



Summit County Climate Action Plan July 2015



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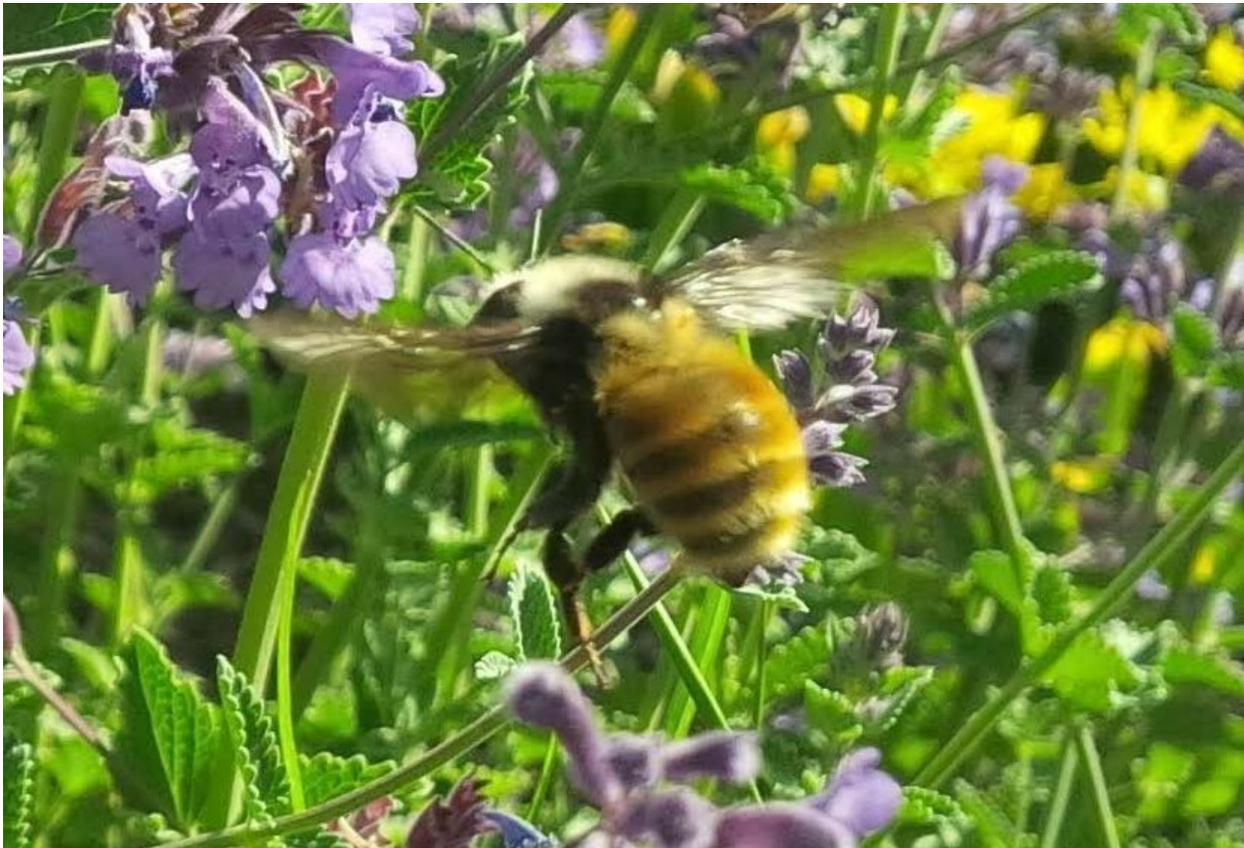
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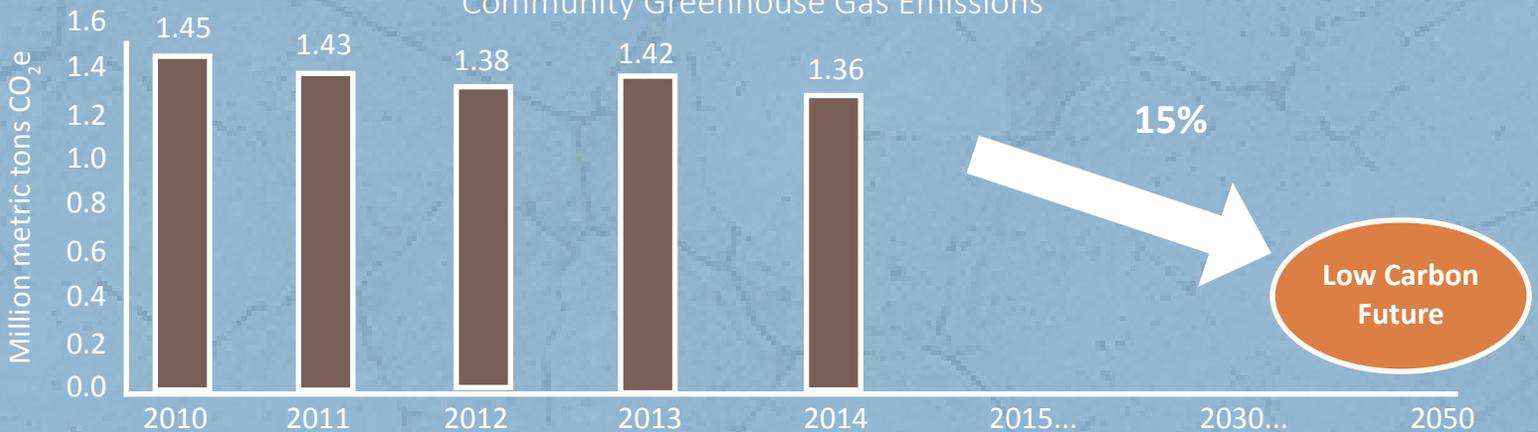


Summit County Climate Action Plan Executive Summary

Our Goal

Summit County has engaged in climate action planning to reduce greenhouse gas (GHG) emissions and impacts on climate change, as well as to plan for an economically vibrant, environmentally healthy, and socially responsible future. Ultimately, the goal is to **reduce emissions by 15 percent in 15 years.**

Community Greenhouse Gas Emissions



How will we get there?

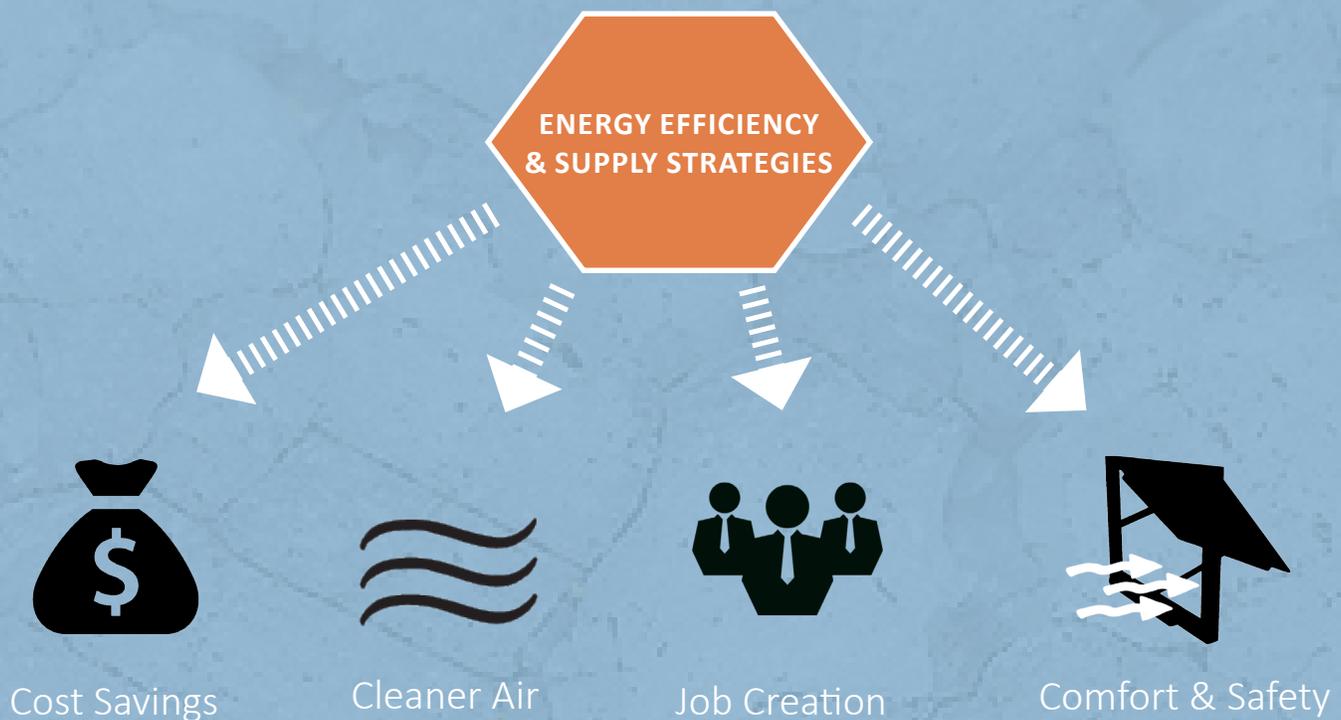
Implement Emissions Reduction Strategies



Success of all Strategies Depends On:



Strategies for achieving our goals.



E1: Distributed Renewable Energy - Continue to develop solar photovoltaic and other renewable energy systems		430,000 by 2030
E2: Above Code Construction - Voluntary adoption of practices for new construction and major renovations that go beyond state-mandated building and energy codes		360,000 by 2030
E3: Summit Community Power Works - Continued support and implementation of Summit Community Power Works initiative for the residential and institutional sectors, and expansion to the commercial and industrial sectors		335,000 by 2030
E4: Outdoor Heating and Snowmelt Systems - Alternatives to installing snowmelt and outdoor heating systems, alternative energy supplies for systems, and training on proper control, and operation of existing systems		115,000 by 2030
E5: Increased Energy Consumption Data - Continue to expand options for and accessibility of information for consumers on their energy consumption via smart controls, websites, utility bills, and other		80,000 by 2030
E6: Building Recommissioning and Tune-ups - Leverage Rocky Mountain Power's energy management program for commercial/industrial recommissioning, retro-commissioning, or strategic energy management		70,000 by 2030
E7: Engaging Second Homeowners and Lodging Properties - Reduce energy consumption and increase efficiency of second homes and lodging properties through education, outreach, incentives, and investments in building controls		48,000 by 2030
Total Emissions Reduction: 1,400,000		

Potential Cumulative Emissions Reduction
(in Metric Tons CO₂e)

TRANSPORTATION & LAND USE STRATEGIES



Mobility Options Cost Savings Cleaner Air Health & Wellness Land Conservation

TL1: Regional Transit Expansion - Explore and expand regional transit options especially from Summit County to/from Salt Lake City and Heber City		84,000 by 2030
TL2: Sustainable Development Patterns - Plan for compact growth, reduced sprawling development, and increased opportunities for people to access services and places of work		56,000 by 2030
TL3: Agriculture, Livestock, and Land Use Management - Apply best practices to reduce energy use, improve efficiency of equipment, and limit GHG emissions associated with equipment and fertilizer use		35,000 by 2030
TL4: Pedestrian and Bicycle Infrastructure Improvements - Develop infrastructure for alternatives to on-road travel		17,000 by 2030
TL5: Alternately Powered Vehicles - Continue to promote alternately powered vehicles, as well as develop infrastructure to support using these vehicles		6,000 by 2030
Total Emissions Reduction: 200,000		

Potential Cumulative Emissions Reduction (in Metric Tons CO₂e)

OTHER CROSS-CUTTING STRATEGIES



Waste Reduction

Leadership Position

Regional Impact

O1: Recycling Program Expansion - Focus on increasing cardboard recycling service and increasing diversion rates of commercial, institutional, lodging, and condominium properties		31,000 by 2030
O2: County Leading by Example - Continue to lead by example at County facilities		13,000 by 2030
O3: Supporting Other's Climate Response Efforts - Support and collaborate with institutions, large emitters, municipalities, and regional neighbors in their climate action planning		10,000 by 2030
Total Emissions Reduction: 53,000		

Potential Cumulative Emissions Reduction (in Metric Tons CO₂e)

Playbook for Implementation

Immediate Initiatives

- LED Lighting Program
- Community Choice Aggregation Exploration (CCA)
- County Code Updates
- County Solar Photovoltaic System Project (Justice Center)
- County Website Energy Updates
- Regional Climate Network Participation
- Residential Outreach Campaign

Near-term Initiatives

- Bulk Purchasing Solar Program
- County Compressed Natural Gas Refueling Station
- County Resource Management Plan Development
- County Sustainability Plan 2017 Update
- Energy Reporting Tool Outreach Campaign
- Lodging Property Energy Outreach Campaign
- Programmable Thermostat Bulk Purchasing & Incentives (Smart Controls) Program
- Residential and Institutional Weatherization and Retrofit Program
- Second Homeowner Energy Outreach Campaign
- Smart Metering Technology Pilot Discussions
- Technical Assistance Program or Certification Program for Above Code Construction

Long-term Initiatives

- Agriculture and Large Land Owner Energy Outreach Campaign
- Business Energy Outreach Campaign
- Commercial Recycling Program Expansion
- Commercial/Industrial/Institutional Energy Advisor Coaching and Programming
- County Compost Facility Development
- Electric Vehicle Infrastructure Development
- Nitrogen Fertilizer Optimization Program Exploration
- Outdoor Heating and Snowmelt System Resource Guide
- Outdoor Heating Notification System

Ongoing

- Bicycle and Pedestrian Improvement Plan Coordination
- County Facility Lighting and Efficiency Upgrades
- County Fleet Vehicle Investments
- Regional Transit Expansion Coordination

1. INTRODUCTION

1.1 Why a Climate Action Plan?

Summit County has engaged in climate action planning to reduce its greenhouse gas (GHG) emissions and impacts on climate change, as well as to plan for an economically vibrant, environmentally healthy, and socially responsible future. The County recognizes the relationship between climate change and its long-term vision and strategic issues that focus on ensuring quality of life for present and future generations and retaining the natural beauty, economic diversity, and healthy lifestyles that support this high quality of life.

