hear more about how the city can support you as a resident, a parent, a young person, a business owner, to develop your own plan.

Strategies:

- Use this communication plan and the Climate Commitment framework as a way to unify messaging and communication efforts around <u>all</u> work being done by the city in this area
- Emphasize the opportunity to leave a strong legacy for the next generation and co-benefits to our current way of living and economic security
- Maximize audience reach in a cost-effective way by utilizing existing communications platforms, including social media (specifically the city Facebook account and the City of Boulder LEAD Twitter account), Channel 8 programming, the Energy Future e-newsletter and LEAD e-newsletters (as appropriate), Inspire Boulder and strong media relationships to share information and seek feedback on the city's Climate Commitment direction
- Improve online presence and information materials supporting, first, the community's understanding of the goal and the strategic framework, and later, of the steps they can take in terms of individual action to support this plan
- Tap into existing and new partnerships (and the expertise and reach of individuals within these partnership organizations) for the purposes of cross-promoting consistent messages and meaningful climate action. One such partnership is the Climate Culture Collaborative.

Tactics, in proposed chronological order (includes proposed timing and who's responsible for what):

- Build internal consensus around the three focus areas, messaging framework, key story components, overall tone and integration into GHG inventory work
- Develop visually compelling Climate Commitment Strategy Frameworkthat spells out the focus areas, shows targets and where we are starting from and explains what roles the city, partners and individuals have; document will provide outline for content as it lives on web
- Hiring of outreach fellow

- Development of workplan and integration of Climate Culture Collaborative group in accessing and leveraging frontline climate action groups to support framework and differentiate between government action areas and individual action areas
- Create or resurrect email listserv for people interested in receiving climate news or re-purpose/broaden EF email listserv
- Coordination of media information for likely news articles both advance and coverage of July 30, 2015 study session
- Requests for inclusion in partner newsletters and communication platforms
- Onsite presentations and conversations with community groups to present proposed framework and solicit feedback both on the framework and more importantly, on how the city can best support individual action consistent with the framework
- Development of web landing page and framework for building out of additional pages
- Channel 8 coverage of issue and milestones; social media blasts associated with feedback opportunities; e-newsletter articles

Study Session
M E M O R A N D U M

TO: Members of Council

FROM: Jane S. Brautigam, City Manager
Maureen Rait, Executive Director of Public Works, Flood Recovery Manager
Susan Richstone, Deputy Director of Community Sustainability & Planning
Jeff Yegian, Division of Housing Manager
Crystal Launder, Housing Planner
Chris Meschuk, Flood Recovery Coordinator – Community Services

DATE: July 30, 2015

SUBJECT: Study Session – Update on West Fourmile Canyon Creek Planning Project including the work to date and next steps.

I. PURPOSE

The purpose of this study session is to provide an update and gather feedback from City Council on the West Fourmile Canyon Creek Planning Project, including the work to date and next steps.

The West Fourmile Canyon Creek Planning project is a Community Development Block Grant – Disaster Recovery (CDBG-DR) funded analysis of the Ponderosa Mobile Home Park and vacant parcel at the Foothills Community along Fourmile Canyon Creek in north Boulder. The planning study grant was applied for to identify flood recovery opportunities in the area in order to promote the resilience of the neighborhood, address health and safety concerns (utility infrastructure, floodplain, and unit spacing and code compliance) at the Ponderosa Mobile Home Park, and examine annexation and scenarios for future housing options in the study area.

In addition, per council's request, information on mobile home parks in Boulder is included in this memo. A profile of the Ponderosa community and as summary of outreach to date is included in **Attachment A**, and a summary of citywide mobile home policy and parks within the service area is included in **Attachment B**.

II. QUESTIONS FOR COUNCIL

The following questions are included to guide the discussion at the study session:

1. Does Council have any questions or comments on the work to date, including the history of city actions on mobile home parks in Boulder?
2. Does Council have any feedback on the next steps, specifically related to the options to be analyzed?

III. OVERVIEW

Project Background

Since at least 1990, the city and county have recognized that Ponderosa Mobile Home Park has health and welfare, and life safety concerns that need to be addressed. The 1995 North Boulder Subcommunity Plan states "Substantial public funding probably will be necessary to correct physical deficiencies there, like the shallow sewer lines to individual lots and unpaved streets. A grant may be obtained to cover some of these annexation costs, as they are prohibitive for the Ponderosa residents and exceed the value of many of the homes themselves."

Ponderosa Mobile Home Park is an enclave located outside the city limits, and is eligible for annexation. The property is in the Boulder Valley Comprehensive Plan (BVCP) Planning Area II, meaning the city and county have indicated this property is eligible for annexation, and the provision of urban services from the City of Boulder. The BVCP is a jointly adopted city and county plan that guides policy decisions, development and preservation within the Boulder Valley.

In September 2013, flooding occurred throughout the city and county, including Fourmile Canyon Creek, causing surface water flooding throughout Ponderosa Mobile Home Park, and significant damage to surrounding properties and much of north Boulder. Impacts from the flood were minimal and included shallow flooding of the roads, mud and roof damage due to the rain.

Following the 2013 Flood, the City of Boulder in partnership with Boulder County, applied for and received a Community Development Block Grant – Disaster Recovery (CDBG-DR) resilience and capacity building grant. The grant provides funding for a consultant to explore options related to the Ponderosa Mobile Home Park and vacant parcel at the Foothills Community, which were both impacted by flooding from Fourmile Canyon Creek.

The city issued an RFP for consulting services in November 2014, and awarded the contract to Trestle Strategy Group (Trestle). The project was initiated in March 2015. The purpose of the West Fourmile Canyon Creek Annexation Scenarios Study and Design Charrette is to work with the City of Boulder, Boulder County and with Ponderosa residents and owners as well as Boulder Housing partners to develop and evaluate a range of scenarios for the future of Ponderosa and the vacant parcel at the Foothills Community.

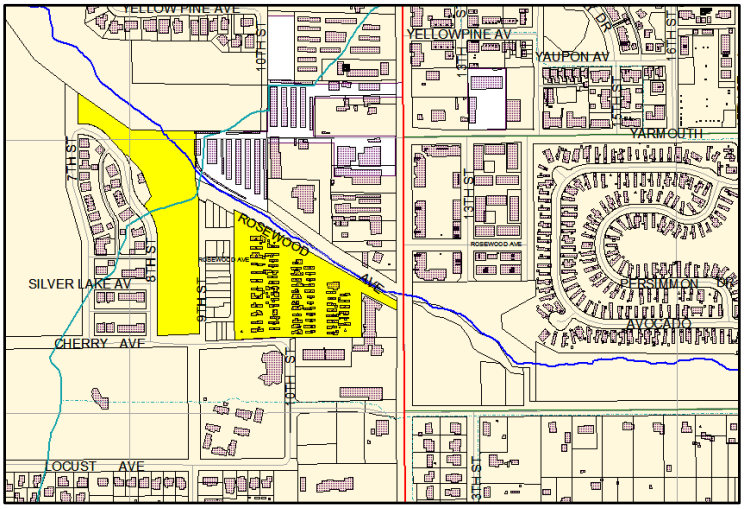


Figure 1: West Fourmile Canyon Creek Project Study Area (in yellow)

Planning Project Timeline

The primary driver of the timeline for this project is to identify potential costs and options by the fall of 2015 to potentially leverage additional CDBG-DR funding. The project is broken into two phases. In the first phase, which was conducted between March and July, Trestle conducted

research, reviewed past documentation and conducted extensive outreach and engagement with Ponderosa residents, owners and management, as well as Boulder Housing Partners.
The overall project timeline is as follows:

Phase 1

1. Research/Info Gathering (March – June)
2. Outreach/Engagement (March – July)

Phase 2

3. Technical Study/Analysis (July – August)
4. Identify Options (August)
5. Present options and potential next steps (Sept 17, City Council Study Session)

Phase 1 Goals:

- Understand the history of Ponderosa and share this with the residents, owners, management, and City.
- Explain the scope of work and what the objectives are.
- Build trust with the residents, owners and management through open, transparent, consistent and accurate communication.
- Identify common goals and visions for the future from all Stakeholders.
- Develop a shared message platform to communicate what the study IS and ISN'T, educate around complex issues, reduce anxiety, and build confidence towards discussing the future
- Create agreement and understanding around project outcomes, length of time and next steps
- Understand the City's interest in preserving and improving this community.

These goals will be used to develop qualitative criteria to use for evaluation when developing a range of scenarios for Ponderosa.

Phase 2 Goals:

- Develop and evaluate a range of viable options (within each of the scenarios).
- Evaluate these options against quantitative and qualitative criteria and objectives.
- Identify and document preferred option(s) and next steps.
- Share these options, requirements and opportunities with all stakeholders (owners, residents, City).

Post Study Goals: These are goals that could be pursued as a result of this study:

- Develop an annexation roadmap for the future of Ponderosa and communicate that with all stakeholders to create a predictable, clearly articulated vision for the future
- Implement roadmap with stakeholder involvement

Considerations and Drivers

Through discussion and outreach with the key stakeholders – city, owners, and residents, the following key considerations/drivers have been developed to evaluate potential scenarios. Scenarios identified in Phase 2 will be evaluated in both a quantitative manner (price, time, requirements) as well as a qualitative manner using the considerations and drivers below.

- Minimize disruption to the owners and residents
- Minimize displacement to residents
- Improve the resilience of the community
- Improve health and safety
- Retain affordability
- Create certainty for the future
- Achieve annexation goals
- Encourage long term investment in property
- Improve utilities stability/reliability/service
- Leverage Disaster Recovery Funding
- Minimize costs and maximize dollars invested

History of Ponderosa Mobile Home Park

The Ponderosa Mobile Home Park appears to have begun operation sometime in the early 1950's. Some documents list the park opening in 1957. A 1958 aerial photograph shows the park with 16 units. By 1966 the park had expanded to 54 units, and by 1972 expanded to 68 units, which is the size the park remains today. The park operated on a well and septic system until the late 1970s, when water supply issues began resulting in the park running out of water, and potential contamination issues arose. In coordination with the County Health Department, the park applied for and received an out-of-city utility permit for city water and sewer service.

The city issued the water connection permit in 1980. Based on the as-built drawings, it appears the city water connection was tied into the existing park water line infrastructure. Connection to the city sewer system occurred in 1984, and was also tied into the existing park sewer line infrastructure.

In 1990 the city began studying the park due to concerns of life safety of the units and infrastructure condition, and in 1991 and 1992 Thistle Community Housing and the city worked to examine the feasibility of purchasing and operating the park. In 1992 the city, residents, and the property owner began discussing the annexation of the park, upgrades to the utilities, and the sale of the property to the city for the purpose of eventual transfer to the residents as a resident-owned community. In May of 1994 the city formally offered to purchase the park, plus the vacant 2 acre parcel to the west for $944,000. City staff, at the direction of the City Council, proceeded to identify the necessary phased upgrades to the park, including reconstruction of the utilities, paving the streets, and replacing unsafe units, utilizing the vacant 2-acre parcel to resolve spacing issues with existing units. The total cost for infrastructure upgrades was estimated at just over $1,000,000 in 1996. The city proposed a phased purchase package for the owner to spread the city's purchase payments over several years, and a loan to transition to a resident-owned community. In April 1996, the owner informed the city that he was not interested in responding to the city's purchase offer, which the city then formally withdrew.

