

In loving memory of Adam Palmer, Andy Jessen, and Seth Bossung

20
23

TOWN OF EAGLE
**NET ZERO
ACTION
PLAN**

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April 2023
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Executive Summary

Achieving net zero means reducing greenhouse gas emissions as much as possible and ensuring that any remaining emissions are balanced by removals.

The Town of Eagle adopted a resolution in July of 2021 to achieve net zero emissions in the Eagle community by 2030. This Net Zero Action Plan was developed for the Town of Eagle in collaboration with the Adam Palmer Sustainability Fund.

This plan outlines a pathway to achieving net zero by 2030 by providing strategies, policies, and initiatives to reduce greenhouse gas emissions to zero and limit the impacts of climate change. While reducing greenhouse gas emissions is the primary objective, how Eagle gets there matters. Climate action provides an opportunity to recognize additional benefits for our community, environment, and economy.

Net zero is an ambitious goal that will require deep and broad commitment by everyone in Eagle. This plan details the strategies and actions that will help Eagle to simultaneously address energy, transportation, and waste emissions to achieve net zero emissions.

Eagle's 2020 greenhouse gas emissions baseline inventory calculates total emissions at 85,078 tons of CO₂e. 47% of these emissions are attributed to transportation, 39% to building energy use, and 14% to waste. The strategies detailed in this plan include reducing vehicle miles traveled and encouraging electric vehicles, maximizing electrification and efficiency in buildings, and increasing composting and recycling in our town. Achieving net zero by 2030 is possible through bold, community-wide efforts.

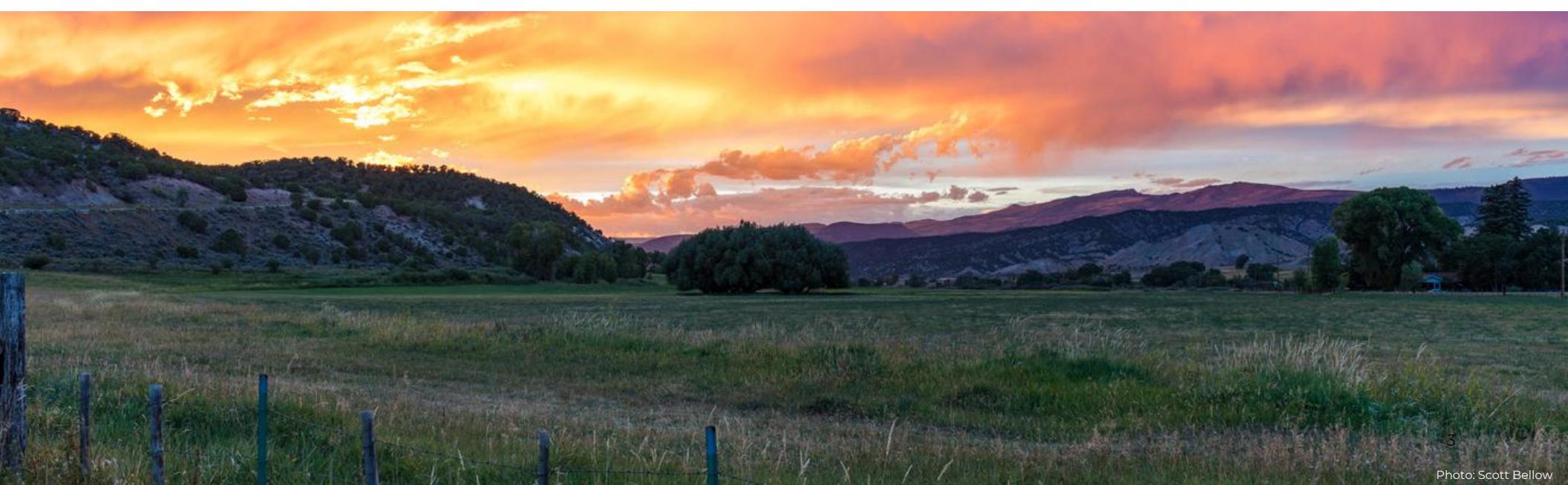


Introduction

This Net Zero Action Plan (NZAP) provides the Town of Eagle and the Palmer Fund with specific measures that our community will need to take to achieve net zero by 2030. The plan includes a greenhouse gas emissions reduction analysis to help prioritize strategies; proposed actions to pursue each strategy; specific funding and support opportunities for residents, businesses, the Town, and the Palmer Fund to help Eagle achieve net zero; and recommendations on how to measure annual progress towards net zero.