Climate action planning is a proactive, strategic effort to address growing concentrations of GHGs in the atmosphere. Release of GHGs, such as carbon dioxide, methane, and nitrous oxide, are caused by various activities including fossil fuel use, land use, and agriculture. Deliberate planning and adjustment of these activities and practices can greatly impact the amount of GHGs produced and also improve our air quality, lower utility costs, and support transportation alternatives.

While the County government itself has a major role in leading the development and implementation of this Climate Action Plan, this Plan was developed through a collaborative stakeholder process. It is truly a community plan in terms of how these GHG emissions reductions will be achieved and who will benefit from the Plan's initiatives.

Summit County government's role in ensuring the Plan's success includes (1) leading by example, (2) overseeing the implementation of various initiatives, (3) providing tools for community success (e.g., education, training, and financial mechanisms), and (4) forging and maintaining partnerships with other communities and organizations within the County.

Community members, including residents, businesses, visitors, and other organizations and institutions, can support the Plan's success by learning about different programs and initiatives, considering and adopting new behaviors, and engaging others in conversations about Summit County's future.

Together, Summit County, its residents, businesses, visitors, and partners can take collective action to chart a positive and resilient future that reduces the County's impact on a global issue while maximizing the County's economic, environmental, and community benefits.



The solar photovoltaic installation on Summit County Health Department's Park City building produces an average of 250 kilowatt hours (kWh) of electric energy a day. The project was generously funded by Rocky Mountain Power's Blue Sky customers.

1.2 Aligning with Other Efforts

This Climate Action Plan is intended to support and align with many other local and regional climate and sustainability-related initiatives. The following list provides a summary of other plans and efforts that have informed the development of this Plan.

Summit County Sustainability Plans

Originally adopted in November 2011, the Summit County Sustainability Plan targets activities and policies the County is undertaking in its operations and facilities. A major component of the Plan was establishing a GHG reduction goal to reduce carbon dioxide equivalent (CO₂e) emissions from County operations by 13 percent below business-as-usual conditions by the end of 2013. While that goal was not achieved in that timeframe, the County recommitted to meeting it by the end of 2014 in its 2014-2016 Sustainability Plan, and then exceeded the goal by 7 percent. Other goals established in the 2014-2016 Sustainability Plan include the following:



- Intensifying energy efficiency in existing County facilities
- Raising the fuel efficiency and reducing tailpipe emissions of the County fleet
- Amplifying the use of renewable energy countywide
- Fostering energy efficiency of residential and commercial properties countywide
- Establishing a comprehensive countywide climate action plan
- Influencing maintenance of air and water quality
- Incorporating sustainability measures in land management activities

As the Sustainability Plan identifies, a comprehensive Climate Action Plan is intended to position Summit County for short-term reductions in GHG emissions and establish a long-term plan for more significant reductions over time.

Summit Community Power Works

In 2014, Park City and Summit County co-founded Summit Community Power Works (SCPW), an initiative to facilitate, educate, and incentivize the County's residents, schools, and governments to adopt energy efficiency in an attempt to win a \$5 million prize offered through the Georgetown University Energy Prize competition. The SCPW Energy Savings Plan defines the goals that SCPW will take to reduce residential electricity and natural gas consumption and focuses on four key initiatives as platforms and opportunities to meet the goals:



- LED Light Bulbs (LED Switch)
- Smart Controls (Control Switch)
- Weatherization (i.e., the whole built environment) (Comfort Switch)
- Renewables (Power Switch)

Be Wise, Energize

The **Be Wise, Energize** initiative is a proposed program designed to increase residential energy efficiency and decrease the carbon footprint of Summit County households. It will focus on existing homes where the potential for efficiency gain is significant. The program is intended to remove barriers to action by assisting homeowners through simplifying the entire process, making a network of qualified workforce available to homeowners, and offering low-interest loans for residential weatherization and energy efficiency improvements. Existing, owner-occupied single family homes within Summit County will be eligible to apply, and efficiency upgrades must be validated by an approved energy auditor.



Greenhouse Gas Reduction Roadmap

The 2012 Summit County Greenhouse Gas Reduction Roadmap serves as a precursor to this Climate Action Plan. It established a foundation for future GHG emissions reduction actions and goal-setting by examining emissions trends and exploring potential emissions reduction strategies. The Roadmap included a GHG inventory, which is carried forward in this Climate Action Plan. It also identified 23 potential emissions reduction strategies that were further analyzed and refined in this Plan.

County General Plans

Two general plans serve as guidance for future Planning Commission and County Council decisions regarding the natural and built environments: the Eastern Summit County General Plan and the Snyderville Basin General Plan.

The **Eastern Summit County General Plan** guides land use planning activities for the more rural eastern side of the County in the unincorporated areas surrounding the cities of Henefer, Coalville, Oakley, Kamas, and Francis. It includes various goals and policies that relate to climate action planning, including a focus on multiple modes of transportation and measures to promote energy conservation and the development of renewable energy in eastern Summit County.

The **Snyderville Basin General Plan** guides growth and development in the more urban western side of the Summit County in the unincorporated areas surrounding Park City. The updated General Plan for this area also includes myriad goals and strategies related to GHG emissions, including enhancing the natural environment, protecting open spaces, supporting the local economy, improving the quality of the built environment, and preventing unsustainable development patterns in remaining undeveloped areas.

County Transportation Plans

The recent **Abridged Snyderville Basin Long Range Plan** (prepared in 2015) notes that this region is growing rapidly and will continue to have an increased demand for travel and transportation facilities. The plan highlights the fundamental link between land use and transportation and establishes a vision for a “safe, convenient, and efficient transportation system for the Snyderville Basin that incorporates various modes of travel including automobiles, public transportation, bicycles, pedestrians, and other innovative and futuristic modes.”

The **Eastern Summit County Transportation Master Plan**, adopted in 2013, evaluates the future impact of increased population and travel on the existing road network in eastern Summit County (not including

the Snyderville Basin area) and identifies the goals, principles, actions, and projects to maintain an acceptable quality of transportation levels of service. In addition to addressing the road network, the plan addresses alternative transportation modes.

Rocky Mountain Power and Questar Demand-side Management Programs

Both Rocky Mountain Power, the electric utility for Summit County, and Questar, the natural gas provider, currently offer residential and commercial demand-side management (DSM) programs that offer a variety of services for customers. These include building energy assessment assistance and rebates and incentives for various efficiency improvements.

Regional Transportation Initiatives

Utah's Unified Transportation Plan (2011-2040) identifies the planned highway and transit projects across the state and for each region. Major highway projects identified in Summit County include widening of and bicycle and safety improvements to SR-32, Interstate 80 upgrades, and widening of SR-248 and SR-224. Transit projects identified for Summit County include improvements to the Park City Corridor route between downtown Salt Lake City and Park City.

The Park City and Summit County Transit System provides a free transit system that serves recreational areas, Park City's Historic District, and Kimball Junction. Utah Transit Authority (UTA), in conjunction with Park City and Summit County, provides a regional transit route that connects Park City and downtown Salt Lake City.

Other Regional Climate Action Planning Efforts

Others in the region who have undertaken similar efforts to inventory, report, monitor, and take actions to reduce GHG emissions include, but are not limited to, the following:

- **Park City's Community and Municipal Carbon Footprint** – in 2009, Park City was the first community in Utah to conduct a baseline GHG inventory for the entire community. Park City has also implemented various measures to mitigate its internal carbon footprint.
- **ParkCityGreen.org** – this website is a community resource for environmental information created by Park City Municipal Corporation and The Park City Foundation. The site includes a calculator for users to estimate their carbon footprint, educational tips to help users reduce their environmental impacts and save money, and challenges and user commitment options.
- **National Ski Areas Association Climate Challenge** – this is a voluntary program dedicated to helping participating ski areas reduce their GHG emissions and reap other benefits in their operations, such as reducing costs for energy use. Summit County participants in the 2014 Climate Challenge include Canyons Resort and Park City Mountain Resort.
- **Sustainable Salt Lake Plan** - the air quality and climate change goals of this Plan aim to improve air quality, reduce GHG emissions, and protect the community from the impacts associated with climate change. The Plan calls for 10 percent reduction in community GHG emissions and 13 percent reduction in municipal building and fleet emissions by 2015.
- **SLC Green** – this Salt Lake City initiative is comprised of award-winning environmental programs that help the community conserve resources, reduce pollution, slow climate change, and ensure a healthy, sustainable future for Salt Lake City.
- **Northern Utah Regional Climate Network** – a newly emerging group in the greater Salt Lake City and Wasatch region, this network is focused on providing regional collaboration and response to climate issues and opportunities.

2. EMISSIONS TRENDS AND FORECAST

2.1 Baseline Inventory

Summit County first completed a community GHG inventory report in 2012, which estimated annual emissions from 2005 through 2009. This updated community GHG inventory was completed for the years 2010 through 2014. It was assembled through close coordination with County staff and other community stakeholders to collect and analyze data for a variety of emission sources. The emission sources considered as part of each inventory were determined by a number of factors, including what is required by protocol, what was included in the 2005 to 2009 inventories, and what data were readily available to ensure ease of future updates.

In order to provide consistency between the first inventory report and this update, no one GHG inventory protocol was followed. Instead, a variety of guidance documents were used that include those used for the previous inventory and some newer protocols that have been released since 2012. These include ICLEI's U.S. Community Protocol, The Climate Registry (TCR), and the U.S. Environmental Protection Agency (EPA).

To support the GHG inventory analysis, a Microsoft Excel-based Inventory Management System (IMS) was developed for Summit County. The IMS gathers into one tool the original emission source data, emissions factors, methodology and calculations for converting sources to GHG emissions. The IMS also includes a summary of GHG emission results.

GREENHOUSE GASES AND CARBON DIOXIDE EQUIVALENT

There are six main gases that are typically included in a GHG inventory: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF₆). Most of Summit County's GHG emissions are a function of the first three gases. As a result, they are the only three GHGs considered as part of this inventory.

Each of the GHGs reported in this inventory has a different level of impact on climate change. For example, the emission of 1 ton of N₂O has a global warming potential (GWP) 310 times larger than that of the emission of 1 ton of CO₂. Similarly, the emission of 1 ton of CH₄ has a GWP 21 times that of CO₂. To avoid confusion between the different types of gases and their respective GWPs, all emissions are reduced to the common unit of CO₂e, or carbon dioxide equivalent. Thus, the emission of 1 ton of N₂O is expressed as the emission of 310 tons of CO₂e. All results in this report will be presented in units of metric tons of CO₂ equivalents (MTCO₂e) unless otherwise noted.

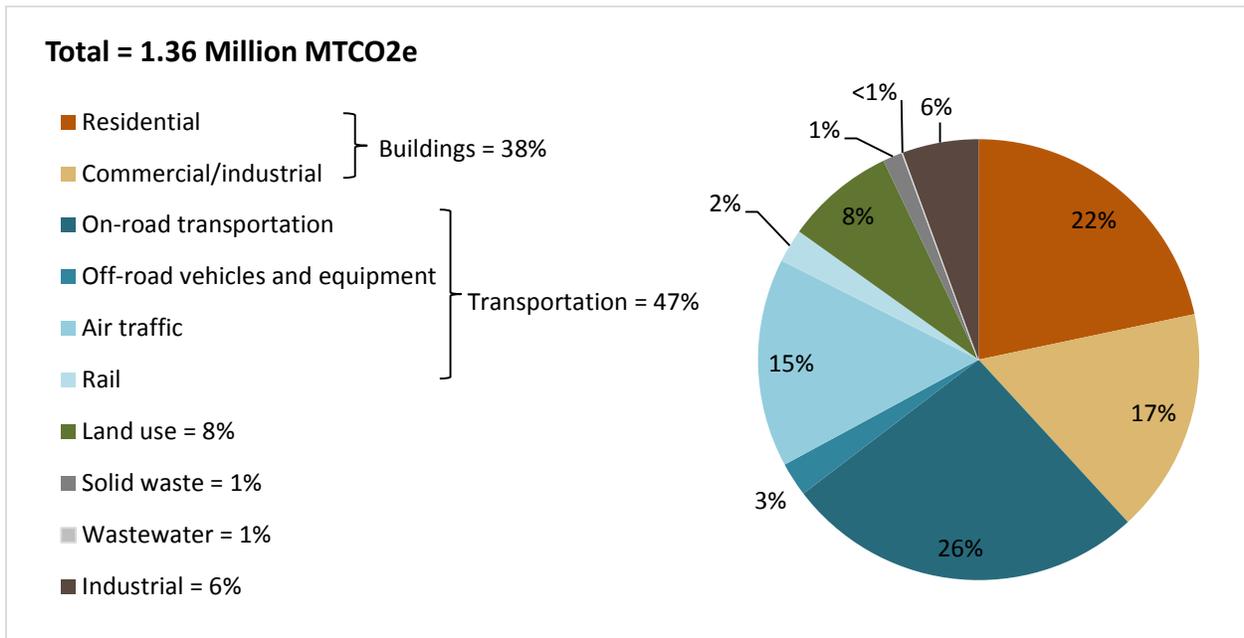
RESULTS

The emissions generated from the entire community in Summit County in 2014 totaled 1.36 million MTCO₂e. This is equivalent to each resident of Summit County driving roundtrip between Park City and Salt Lake City 3.7 times per day.

The transportation sector accounts for approximately 47 percent of the County's total GHG emissions. The largest single source of emissions is on-road transportation, which accounts for 26 percent of total emissions.