In 1997, the county rezoned the park to Manufactured Housing Park zoning. In 2000, the city and county changed the land use designation from Medium Density Residential to Manufactured Housing in the Boulder Valley Comprehensive Plan.

In 2000, the owner began the process of exploring annexation again, this time without any city purchase considerations. The city reviewed and provided numerous comments and questions for additional analysis to the owner. In 2002 the application for annexation was withdrawn.

In 2004, the then owner (since 1971) sold the park (without the adjacent vacant 2 acre parcel) to the current property owner. The adjacent parcel was then sold to a separate buyer and annexed and developed as the 1000 Rosewood project. In 2010, a group of students from the University of Colorado Boulder College of Architecture and Planning prepared a survey and report on the neighborhood. Since that time the current owner has performed some upgrades to the park. In early 2013, the owners applied for a pre-application review to upgrade the existing water lines inside the park. Due to the provisions in the out-of-city utility agreement, annexation was necessary before any work could be completed. In September 2013, flooding occurred throughout the city and county, including Fourmile Canyon Creek, causing shallow surface water flooding throughout the park, and causing significant damage to surrounding properties and much of north Boulder.

IV. COMMUNITY PROFILE & OUTREACH TO RESIDENTS

Community Profile

Ponderosa Mobile Home Park consists of 68 mobile homes and 187 residents. Trestle, in partnership with the residents and management collected information, which is summarized in **Attachment A.** Key findings from the community profile include:

- Nearly all the units (99%) are owner-occupied, which is a significant increase from 2010.
- The vast majority of Ponderosa's residents have lived in Boulder for over 10 years, however, a significant proportion have resided in the park for less than 10 years.
- The community is 64 percent male and has a large population under the age of 21.
- The majority of the homes house one or two residents (54.4%); but, there are some homes (22%) that contain five or six individuals, including children.
- The residents occupy a unique and broad range of professions that include construction worker, hospice worker, landscaper and university administration.

Community Outreach

The purpose of the community outreach and engagement is to foster consensus building around a future plan for Ponderosa. During this first phase of work, Trestle met with the residents in large community meetings held at Ponderosa, as well as several one-on-one meetings with residents, the manager, and owners. Since the first community meeting, there has been a steady growth in the number of Ponderosa resident attendance, participation, and interest. The four resident meetings have helped Trestle gain a foundational understanding of who lives in Ponderosa, what their range of concerns are, and what their desired outcomes and/or scenarios entail.

To date, there have been four onsite community meetings that were held in both the manager's office at Ponderosa, and in the open area outside the office as the number of people attending grew in size:

1. May 13 (11 residents)
2. May 27 (15 residents)
3. June 9 (24 residents)
4. July 1 (65 residents)

Community Values

Through various conversation and engagement activities the community has communicated why they value Ponderosa and what characteristics are important for their neighborhood. Key findings include:

- The residents of the Ponderosa Mobile Home Park describe community members as self-sufficient, artistic, family-oriented and hardworking.
- Ponderosa is a quiet place, where children can play freely and community members watch out for one another.
- They are a diverse community that is well connected to the rest of Boulder through schools, work, parks, neighbors and businesses.
- They value the housing security as a result of the low monthly rents and home ownership gives them. They know that they can provide for their families, plan for the future, and feel pride that they own a home without financial subsidy or assistance.

A full description of the community outreach and profile can be found in **Attachment A**.

Ownership and Management Perspectives

As part of the community outreach process, Trestle has been working to also understand the vision and goals of the ownership group in order to incorporate their questions, concerns and desires into the planning study. Trestle has met bi-weekly with Greg Gustin, the onsite property manager. The owners purchased the property in 2004, and hired Mr. Gustin to be the property manager approximately 2 years ago. Mr. Gustin is well respected and appreciated by both the residents and the owners, and is available onsite with an open door to all residents and neighbors of Ponderosa. Since taking over management of the MHP, Mr. Gustin has made many improvements to the property, and has successfully worked to increase the level of trust between the residents and the primarily out of state ownership group. The ownership group is comprised of a family partnership, with 4 of the 5 currently living out of state. Trestle has met with representatives of the ownership group twice, including one time with Chris Meschuk from the City of Boulder.

Generally, there is a concern from the ownership group around the city's intentions for this property. Trestle has shared a large volume of information with the ownership group to provide a transparent working relationship and to facilitate both an understanding about the complexities that MHPs can face, as well as foster the discussion for future solutions and scenarios that consider all stakeholder perspectives.

The ownership group has expressed key questions around what the ultimate requirements would be for annexation, what the costs would be and what funding sources would be available. They have expressed their intention to keep rents low and minimize displacement of the residents. This property represents a significant long-term investment for the family partnership, and their desire is to continue to maintain and manage the MHP for years to come. In 2013, they hired an engineer to prepare plans for a new water line and submitted this request to the City of Boulder. At this point in time, they were prepared to make a significant investment into the water infrastructure, but were then made aware of the out of city utility permit and annexation requirements. It was several months after this that the city approached the owners to discuss their participation in West Fourmile Creek Canyon planning study. The owners were present in

the consultant selection interview process and have provided direct input to Trestle regarding their concerns, perspectives and questions.

Trestle and the city has begun to discuss a range of solutions and future outcomes with Mr. Gustin and the ownership group in anticipation of the work that is anticipated for Phase 2. Trestle and the city will continue to work with these representatives throughout the remainder of this study to continue to foster collaboration and long-term strategies and solutions.

V. ANNEXATION GOALS AND CONSIDERATIONS

Since the city began examining annexation of the property beginning in 1990, several key issues and challenges remain unresolved. Several health, welfare, and life safety issues need to be addressed, regardless of whether the property remains in the city or county's jurisdiction. Phase 2 of this study will evaluate potential solutions to address these issues and will identify opportunities for phasing to minimize impacts to the residents. Many of these issues are common for mobile home parks of this vintage and would require significant investment to address to completion. Improvements that were identified in previous reports and studies include:

- Water and Sewer utility replacement and redesign to city standards, including adequate fire protection: The current private utility lines do not meet the city standard sizing, layout and looped system requirements; additional fire hydrants would be required. Floodplain mitigation for the mobile homes in the 100-year floodplain: The majority of the park is in the 100-year floodplain, and mobile homes must be properly elevated and secured to prevent movement or collapse in a flood.
- Upgrades to other utilities (electric, gas, cable, etc.). Power lines are located near the roofs of some homes and some gas connections do not meet current safety standards.
- Access, street paving, parking, and stormwater management: The current streets are unpaved, and access is not clearly defined. In order to meet city standards and fire/police/EMS access standards, paving of the streets, designated parking and adequate turning radius for fire trucks is necessary, as well as stormwater detention and water quality facilities could be necessary in the future.
- Unit spacing and building code compliance: Many of the units have had non-permitted additions or construction work that do not meet building codes or safety standards. In addition, many units are spaced too close together to meet fire protection or setback standards.

In 1996 it was estimated approximately $1,000,000 in work was potentially necessary.

Issues that have been identified since the most recent study of the site in 2001, and that will be examined in Phase 2 include:

- The utility system continues to have reliability issues, including minor leaks and back-ups. In December 2013 a sewer cleanout was leaking and threatened to contaminate the water meter pit, which could have had potential impacts to the Ponderosa water and city water supply. The leak was fixed quickly and water service was turned back on. The site was monitored for several days and no contamination was found.
- A fire that was started within a mobile home, destroyed one unit in the park on May 29, 2014. Firefighters and neighbors were able to contain the fire and prevent spreading to

surrounding trailers. No other units were affected by the fire, and fire trucks were able to adequately access the mobile home.

- The park has had two recent electrical issues, caused by faulty wiring and a damaged transformer. The source of the issues were fixed by Xcel Energy, and no significant damage occurred.

V. RESEARCH OF MOBILE HOME PARK CHALLENGES

As part of the Fourmile Canyon Creek Planning Project, Trestle worked with Placematters, a Denver based non-profit think tank for civic engagement and community involvement in planning to conduct research on mobile home parks and issues. There is a wealth of information around key challenges surrounding mobile home parks, and this will be summarized in a report that will be presented at the September study session. Ponderosa is not alone in its challenges facing infrastructure upgrades, utility costs, floodplain protection and life and safety issues. In addition, this report will outline tools, financing mechanisms and organizational solutions that have been used in other MHPs to create resilient, stable communities for the future. Recently, the Lyons Emergency Assistance Fund (LEAF) hired Andrew Rumbach and Brandon Gossard to prepare a report on Manufactured Housing and Flood Recovery in Lyons, Colorado. A link to the study is provided here.

VI. HISTORY OF MOBILE HOME PARKS IN BOULDER

The city values the role that mobile homes play in Boulder's overall housing market as a market-rate, relatively affordable housing option. Since the mid-1980s, the city and county have implemented policies to support the preservation of mobile home parks.

The following is a timeline of policies and regulations regarding mobile homes:

1984: Mobile home task force (Countywide)
1985: City creates mobile home zoning district
1988: Mobile home park task force (City only)
1992: Boulder County creates manufactured home park zoning district
1999: Comprehensive Housing Strategy, which identified the purchase of mobile home parks as a priority tool.
2000: Boulder Valley Comprehensive Plan Update – City and County creates manufactured housing land use designation and "Preservation and Development of Manufactured Housing" policy.
2015: Limiting Park Owner's Right to Prohibit Sales ordinance

There are currently eight mobile home parks within the city limits or in BVCP Area II. They are:

- Boulder Meadows (Established in 1970, in the city)
- Columbine (Established in 1960, in Area II, eligible for annexation)
- Orchard Grove (Established in 1963, in the city)
- Mapleton (Established in 1961, in the city)
- Ponderosa (Established in 1957, in Area II, eligible for annexation)
- San Lazaro (Established in 1970, in Area II, eligible for annexation)

- Table Mesa Village (Established in 1970, in Area II, not eligible for annexation)
- Vista Village (Established in 1968, in the city)

According to current Boulder County Assessor data, there are 1,195 mobile homes in the city limits. The city has been tracking mobile home counts since 2000, at which time there were 1,588 mobile homes in the city. The decrease is due to increased vacancies in several parks, and parks that have closed.

There are three mobile home parks that have been closed since 2000. The city purchased and closed the Branding Iron Mobile Home Park (21 units) due to the location within the Goose Creek floodplain, and the Alpine/North Boulder Mobile Home Park (33 units) was closed by the property owner and the property eventually redeveloped into apartments. The Boulder Mobile Manor Park (66 units) was purchased by Boulder Housing Partners, and eventually redeveloped into Red Oak Park, a fixed foundation affordable housing development.

The city has become involved financially or programmatically with mobile home parks in different ways since the mid-1980s. This ranges from mobile home rehabilitation programs, city/housing authority purchase and resale to non-profits, City purchase, city infrastructure grants, and city regulatory (zoning) changes.

Attachment B includes a summary of the policy history, and information about each park and any specific role of the city related to that park.