While it's important to note that the Town of Eagle has also adopted a goal to achieve net zero by 2028 for internal operations, this NZAP focuses solely on strategies and approaches to achieving net zero in the greater Eagle community by 2030. Many of these strategies will also need to be implemented within town operations to achieve the internal net zero goal.

The emissions baseline and strategic analysis in this NZAP were calculated using ICLEI's ClearPath software. ICLEI provides the tools, framework, and network to advance sustainability and climate action in local governments and communities. As an ICLEI member, Eagle has access to the ClearPath software designed to help track and manage greenhouse gas inventories, model reduction measures, forecast future emissions based on a variety of reduction strategies, and monitor emissions on the path to net zero.



Acknowledgements

This Net Zero Action Plan would not have been possible without significant contributions in time, energy, and thought of many. Thank you to the stakeholders and community members that provided input and support in the development of this plan.

Laura Hartman, Adam Palmer Sustainability Fund, Executive Director

John Gitchell, Adam Palmer Sustainability Fund Board Member and Eagle County Climate Action Manager

Geoff Grimmer, Adam Palmer Sustainability Fund Board Member and Eagle Town Council Member

Keith Klesner, Adam Palmer Sustainability Fund Board Member and Holy Cross Energy Board Member

John Widerman, Adam Palmer Sustainability Fund Board Member and FirstBank Banking Officer

Erica Sparhawk, CLEER

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Brad Davis, Holy Cross Energy

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Lisa Reed, Holy Cross Energy

Sam Whelan, Holy Cross Energy

Kim Schlaepfer, Lotus Sustainability

Charlotte Lin, Town of Avon

Nikki Davis, Town of Eagle

Molly Furtado, Town of Eagle

Larry Pardee, Town of Eagle, Town Manager

Nick Sunday, Eagle Town Council Member

Beth Markham, Town of Vail

Amelia Kovacs, Walking Mountains Science Center

Nikki Maline, Walking Mountains Science Center

Gina McCrackin, Walking Mountains Science Center

This plan also recognizes the impact that Adam Palmer, Andy Jessen, and Seth Bossung had on our community and pursuit of net zero.

Town of Eagle

Located on the western slope of the Rockies, roughly 140 miles west of Denver, the town of Eagle, Colorado has a population of 7,511 residents. With a plethora of outdoor recreation activities, including mountain biking, trail running, hiking, golf, kayaking, rafting, hunting, snowmobiling, and fishing, and an extensive trail system supporting these pursuits, **Eagle is a gem of an outdoor-focused community.** Located 30 minutes from Vail and Beaver Creek ski resorts, the Eagle community enjoys world-class skiing and amenities, in addition to many related employment, tourism, and economic opportunities.

Eagle is a vibrant mountain community that is diverse, inclusive, and unique. The Town has adopted seven guiding principles that strive to maintain and enhance the quality of life for everyone in our community and help to establish a framework for developing more detailed standards and evaluating and implementing solutions.¹ Several of these guiding principles are addressed within this plan, including Appropriate Investment; Protecting Public Health, Safety, and the Environment; Reliable and Cost-Effective Services; Sound Planning; Sustainable Finances and Increasing Efficiency; and Transparency and Community Engagement. The Town has also developed a series of nine primary objectives in their most-recent strategic plan, including an objective to invest in environmental and energy sustainability.

With over 1,500 residential units currently planned or in development, Eagle will experience the vibrant economic vitality that accompanies a growing community. This growth must be planned strategically and with the net zero goal in mind in order to support the our climate commitment as well as our our economic, social, and environmental health. Additional homes and residents will result in a measurable increase in Eagle's emissions, and future development must be designed in alignment with the strategies identified in this plan.



¹ Town of Eagle (2020). *Town of Eagle Strategic Plan*. <https://www.townofeagle.org/DocumentCenter/View/16287/Strategic-Plan->

Adam Palmer Sustainability Fund



The Adam Palmer Sustainability Fund envisions a net zero Town of Eagle by 2030 through communication, innovation, and action. The Palmer Fund is designed to raise and disperse funds towards achieving net zero by 2030 in Eagle through a revolving loan model.² It provides a key role in pursuing net zero through innovative funding opportunities, financial support, climate action leadership, and community involvement. The Palmer Fund aims to create the first known philanthropically capitalized revolving loan fund structure for climate action.