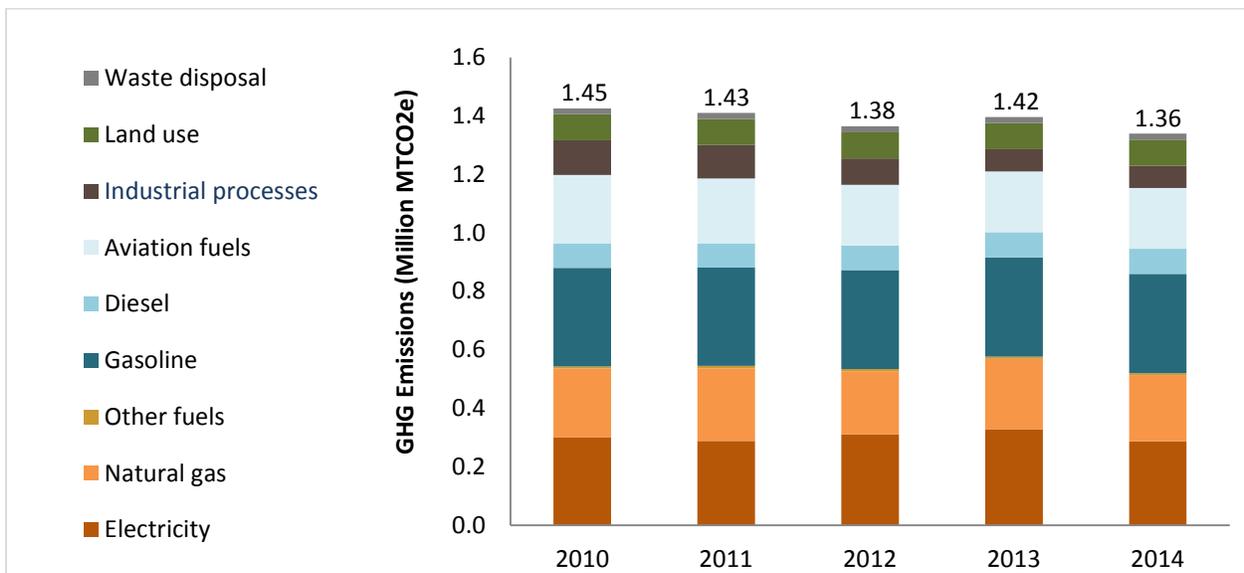
About 38 percent of total County emissions result from the building sector, with residential buildings accounting for 22 percent of total emissions. The two main sources of emissions in the building sector are electricity use, which accounts for 21 percent of total emissions, and natural gas use, which accounts for almost 17 percent of total emissions.

Figure 1: 2014 Countywide GHG Emissions by Sector



When compared to 2010, Summit County has seen a 6 percent decrease in its total GHG emissions, which equates to a 1.5 percent annual reduction. The biggest contributor to this decrease in emissions is the industrial sector, which includes shale oil and natural gas production (industrial processes). Between 2010 and 2014, emissions from this sector decreased 36 percent. Both electricity and natural gas use also decreased around 4 percent each during that timeframe. Lastly, emissions associated with airline travel decreased 11 percent between 2010 and 2014, which was also a large contributor to the overall reductions for the County.

Figure 2: 2010-2014 Summit County GHG Emissions by Source



COMPARISON TO PREVIOUS INVENTORIES

Summit County first completed a countywide emissions inventory report in 2012 that estimated total countywide emissions from 2005 through 2009. This inventory report for years 2010 through 2014 follows closely to the previous report and includes all of the same emissions sectors and sources. However, there is one difference between the reports related to electricity.

The methodology used to collect electricity usage data collected for the 2005 to 2009 inventories was different than the methodology used for the 2010 to 2014 inventories. This resulted in significantly different electricity usage amounts and subsequently much lower emissions for the most recent inventories. As a result, it is not advisable to compare total countywide emissions between the 2005 to 2009 and 2010 to 2014 inventories. However, specific emission sectors and sources beyond electricity can be compared.

For example, the large reduction in industrial emissions that occurred between 2010 and 2014 began at least back in 2005. Since then, there has been a consistent reduction in industrial related emissions each year through 2014 due to the decrease in shale oil and natural gas production. In total, those emissions have been reduced by 67 percent in the timeframe. The same can be said for airline emissions as those emissions have been reduced 30 percent over that time period.

The largest increase in emissions since 2005 can be attributed to natural gas production. Emissions increased almost 25 percent between 2005 and 2014. However, emissions appeared to have peaked in 2011 and have been significantly lower each year since.

Two other data related issues between the 2005-2009 and 2010-2014 inventories involve the land use and off-road vehicle and equipment use emission sources. For the previous inventory report, specific studies were undertaken to estimate emissions for both sources. However, this current study and report did not conduct specific new analyses for those two emission sources and instead uses the same data collected for the previous report. The justification for this is that off-road emissions are relatively small, consisting of just 2% of total emissions in the 2009 inventory, and that land use emissions are relatively constant over time.

2.2 Projected Future Emissions

To inform the Climate Action Plan and future emissions that will need to be reduced to meet the County's goals, a Business As Usual (BAU) inventory forecast was prepared for Summit County from 2015 to 2030 (shown on the following page). This forecast applies growth rates to today's estimated emissions based on expected population growth and other sector specific projections. It does not account for reduction efforts in progress, those that may be implemented in Summit County over the next 15 years, nor those that will occur as a result of changes in state or federal standards, such as an increase in fleet fuel efficiency or likely reductions in the emissions intensity of electricity.

Emissions from most sources in the inventory are projected to grow at the rate of population growth in Summit County from 2015 to 2030, which is estimated at around 2 percent per year.¹

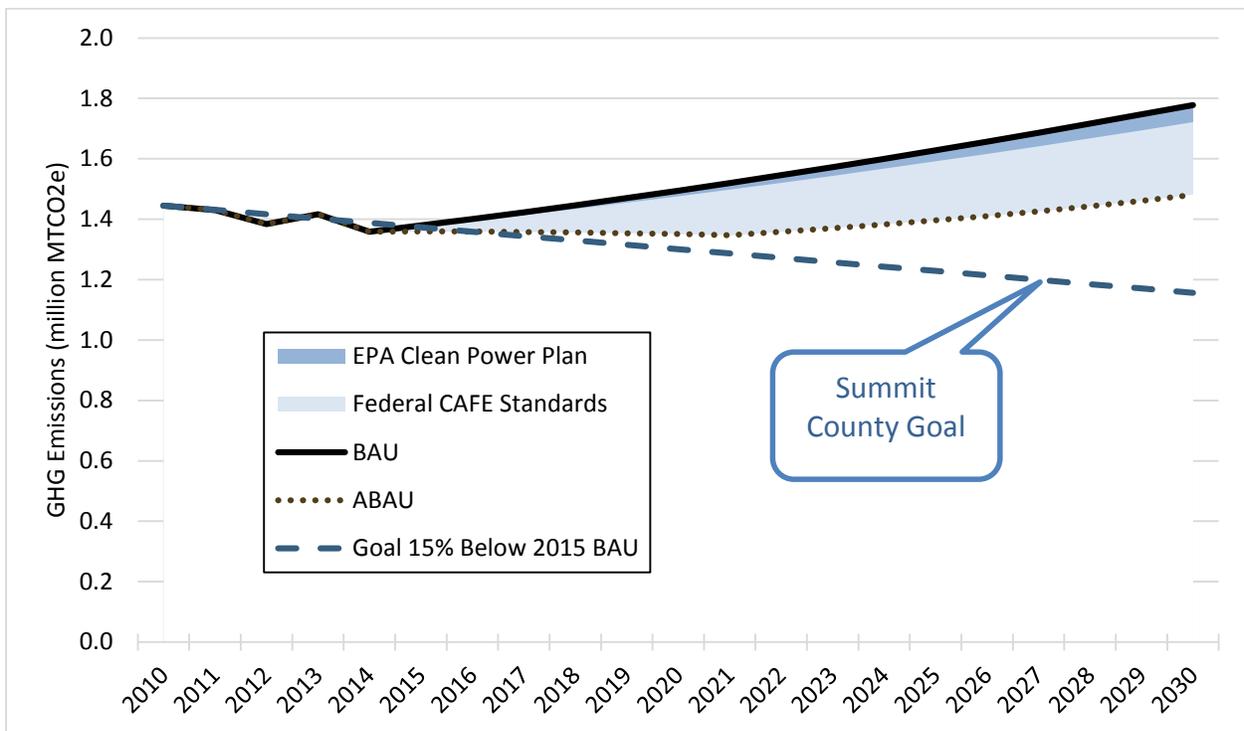
¹ Source: Analysis of Utah Governor's Office of Planning and Budget sub-county population projections for 2010 to 2020.

ADJUSTED BUSINESS AS USUAL FORECAST

In addition, to the BAU forecast, an Adjusted Business As Usual (ABAU) forecast was also prepared for Summit County from 2015 to 2030. As opposed to the BAU forecast, the ABAU forecast includes expected reductions as a result of federal standards, such as the Corporate Average Fuel Economy (CAFE) standards for vehicular mileage improvements and the efforts of the Environmental Protection Agency’s Clean Power Program to reduce the carbon intensity of power plants. The CAFE standards will reduce the actual energy consumed in vehicles while the EPA’s Clean Power Program will affect the supply side of electricity and not actually change energy consumption.

The following graph shows the BAU and ABAU forecasts for Summit County. It details the impacts that the CAFE standards and the EPA Clean Power Program will have on projected emissions in the future, and also how significant they are with respect to Summit County’s goal of a 15 percent reduction by 2030 (see the next section of this Plan for information about the emissions reduction goal).

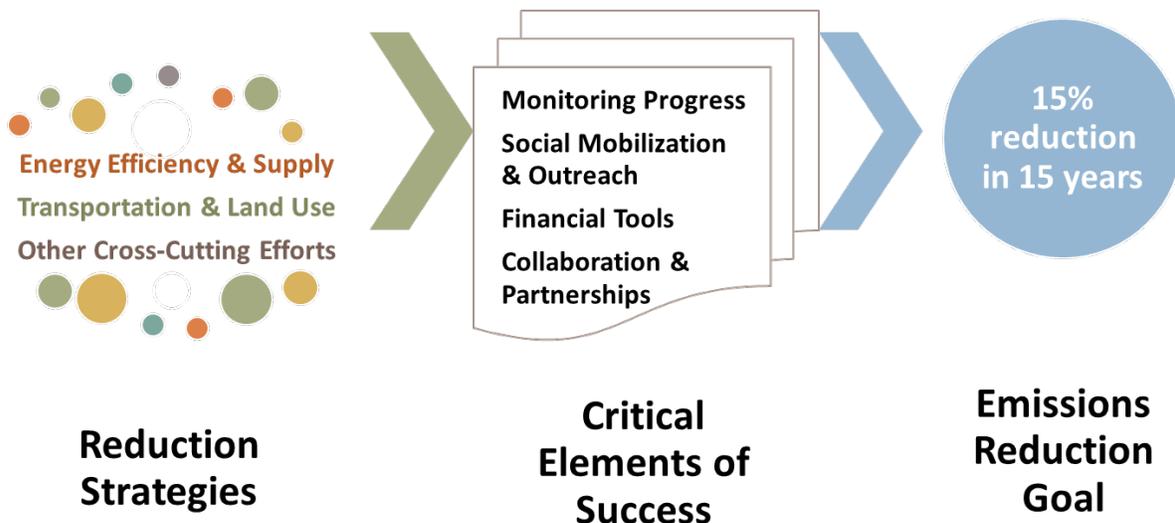
Figure 3: Countywide GHG Emissions Projections



3. FRAMEWORK FOR CLIMATE ACTION

This section details how Summit County will leverage existing efforts and launch new programs and initiatives to reduce countywide GHG emissions. This framework for climate action begins with defining the County's long-term goal for emissions reductions. The next layer of the framework focuses on critical elements of success (i.e., specific actions) that will help ensure buy-in and success of the Plan. Finally, the framework identifies 15 core strategies that will help Summit County achieve its emissions reduction goal. These strategies are organized into three groups of activities: energy efficiency and supply, transportation and land use, and other-cross cutting efforts.

Figure 4: Framework for Climate Action Components



3.1 Emissions Reduction Goal

Summit County envisions a future with a vital community that is renowned for its natural beauty, quality of life, and economic diversity and supports a healthy, prosperous, culturally diverse citizenry. To support this vision, the County is committed to being proactive in reducing the countywide carbon footprint. **Summit County's goal for emissions reduction is based on a 2010 baseline of GHG emissions and focuses on incremental improvements to achieve long-term progress.**

**Summit County will strive to reduce countywide GHG emissions
by 15 percent in 15 years.**

The goal begins in 2015 and extends to 2030. An average 1 percent reduction each year from 2015 through 2030 will ensure achievement of the 15 percent goal – or a total cumulative emissions reduction of 7.72 million MTCO_{2e} from the BAU forecast by 2030. **This reduction amount is roughly equivalent to the emissions of 360,255 cars, or about 9 cars per County resident.**

Since 2010, Summit County has already achieved a 6 percent reduction through 2014 – approximately 1.5 percent per year. Given the County's recent emissions trends, sustaining this level of average annual emissions reductions would require concerted effort due to the County's projected population growth. An average 1 percent annual reduction may be more realistic and achievable.

Beyond 2030, Summit County aspires to continue to provide leadership in the climate action planning arena, especially since emissions reductions require a long-term commitment and sustained effort. Therefore, Summit County will strive to continue its trajectory of emissions reductions (an average of 1 percent reduction each year) **to a total reduction of 35 percent or more by 2050.**

3.2 Critical Elements of Success

Several factors are essential in ensuring that Summit County is able to achieve its emissions reduction goals. These factors will help boost community interest and involvement, build credibility, and enhance opportunities for success for all of the emissions reduction strategies.

SOCIAL MOBILIZATION AND EDUCATION

Communication about how people can support plan implementation through their individual and collective actions and behaviors is critical in ensuring success of this Plan. Activities such as educational campaigns, training programs, and friendly competitions can help mobilize community members to take ownership of their GHG emissions and influence others to do the same.

The SCPW Energy Savings Plan categorizes and highlights the many different stakeholder groups and segments of the community involved in the County's energy efficiency and renewable energy initiatives, including residential groups, municipal stakeholders, schools, and other utility and non-profit partners. Rather than duplicate efforts, this Climate Action Plan intends to support the SCPW outreach, education, and engagement efforts by reinforcing the important messages about the opportunities for energy efficiency enhancements and renewable energy generation, and linking these conversations not only to the Georgetown University Energy Prize competition, but also to the County's long-term vision for climate resiliency and emissions reduction. This Plan also helps extend efforts beyond the County's residential and institutional sectors, to the commercial, industrial, and agricultural sectors, as well as to other opportunity areas such as transportation, land use, waste, and regional collaboration.

MONITORING PROGRESS

In addition to communicating about how people can help support achievement of the emissions reduction goal, Summit County must be consistent and transparent in communicating progress (and challenges) to the community. Timely and accurate information will help people stay engaged, so as part of its commitment to achieving the goal, the County will analyze and publicly report its emissions reduction achievements and status every 5 years (i.e., 2020, 2025, and 2030).