VII. NEXT STEPS

The City staff and consultants are now initiating the technical analysis phase of the project. This phase will also include additional feedback and input from the property owners and residents. This phase will examine the costs and options to address the life safety issues, and to explore a high-level range of options to finance the upgrades necessary, consistent with the drivers and considerations identified for the project.
These options include:

- Do Nothing
- Annex the property, upgrade and bring into compliance with city standards, and remain a mobile home park
- Annex the property, and redevelop a portion of the property to a non-mobile home use, upgrade and bring into compliance with city standards the remainder of the mobile home park.
- Annex the property and redevelop the entire property to a non-mobile home use.

The options analysis will include exploring costs, timing, challenges, opportunities, city/county requirements, complexity, and potential funding sources and city/county role. These options will be presented in a study session on September 17, 2015.

VIII. ATTACHMENTS

A– Ponderosa Mobile Home Park community profile and outreach summary
B – History of Mobile Home Park policy in Boulder and summary of mobile home parks

Attachment A

Ponderosa Mobile Home Park Community Profile and Outreach Summary

July 20, 2015

TRESTLE strategy group

PLACE/MATTERS

ayre GROUP

CONSULTING ENGINEERS

Table of Contents

A. Outreach Summary 3

B. Community Profile 6

1. Residents

Demographics

Community Storytelling

Community Values and Characteristics

Community Concerns and Fears

Progress in Resident Project Understanding

Hopes of Residents and Desired Study Outcomes

2. Ownership and Management Perspectives

C. Maps 13

Context Map

Floodplain Map

D. Aerial Photos Through Time 15

A. Outreach Summary

The purpose of the community outreach and engagement is to foster understanding and consensus building around a future plan for Ponderosa Mobile Home Park (Ponderosa MHP). During this first phase of work, Trestle met with the residents in large community meetings held at Ponderosa, as well as several one-on-one meetings with residents, the property manger, and the owners of the Mobile Home Park. Since the first community meeting, there has been a steady growth in the number of Ponderosa resident attendance, participation, and interest. The four resident meetings have helped Trestle gain a foundational understanding of who lives in Ponderosa, what their level of understanding is of this Annexation Scenario and Design Charrette Study, what their largest and smallest concerns are, and what their desired outcomes and vision for the future is.

The four Community Meetings took place on:

1. May 13th - 11 residents
   - Purpose: To introduce Trestle to the community, provide a description of the project, and to meet and learn from the residents
2. May 27th - 15 residents
   - Purpose: To provide a project update, answer questions, and discuss the concerns of the residents
3. June 9th - 24 residents
   - Purpose: To provide a project update and learn what the residents like and dislike of the community using a photo/video exercise
4. July 1st - approximately 65 people attended
   - Purpose: Input from City of Boulder representative on the importance, opportunity, and goals of the project

Initially, the Ponderosa on-site manager asked, on behalf of Trestle, for self selected individuals to act as community representatives and meet with Trestle during outreach meetings. Eight residents quickly stepped forward and attended the first meeting along with a few other friends and family members. These initial representatives were a diverse group of individuals consisting of a broad range of age groups and ethnic backgrounds. During this first meeting Trestle encouraged those who attended to bring more residents with them to the following meetings. There has been a steady increase ever since. Those who have attended include males, females, children, babies, seniors, families, friends of residents (some of whom live in other mobile home parks), caucasians, hispanics, and african-amer-

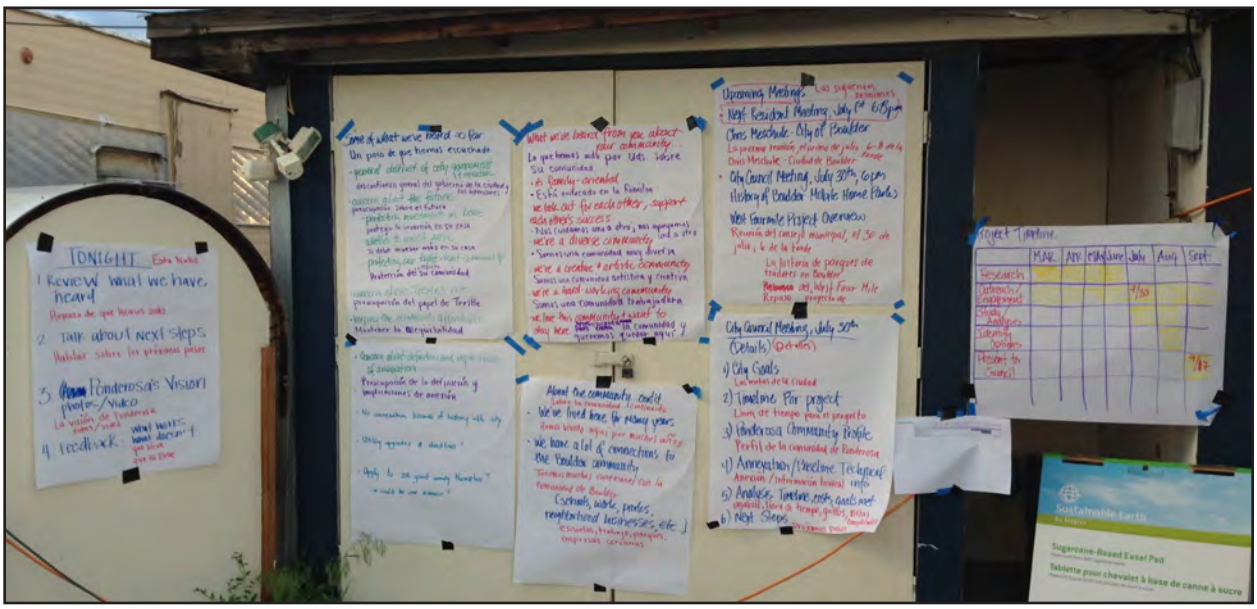
icans. The on-site property manager has also been present at all four meetings and has helped facilitated the group discussion at times.

Throughout all the meetings, Trestle has steadily gained a strong understanding of the community through various techniques including group and one-on-one discussions, questions and answers, visual imagery, and like/dislike picture and video exercises. All meetings have been conducted in English and Spanish and information gathered through these outreach techniques was compiled, summarized, and formatted into an English and Spanish flyer that was shared with all Ponderosa residents, managers, and owners. This flyer has been extremely helpful in sharing consistent and transparent information to the residents about the project, including the timeline and phases of the project including upcoming meeting dates and agendas, the history of Ponderosa, and summary of what Trestle has heard from the residents in previous community meetings. In addition, we have created an onsite library for the residents with all Trestle's research materials, including background documents on Ponderosa, the North Boulder Subcommunity Plan, and background information on other Boulder MHPs.

The most recent meeting on July 1, 2015 was highly anticipated for the residents as they looked forward to a presentation from a City of Boulder representative. Also present at this meeting was a representative from Boulder County and a professional English-Spanish translator who efficiently helped relay the City's presentation regarding annexation, utilities, timing, project reasoning, and more to the Spanish-speaking subcommunity of Ponderosa.

Trestle has also engaged with a number of other individuals, groups, and organizations to gain additional understanding, viewpoints, and projects happening either directly related to Ponderosa MHP, mobile home parks nation wide, or in the North Boulder subcommunity area. Those who Trestle has met with include:

- Resident Owned Communities USA (ROC USA)



- Thistle Communities
- Growing Up Boulder
- Boulder Housing Partners (BHP)
- Willem van Vliet, Professor Emeritus, University of Colorado Boulder
- Owners of Ponderosa MHP
- Property Manager of Ponderosa MHP
- City of Boulder Engineering Project Manager
- Boulder County
- Felicia Griffin, Executive Director of FRESC
- Andy Rumbach, Assistant Professor CU Denver
- Sharon Whitehair, Resident of Mobile Home Park in Denver Metro Region

Engaging with these groups has helped Trestle share the progress of the project with and gain key insight from key stakeholders, specifically the property owners and managers, while being able to expand the range of possibilities and begin to brainstorm scenarios for the future of Ponderosa MHP.

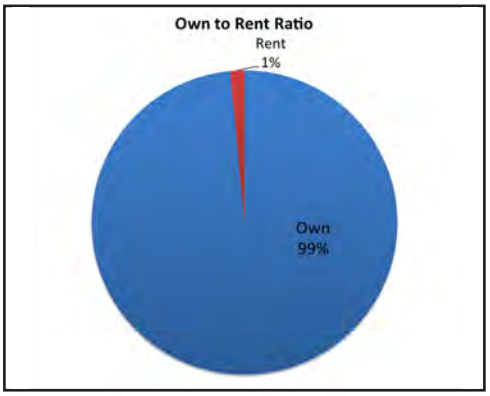
B. Community Profile

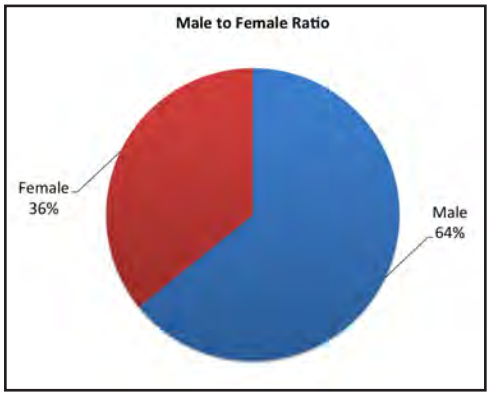
1. Residents

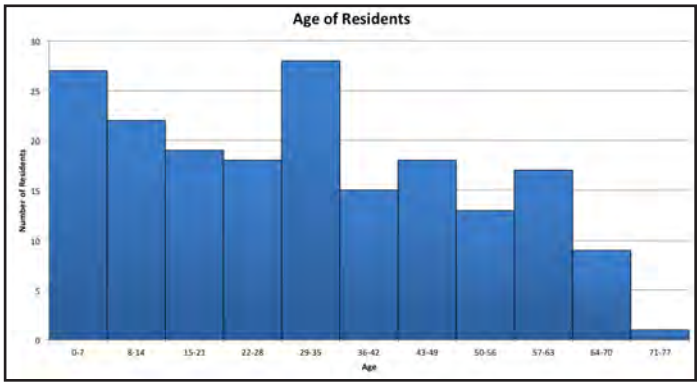
Demographics[1]

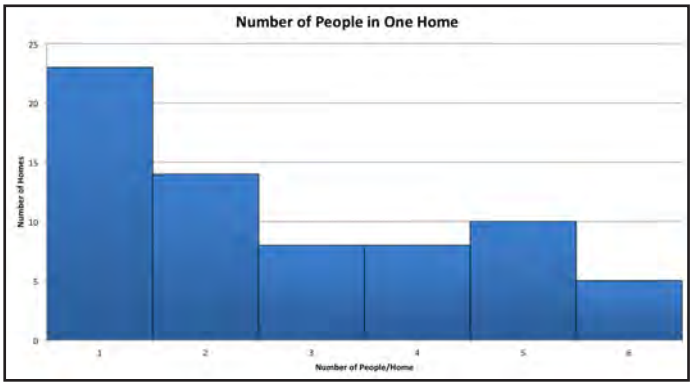
Ponderosa MHP consists of 68 mobile homes and 187 deeply rooted community residents who are proud to live in the mobile home park. Nearly all the units (99%) are owner-occupied and although the age of residents varies from newborn to 71, the vast majority of Ponderosa's residents have lived in Boulder for over 10 years, with maximum being 64. The range of years residents have lived in the Ponderosa MHP varies between 1 and 43 years, with a significant proportion having only resided in the park for less than 10 years; however, 20 of the 68 homeowners (29.4%) have lived in the park between 90 and 100 percent of their time in Boulder. The community is 64 percent male and consists of a large youthful population under the age of 21. The majority of the homes only house one or two residents (54.4%); but, due to the large younger population, there are some homes that do contain 5 or 6 six individuals. The residents occupy a unique and broad range of important professions that range from CU-Boulder administrator and hospice worker to landscaper and construction worker.