The Town of Eagle government will be vital in adopting the strategies and policy approach laid out in this plan to achieve net zero by 2030. However, as a small town, Eagle currently lacks a dedicated sustainability fund, staff, and excess finances necessary to help propel the town towards its net zero commitment. The Palmer Fund will be vital to contributing funding and technical expertise for climate-related initiatives.

You can learn more about the Palmer Fund and donate at [apsfund.org](https://www.apsfund.org).

² The Adam Palmer Sustainability Fund (2022). <https://www.apsfund.org/>

Why Net Zero?

Climate change is happening. Total annual anthropogenic greenhouse gas emissions increased by roughly 10 million metric tons of carbon dioxide between 2000 and 2010. As a direct result of anthropogenic climate change, the average temperature in the United States has increased by 1.3°F to 1.9°F since 1895, and the number and strength of heavy downpours, major hurricanes, and heatwaves continues to grow as well. The impacts of human-induced climate change are increasing globally, as rising greenhouse gas emissions result in temperature increases, changes in precipitation and the intensity of extreme weather events, rising sea levels, shrinking glaciers, and the degradation of ecosystems.³

We can make a difference. Scientists have estimated that if warming can be kept below 1.5°C, the worst impacts of climate change, like extreme floods, wildfires, and droughts, can be avoided. The Intergovernmental Panel on Climate Change released a special report in 2019, *Global Warming of 1.5° C*⁴, that indicates that we will need to reduce greenhouse gas emissions by 45% by 2030 and achieve net zero by 2050 in order to potentially limit global warming to 1.5°C.

Our mountain community is at risk. Winters are getting warmer and shorter, as scientists predict we'll have 30 additional days without freezing temperatures by 2060. Average summer temperatures are getting hotter, mountain ecosystems are changing, and we are experiencing more extreme events, such as wildfire and droughts.⁵ All of these changes to our climate and ecosystem will have impacts on the fundamental resources we need to maintain populations and live in the west, as well as the recreational, tourism, and lifestyle elements that help our community thrive.

Climate change has equity impacts. Historically, the impacts of climate change affect communities of color and low-income communities most predominately. 26% of Eagle's community identifies as Hispanic or Latino.⁶ Addressing systemic inequity and climate equality requires an intentional approach that includes and empowers all communities in Eagle.

³ U.S. National Climate Assessment (2014). *Climate Change Impacts in the United States*. U.S. Global Change Research Program.

⁴ IPCC (2018). *Intergovernmental Panel on Climate Change Special Report: Global Warming of 1.5° C*. <https://www.ipcc.ch/sr15/>

⁵ Eagle County (2016). *Climate Action Plan for the Eagle County Community*.

⁶ U.S. Census Data (2022). "Eagle town, Colorado." <https://www.census.gov/quickfacts/fact/table/eagletowncolorado/HSD310221>