At these check-in milestones, the County may choose to complete a full GHG inventory update if changing conditions warrant a comprehensive re-examination of the data. However, at a minimum, every 5 years the County will monitor and report on the major sectors that contribute to the County's emissions:

Outreach activities, such as the Watt Shot campaign by Summit Community Power Works, helped generate awareness of and funding for LED replacements for households in need.

- Residential energy use
- Commercial building energy use
- Transportation (excluding air traffic)

FINANCIAL TOOLS

In order for many of the strategies and tactics described in this Plan to be most effective, they must make financial sense to the community members who will implement them. Tools such as low interest loans can help customers finance some of the upfront costs that often serve as barriers to investing in emissions reduction strategies, such as energy efficiency and renewable energy production.

Summit County's proposed **Be Wise, Energize** Program and the State of Utah Commercial Property Assessed Clean Energy (C-PACE) are a few potential financing mechanisms for energy efficiency, renewable energy, and water conservation projects. **Be Wise, Energize** is focused on providing low-interest loans for residential weatherization, while C-PACE supports commercial building investment through a voluntary assessment on the property tax bill. This Climate Action Plan supports enhanced participation in both of these programs as they come online, as well as continued involvement and collaboration with other funding and incentive programs offered through the state, utilities, and federal government.

COLLABORATION AND PARTNERSHIPS

Finally, since this is a community-focused Climate Action Plan, collaboration with other groups and organizations will help sustain momentum and build mutually beneficial partnerships. Local groups to involve and engage include but are not limited to neighborhood and business associations, local governments, and community institutions and service providers such as the school districts and utility companies. Other County and regional stakeholders to collaborate with on Climate Action Planning initiatives include ski resort owners, transportation organizations, and neighboring communities and counties.

Again, the SCPW Energy Savings Plan details many of the stakeholders with which to collaborate on energy and climate action planning efforts. As well, each of the reduction strategies discussed in the following sections identifies the potential roles of others (in addition to Summit County) in leading and supporting implementation of the various emissions reduction strategies.



Partnerships and collaboration with utility providers, community organizations, businesses, and residents are vital to the success of this Climate Action Plan. Funding of solar fountain provided by Rocky Mountain Power's Blue Sky customers.

3.3 External Factors

In addition to the critical factors of success discussed on the previous pages and the strategies that follow, there are two major external factors being implemented at the federal level that will help Summit County reduce emissions.

CORPORATE AVERAGE FUEL ECONOMY

CAFE standards are for vehicular mileage improvements and will reduce the actual energy consumed in vehicles. This will result in fewer GHG emissions per mile driven. There are currently annual improvements established through 2025. By 2030, the CAFE standards would reduce BAU emissions for Summit County by a total of 2.4 million MTCO₂e over the 15-year planning horizon.

U.S. ENVIRONMENTAL PROTECTION AGENCY'S CLEAN POWER PROGRAM

The EPA's proposed Clean Power Program is designed to reduce the carbon intensity of power plants. In effect, this program would result in less GHG emissions per kilowatt-hour of electricity consumed. The proposed rule establishes carbon intensities that must be met by 2030. For Summit County, this program would reduce BAU emissions by a total of 450,000 MTCO₂e over the 15-year planning period.

3.4 Emissions Reduction Strategies

The following sections outline many of the strategies that Summit County will employ to reduce countywide emissions. These strategies draw from and build upon existing programs within the County and region and also reflect new ideas and opportunities that emerged from discussions with stakeholders involved in the project.

The strategies that were analyzed are organized into three categories based on the major emissions sectors impacted: (1) Energy Efficiency and Supply, (2) Transportation and Land Use, and (3) Other.

Each category begins with a discussion of why it is important to Summit County’s climate action planning efforts, including the potential benefits of action. Then, a summary of each strategy is presented, including the following components:

- **General description** – what is the strategy and what is it trying to accomplish?
- **Analysis summary** – potential GHG emissions reduction achieved by implementing this strategy, the estimated economic value (in dollars per ton of GHG emissions reduced), and general assumptions used in the analysis.
- **Implementation pathway** – potential tactics that the County and others can take and other efforts to leverage to implement this strategy.

Table 1 presents an overview of the three emissions reduction categories. Each of the 15 strategies outlined in this table are discussed in greater detail in the pages that follow. The next chapter of this Plan establishes a playbook for implementation, including a timeline for action and identification of responsible parties for leading and supporting various initiatives.

Table 1: Emissions Reduction Strategy Category Overview

EMISSIONS REDUCTION STRATEGY	RELATED EMISSIONS SECTOR		
	Building Energy	Transportation & Land Use	Other
E1: Distributed Renewable Energy			
E2: Above Code Construction			
E3: Summit Community Power Works			
E4: Outdoor Heating and Snowmelt Systems			
E5: Increased Energy Consumption Data			
E6: Building Recommissioning and Tune-ups			
E7: Engaging Second Homeowners and Lodging Properties			
TL1: Regional Transit Expansion			
TL2: Sustainable Development Patterns			
TL3: Agriculture, Livestock, and Land Use Management Practices			
TL4: Pedestrian and Bicycle Infrastructure Improvements			
TL5: Alternatively Powered Vehicles			
O1: Recycling Program Expansion			
O2: Supporting Others’ Climate Response Efforts			
O3: County Leading by Example			

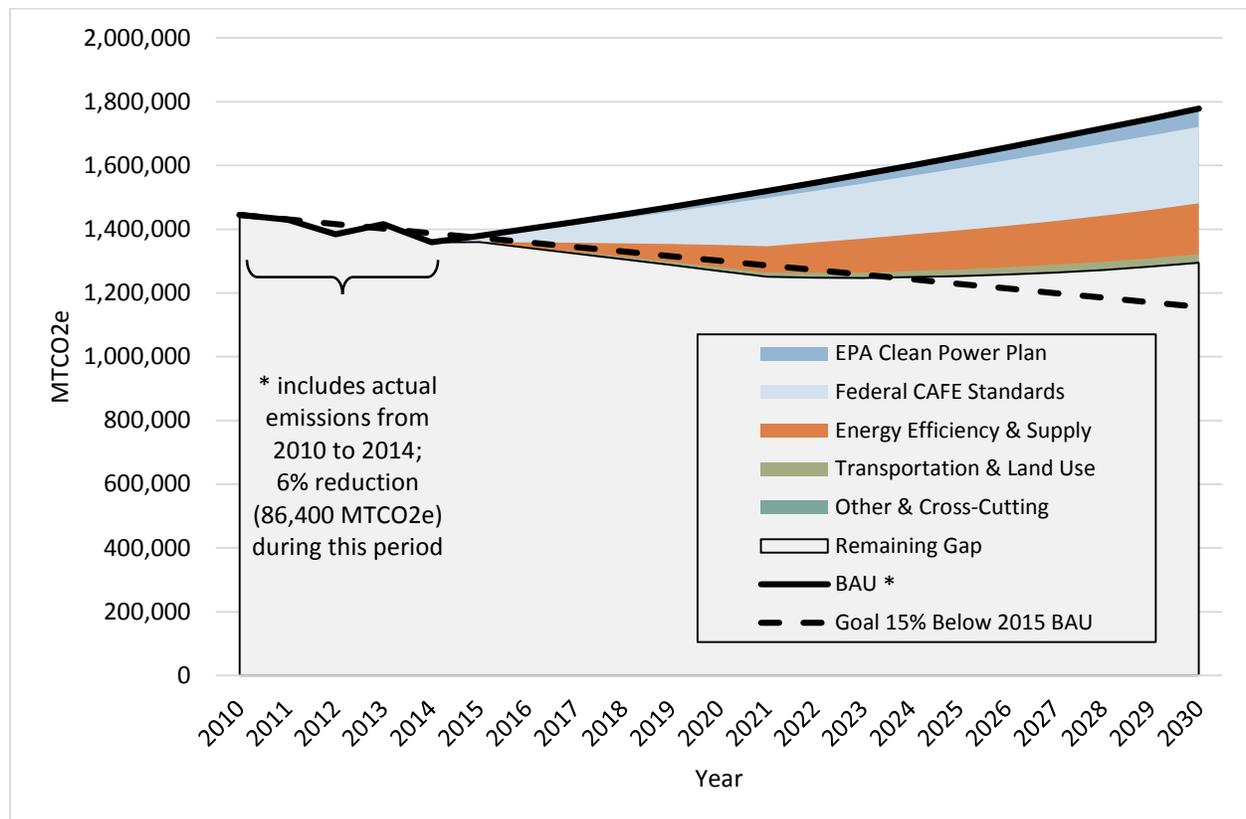
Note that additional strategies and emissions reduction opportunities are likely to emerge over time and the strategies analyzed within this Plan are not all-inclusive of the all emissions reduction opportunities. For example, water conservation was not identified as a priority for analysis by the stakeholder group during the planning process, but there is a relationship between water use and energy use. **Continued focus on overarching sustainability issues, such as water conservation and resource efficiency at the County level, will likely help reduce countywide emissions over time.**

ANALYSIS SUMMARY: IMPLEMENTING ALL STRATEGIES

The emissions reduction strategies presented in this Climate Action Plan help contribute to Summit County’s goal of a 15 percent reduction in emissions in the next 15 years. In particular, for the next 10 years, if the County implements the strategies identified in this Plan, it may be able to achieve its target of an average of a 1 percent reduction each year when also factoring in the reductions associated with proposed CAFE standards and EPA’s Clean Power Program.

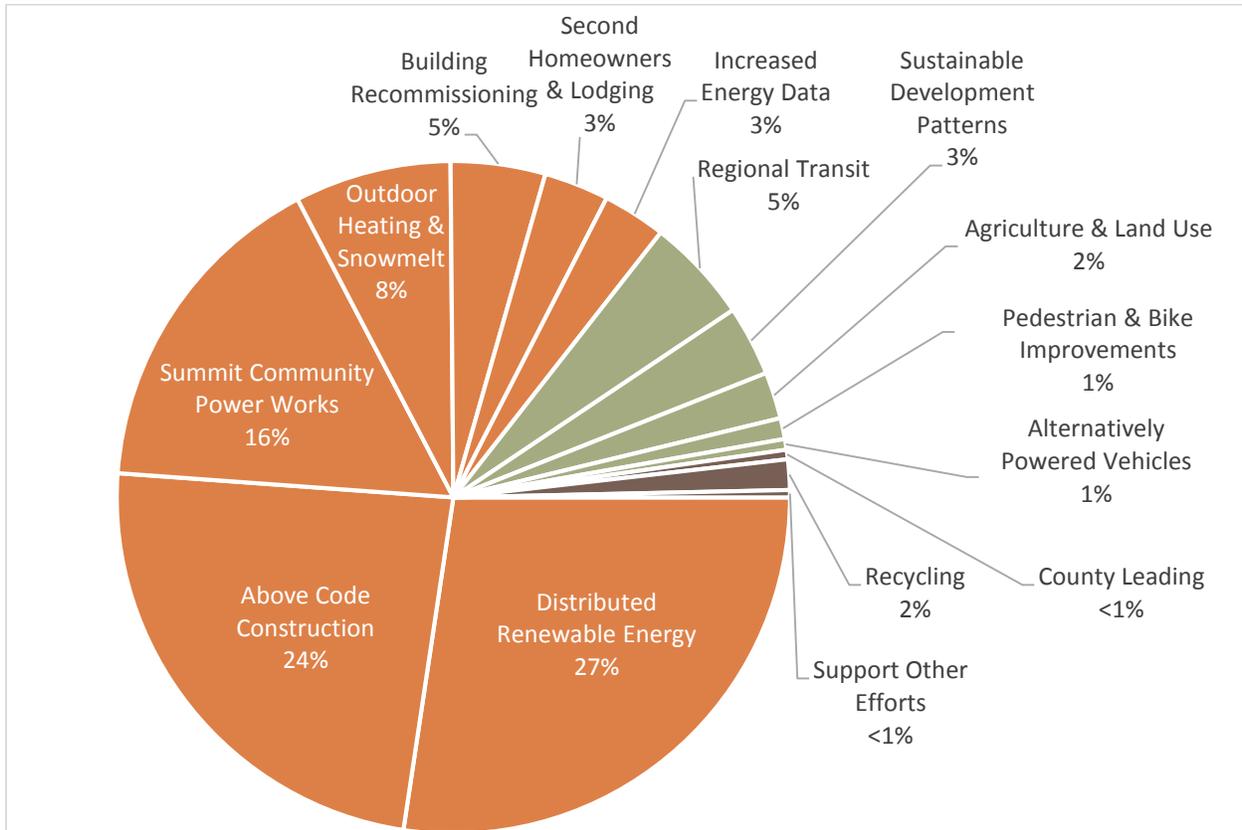
However, projected growth in the County may become a limiting factor in its overall ability to achieve that goal longer term (to 2030 and beyond) unless BAU projections begin to change course. Potential changes to the BAU conditions might include slower growth than projected or a decoupling of population growth and carbon emissions – meaning that each new person in the County would not automatically result in a proportional increase in carbon emissions. **A decoupling may already have started in Summit County since emissions have decreased 6 percent since 2010 while population has increased about 5 percent during the same timeframe.** Both of these scenarios are feasible, and as such, the 15 percent reduction in 15 years remains a realistic but ambitious goal for Summit County.

Figure 5: Total Emissions Reduction Potential



The largest opportunities for Summit County to reduce emissions include widespread renewable energy installation (e.g., solar photovoltaic), promoting and incentivizing above-code construction for new buildings, and continuing to implement and expand the SCPW initiatives.

Figure 6: Share of Emissions Reduction Potential



To achieve its emissions reduction goal, Summit County, its partners, and the greater community will need to invest in the future – through enhancements to infrastructure and systems as well as through education, expanded information, resources, and engagement. As shown in Table 2, some strategies are more economically valuable than others (i.e., positive values indicate net savings or avoided costs and negative values indicate net costs). The most economically valuable strategies (in terms of cost per MTCO_{2e} reduced) may be incentivizing above-code construction and improving the efficiency of outdoor heating and snowmelt systems.