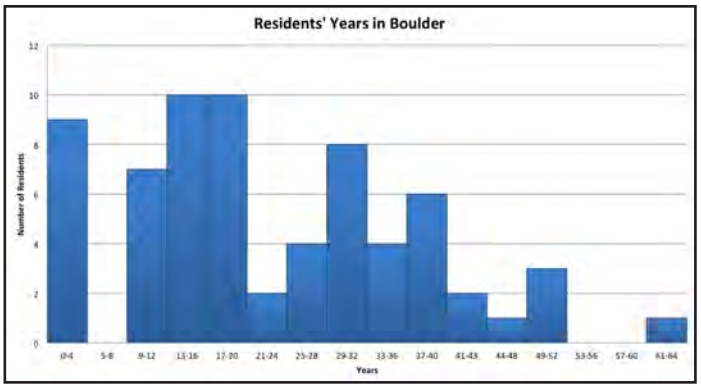
1 Demographic data was collected through a residential survey distributed by the on-site Property Manager of Ponderosa MHP in May and June 2015.

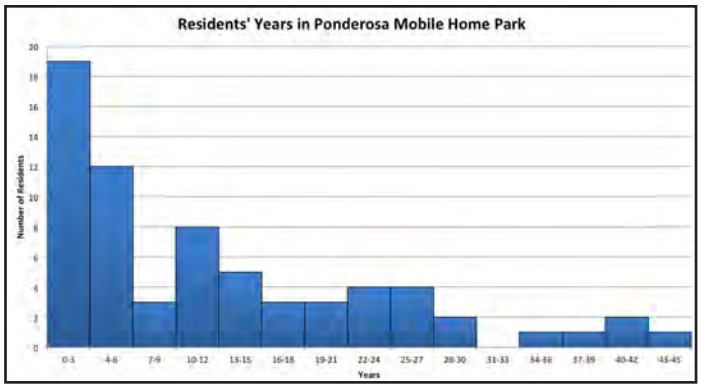


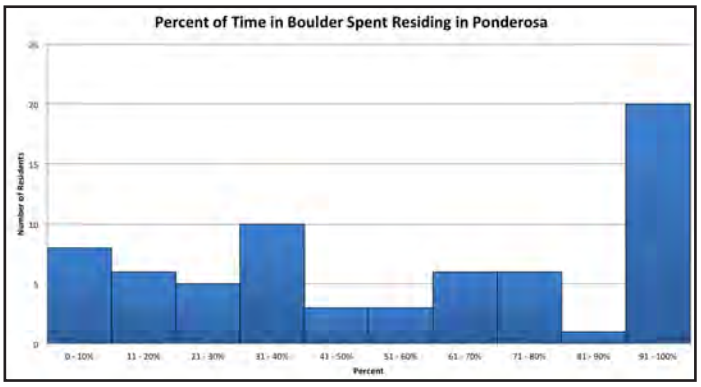


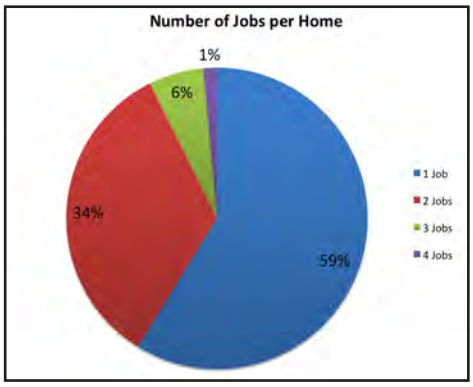


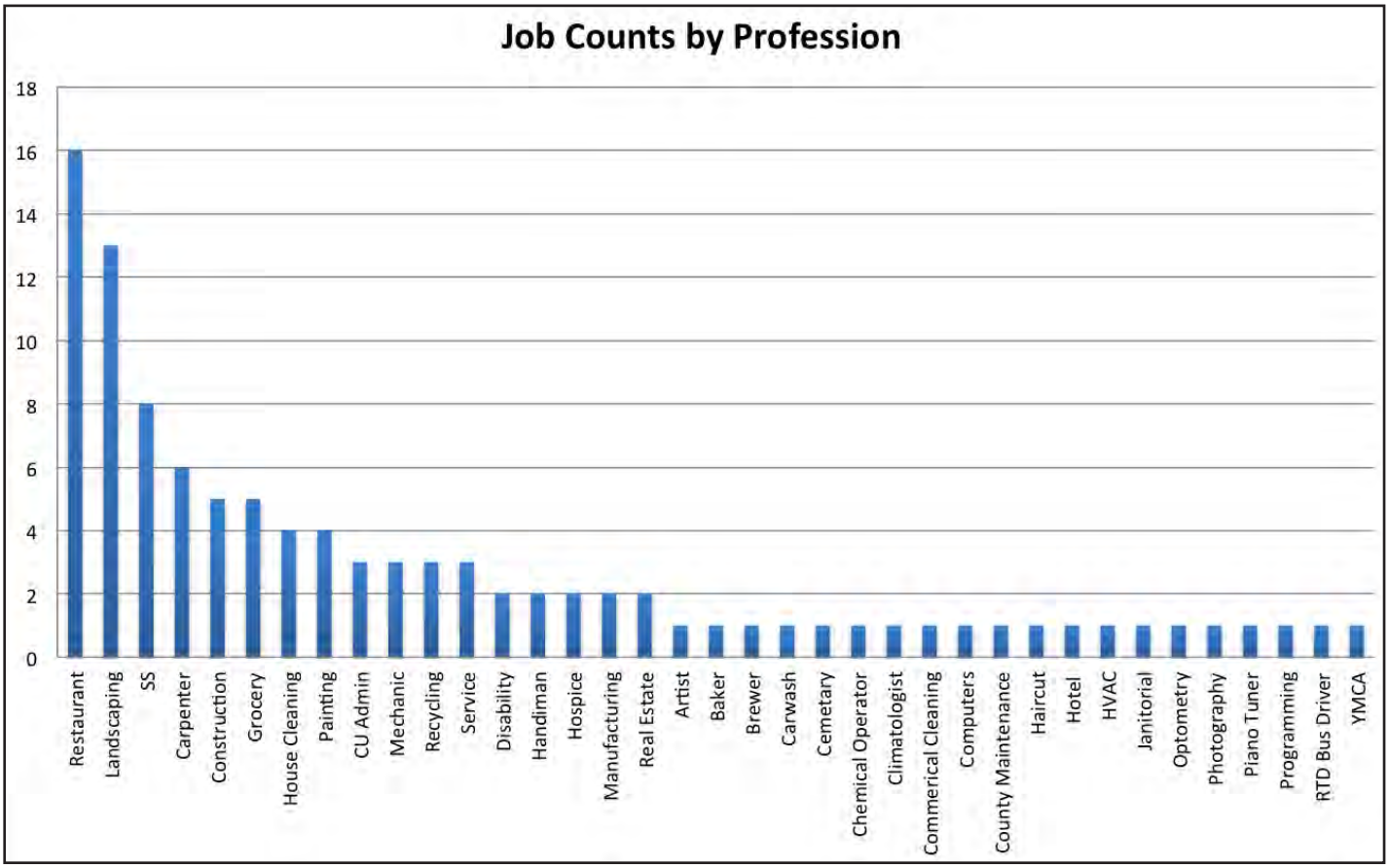



Residents' Years in Boulder
Number of Residents
Years


Residents' Years in Ponderosa Mobile Home Park
Number of Residents
Years


Percent of Time in Boulder Spent Residing in Ponderosa
Number of Residents
Percent


Number of Jobs per Home
1%
6%
34%
59%
1 Job
2 Jobs
3 Jobs
4 Jobs


Job Counts by Profession
18
16
14
12
10
8
6
4
2
0
Restaurant
Landscaping
SS
Carpenter
Construction
Grocery
House Cleaning
Painting
CU Admin
Mechanic
Recycling
Service
Disability
Handiman
Hospice
Manufacturing
Real Estate
Artist
Baker
Brewer
Carwash
Cemetary
Chemical Operator
Climatologist
Commerical Cleaning
Computers
County Maintenance
Haircut
Hotel
HVAC
Janitorial
Optometry
Photography
Piano Tuner
Programming
RTD Bus Driver
YMCA

Community Storytelling

Ponderosa residents have started to open up about themselves and their cherished neighborhood as the project advances. They understand the importance of the community storytelling as one piece of this study and are helping the Trestle team, as well as the City of Boulder and the owners, understand their community's concerns, fears, values and characteristics. The Trestle team used a variety of tools for residents to share their stories comfortably, including:

- Red/green frame photo exercise: Residents were invited to describe their neighborhood with pictures. Using green and red frames and a camera, residents depicted what they like and dislike about their neighborhood and the surrounding area. Photography proved to be a powerful method of describing realities, communicating personal vision and perspectives, and telling a story to an unfamiliar audience. The Trestle team presented a sample of the residents' pictures during a later community meeting on July 1st. Residents have been encouraged to continue this exercise throughout the remainder of the project. A few of the residents' likes included views, homes, neighbors, and the memory garden. Some of the dislikes included the number of cats in the community, potholes, and recent developments blocking views.

- Video recordings: A few residents agreed to share their stories on video. A short summary video will be presented during the July 30th City Council study session.

- Note taking during meetings: The Trestle team has been taking extensive and detailed notes during all community meetings as well as meetings with other critical stakeholders and interested parties. Additionally, the Trestle team with the assistance of PlaceMatters, has translated notes and communications into Spanish so all residents can understand and track the work.

As experts of the community, these various activities have allowed Ponderosa residents to provide valuable insights.

Community Values and Characteristics

Through the various community meetings and engagement activities described above, the community has effectively shared their deep appreciation for Ponderosa and what neighborhood characteristics are important. The Ponderosa community describes themselves as self-sufficient, artistic, family-oriented and hardworking. Ponderosa is a quiet place, where children can play freely and where residents care for and look out for one another and their families. Ponderosa is a diverse community that is well connected to the rest of Boulder through schools, work, parks, neighbors and businesses. Residents value the opportunities, security and economic viability that low rents provide them. They know that they can provide for their families and feel proud to not live in subsidized housing.

The location and organization of Ponderosa provides children with the freedom to run and play within the community, by the creek, or in the nearby Foothills Park. More generally, residents value the open spaces that they have easy access to. They are proud of the community garden and memory garden in Ponderosa. They enjoy having their own four walls, which reduces conflict with neighbors. Residents are hopeful that they will have the opportunity to live in Ponderosa MHP for many years to come.

Community Concerns and Fears

Throughout the course of Trestle's conversations and meetings with residents, several common concerns and fears have surfaced. Based on the community's history with government, there are concerns about city intentions and motivations about the purpose of the study and desire to annex. The residents' main concern is losing their homes through the annexation process. They fear that the City of Boulder has already identified an outcome, which is not being shared with the Ponderosa community.