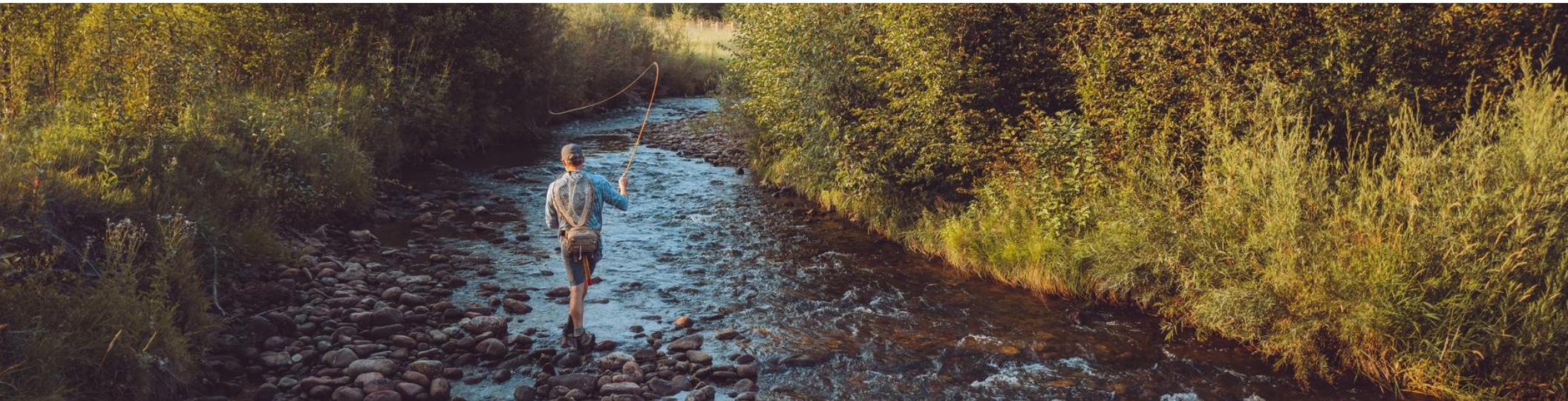
Opportunities and Risks

On July 27, 2021, the Eagle Town Council adopted resolution 56-2021 to achieve net zero carbon emissions by 2030. This Net Zero Action Plan (NZAP) provides the Palmer Fund with the opportunity to help support the Eagle community achieve this net zero goal. The plan also equips Eagle as a leader in small mountain towns and communities throughout the world pursuing net zero by 2030.

By implementing the strategies identified in this plan, Eagle can help to cultivate healthier buildings, people, and air quality, resulting in a more equitable and prosperous community for everyone.

Many of these strategies will result in cost savings along with economic and job growth for community members and the Town of Eagle. Furthermore, this plan provides an opportunity to expand climate equity in our community by including access to newer and cleaner technologies, healthier homes and businesses, and more reliable and affordable transportation options. Pursuing many of the actions detailed within this plan will also allow Eagle to access specific federal funding developed to support greenhouse gas emissions reduction measures. Implementing the NZAP provides an opportunity for the Palmer Fund to showcase how innovative collaboration and funding can help lead communities in their pursuit of sustainability and net zero.

Without a specific Net Zero Action Plan, both the Palmer Fund and the Town of Eagle risk losing future funding, dissolving partnerships and collaboration, and not upholding Adam Palmer's legacy. Additionally, Eagle risks not reaching the net zero goal detailed in Resolution 56-2021, failing to reduce emissions and climate impacts both in our community and globally, and neglecting to achieve major objectives and guiding principles that the town and community have developed.

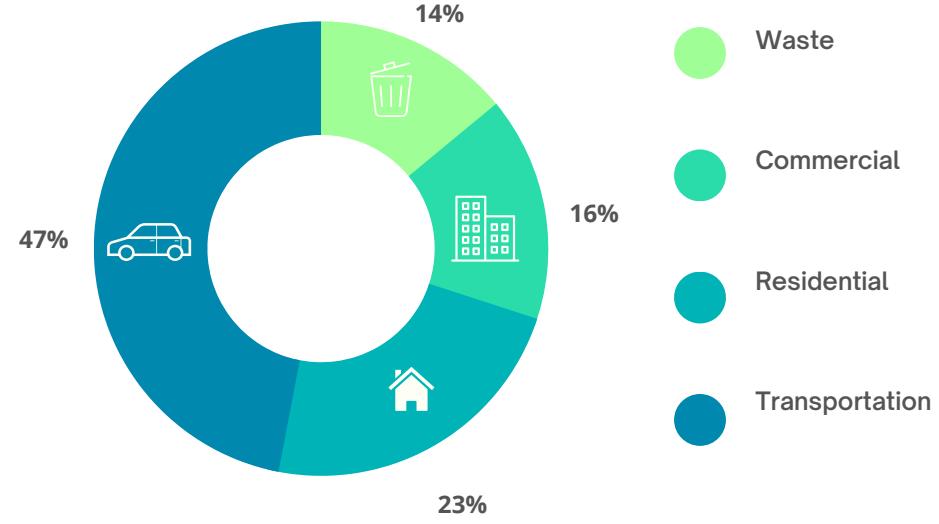


Baseline Greenhouse Gas Emissions

A baseline greenhouse gas inventory for 2020 was completed using ICLEI's ClearPath software in combination with the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC).⁷ The strategies and prioritization included in this plan are based off a baseline analysis of greenhouse gas emissions from 2020, which calculates **total emissions at 85,078 tons of CO₂e**. This equates to over 11 tons of CO₂e generated per Eagle resident in 2020.