Estimated costs and savings (or avoided costs) were determined using County and utility data wherever applicable and other regional and national best practices as needed. A summary of analysis assumptions is included in the detailed strategy summaries in the following sections.

As shown in Figure 7, as a whole, all of the strategies analyzed are projected to reach a breakeven point between annual costs and annual savings around 2030. However, the strategies implemented and the timing of their implementation will greatly impact annual and cumulative cash flow. As such, the County and its partners may choose to leverage some of the more economically valuable strategies in the near term to build momentum and savings to implement less economically valuable strategies in the future to achieve longer term goals. For example, focusing on more economically valuable measures, such as above code construction, outdoor heating and snowmelt systems, and building recommissioning and

tune ups in the near-term can help build momentum and lead to significant emissions reductions while also allowing time for technology and implementation costs for less cost effective measures, such as distributed renewable energy, to become more competitive.

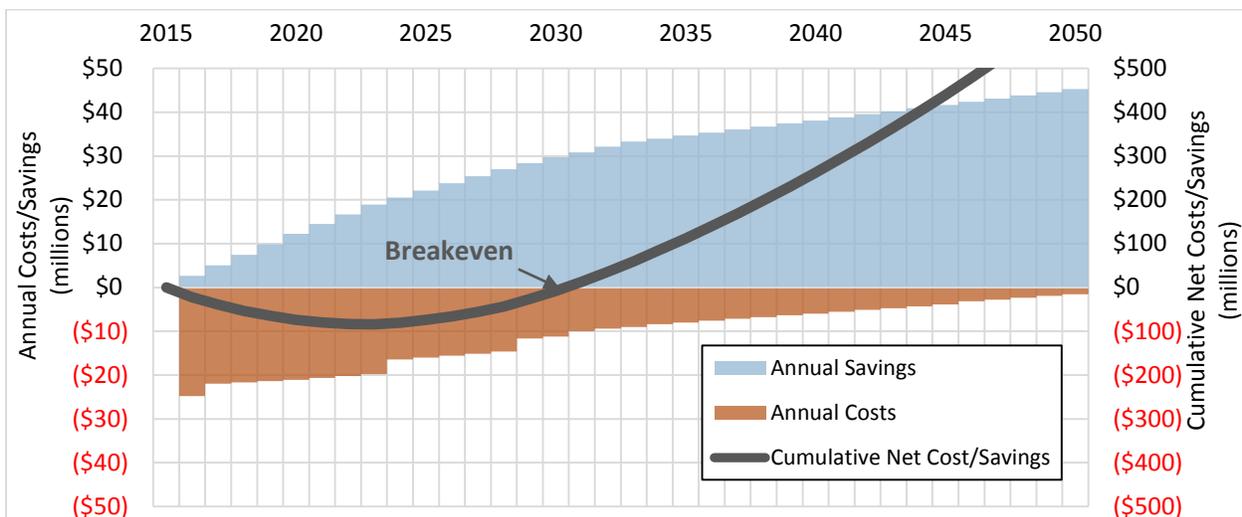
To provide some additional context related to the total cost and savings estimates, the total cumulative cost of energy in the County to 2030 under BAU is estimated at \$3 billion. Furthermore, the 2015 Council-adopted budget for Summit County is approximately \$58 million.

Table 2: Emissions Reduction Strategy Analysis Summary (All Strategies)

Emissions Reduction Strategy	Potential Cumulative Emissions Reduction	Economic Value (\$ per MTCO2e reduced)*
E1: Distributed Renewable Energy	430,000	-\$280
E2: Above Code Construction	360,000	\$150
E3: Summit Community Power Works	335,000	\$85
E4: Outdoor Heating and Snowmelt Systems	115,000	\$150
E5: Increased Energy Consumption Data	80,000	\$17
E6: Building Recommissioning and Tune-ups	70,000	\$130
E7: Engaging Second Homeowners and Lodging Properties	48,000	\$90
TL1: Regional Transit Expansion	84,000	-\$10
TL2: Sustainable Development Patterns	56,000	-\$10
TL3: Agriculture, Livestock, and Land Use Management Practices	35,000	-\$7
TL4: Pedestrian and Bicycle Infrastructure Improvements	17,000	-\$12
TL5: Alternatively Powered Vehicles	6,000	-\$163
O1: Recycling Program Expansion	31,000	-\$155
O2: County Leading by Example	13,000	\$45
O3: Supporting Others' Climate Response Efforts	10,000	\$99

*Note: Negative values indicate net costs for strategy.

Figure 7: Annual and Cumulative Cash Flow (Assuming all Strategies Implemented)



IMPLEMENTATION FUNDING

Summit County government cannot invest in and achieve countywide GHG emissions reduction alone. Instead, the costs and associated savings from GHG reducing strategies would require involvement from the County government, as well as the County’s municipalities, residents, businesses, and private investors.

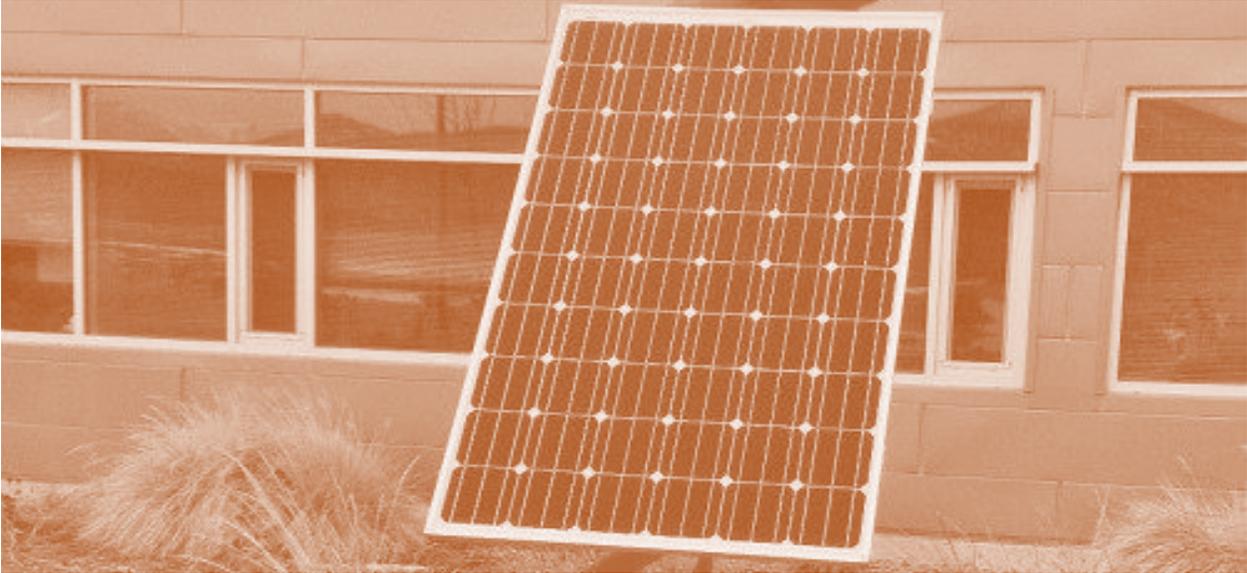
The following table identifies potential implementation funding mechanisms across a variety of potential investor types. In most cases the direct savings from implementing the strategies will benefit end-users such as those who pay the utility bills (i.e., households and businesses).

Table 3: Potential Implementation Funding Mechanisms

County & Local Government	Households & Businesses	Others
Bonds	Self-funded	Sponsorships and donations
Tax Increment Financing	Mortgage/home equity	User fees and revenue
Consumer grants, loans, and direct installs	Traditional bank loans or consumer lending	Regional, State, and Federal grants
Community Choice Aggregation	Energy efficiency loans	Development exactions
Program development and delivery	Property Assessed Clean Energy (PACE) programs	
	On-bill financing	

In terms of the analysis provided in this Plan, it is likely that those who invest in implementation may not be the same as those who will realize the savings benefits. For example, the County may use a variety of federal, state, and County funds to pay for a transportation infrastructure project to reduce vehicle miles traveled (e.g., enhance bicycling facilities), but the people who would most directly benefit from the savings associated with those reduced vehicle miles traveled would be those who use a bicycle instead of a vehicle for transportation, thus avoiding the costs of fuel.

As another example, the County might invest in a program designed to encourage new buildings to be constructed at above-code standards. The County would be responsible for funding the program administration (including staff time, materials, and any incentives offered), whereas the owner of the building under construction would pay for implementation through a slightly higher cost of construction for a more efficient building. In some applications, those costs might be passed on to the building tenant through a rent or purchase premium. Ultimately, the party paying the building’s utility bill would benefit from avoided energy costs due to a more efficient building, typically offsetting the higher construction costs within the first several years, with those savings continuing to accrue over time.



ENERGY EFFICIENCY AND SUPPLY STRATEGIES

This Climate Action Plan focuses on a two-pronged approach to reduce building-related emissions: (1) improving the energy efficiency of existing buildings and future construction and (2) supplying cleaner forms of energy to existing and future buildings.

Energy used by residential, commercial, and industrial buildings leads to nearly 40 percent of Summit County’s overall GHG emissions. More efficient buildings use less energy and therefore generate less emissions than standard buildings. While construction practices play a large role in the overall energy efficiency of a building, often times the management and operation of the building and its systems can also lead to inefficiencies.

Similarly, the type of energy supplied to operate these buildings has a tremendous impact on the resulting emissions. Traditional energy sources, such as coal-based electricity and natural gas, produce significant levels of emissions compared to emissions-free renewable sources, such as solar photovoltaic, solar thermal, and wind energy systems. While state and federal policies are requiring utilities across the country to reduce the carbon impacts from the energy they supply, these changes are occurring at a slower pace than many communities would like to see. Furthermore, declining prices and rapidly evolving technologies continue to expand opportunities for integrating renewable energy sources at the building or local scale (e.g., rooftop solar or community solar gardens).

Benefits of Action

As Summit County begins to implement the energy efficiency and supply strategies identified in this Plan, not only will it benefit from reduced GHG emissions, but it will also create many other benefits, including the following:

- **Job creation** – installing energy efficiency and renewable energy equipment and providing enhanced maintenance of and training on existing building energy systems will grow additional jobs and employment opportunities in the region that range from manufacturing and installation to technical support and programming.
- **Cost savings** – improved building efficiency and performance will help customers avoid energy waste and costs, saving them money on utility bills over the long term.

- **Cleaner air** – reduced reliance on coal-based energy will help reduce pollutants that lead to poor air quality.
- **Comfort and safety** – attention to design and construction can lead to more comfortable, healthier, and safer buildings.

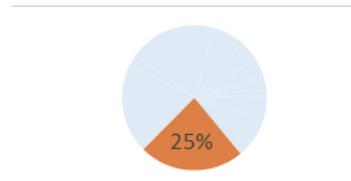
Supporting Strategies

Implementing the following energy efficiency and supply strategies will help Summit County reduce emissions by a cumulative total of 1.5 million MTCO₂e by 2030, which is about 20 percent of the necessary total cumulative reductions to meet the 2030 goal.

E1: Distributed Renewable Energy

This strategy focuses on continuing to develop distributed solar photovoltaic and other renewable energy systems (e.g., micro-hydro, wind) across the community. Currently the analysis shows a net cost to implement this strategy, but this may change as renewable energy technology prices decline over time.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

<p><u>Potential Cumulative Emissions Reduction</u> 430,000 MTCO₂E by 2030</p> <p><u>Economic Value (\$ per MTCO₂E Reduced)</u> -\$280 by 2030</p>	<p><u>Assumptions</u></p> <ul style="list-style-type: none"> • Fifteen percent of total rooftop solar photovoltaic capacity is installed by 2030 • SCPW Power Switch Initiative (Summit Community Solar, Phase II) is implemented
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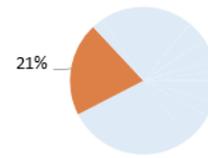
IMPLEMENTATION PATHWAY

<p><u>County Initiatives</u></p> <ul style="list-style-type: none"> • Explore ways to expand bulk purchasing of solar photovoltaic (and/or repeat the Summit Community Solar program) to increase residential and/or business installation • Continue to pursue Community Choice Aggregation (CCA) or a similar mechanism to provide renewable energy to customers within the County 	<p><u>Role of Others</u></p> <ul style="list-style-type: none"> • Residents and businesses are encouraged to learn about and take advantage of solar photovoltaic programs • Business organizations and advocacy groups (e.g., Chamber of Commerce, Park City Business Resource Center, Utah Clean Energy) are encouraged to share information with their constituents about renewable energy opportunities and savings • Contractors/installers are encouraged to learn and share information about these opportunities and may consider additional training to be able to provide installation and maintenance services 	<p><u>Related Efforts to Leverage</u></p> <ul style="list-style-type: none"> • SCPW Renewables Initiative • Summit Community Solar Program • State of Utah C-PACE • Rocky Mountain Power’s Utah Solar Incentive Program
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E2: Above Code Construction

This new strategy focuses on voluntary adoption of practices for new construction and major renovations that go beyond state-mandated building and energy codes.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

360,000 MTCO₂E by 2030

Economic Value (\$ per MTCO₂E Reduced)

\$150 by 2030

Assumptions

- By 2030, 50 percent of new construction will be 30 percent more energy efficient than code
- SCPW expands scope to provide training and energy advisors for new construction

IMPLEMENTATION PATHWAY

County Initiatives

- Develop a **technical assistance program** and/or **County certification system** to incentivize and recognize above-code construction (e.g., LEED Gold for Commercial and HERS Rating of 54 or above for residential)
- Provide education and develop incentives for site-specific design considerations to take advantage of passive solar, shade, transit access, etc.