Residents want to protect the investments they have put into their homes. They are concerned that the annexation process will lead to higher housing costs, whether through higher rents, utility costs or improvements that will put the community out of their budget reach. Residents live in fear of an uncertain Ponderosa future and, how it might impact their home investments and their ability to remain in Boulder. Uncertainty and fear is partially being driven by the perception that the City of Boulder wants to remove mobile home parks and replace them with new developments.

Progress in Resident Project Understanding

Initially, many residents expressed high levels of distrust and doubt about the purpose and intentions of this study. This was largely based on fears and concerns around pri-

or experiences with the city and county. Many residents' initial perception was that eviction was most likely imminent, the City of Boulder does not value mobile home parks, and that annexation equates to condemnation and eviction.

Some residents remain unclear about the City's desires to annex this enclave and have difficulty understanding the city and county's agreements and long range planning goals. Residents have connected the city's desire for annexation with more tangible physical elements of the park. Residents have communicated their willingness to make improvements to the park to please the City, including: home repairs, trash pick up, remove extra vehicles and improve the physical appearance of Ponderosa - with the underlying assumption that this is something the city and other neighbors might be pressing for. They have expressed a belief that eviction and condemnation are synonymous with annexation. Trestle has repeatedly informed the residents that there are many scenarios that can occur through annexation. Residents have begun asking more nuanced questions that focus on scenarios, rather than eviction, in regards to annexation. However, additional education about scenarios and the annexation process is needed and will continue. Residents have expressed their belief that the City of Boulder has a predetermined outcome and they have requested Trestle to share this outcome with them multiple times, although no predetermined outcome exists.

As Trestle has continued conversations and outreach to community residents, we have worked with them towards deconstructing some of their initial beliefs, in particular the notion of a predetermined outcome. We are working with them to identify outcome scenarios and encouraging them to make their voices heard to help inform and influence potential options. Many residents are beginning to understand this and to appreciate the opportunity being provided.

Trestle has reiterated the range of annexation scenarios many times, from do nothing to a complete redevelopment, and reiterated that we will look at a range of solutions and weigh them against both quantitative and qualitative criteria. Residents are beginning to embrace this idea. Trestle has gained traction when communicating the reasoning behind annexation of Ponderosa due to its relationship with utility improvements and the reality that we are not in a crisis situation and able to plan thoughtfully for the future. In addition, the prospect of Round 3 Disaster Recovery funding is an attractive and important element of this study, and the residents understand this. The existing out-of-city utility permit between the City of Boulder and the property requires annexation to take place when the utilities on the property fail. Residents are beginning to understand that

the physical appearance of their homes or the park is not driving annexation, but the need for infrastructure upgrades and flood improvements are more relevant.

We have continued to assess the degree of change in resident understanding and beliefs about the project. There is now evidence that the focus is shifting to infrastructure questions and how to improve the site before a major disruption might occur.

Hopes of Residents and Desired Study Outcomes

Ponderosa community residents have repeatedly said that they hope to stay in their homes with low rent and little or no additional oversight. They hope that the study will provide them with clarity for the future and allow them to invest into their homes and make improvements. Ponderosa residents have expressed the desire to have a stable living situation for themselves and their families, well into the future.

As the project continues, Trestle will continue to answer the following questions, and others, through on-going engagement, outreach, and discussion with the residents, the owners, the property manager, and the City:

- How is the community already stable? Resilient? What does stabilization look like?
- What does a transition state look like?
- What does resiliency look like?
- What funding sources are available?
- What should the community look like in 5, 10, 20 years?

2. Ownership and Management Perspectives

As part of the community outreach process, Trestle has been working to also understand the vision and goals of the ownership group in order to incorporate their questions, concerns and desires into the planning study. Trestle has met bi-weekly with Greg Gustin, the onsite property manager. The owners purchased the property in 2004, and hired Mr. Gustin to be the property manager approximately 2 years ago. Mr. Gustin is well respected and appreciated by both the residents and the owners, and is available onsite with an open door to all residents and neighbors of Ponderosa. Since taking over management of the MHP, Mr. Gustin has made many improvements to the property, and has successfully worked to increase the level of trust between the residents and the primarily out of state ownership group. The ownership group is comprised of a family partnership, 4 of whom live out of state. Trestle has met with representatives of the ownership group twice, including one time with Chris Meschuk from the City of Boulder.

Generally, there is a concern from the ownership group around the city's intentions for this property. Trestle has shared a large volume of information with the ownership group to provide a transparent working relationship and to facilitate both an understanding about the complexities that MHPs can face, as well as foster the discussion for future solutions and scenarios that consider all stakeholder perspectives.

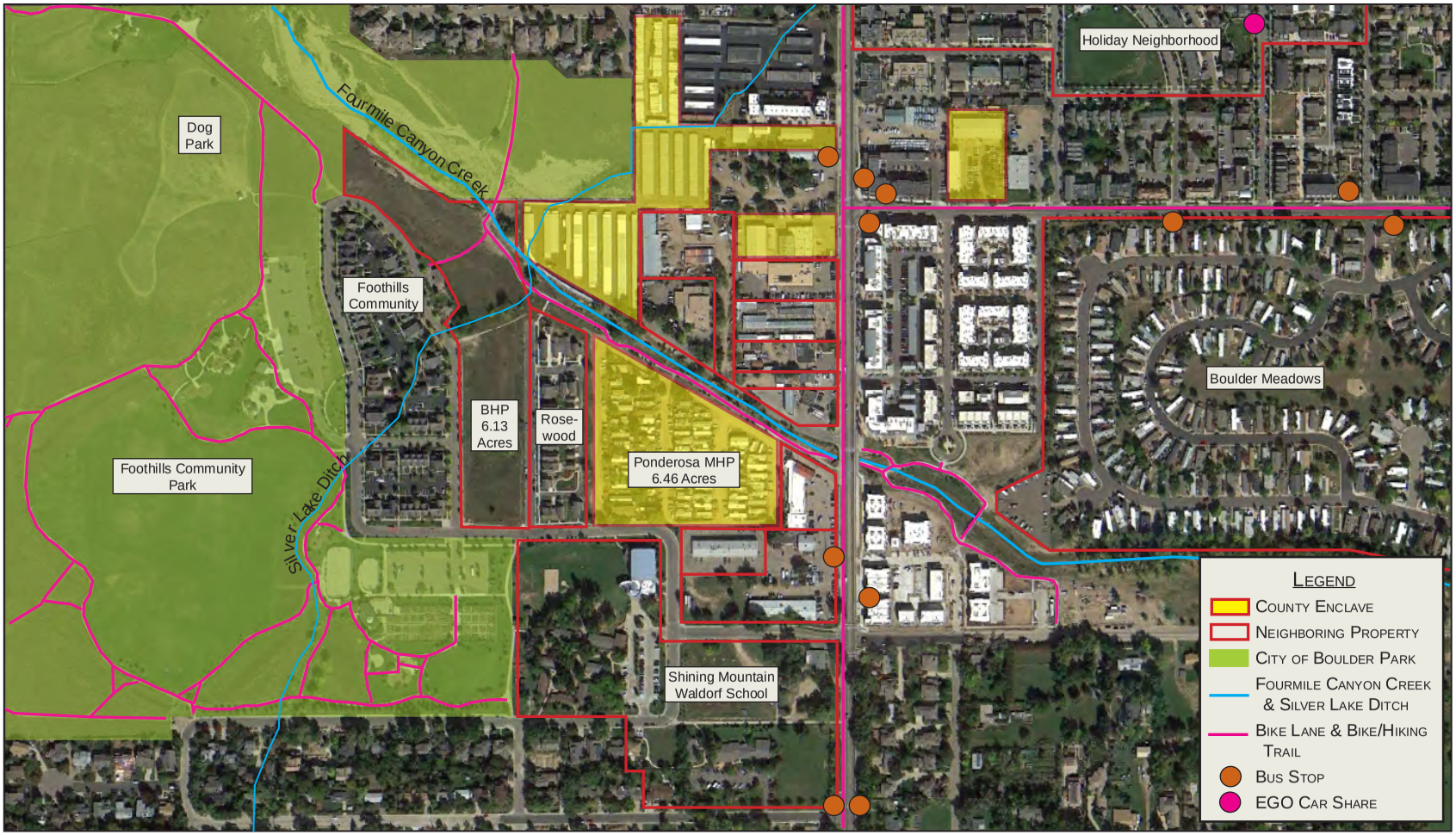
The ownership group has expressed key questions around what the ultimate requirements would be for annexation, what the costs would be and what funding sources would be available. They have expressed their intention to keep rents low and minimize displacement of the residents. This property represents a significant long-term investment for the family partnership, and their desire is to continue to maintain and manage the MHP for years to come. In 2013, they hired an engineer to prepare plans for a new water line and submitted this request to the City of Boulder. At this point in time, they were prepared to make a significant investment into the water infrastructure, but were then made aware of the out of city utility permit and annexation requirements. It was several months after this that the city approached the owners to discuss their participation in West Fourmile Creek Canyon planning study. The owners were present in the consultant selection interview process and have provided direct input to Trestle regarding their concerns, perspectives and questions.

Trestle and the City has begun to discuss a range of solutions with the manager and ownership group in anticipation of the work that is anticipated for Phase 2. Trestle and the city will continue to work with Mr. Gustin and the ownership group throughout the remainder of this study.