47% of emissions are estimated from transportation, while 39% can be allocated to buildings and 14% to waste. This data is sourced from a combination of actual utility data and estimations from the 2020 Eagle County Energy Inventory. Emissions data should be tracked and uploaded to ICLEI's ClearPath tool annually to measure progress towards net zero.

Total Emissions



Eagle's greenhouse gas emissions in 2020 by sector



⁷ World Resources Institute, C40 Cities Climate Leadership Group, & ICLEI. *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC)*. <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>

Transportation

Transportation emissions are estimated to account for 47% of Eagle's total greenhouse gas emissions. These emissions were calculated using the 2020 transportation emissions for all of Eagle County as a proxy, provided by Google's Environmental Insights Explorer (EIE), and prorated to the Eagle population. Since county-wide transportation data was used as the basis for Eagle's transportation calculations, it includes emissions associated with tourism to Vail and Beaver Creek as well as additional travel on the I-70 corridor. This may skew Eagle's prorated transportation emissions higher than actual emissions.

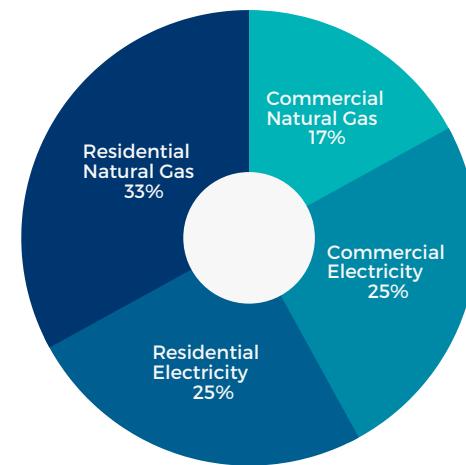
Moving forward, the Town should investigate software to isolate and measure transportation emissions occurring only in Eagle for a more precise calculation of Eagle's transportation emissions.



Building Energy Use

Building energy use represents 39% of Eagle's total emissions. This was measured directly from utility data provided by Holy Cross Energy and Black Hills Energy. The graphic below shows all building-related emissions in Eagle, distributed by fuel and building use type.

Emissions from Buildings



Eagle's emissions in 2020 from buildings by fuel and use type

Waste

Waste emissions are estimated at 14% of Eagle's total emissions. Waste volume was calculated using Eagle County's 2020 waste data from Eagle County landfill, prorated to the Eagle population, using the 2020 Eagle County diversion rate of 30%. Emissions were calculated using the material breakdown calculated in a 2018 Eagle County waste composition study.⁸ Similar to transportation emissions, estimated waste emissions may be higher than actual emissions, as the county-wide waste data includes waste from resorts and hospitality sources in Vail and Beaver Creek, along with any waste originating outside of Eagle County delivered to the Eagle County landfill.

The Town of Eagle currently holds a contract with Vail Honeywagon to collect recycling and trash for residential properties within the town boundary. Commercial and multifamily properties may use a waste hauler of their choice. Moving forward, the Town should implement a requirement for all haulers operating in Eagle to report trash and recycling hauling data quarterly, including tons of trash, recycling, and organics collected. Both Vail and Avon require haulers to report waste data regularly. Combined with residential hauling data from Vail Honeywagon, additional commercial hauling data can be used to provide an accurate calculation of Eagle's waste volume. A waste audit should also be completed every two years to estimate the waste composition and provide an accurate calculation of Eagle's solid waste emissions based on actual material composition.



AFOLU

Agriculture, forestry, and other land use (AFOLU) reflect natural climate solutions that are an effective approach to reducing and removing emissions. The impact of AFOLU in Eagle was calculated using ICLEI's Land Emissions and Removals Navigator (LEARN) tool.⁹ This web mapping tool helps to estimate the local GHG impacts of their forest and trees by combining methods outlined in ICLEI's Greenhouse Gas Protocol with national data sources to approximate annual greenhouse gas impacts over a given time.

Net emissions from forests and trees in Eagle result in the removal of approximately 422 tons of CO₂e each year.