Role of Others

- **Builders and contractors** are encouraged to learn about above-code construction practices and may elect to participate in any incentive programs offered
- **Residents and businesses** who are planning new construction or major renovation projects should work with their builders and the County to learn about and take advantage of any above-code incentive programs

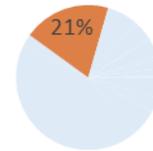
Related Efforts to Leverage

- Park City will be piloting a priority processing and permit fee incentive program that may help inform Summit County and other municipalities' efforts

E3: Summit Community Power Works

This strategy focuses on the continued support and implementation of the SCPW initiative (during the 2-year competition period and beyond) for the residential and institutional sectors (i.e., County operations and schools) and expansion to the commercial and industrial sectors.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction
355,000 MTCO₂E by 2030

Economic Value
(*\$ per MTCO₂E Reduced*)
\$85 by 2030

Assumptions

- By 2030, overall residential energy consumption in Summit County is reduced by 11 percent
- More energy advisors are hired to provide energy coaching services to residences
- **Be Wise, Energize** is authorized

IMPLEMENTATION PATHWAY

- County Initiatives
- Continue to implement the SCPW priority initiatives including **LED light bulbs, smart controls, infrastructure, and renewables** for the residential and institutional sectors
 - **Extend these initiatives to the commercial and industrial sectors** (in tandem with technical assistance program, energy coaching, and other initiatives)
 - Coordinate activities of Rocky Mountain Power and Questar to refine **outreach programs targeting residential and business customers**

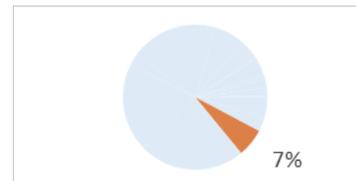
- Role of Others
- **Residences** should contact the SCPW program to learn how to work with an energy advisor to reduce energy use
 - **Local energy utility providers**, Rocky Mountain Power and Questar, should continue to offer incentive programs
 - **Schools and educational providers** should continue to integrate energy efficiency topics into curriculum; training programs and higher education providers may also enhance training opportunities for installation and maintenance services related to energy efficiency and renewable energy

- Related Efforts to Leverage
- **Be Wise, Energize**
 - Rocky Mountain Power and Questar incentive programs
 - Other energy efficiency and supply strategies in this section

E4: Outdoor Heating and Snowmelt Systems

This new strategy focuses on alternatives to installing snowmelt and outdoor heating systems, alternative energy supplies for such systems (such as solar photovoltaic), and training on proper control and operation of existing systems to enhance efficiency and reduce heat loss.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction
115,000 MTCO₂E by 2030

Economic Value (\$ per MTCO₂E Reduced)
\$150 by 2030

Assumptions

- Ten percent of all building energy usage is for outdoor heating and snowmelt systems
- Fifty percent of all systems will be 30 percent more efficient by 2030
- SCPW’s scope is expanded to focus on efficient outdoor heating and snow melt systems

IMPLEMENTATION PATHWAY

County Initiatives

- Develop and distribute a **resource guide** to share information about proper installation and control of outdoor heating and snowmelt systems
- Consider developing a **web-based notification system** to notify customers of appropriate temperatures and weather conditions to run outdoor snowmelt and heating systems (e.g., similar to air quality alerts)

Role of Others

- **Property owners/managers** are encouraged to ensure proper maintenance and controls of outdoor heating and snowmelt systems by installing smart/remote controls
- **Business organizations and advocacy groups** (e.g., Chamber of Commerce, Park City Business Resource Center, Utah Clean Energy) are encouraged to share information with their constituents about outdoor heating and snowmelt systems
- **Contractors/installers** are encouraged to learn and share information about these opportunities; may consider additional training to be able to provide enhanced installation and maintenance services

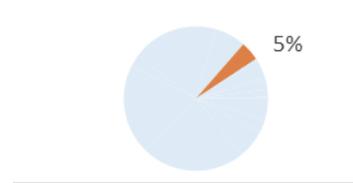
Related Efforts to Leverage

- Coordination with the increased energy consumption data and second homeowners and lodging property strategies
- SCWP

E5: Increased Energy Consumption Data

This strategy focuses on continuing to expand options for and accessibility of information for consumers on their energy consumption via smart controls, websites, utility bills, and other means.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

80,000 MTCO2E by 2030

Assumptions

- All electric customers receive energy reports within 5 years

Economic Value (\$ per MTCO2E Reduced)

\$17 by 2030

IMPLEMENTATION PATHWAY

County Initiatives

- Work with Rocky Mountain Power on an **outreach campaign** focused on expanding the number of customers that participate in customized energy reporting tools
- Facilitate the **bulk purchase of programmable thermostats** and partner with local utilities to expand incentives for their installation
- Engage local businesses and start-ups to begin **discussions about smart metering technologies** to determine potential opportunities to pilot these concepts

Role of Others

- **Residents and businesses** are encouraged to sign up to use free online energy reporting tools and install programmable thermostats (using any available incentives)
- **Business organizations** and advocacy groups (e.g., Chamber of Commerce, Park City Business Resource Center, Utah Clean Energy) are encouraged to share information with their constituents about energy monitoring options
- **Contractors/installers** are encouraged to learn and share information about these opportunities; may consider additional training to be able to provide installation and maintenance services

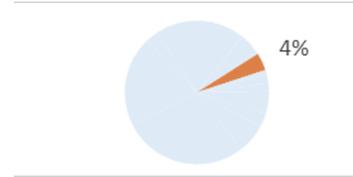
Related Efforts to Leverage

- SCPW Smart Controls Initiative
- Rocky Mountain Power Home Energy Reports and Online Tools
- Questar ThermWise Energy Comparison Reports
- Questar Smart Thermostat Rebates

E6: Building Recommissioning and Tune-ups

This strategy focuses on leveraging Rocky Mountain Power’s energy management program for commercial/industrial recommissioning, retro-commissioning, or strategic energy management.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

70,000 MTCO₂E by 2030

Economic Value (\$ per MTCO₂E Reduced)

\$130 by 2030

Assumptions

- One percent of commercial and industrial buildings are re-commissioned each year
- SCPW expands scope to provide training and energy advisors for commercial buildings

IMPLEMENTATION PATHWAY

County Initiatives

- Expand the SCPW program to create an **energy advisor position** to help coach commercial/industrial energy users and to help them connect with Rocky Mountain Power’s energy management programs
- Add information to the **County’s website** regarding incentives and resources for commercial/industrial customers
- Conduct **targeted outreach** to inform and engage commercial and industrial buildings
- Authorize and begin **Be Wise, Energize**

Role of Others

- **Businesses** are encouraged to learn about and take advantage of potential building recommissioning and tune-up opportunities
- **SCPW** is encouraged to coordinate activities with Rocky Mountain Power and Questar to establish priority outreach programs
- **Business organizations** (e.g., Chamber of Commerce, Park City Business Resource Center, Grow Utah) are encouraged to share information with their constituents about building recommissioning opportunities and savings
- **Contractors** are encouraged to learn and share information about these opportunities; may consider additional training to be able to provide these services to businesses

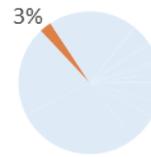
Related Efforts to Leverage

- SCPW
- Rocky Mountain Power’s Energy Management Programs
- Rocky Mountain Power’s Energy Project Manager Co-Funding Resources
- Questar’s ThermWise Business Rebates

E7: Engaging Second Homeowners and Lodging Properties

This new strategy focuses on reducing energy consumption and improving efficiency of second homes and lodging properties through education, outreach, incentives, and investments in building controls

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

50,000 MTCO₂E by 2030

Economic Value (\$ per MTCO₂E Reduced)
\$90 by 2030

Assumptions

- Five percent of residences in Summit County are second homes and 5 percent of commercial energy accounts are for lodging
- Fifty percent of second homes and lodging facilities are 10-15 percent more efficient by 2030
- SCPW’s scope is expanded to include lodging

IMPLEMENTATION PATHWAY

County Initiatives

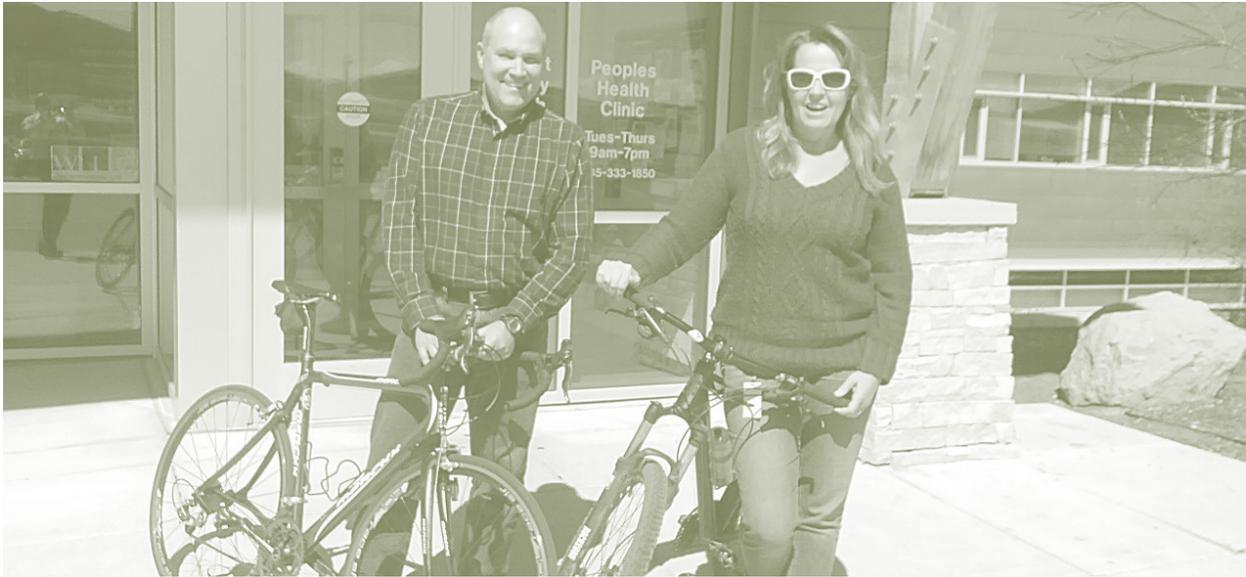
- Conduct an **outreach campaign to second homeowners** focusing on providing educational resources about efficiency and renewable opportunities and incentives, especially at the time of sale (e.g., welcome packages)
- Conduct an **outreach campaign focused on the largest lodging properties, homeowners associations, and property management companies**, asking them for references and referrals to other properties

Role of Others

- **Owners of second homes** are encouraged to participate in SCPW
- **Owners of lodging properties** are encouraged to sign up to use free online energy reporting tools, install programmable thermostats (especially those with smart/remote controls), and conduct recommissioning and retrofits projects as part of normal property maintenance activities
- **SCPW** is encouraged to coordinate activities with Rocky Mountain Power and Questar to establish priority outreach programs
- **Business and real estate organizations** (e.g., Chamber of Commerce, Board of Realtors) are encouraged to share information with their constituents about incentives and opportunities

Related Efforts to Leverage

- Coordinated implementation with all other energy efficiency and supply strategies in this section
- SCPW



TRANSPORTATION AND LAND USE STRATEGIES

Emissions from the transportation and land use sectors comprise more than half (53 percent) of Summit County's emissions. These emissions are primarily generated from on-road transportation, but also include use of off-road equipment, air travel, agriculture, and other land management practices.

This Climate Action Plan focuses on reducing transportation related emissions through changes in vehicle types to more efficient options, as well as increasing travel options beyond single occupancy vehicles (SOVs) through expansions in walking, bicycling, and transit infrastructure.

Land uses play an important role in maximizing effectiveness of pedestrian, bicycling, and transit infrastructure and ensuring that people do not need to drive long distances to access housing, jobs, and daily goods and services. Furthermore, compact development patterns and a mix of land uses helps minimize conversion of agricultural and open lands as the County grows and develops. These open lands help capture or offset some of the GHG emissions from other sectors, and continued focus on agricultural practices and efficiencies will help further limit the overall impact that this sector has on countywide emissions.

Benefits of Action

Implementation of the transportation and land use strategies identified in this Plan will help Summit County achieve its emissions reduction goal in addition to leading to these other benefits:

- **Mobility options** – expanded bicycling, pedestrian, and transit networks help ensure that there are options for people to get to destinations throughout the County without needing to drive a vehicle.
- **Cost savings** – bicycling, walking, and transit use help reduce the costs associated with driving to destinations.
- **Cleaner air** – shorter vehicle trips, alternative fuel vehicles, and less driving alone all help to reduce air pollution.
- **Health and wellness** – active transportation modes, such as walking, bicycling, and transit use, help boost activity levels, as do land use patterns that provide a mix of uses within distances that do not require driving between them.

- **Land conservation** – compact development patterns reduce the consumption of open lands and help preserve them for other uses, such as agriculture, recreation, or open space.

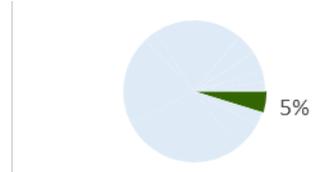
Supporting Strategies

Implementing the following transportation and land use strategies will help Summit County reduce emissions by a cumulative total of 200,000 MTCO₂ECO₂e by 2030, which is about 3 percent of the necessary cumulative total reductions to meet the 2030 goal.

TL1: Regional Transit Expansion

Continue to explore and expand regional transit options especially from Summit County to/from Salt Lake City and Heber City.