C. Maps

Context Map

Context Map

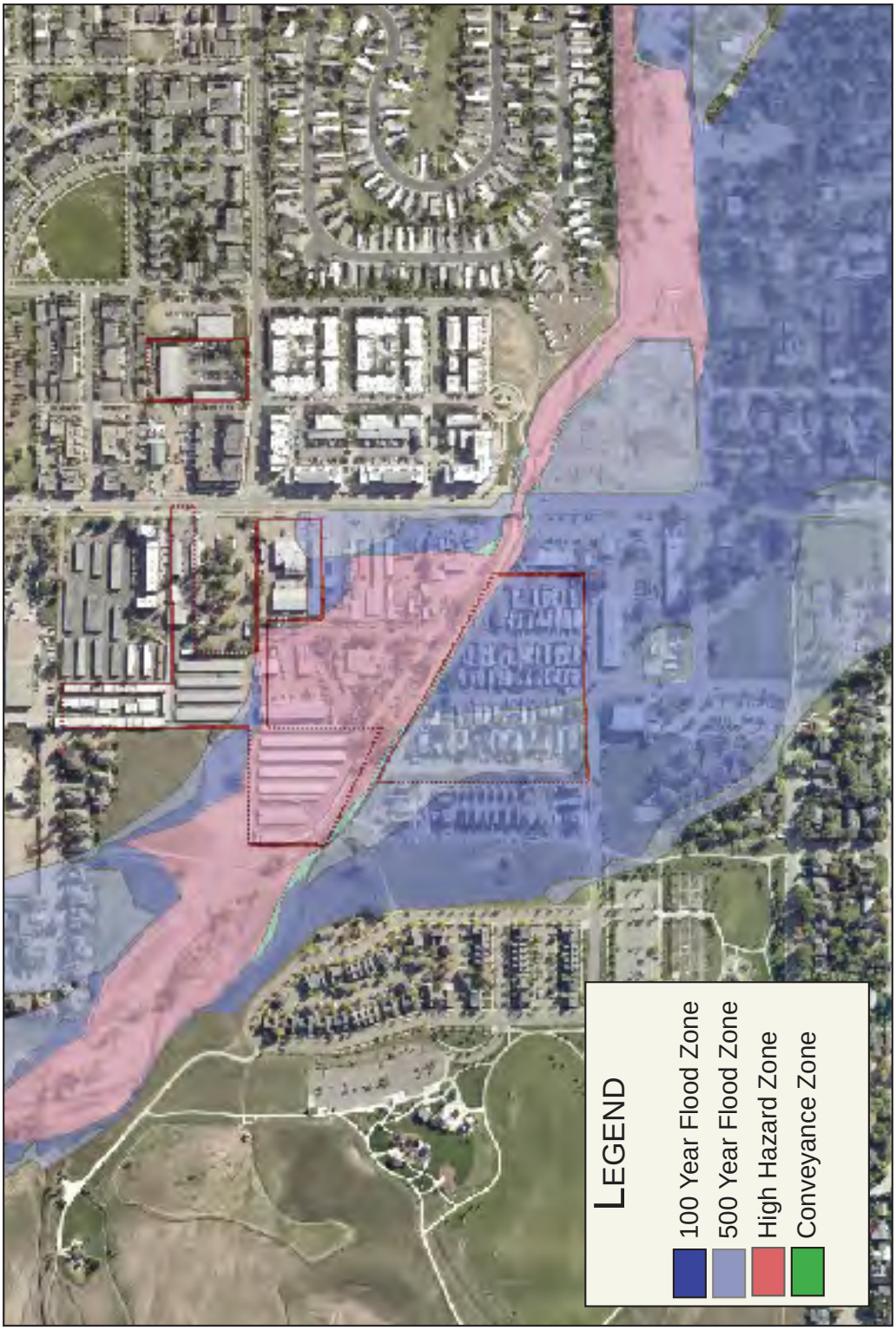


3.20.2015

TRESTLE strategy group

Floodplain Map

Floodplain of Ponderosa Mobile Home Park and Surrounding Neighborhood



D. Aerial Photos Through Time

1958

1966

1971

1972

1976

1979

1984

1993

2015

A History of Mobile Home Parks and Policy in Boulder

INTRODUCTION

Mobile homes have long been recognized as a market-rate, relatively affordable housing option for Boulder residents. Beginning in the mid-1980s, city policies began to directly promote mobile home park preservation and development, balanced with the risk of natural hazards to parks. This is an overview of mobile home park policy in Boulder, capturing major milestones in the development of the city's policy and how on-the-ground conditions have led to different outcomes and approaches in different mobile home parks. Below is a summary of the city's policy decisions related to each of the mobile home parks located in Boulder.

1. Boulder Meadows – Legal defense fund established for residents, use of regulatory mechanisms (the Mobile Home zoning district) and no permanent affordability
2. Boulder Mobile Manor – Purchase by the housing authority, initial property management, and ultimate conversion to fixed foundation, affordable rental homes, to preserve long-term affordability
3. Branding Iron – City purchase, rezoned Public, park closed, and flood improvements provided along Goose Creek; four lots preserved with adjacent Mapleton Mobile Home Park
4. Mapleton Mobile Home Park – City purchase and subsidy provided to preserve permanent affordability of mobile homes
5. "No Name" Park – Housing counseling and financial assistance provided to park residents, no rezoning to preserve mobile home use
6. Orchard Grove – Use of regulatory mechanisms (the Mobile Home zoning district) and no permanent affordability
7. Vista Village – Legal defense fund established for residents, use of regulatory mechanisms (the Mobile Home zoning district) and no permanent affordability

In the section following the chronology of policy initiatives, the 11 mobile home parks located in Boulder and in Area II are discussed in greater below. This chronology and history summary is not inclusive or a complete history of each mobile home park, but is based on previous research and history documents of the city.

CHRONOLOGY OF POLICY INITIATIVES

<u>1984: Mobile Homes, Part of an Affordable Housing Strategy</u>

Mobile homes were first considered as part of an affordable housing strategy in 1984 when the Boulder County Consortium of Cities formed a countywide Mobile Home Task Force. This task force recommended:

(a) Examination of zoning and building code regulations to eliminate barriers to manufactured housing; and

(b) Legislation by the Colorado General Assembly to protect the rights of owners of mobile homes.

1985: the City of Boulder develops a Mobile Home (MH) Zone

Concern that mobile home parks, considered a valuable part of the city's housing stock and located on medium to high density zoned land, would be redeveloped, Boulder became the first community in Colorado to develop a specific zone for mobile home parks. The Mobile Home (MH) zone addresses zoning standards for mobile home parks, including setbacks and required spacing between mobile homes and preserves the manufactured home (MH) land use. Only parks owned by willing owners, Vista Village and Boulder Meadows, were rezoned at that time.

Today, all mobile home parks inside Boulder city limits – Boulder Meadows, Mapleton Mobile Home Park (MHP), Orchard Grove MHP, and Vista Village – are zoned MH. All of the parks in Boulder as well as those located adjacent to and near Boulder (Ponderosa MHP, Columbine MHP, San Lazaro Park Properties, Sans Souci MHP, and Table Mesa Village MHP) have been designated in the Boulder Valley Comprehensive Plan with a Manufactured Housing (MH) land use.

1988 Mobile Home Task Force The Mobile Home Task Force convened to determine the feasibility of creating a new mobile home park in Boulder. Although the task force findings determined that it was financially and programmatically feasible to develop a new mobile home park, a suitable site could not be located.

1999 Comprehensive Housing Strategy The 1999 Comprehensive Housing Strategy identified the purchase of mobile home parks as a priority tool.

2000 Manufactured Housing Policy in the Boulder Valley Comprehensive Plan The 2000 major update to the Boulder Valley Comprehensive Plan introduced the Manufactured Housing (MH) land use designation in Area I and II. The rationale for the new land use in Area I was that they provide needed affordable housing for the area and such land use would "signal the city's intent to preserve the affordable housing provided by the existing mobile home parks", given the market pressures for them to redevelop. That same year, the land use for mobile home parks in Area II was similarly changed under the similar rationale, but also to create consistency with county land use and zoning maps, which had already zoned the parks MH.

In addition, a new housing policy titled *Preservation and Development of Manufactured Housing* was adopted. The rationale for this new policy was that it would "provide a policy basis for protecting and preserving a uniquely vulnerable type of existing low income housing or for assisting low income residents should their park be eliminated for reasons such as flood control mitigation".

The 2010 version reads:

7.08 Preservation and Development of Manufactured Housing

Recognizing the importance of manufactured housing as an option for many households, the city and county will encourage the preservation of existing mobile home parks and the development of new manufactured home parks, including increasing opportunities for resident-owned parks. Whenever an existing mobile home park is found in a hazardous area, every reasonable effort will be made to reduce

or eliminate the hazard, when feasible, or to help mitigate for the loss of housing through relocation of affected households.

2015, Limiting Park Owner's Right to Prohibit Sales

In the first half of 2015, Council is considering an amendment to the mobile homes chapter of the Boulder Revised Code, introducing a new section limiting park owner's rights to prohibit the sales of manufactured homes. This ordinance change was in response to complaints by residents of Vista Village Mobile Home Park limiting the sale of pre-1976 homes.

Services and Funding for Mobile Home Owners

Over the years, the city has offered services and funding to support mobile home owners.

- In 1991, the city implemented the Mobile Home Grant Program, providing up to $4,000 in assistance to mobile home owners for maintenance and repair. The city now (2015) grants funding to Longs Peak Energy Conservation to assist up to fifteen mobile home owners annually in the City of Boulder with up to $7,500 in health, safety and code repairs as well as energy efficiency upgrades.
- In 1993, the city's Community Mediation Program expanded its guidelines to offer mediation services to mobile home communities in the Boulder Valley.
- In 1995, the city awarded an opportunity grant to residents of Columbine Mobile Home Park to explore purchase of their park. (The park was sold to a private entity.)
- In 1996, a VISTA/Americorps volunteer position was created to organize residents to develop resident councils. That same year, the city and county sponsored a conference, Mobilizing for a Change, focused on community organizing, resident ownership and legal issues. It led to a county-wide resident group.
- In 1998, the city also held a mobile home repair workshop for owners, established a homeownership program to assist homeowners to purchase mobile/manufactured housing, and published a mobile home landlord/tenant guide.
- In 2001, in response to complaints of unfair management practices at Boulder Meadows, the city established a $15,000 one-time fund to pay an attorney to provide legal assistance to mobile home owners. In 2015, the city again established a one-time legal assistance fund of $20,000, this time for Vista Village mobile home owners alleging park owners violated a number of provisions of the Mobile Home Park Act.

HISTORY OF INDIVIDUAL MOBILE HOME PARKS IN AND NEAR BOULDER

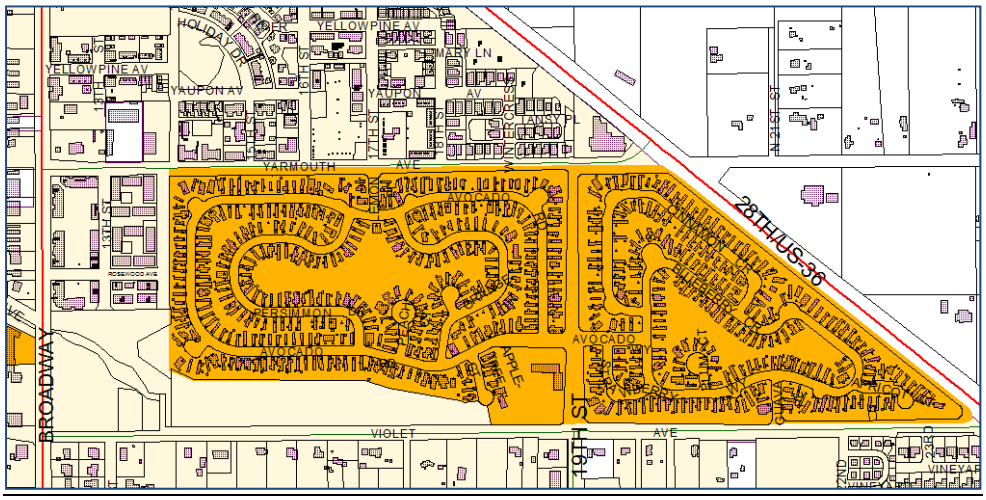
There are eight mobile home parks within the city limits or in BVCP Area II. They are:

1. Boulder Meadows
2. Columbine
3. Orchard Grove
4. Mapleton
5. Ponderosa
6. San Lazaro
7. Table Mesa Village
8. Vista Village

Since 2000, there are three mobile home parks that have closed. They are:

9. No Name
10. Boulder Mobile Manor
11. Branding Iron

1. <u>Boulder Meadows (Countryside Village)</u>



Source: Maplink,

<u>General</u>
Year Established: 1970
Total Lots/Pads: 617
Vacant Lots: 76 (12%)