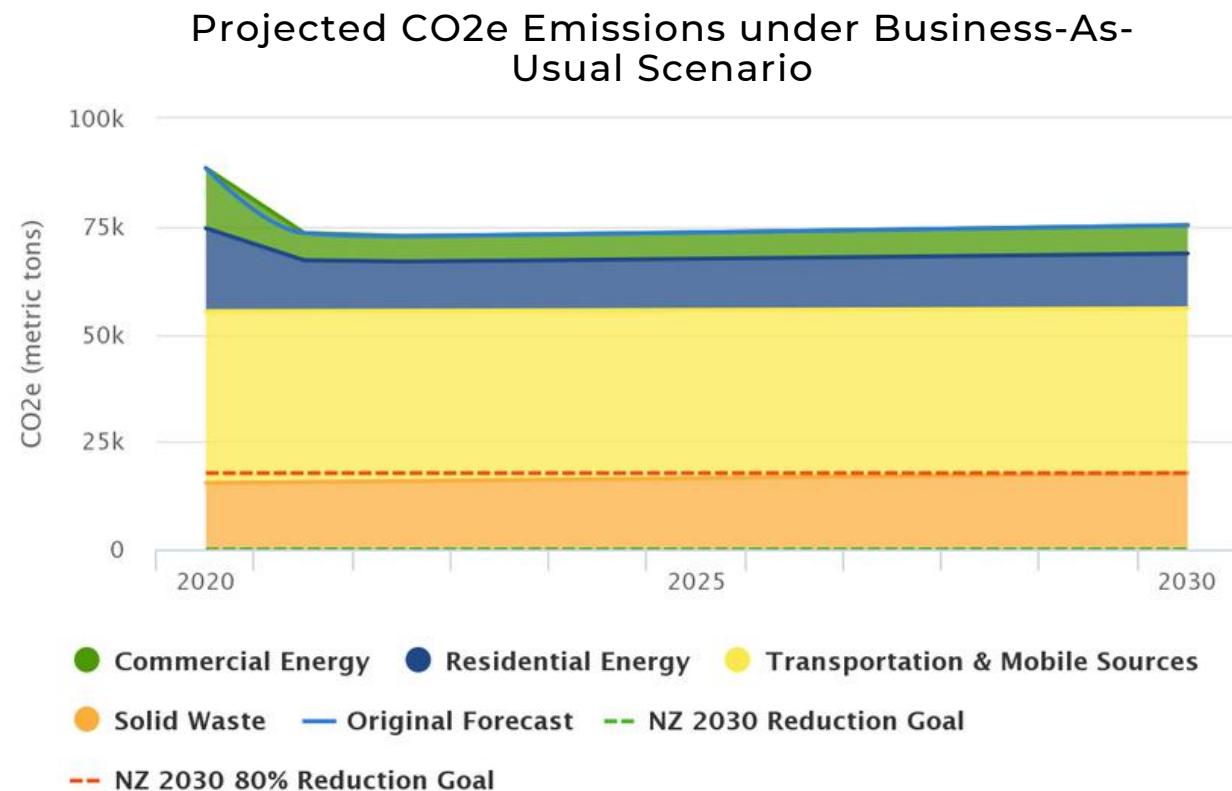
⁸ Cowman, Winn (2018). Northwest Colorado Waste Diversion Study. Souder, Miller & Associates.

⁹ ICLEI (2023). US Community Protocol's Land Emissions and Removals Navigator (LEARN). <https://icleiusa.org/LEARN/>

Greenhouse Gas Emissions Forecast

Forecasting future greenhouse gas emissions is a best practice for climate action planning. It helps to build a framework for the scale of action required to achieve climate action goals. The following business-as-usual (BAU) forecast models how emissions are expected to increase through 2030 and assumes a projected population growth rate of 1.4% per year.¹⁰ It also reflects Holy Cross Energy's commitment to providing 100% renewable energy by 2030.

The BAU scenario illustrates Eagle's emissions through 2030 if current emissions are maintained but no additional action is taken. The forecast confirms that getting close to net zero will require a significant increase in programming, impact, and strategic action.



Under business as usual, Eagle's greenhouse gas emissions are likely to continue relatively steadily, with a decrease due to Holy Cross Energy's 100% renewable energy portfolio and a slight increase due to population growth.

¹⁰ Economic & Planning Systems, Inc. (2023). Town of Eagle Comprehensive Affordable Housing Assessment.