% Contribution to Total Emissions



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

84,000 MTCO₂E by 2030

Assumptions

- Five percent reduction in vehicle miles traveled by 2030

Economic Value (\$ per MTCO₂E Reduced)

-\$10 by 2030

IMPLEMENTATION PATHWAY

County Initiatives

- Continue to coordinate with other municipalities, the development community, and others to **implement regional transit expansion plans** across the County and region

Role of Others

- **Local municipalities** should investigate policies and plans to encourage regional transit use in between their communities
- **Businesses** should investigate developing incentive programs for employees who use transit to commute to work
- **Schools and other institutions** should work with the County, municipalities, and others to enhance transit accessibility and encourage their constituents to use transit service
- **Business and tourism organizations** (e.g., Visit Park City, Chamber of Commerce) are encouraged to share information with their constituents about transit routes and resources

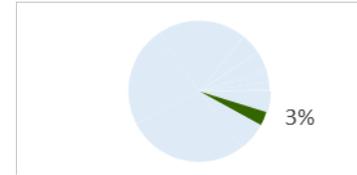
Related Efforts to Leverage

- Park City-Salt Lake City Connect

TL2: Sustainable Development Patterns

This strategy focuses on continuing to plan for compact growth, reduced sprawling development, and increased opportunities for people to conveniently access services and places of work without having to drive long distances.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

56,000 MTCO2E by 2030

Economic Value (\$ per MTCO2E Reduced)

-\$10 by 2030

Assumptions

- Nine percent reduction in vehicle miles traveled from growth by 2030

IMPLEMENTATION PATHWAY

County Initiatives

- **Review existing County plans, policies, and development codes** to ensure that they are supporting and not creating barriers to implementing sustainable development patterns
- Continue to prepare **long-range plans and strategies** to address County growth and development
- Develop a **Resource Management Plan** to supplement the latest County General Plans and provide for the protection, conservation, development, and management of resources including energy, air, and water

Role of Others

- **Local municipalities** should investigate policies and plans to encourage sustainable development patterns in their communities
- **Developers and builders** are encouraged to incorporate a mix of uses and establish compact patterns in future developments and are encouraged to pursue redevelopment and infill development wherever possible

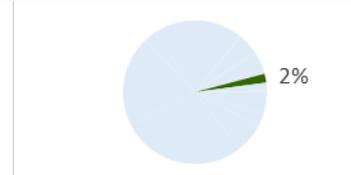
Related Efforts to Leverage

- General Planning efforts in the Snyderville Basin and Eastern Summit County

TL3: Agriculture, Livestock, and Land Use Management Practices

This new strategy focuses on applying best practices for agriculture, livestock, and land use management to reduce energy use, improve efficiency of equipment, and limit GHG emissions associated with equipment and fertilizer use.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

35,000 MTCO₂E by 2030

Economic Value (\$ per MTCO₂E Reduced)

-\$7 by 2030

Assumptions

- Fifty percent reduction in nitrogen fertilizer use by 2030 in the county
- Twenty percent of agriculture equipment is upgraded to high efficient models by 2030

IMPLEMENTATION PATHWAY

County Initiatives

- Conduct **an outreach campaign to large agriculture operations and land owners**, providing them with information about State of Utah resources and potential energy efficiency opportunities and land management practices
- Engage Summit County Extension agency to consider need for and development of a **nitrogen fertilizer optimization program**

Role of Others

- **Summit County Extension** should coordinate with County staff and agricultural properties to explore establishing a nitrogen fertilizer best management incentive program
- **Business organizations and advocacy groups** (e.g., Farm Bureau, Chamber of Commerce) are encouraged to share information with their constituents about resources to improve efficiency and limit GHG emissions

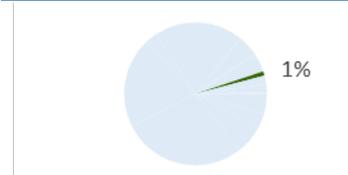
Related Efforts to Leverage

- United States Department of Agriculture’s Environmental Quality Incentives Program
- State of Utah Agriculture Energy Efficiency Resources
- International Institute for Sustainable Development, which addresses sustainable land management practices and the role of land use in carbon sequestration

TL4: Pedestrian and Bicycle Infrastructure Improvements

This strategy focuses on continuing to support the development of pedestrian and bicycle infrastructure to provide alternatives to on-road vehicle travel.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

17,000 MTCO2E by 2030

Assumptions

- One percent of gasoline fuel use will be reduced by 2030

Economic Value (\$ per MTCO2E Reduced)

-\$12 by 2030

IMPLEMENTATION PATHWAY

County Initiatives

- Continue to coordinate with other municipalities, the development community, and others to **implement bicycle and pedestrian improvement plans** across the County and region

Role of Others

- **Local municipalities** should investigate policies and plans to encourage pedestrian and bicycle use in their communities
- **Businesses** should investigate developing incentives programs for employees who walk or bike to work
- **Schools and other institutions** should work with the County, municipalities, and others to ensure accessibility by bicycle and pedestrians and encourage their constituents to use these travel modes
- **Business and tourism organizations** (e.g., Visit Park City, Chamber of Commerce) are encouraged to share information with their constituents about pedestrian and bicycle networks and resources

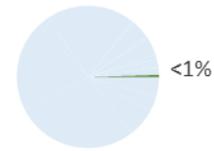
Related Efforts to Leverage

- General Planning efforts in the Snyderville Basin and Eastern Summit County

TL5: Alternately Powered Vehicles

This strategy focuses on continuing to promote alternately powered vehicles (e.g., electric vehicles), as well as developing infrastructure to support use of these vehicles (e.g., charging stations).

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

6,000 MTCO₂E by 2030

Economic Value (\$ per MTCO₂E Reduced)

-\$163 by 2030

Assumptions

- Two percent% of all vehicles are electric or plug-in electric by 2030

IMPLEMENTATION PATHWAY

County Initiatives

- Continue to **share information via the County’s website** about Utah Drives Electric resources, including the vehicle guide, savings calculator, and charging station location
- Explore and facilitate the installation of **electric vehicle infrastructure** (i.e., charging stations) in distributed locations across the County, including those owned and operated by the County as well as by others

Role of Others

- **Businesses and residents** interested in purchasing or leasing an electric or hybrid electric vehicle should contact Utah Drives Electric for more information about benefits of electric vehicles and potential incentives
- **Local municipalities** should investigate installing plug-in charging stations for their own use and for the use of the public
- **Business and tourism organizations** (e.g., Visit Park City, Chamber of Commerce) are encouraged to share information with their constituents about electric vehicle options, infrastructure and resources

Related Efforts to Leverage

- Utah Drives Electric
- U.S. Department of Energy Alternative Fuels Data Center



OTHER CROSS-CUTTING STRATEGIES

Beyond building-related energy, transportation, and land use, there are several other factors contributing to Summit County's total emissions picture, including solid waste as well as the County's own operations (including its energy and transportation emissions). Furthermore, while boundaries for Summit County's emissions can be drawn for inventory purposes, it is also important to consider the emissions from others in the region, including other jurisdictions within Summit County, as well as neighboring communities because their emissions will also shape Summit County's future.

The strategies identified in this section are cross-cutting, meaning they touch various sectors of the County at different levels. The first focuses on Summit County continuing to provide leadership in climate action by achieving its own emissions reduction goals across County operations. Summit County is currently striving to achieve a net 25 percent reduction in GHG emissions below the County's 2013 level by 2016 (a decrease of 2,500 MTCO_{2e}).

Another cross-cutting strategy focuses on continuing to reduce solid waste from all those who contribute to the waste stream in Summit County and also expanding waste diversion options, such as recycling and composting. The final strategy emphasizes coordination and support of others' climate efforts, including climate action planning and adapting to the long-term impacts of climate change.

Benefits of Action

In addition to supporting achievement of Summit County's emissions reduction goal, implementing these cross-cutting strategies will lead to these other benefits:

- **Waste reduction** – expansion of recycling programs will help reduce the amount of solid waste landfilled.
- **Leadership position** – continuing to focus on the emissions from County operations will ensure that Summit County remains a regional and national leader in sustainability efforts.
- **Regional impact** – coordinating with others in their climate response activities will help improve regional resiliency and impacts on climate change.

Supporting Strategies

Implementation of the following cross-cutting strategies will help Summit County reduce emissions by a cumulative total of 40,000 metric tons by 2030, which is about 1 percent of the necessary total cumulative reductions to meet the 2030 goal.

O1: Recycling Program Expansion

This strategy focuses on continuing to expand recycling services throughout the county, particularly focusing on increasing cardboard recycling service and increasing diversion rates of commercial, institutional, lodging and condominium properties.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

31,000 MTCO2E by 2030

Economic Value (\$ per MTCO2E Reduced)

-\$155 by 2030

Assumptions

- Fifteen percent increase in waste diversion from landfills by 2024 to achieve the goal of 40 percent diversion

IMPLEMENTATION PATHWAY

County Initiatives

- Coordinate with municipalities and waste providers to establish a **County compost facility**
- **Expand recycling practices** to include commercial businesses

Role of Others

- **Businesses** should implement cardboard recycling in Kimball Junction and Jeremy Ranch business centers
- **Businesses, residences, and institutions** should all invest in education and policies that reduce solid waste disposal and increase recycling and composting
- **Business and tourism organizations** (e.g., Visit Park City, Chamber of Commerce) are encouraged to share information with their constituents about recycling resources and waste management best practices

Related Efforts to Leverage

- Current curbside recycling efforts promoted by the County
- Recycle Utah’s current drop-off recycling center
- Current recycling efforts at Three Mile Canyon Landfill
- Park City food waste pilot program

O2: County Leading by Example

This strategy focuses on continuing to lead by example at County facilities by reducing energy use, developing renewable energy on County lands and buildings, reducing vehicular trips and waste, employing responsible land use management practices, and providing climate action and sustainability information and resources to County constituents.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

13,000 MTCO2E by 2030

Economic Value (\$ per MTCO2E Reduced)

\$45 by 2030

Assumptions

- Fifteen percent reduction in County building energy use by 2030

IMPLEMENTATION PATHWAY

County Initiatives

- Continue to implement, report on, and update the **County Sustainability Plan**
- Continue to enhance the content on the **County website's** sustainability pages, including adding sustainability plans and reports, climate action plan information, and resources for residents and businesses to engage in these initiatives

Role of Others

- **Local energy utilities**, Rocky Mountain Power and Questar, should continue to offer incentive programs

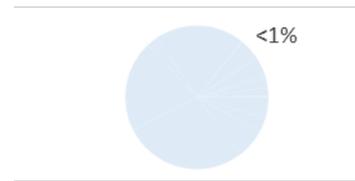
Related Efforts to Leverage

- Summit County Sustainability Plan
- SCPW
- Park City Green

O3: Supporting Others' Climate Response Efforts

This strategy focuses on continuing to support and collaborate with the County's institutions, large emitters, municipalities, and regional neighbors in their climate action planning efforts and their climate adaptation and resiliency initiatives.

% Contribution to Total Emissions Reduction



ANALYSIS SUMMARY

Potential Cumulative Emissions Reduction

10,000 MTCO2E by 2030

Assumptions

- Existing climate action goals by local ski areas achieved

Economic Value (\$ per MTCO2E Reduced)

\$99 by 2030

IMPLEMENTATION PATHWAY

County Initiatives

- Participate in **other regional climate response plans, conversations, and activities**
- Pursue formation of **CCA** in collaboration with other regional entities

Role of Others

- **Local ski areas** with GHG reduction goals are encouraged to achieve their goals within the timeframes they specify
- **Local municipalities** should establish GHG reduction goals if they have not already done so
- **Schools and educational institutions** should continue to incorporate sustainability and energy education into their curriculum
- Large organizations and institutions are encouraged to establish their own GHG reduction goals and identify strategies for reduction

Related Efforts to Leverage

- Park City Mountain Resort and Canyon's ski areas have established GHG reduction goals
- The City of Park City has established a Climate Action Plan
- Park City, North Summit, and South Summit School District sustainability efforts

4. PLAYBOOK FOR IMPLEMENTATION

This section provides a detailed playbook of initiatives and actions to guide implementation of this Climate Action Plan and achieve the County’s emissions reduction goals by 2030. This playbook focuses on actions led by Summit County, but also includes other initiatives that may be led by other partners but where Summit County will play a major role. The playbook includes two major sections: (1) ongoing efforts to keep the Plan on track and (2) implementation initiatives, organized by type and timing.

4.1 Ongoing Efforts to Keep the Plan on Track

PLAN LEADERSHIP

The **Summit County Sustainability Coordinator** will continue to serve as the project manager and will lead implementation of the Climate Action Plan. The Sustainability Coordinator will serve as the central coordinator of the various implementation initiatives, delegating responsibility to others as necessary, and seeking approval from County Council as appropriate. The Sustainability Coordinator will also be responsible for continuing to convene stakeholder and leadership meetings, overseeing the Climate Action Plan monitoring and reporting activities, and initiating future Plan amendments and updates.

The **Stakeholder Committee** that was convened to support development of this Plan may be convened again on an as-needed basis in the future to provide technical expertise and a diverse range of perspectives as future implementation initiatives are considered and planned.

Summit County Council is responsible for adopting the Climate Action Plan and continuing to align County policies, decisions, and funding to support its implementation.

MONITORING AND REPORTING

As discussed in the “Critical Elements of Success” section, ongoing monitoring of progress and reporting of achievements is essential in keeping the Plan current and on track to achieve the 15 percent in 15 years emissions reduction goal. Monitoring and reporting activities will include the following:

- **Performance Monitoring:** updating and reporting on the major sectors that contribute to the County’s emissions (residential and commercial energy use and transportation) at a minimum of every 5 years (i.e., 2020, 2025, 2030).
- **Implementation Monitoring:** providing an annual memorandum or report summarizing the status of each implementation initiative (including achievements, challenges, and general progress).

PLAN AMENDMENTS AND UPDATES

Finally, because this Climate Action Plan is intended to provide a framework for emissions reduction for the next 15 years and beyond, it is likely that amendments and updates to the Plan will be necessary. In particular, every 5 years, the GHG inventory may be updated to reflect monitoring and updating commitments. Other amendments to the Plan may also occur as needed but should, at a minimum, be considered every 5 years.

Similarly, the implementation initiatives identified in this playbook will need to be updated as actions are completed and new ideas and priorities emerge. It is recommended that following the implementation monitoring report each year, the lists of implementation initiatives should be reviewed and updated to remove outdated items and to refine details related to timing and responsibilities, and to add other new efforts that are identified.

4.2 Implementation of Initiatives

Beyond the commitments to ongoing leadership, monitoring, reporting, and updates to the Climate Action Plan, Summit County and its partners will need to continue, expand, and launch various initiatives to achieve its emissions reduction goals. As introduced in the previous section, the implementation initiatives in this section are organized by type. Details also include potential timelines for action, related emissions reduction strategies, and responsible parties.

TYPES OF INITIATIVES

The Climate Action Plan will be implemented through various types of initiatives and efforts, including the following:

- **Programs:** continuation, or addition of programs or services offered by the County or its partners that require ongoing staffing and allocation of resources to support the Climate Action Plan.
- **Outreach Campaigns and Resources:** communications materials and strategies and informational resources to reach a general or targeted audience – these may require ongoing or one-time allocation of resources and staff time.
- **Supporting Plans and Policies:** existing or new land use, transportation, sustainability, and other topic-specific County plans and policies to guide decision making and investment. These are typically prepared for other primary objectives but support implementation of the Climate Action Plan.
- **Projects and Investments:** new or replacement equipment, infrastructure, facilities, or other capital resources, either with a direct or indirect objective of supporting the Climate Action Plan.
- **Other Coordination:** collaboration, partnerships, or agreements with other organizations and stakeholders to support implementation of the Climate Action Plan.