<u>Manufactured Housing</u>
Median Year Built: 1983
Share Built Before 1976: 31%

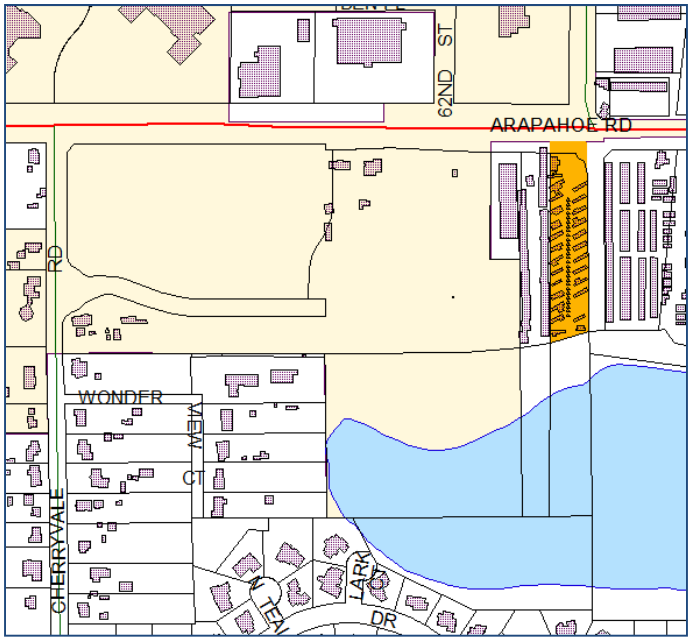
<u>Estimated Utility Infrastructure Date</u>
1970

Source: Boulder County Assessor's Office, June 11, 2015

Boulder Meadows annexed into Boulder in 1990. Over the years, the city attended and at times facilitated meetings with residents and management focused on park practice around balancing affordability against park upgrades, and resident relations more generally. In 2001, as a result of numerous allegations of harassment and pretextual eviction, the city established a $15,000 legal assistance fund for mobile home owners. In 2003, the city was asked to assume the water utility billing function for the homes in the park,

which are separately metered with private water meters. A 2003 report on the topic found that it would be costly and coordination between park management and city staff would be significant and ongoing. The city declined the request.

2. Columbine



Source: Maplink

General
Year Established: approximately 1960
Total Lots/Pads: 27
Vacant Lots: 0 (0%)

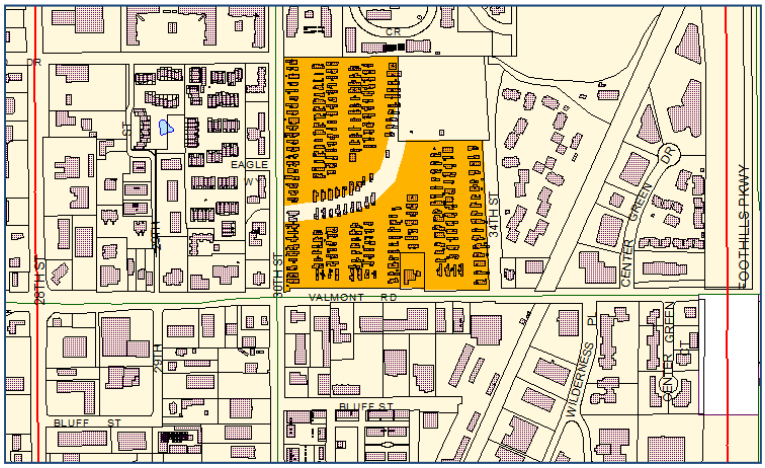
Manufactured Housing
Median Year Built: 1967
Share Built Before 1976: 89%
Estimated Utility Infrastructure Date
1960

Source: Boulder County Assessor's Office, June 11, 2015

Columbine is located outside the city limits, in BVCP Area II, and is eligible for annexation. The property is served by city water and sewer through an out-of-city utility permit issued in 1964.

In 1995, the city awarded the park an opportunity grant to explore resident purchase of the park; however the park was ultimately sold to a private owner.

3. Orchard Grove Mobile Home Park



Source: Maplink,

General
Year Established: 1963
Total Lots/Pads: 217
Vacant Lots: 3 (1%)

Manufactured Housing
Median Year Built: 1971
Share Built Before 1976: 71%
Estimated Utility Infrastructure Date
1963

Source: Boulder County Assessor's Office, June 11, 2015

The Orchard Grove Mobile Home Park (MHP) was established in 1963 and privately owned by a longtime Boulder partnership that had maintained below-market mobile home pad rents. Unlike Vista Village and Boulder Meadows, Orchard Grove was not rezoned Mobile Home when the MH zone was introduced in 1985, but remained medium-density residential. In 2008, Orchard Grove was put on the market and a perspective buyer proposed converting the park into higher density fixed foundation housing. Residents approached Council with concerns about potential loss of homes, community and lifestyle. They prepared a report detailing options to become a resident-owned park. In response to concerns about losing the MH park and its perceived benefits including affordable housing options, in July 2008, at the request of the residents, City Council rezoned the park to Mobile Home.

In late 2009, the city contracted with Boulder Housing Partners to study the park, and draft a report on the physical and environmental attributes, an infrastructure rehabilitation plan, and development of financial strategies. Report findings, were the park offered for sale, a viable purchase would require either:

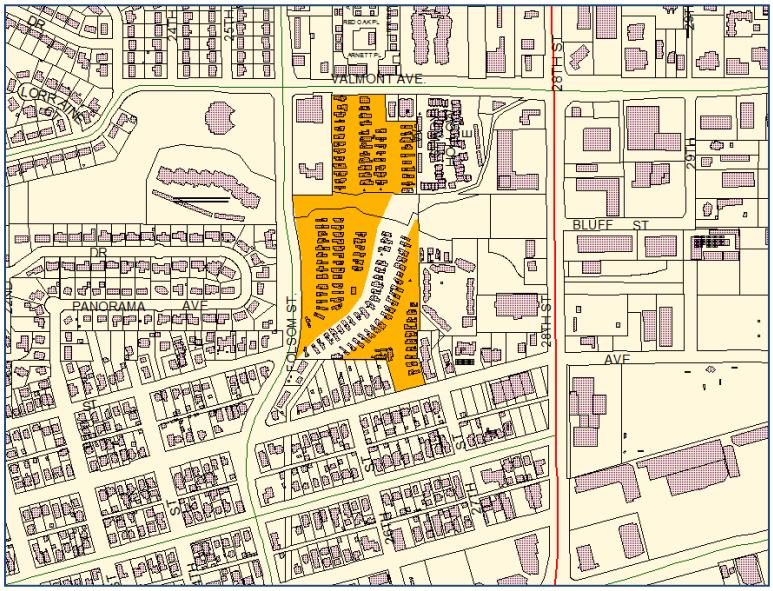
- Subdivision of much of the property, then rezoning and sale of the frontage along Valmont and 30th St for mixed-use redevelopment, or
- Estimated $6.3 million in subsidy funding.

In either scenario, an additional $5.4 million in subsidy would be required to bring the park infrastructure up to city standards.

A 5-acre parcel in the northwest corner of the park was not rezoned to Mobile Home, and in the 2010 Boulder Valley Comprehensive Plan update it was determined to leave the land use designation medium-density residential, for future development.

Since that time, the park owner implemented lot rent increases and ultimately sold the park to the private entity Riverstone Communities in 2015.

4. Mapleton Mobile Home Park



Source: Maplink

General
Year Established: 1961
Total Lots/Pads: 135
Vacant Lots: 3 (2%)
Permanently Affordable Lots: 120

Manufactured Housing
Median Year Built: 1967
Share Built Before 1976: 82%

Estimated Utility Infrastructure Date
South of Goose Creek installed in 2008; north of Goose Creek 1960's

Source: Boulder County Assessor's Office, June 11, 2015

Mapleton Mobile Home Park, built in 1961, is the one park in Boulder preserved through purchase and subsidy. It was purchased by the city for $3.5 million in 1996, using the Stormwater and Flood Control Utility Fund. Residents continued to own and live in their homes. The intent was to facilitate planned flood improvements to Goose Creek and to preserve Mapleton as a resident-owned, affordable mobile home park. Issues encountered in the effort to establish a resident-owned park included: financing the purchase, financing infrastructure improvements, management of the park.

The city and Mapleton Home Association (MHA), the resident-led entity that would come to manage the park, approached Thistle Communities to purchase the park. Thistle purchased the park in 2004 for $2.96

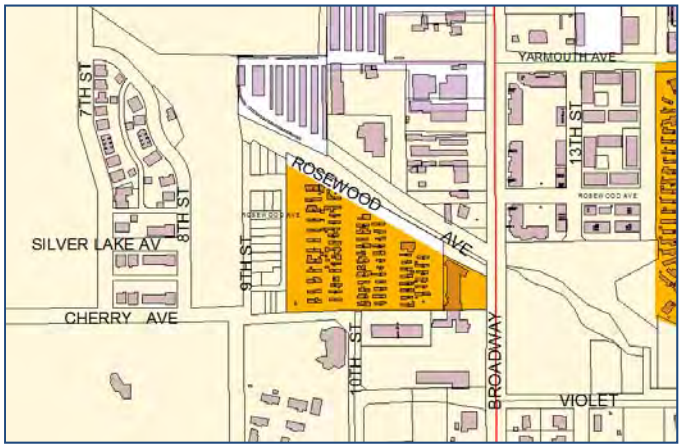
million (with $550,000 city subsidy funds). The city retained a portion of the park along Goose Creek and completed flood mitigation work.

The MHA leases the park from Thistle and manages it, including setting park rules, park maintenance and rent increases. Of the park's 135 occupied lots, 120 are permanently affordable to households with incomes at or below 30 percent to 60 percent AMI.

In 2007, the city provided an additional $884K in subsidy funds for basic improvements to the entire park. Thistle and the MHA decided to do enhanced improvements. Infrastructure improvements have only been completed for the portion of the park south of Goose Creek with a total wet and dry infrastructure costs estimated to be $4.7 million or $53,225 per space for 88 spaces.

Thistle and the MHA decided to do enhanced improvements for the portion of the park south of Goose Creek, with the understanding that they would need to obtain additional financing for improvements. Total cash subsidy funds from city to Mapleton to date equals $1.23M or approximately $9,300 per space. The Colorado Division of Housing also provided subsidy to Mapleton.

5. Ponderosa



Source: Maplink

General
Year Established: 1957
Total Lots/Pads: 67
Vacant Lots: 0 (0%)

Manufactured Housing
Median Year Built: 1969
Share Built Before 1976: 78%
Estimated Utility Infrastructure Date
Varies, 1950s to current.

Source: Boulder County Assessor's Office, June 11, 2015

The Ponderosa Mobile Home Park appears to have begun operation sometime in the early 1950's. Some documents list the park opening in 1957. A 1958 aerial photograph shows the park with 16 units. By 1966 the park had expanded to 54 units, and by 1972 expanded to 68 units, which is the size the park remains today. The park operated on a well and septic system until the late 1970's, when water supply issues began resulting in the park running out of water, and potential contamination issues arose. In coordination with the County Health Department, the park applied for and received an out-of-city utility permit for city water and sewer service.

The city issued the water connection permit in 1980. Based on the as-built drawings, it appears the city water connection was tied into the existing park water line infrastructure. Connection to the city sewer system occurred in 1984, and was also tied into the existing park sewer line infrastructure.