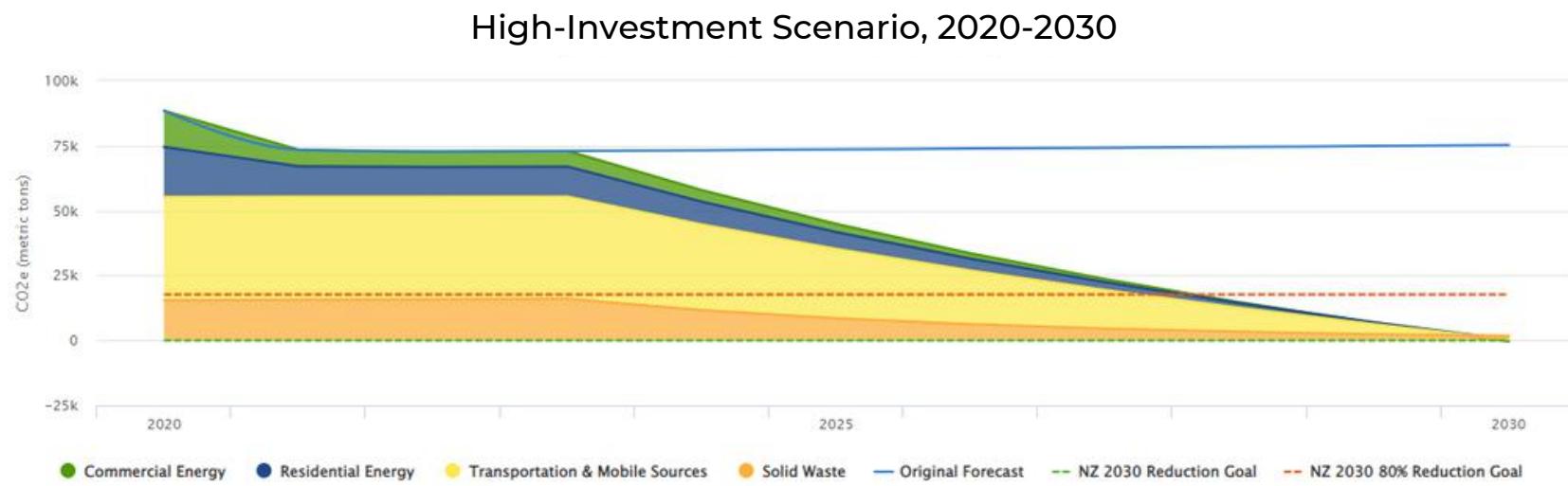
The Path to Net Zero

Using a reduction potential model, a complete set of emissions reduction strategies has been analyzed to evaluate how net zero is achievable. Many strategies were modeled at a low, medium, and high-investment approach to determine the extent of emissions reductions possible at several levels. This approach identifies which actions could reduce greenhouse gas emissions the most, as well as the scale and feasibility of community-wide reductions, depending on the financial investment and effort made.

The graph below shows Eagle achieving net zero in the high-investment approach in combination with the business-as-usual assumptions. Appendix A provides the greenhouse gas reduction potential scenarios for the low- and medium-investment approach.

Strategic climate modeling revealed that if Eagle successfully implements a high-investment approach of all strategies presented in this net zero analysis, we could achieve net zero by 2030.

The results of the modeling are encouraging in revealing that net zero is achievable. It will require significant time, financial, and community investment, coupled with dedication and commitment from the Town, residents, and businesses over the next 7 years. Beyond 2030, responsibility and persistence will be required to maintain reduced emissions and decrease future carbon offsets and removals.



If Eagle can successfully implement every high-level implementation measure contained in the NZAP, we can achieve net zero by 2030.

Co-Benefits and Climate Equity

Each strategy provides benefits to our community beyond greenhouse gas emissions reductions. Co-benefits include improved air quality and public health, economic growth, resiliency, and climate equity. Each sector addresses the co-benefits of strategies within that sector. While decarbonizing our community will have a significant impact on our greenhouse gas emissions, it will also bring positive economic and job growth.

Pursuing net zero provides Eagle with the opportunity to lead a positive transformational effort in our economic history through economic growth, job opportunities, and a stronger and healthier community.

There is a strong interconnection between the strategies outlined in this plan and equity, environmental justice, and community health. The proposed strategies and recommendations have varying implications for different sectors of our community. Additional efforts will be necessary to fully address equitable access to the programs, services, and initiatives that will be implemented to pursue net zero.

Climate equity allows everyone to fairly share the same benefits from climate solutions and attain full and equal access to opportunities, regardless of one's background, identity, or socio-economic status.



Community Engagement

To successfully implement this plan, a formal community and stakeholder engagement plan should be implemented to encourage feedback, involvement, and action by our community. It is recommended that the Town host a variety of community and stakeholder engagement events every one to two months throughout the implementation of this plan.