Implementation of the Climate Action Plan will occur through collaboration on and coordination of various types of initiatives, such as capital investments and equipment replacement.

POTENTIAL ROLES AND RESPONSIBILITIES

Each of the initiatives listed includes identification of potential implementation leaders and supporters. Note that they are preliminary assignments—roles and responsibilities will be refined as implementation progresses.

For many of the initiatives identified, the Summit County Sustainability Coordinator is identified as the implementation leader. While many of the initiatives identified can be aligned with and integrated into the roles and work plan of that position, additional County staffing (e.g., interns, outreach expertise, etc.) may be necessary to fully support and implement all of the initiatives identified (especially under the preliminary timelines outlined).

TIMING OF INITIATIVES

Implementation of the Climate Action Plan has already begun through the various efforts related to the SCPW Energy Plan, as well as other County sustainability initiatives. However, it is unrealistic to expect that implementation of all of the emissions reduction strategies identified in this Plan will begin immediately. Instead, the County and its partners will focus on implementing several initiatives at a time – beginning with those that are already in progress or have potential to begin shortly after adoption of the Climate Action Plan.

Next, the County and its partners will take on several more implementation initiatives each year, building on the momentum and successes of the previous initiatives and adjusting and aligning them to other efforts and priorities. The initiatives are organized by the following preliminary time periods:

- **Immediate:** already in progress or will begin immediately in 2015 following adoption of the Climate Action Plan.
- **Near Term:** initiatives that will begin within 1 to 2 years of adoption of the Climate Action Plan (e.g., 2016 to 2017).
- **Longer Term:** initiatives that will be pursued 3 or more years following adoption of the Climate Action Plan (e.g. 2018 and beyond)
- **Ongoing:** initiatives that are continually evolving or in progress.

Table 4: Implementation Initiatives - Programs

Programs	Potential Roles/Responsibilities	Related Strategy(ies)	Other Notes & Details	Preliminary Timing
LED Lighting Program	Lead: SCPW Support: Summit County Sustainability Staff	E3, E5, O3	Aligns with first SCPW initiative	Immediate (Spring/ Summer 2015)
Bulk Purchasing Solar Program	Lead: SCPW Support: Summit County Sustainability Staff	E1, E3	Aligns with fourth SCPW initiative; consider repeating or modifying the Summit Community Solar program and adapting it to apply to commercial and residential properties	Near Term (Fall 2015)
Residential and Institutional Weatherization and Retrofits	Lead: Summit County Sustainability Staff Support: SCPW	E3, E4, E5	Aligns with third SCPW initiative (i.e., infrastructure) pilot projects in 2015; scale with rollout of Be Wise, Energize Program in 2016	Near Term (Fall 2015)
Programmable Thermostat Bulk Purchasing & Incentives (Smart Controls)	Lead: SCPW Support: Summit County Sustainability Staff	E3, E4, E5, E7	Aligns with second SCPW initiative	Near Term (Fall 2015)
Technical Assistance Program or Certification Program for Above Code Construction	Lead: Summit County Sustainability Staff Support: Building Department, Planning & Zoning	E2		Near Term (Fall 2015)
Commercial/Industrial/Institutional Energy Advisor Coaching and Programming	Lead: Summit County Sustainability Staff Support: Utility Providers , Building Department	E2, E5	Develop a countywide program to improve efficiency and energy management of nonresidential properties	Long Term

Programs	Potential Roles/Responsibilities	Related Strategy(ies)	Other Notes & Details	Preliminary Timing
Commercial Recycling Program Expansion	Lead: SCPW Support: Summit County Sustainability Staff, Waste and Recycle Companies	O1	Modernize policies to achieve best practices related to commercial diversion (e.g., mandatory recycling)	Long Term

Table 5: Implementation Initiatives – Outreach Campaigns and Resources

Outreach Campaigns & Resources	Potential Roles/Responsibilities	Related Strategy(ies)	Other Notes & Details	Preliminary Timing
Residential Outreach Campaign	Lead: Summit County Sustainability Staff Support: Utility Providers, Homeowners Associations	E1, E2, E3, E4, E5, E7	Coordinate implementation with utilities and other groups and efforts	Immediate (Spring/Summer 2015)
County Website Updates	Lead: Summit County Sustainability Staff, IT Department Support: SCPW, Utility Providers, Utah Office of Energy Development	E1, E2, E3, E4, E5, E6, E7, TL1, TL2, TL3, TL4, TL5, O1, O2, O3	Update/add content to County website to include: <ul style="list-style-type: none"> • Information about utility energy management programs, reporting tools, and incentives • Electric vehicle resources • County Sustainability and Climate Action Plan information and reporting 	Immediate (Summer 2015)
Energy Reporting Tool Outreach Campaign	Lead: Summit County Sustainability Staff Support: SCPW, Utility Providers	E2, E3, E4, E5	Coordinate implementation with utilities and other groups and efforts	Near Term (Winter 2016)
Lodging Property Outreach Campaign	Lead: Summit County Sustainability Staff Support: SCPW, Utility Providers	E1, E2, E3, E4, E5, E6, E7	Coordinate implementation with utilities and other groups and efforts	Near Term (Winter 2016)
Second Homeowner Outreach Campaign	Lead: Summit County Sustainability Staff Support: SCPW, Utility Providers	E1, E2, E3, E4, E5, E6, E7	Coordinate implementation with utilities and other groups and efforts	Near Term (Winter 2016)

Outreach Campaigns & Resources	Potential Roles/Responsibilities	Related Strategy(ies)	Other Notes & Details	Preliminary Timing
Business Outreach Campaign	Lead: Summit County Sustainability Staff Support: Summit County Economic Development, Utility Providers, Business Associations	E1, E2, E4, E5, E6, E7	Coordinate implementation with utilities and other groups and efforts	Long Term
Outdoor Heating & Snowmelt System Resource Guide	Lead: Summit County Sustainability Staff Support: SCPW, Utility Providers	E1, E2, E3, E4, E5, E6, E7	Coordinate implementation with utilities and other groups and efforts	Long Term
Outdoor Heating Notification System	Lead: Summit County Sustainability Staff Support: SCPW, Utility Providers	E1, E2, E3, E4, E5, E7		Long Term
Agriculture and Large Land Owner Outreach Campaign	Lead: Summit County Sustainability Staff, Summit County Extension Support: Utility Providers, Utah Office of Energy Development	E1, E2, E4, TL3	Coordinate implementation with utilities and other groups and efforts	Long Term

Table 6: Implementation Initiatives – Supporting Plans and Policies

Supporting Plans & Policies	Potential Roles/Responsibilities	Related Strategy(ies)	Other Notes & Details	Preliminary Timing
County Development Code and Policy Review	Lead: Planning & Zoning Department Support: Summit County Sustainability Staff	E1, E2, E4, TL1, TL2, TL3, TL4, TL5, O2, O3	Code updates underway; could include additional review and address topics such as siting, landscaping, parking, open space conservation	Immediate (Summer/Fall 2015)
County Resource Management Plan Development	Lead: Planning & Zoning Department Support: Summit County Sustainability Staff, Utah Commission for the Stewardship of Public Lands	E1, E2, E4, TL1, TL2, TL3, TL4, TL5, O2, O3	Prepare per state requirements, including addressing the protection, conservation, development, and management of air and energy resources	Near Term (By July 1, 2016)
County Sustainability Plan 2017 Update	Lead: Summit County Sustainability Staff Support: All County Departments	O2	Update the 2014-2016 County Sustainability Plan to reflect accomplishments and new goals and priorities	Near Term (2017)

Table 7: Implementation Initiatives – Projects and Investments

Projects & Investments	Potential Roles/Responsibilities	Related Strategy(ies)	Other Notes & Details	Preliminary Timing
County Solar PV System	Lead: Summit County Sustainability Staff Support : Summit County Facilities	E1, O2	Installation of solar photovoltaic system on the Justice Center and continued exploration at each County facility	Immediate (Summer 2015)/ Ongoing
County CNG Refueling Station	Lead: Summit County Facilities, Public Works Support : Summit County Sustainability Staff	TL5, O2	Install a compressed natural gas refueling appliance for County fleet vehicles at Public Works.	Near Term (by 2016)
County Compost Facility	Lead: SCPW Support: Summit County Sustainability Staff, Municipalities, Waste Companies	O1		Long Term
Electric Vehicle Infrastructure	Lead: Summit County Sustainability Staff Support: Public Works, Planning & Zoning Department	TL5, O1, O2	Includes building infrastructure for County vehicles and community charging stations	Long Term
County Facility Lighting and Efficiency Upgrades	Lead: Summit County Sustainability Staff Support : Summit County Facilities	E2, O2	Installation of energy efficiency and lighting upgrades to County Justice Center and County Courthouse	Ongoing
County Fleet Vehicle Investments	Lead: Summit County Fleet Maintenance Support : Summit County Sustainability Staff	TL5, O2	Continue to increase the number of compressed natural gas vehicles in county fleet, enact Vehicle Acquisition Policies, continue replacing low fuel economy vehicles with alternative fuel or higher fuel economy options, coordinate fuel tracking software	Ongoing

Table 8: Implementation Initiatives – Other Coordination

Other Coordination	Potential Roles/ Responsibilities	Related Strategy(ies)	Other Notes & Details	Preliminary Timing
Community Choice Aggregation Exploration	Lead: Summit County Sustainability Staff Support: SCPW, Municipalities	O2, O3		Immediate (dialogue started)
Regional Climate Network Participation	Lead: Salt Lake City, University of Utah, Alta Ski Area Support: Summit County Sustainability Staff	O2, O3		Immediate (dialogue started)
Smart Metering Technology Pilot Discussions	Lead: Summit County Sustainability Staff, Economic Development Support: SCPW, local businesses and incubators	E5	Coordinate with SCPW	Near Term (Fall 2015)
Nitrogen Fertilizer Optimization Program Exploration	Lead: Summit County Sustainability Staff Support: Summit County Extension	TL3		Long Term
Bicycle and Pedestrian Improvement Plan Coordination	Lead: Summit County Transportation Planning Support: Basin Recreation, Mountain Trails, Park City Trails, Summit County Sustainability, Public Works, UDOT	TL4	Summit County Sustainability Coordinator should continue to engage in planning and capital improvement decision-making about pedestrian and bicycle improvements, providing connections to emission reductions goals to inform discussions	Ongoing
Regional Transit Expansion Coordination	Lead: Transportation Planning Organizations and Transit Providers Support: Summit County Sustainability, Public Works, UDOT	TL1	Summit County Sustainability Coordinator should continue to engage in planning and capital improvement decision-making regional transit services, providing connections to emission reductions goals to inform discussions	Ongoing

APPENDIX: GLOSSARY OF TERMS

Adjusted Business as Usual Forecast: A modeling scenario that assumes a continuation of existing practices adjusted for the effects of existing legislation that mandates future reductions in emissions.

Benefit: The positive effects of an action; these can be measured in terms of financial benefits in dollars or through other types of benefits such as health benefits, social benefits, or environmental benefits.

Beyond Code Construction: Standards for construction voluntarily adopted by a jurisdiction that exceed the requirements of current building codes.

Business as Usual Forecast: A modeling scenario that assumes a continuation of existing practices.

Carbon: Carbon dioxide or other gaseous carbon compounds released into the atmosphere, associated with climate change.

Carbon Reduction: Limiting the emissions of carbon pollution to decrease the total amount of carbon released into the atmosphere.

Carbon Sequestration: The process of capture and long-term storage of atmospheric carbon dioxide to mitigate GHG emissions.

Community Choice Aggregation (CCA): State policy that enables local governments to aggregate electricity demand within their jurisdictions in order to purchase renewables while maintaining the existing electricity provider for transmission and distribution services.

Community Scale Renewable Energy: A renewable energy project that is built to supply a group or community of users.

Cost: The amount spent to achieve or obtain something, typically measured in dollars.

Cost Reduction (Savings): Financial benefits in dollars that would otherwise be spent.

Deep Energy Renovation: Altering an existing building or buildings with a focus on not only short-term payback measures but measures that may require more investment and have payback periods that can be substantially longer in order to affect levels of energy reductions that are “deeper” and enable them to use very limited amounts of energy to operate.

Distributed Scale Renewable Energy: Renewable energy is decentralized, and generated by a variety of smaller scale systems (e.g., rooftop solar PV).

Economic Value: The degree to which a cost returns positive benefits; the more cost effective a measure is, the more results (benefits) are created per dollar spent. This value is calculated as total costs minus total cost savings, divided by the total carbon reduction. Negative values indicate a net cumulative cost to the community for each MTCO_{2e} reduced, whereas larger, positive values indicate net savings.

Electric Vehicles (EVs): Vehicles that do not have combustion engines and are designed to be powered entirely by charging batteries with electricity.

Greenhouse Gas (GHG) Emissions: Release of gases such as carbon dioxide, methane, and nitrous oxide from various activities including fossil fuel use, land use patterns, and agriculture. Release of these gases contribute to global warming activity and are typically expressed in terms of equivalent units to carbon dioxide, or CO_{2e}.

Institutional: A market sector that includes public and quasi-public organizations including county and local governments and schools.

Offsets: A financial vehicle that allows the buyer to claim credit for reducing greenhouse gas emissions, typically by funding carbon reduction measures such as wind turbine construction or rainforest reforestation.

Solar Photovoltaic (PV): A model of solar electric energy capture that relies on solar photovoltaic panels (typically installed at a distributed or community scale).

Solar Garden (Community Solar PV): A solar electric energy ownership model whereby a single large installation is built and ownership shares are sold to community members which can then (typically) be applied as a cost reduction of their utility bill.

Single Occupant Vehicle (SOV): A vehicle whose only occupant is the driver.

Utility Scale Renewable Energy: Generation of renewable energy at a large scale for the utility provider, typically governed by a Power Purchase Agreement.

Vehicle Miles Traveled (VMT): The standard measure used to calculate transportation impacts; measures the amount of miles a vehicle travels to get from an origin to a destination (e.g. home to work).