In 1990 the city began studying the park due to concerns of life safety and infrastructure, and in 1991 and 1992 Thistle Community Housing and the city worked to examine the feasibility of purchasing and operating the park. In 1992 the city, residents, and the property owner began discussing the annexation of the park, upgrades to the utilities, and the sale of the property to the city for the purpose of eventual transfer to the residents as a resident-owned community. In May of 1994 the city formally offered to purchase the park, plus the vacant 2 acre parcel to the west for $944,000. City staff, at the direction of the City Council, proceeded to identify the necessary phased upgrades to the park, including reconstruction of the utilities, paving the streets, and replacing unsafe units, utilizing the vacant 2-acre parcel to resolve spacing issues with existing units. The total cost for infrastructure upgrades was estimated at just over $1,000,000 in 1996. The city proposed a phased purchase package for the owner to spread the city's purchase

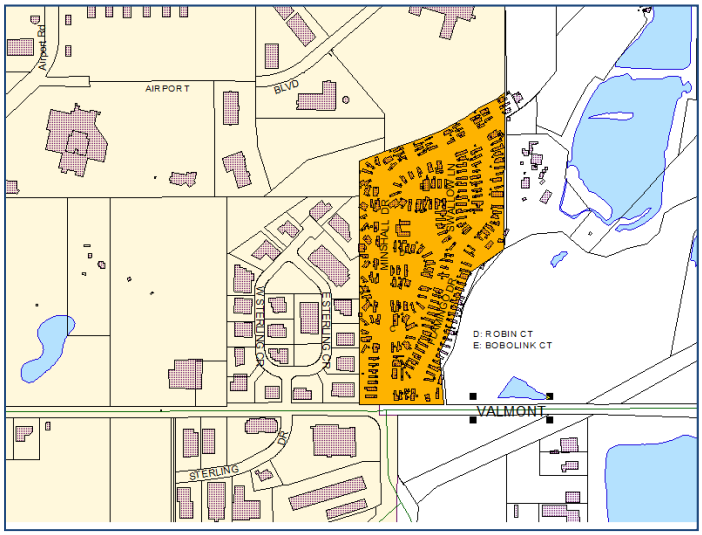
payments over several years, and a loan to transition to a resident-owned community. In April 1996, the owner informed the city that he was not interested in responding to the city's purchase offer, which the city then formally withdrew.

In 1997, the county rezoned the park to Manufactured Housing Park zoning. In 2000, the city and county changed the land use designation from Medium Density Residential to Manufactured Housing in the Boulder Valley Comprehensive Plan.

In 2000, the owner began the process of exploring annexation again, this time without any city purchase considerations. The city reviewed and provided numerous comments and questions for additional analysis to the owner. In 2002 the application for annexation was withdrawn.

In 2004, the then owner (since 1971) sold the park (without the adjacent vacant 2 acre parcel) to the current property owner. The adjacent parcel was then sold to a separate buyer and annexed and developed as the 1000 Rosewood project. In 2010, a group of students from the University of Colorado Boulder College of Architecture and Planning prepared a survey and report on the neighborhood. Since that time the current owner has performed some small upgrades to the park. In early 2013, the owners applied for a pre-application review to upgrade the existing water lines inside the park. Due to the provisions in the out-of-city utility agreement, annexation was necessary before any work could be completed. In September 2013, flooding occurred throughout the city and county, including Fourmile Canyon Creek, causing shallow surface water flooding throughout the park, and causing significant damage to surrounding properties and much of north Boulder.

6. <u>San Lazaro</u>



Source: Maplink

General
Year Established: 1970
Total Lots/Pads: 214
Vacant Lots: 0 (0%)

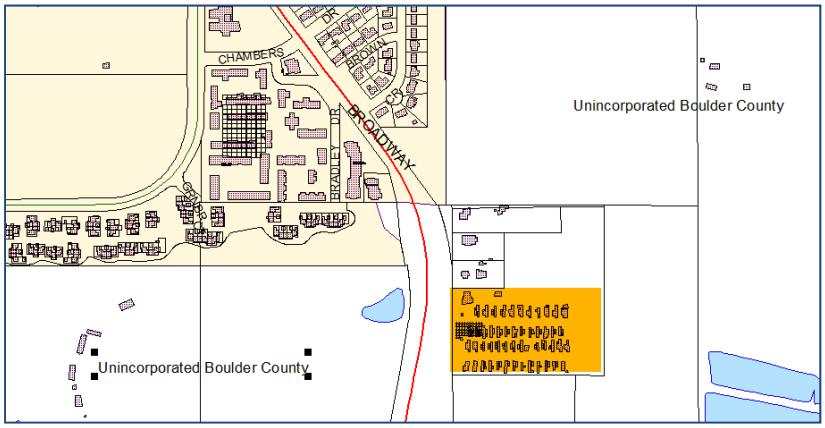
Manufactured Housing
Median Year Built: 1972
Share Built Before 1976: 58%

Estimated Utility Infrastructure Date
1969

Source: Boulder County Assessor's Office, June 11, 2015

San Lazaro is located outside the city limits, in BVCP Area II, and is eligible for annexation. The property is served with a "back-up" city water service through an out-of-city utility permit. The primary water source is a well. The property has an on-site wastewater treatment facility that discharges into Boulder Creek.

7. Table Mesa Village



Source: Maplink

General
Year Established: 1970
Total Lots/Pads: 50
Vacant Lots: 1 (2%)

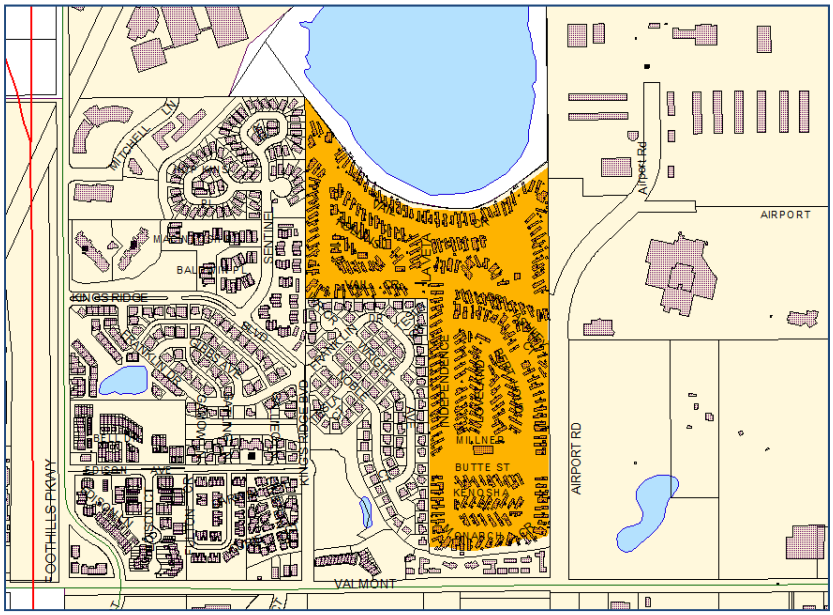
Manufactured Housing
Median Year Built: 1971
Share Built Before 1976: 67%

Estimated Utility Infrastructure Date
Late 60s

Source: Boulder County Assessor's Office, June 11, 2015

Table Mesa Village is located outside the city limits, in BVCP Area II, and is not eligible for annexation due to a lack of contiguity to the existing city limits. The property is served with city sewer through an out-of-city utility permit. The primary water source is a well.

8. Vista Village



Source: Maplink

General
Year Established: 1968
Year Annexed: 1978
Total Lots/Pads: 306
Vacant Lots: 3 (<1%)
Source: Boulder County Assessor's Office, June 11, 2015

Manufactured Housing
Median Year Built: 1979
Share Built Before 1976: 35%
Estimated Utility Infrastructure Date
1972

Vista Village was annexed into the city in 1978. It was one of the two mobile home parks rezoned MH in 1985 when the mobile home zone was established in Boulder. In 1984, the city's Human Relations Commission brought suit against the owners of Vista Village to allow children in the park (Vista Village Mobile Home Community v. Boulder Human Relations Commission, Civil Action No. 84-CV-0658-5). In 1985, apparently in response, the state added language to the Mobile Home Park Landlord-Tenant Act that the state legislature intended to "fully occupy the field of mobile home landlord-tenant relations.

In early 2015, City Council learned that residents of Vista Village Mobile Home Park were being denied the right to sell early model homes. Numerous residents gave public testimony about this situation and alleging retaliatory attacks by the owner. In 2015, an ordinance is under consideration that would allow mobile homeowners the right to resell their safe and decent homes without prohibition by park owners.

9. No Name Park

Year Park Established: 1960s or 70s

Year Annexed: 1992

Year Park Redeveloped: 2012

New Development: 98 market-rate apartments.

This park may have also been known as Alpine MHP or North Boulder MHP. This property annexed into Boulder in 1992. Because of the small, informal nature of the park, rezoning to the MH designation was never pursued. In 1994, the owner attempted to evict all residents in order to redevelop the park. The city collaborated with Emergency Family Assistance Association (EFAA) to provide financial assistance and housing counseling to residents. The redevelopment plan was not approved and redevelopment halted. In 2012, the park was closed. The developer bought out the residents of the park and this and an adjacent parcel became the site of the 98-unit Violet Crossing rental property.

10. Boulder Mobile Manor (Red Oak Park)

Year Park Established: 1961
Year Purchased by Housing Authority: 1997
Year Park Redeveloped: 2011
New Development: 59 permanently affordable single-family, duplex and triplex rentals

In 1985, the city attempted to purchase Boulder Mobile Manor but was unable to secure financing.

Boulder Mobile Manor, a 66-unit mobile home park was purchased by Boulder Housing Partners (BHP), the City's housing authority, in 1997. The original intent was to operate it as an affordable rental property and phase in a homeownership program. Some homes in the park were small and some manufactured as early as 1958. By 1997, homes in the park were deteriorating and infrastructure failing. Between 1997 and 2007, the park received total of $751,000 ($11,000 per unit) in city funds for acquisition of property, repairs and maintenance.

In 2007, the city identified redevelopment of Boulder Mobile Manor as a high-level initiative from the perspective of social, environmental and economic sustainability, and a city inter-departmental staff team to work with BHP on a strategy to redevelop Boulder Mobile Manor. Guiding principles were established that included preserving affordability, minimizing displacement of current residents, replacing mobile homes with fixed-foundation housing, establishing a mixed income community over time, preserving community and natural features, and maintaining rental housing.

Redevelopment of the park as Red Oak Park, a 59-unit permanently affordable, fixed foundation rental property, was completed in 2011. Former park households that chose to remain in the new Red Oak Park, stated they were generally happy with the change.

11. Branding Iron Mobile Home Park

Year Park Established: 1961
Year Purchased by City: 1992
Year Park Redeveloped: late-1990s (flood control)
New Development: Goose Creek flood control channel improvements; Four lots combined with Mapleton Mobile Home park to the west.

In 1992, more than half of Branding Iron Mobile Home Park, a 36-unit mobile home park, was rezoned from Mobile Home to Public in order to use the property for Goose Creek flood control channel improvements. As a result of long negotiations with the park owner, in 1992, the portion of Branding Iron Mobile Home Park, more than half of the park, was rezoned Public and purchased by the City of Boulder for Goose Creek flood control improvements using the Flood Control Utility Fund. Four of the existing mobile homes on the site remained, and were again rezoned MH in 2003, and incorporated into adjacent Mapleton Mobile Home Park. The city assisted the balance of park residents with relocation to open lots in the Mapleton Mobile Home Park or elsewhere.