A successful engagement approach will need to ensure that all communities are involved and invited to participate, including Hispanic populations, people of color, and low-income communities.

Community ownership, action, and feedback will be crucial to achieving net zero.

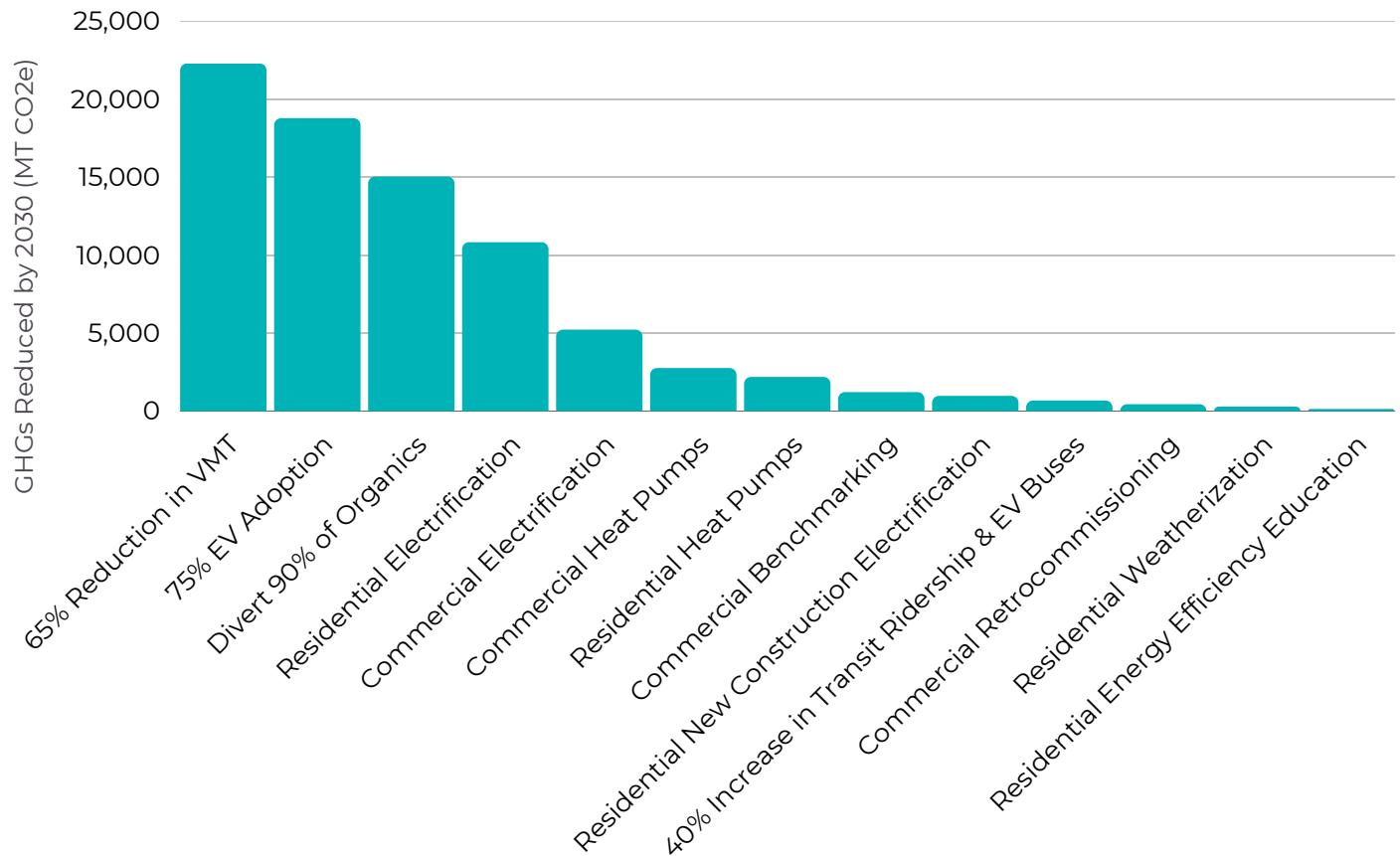
Engagement events will provide opportunities for social mobilization within the community, as well as the chance to deliver community updates on current progress and priorities towards net zero. Additional behavior change initiatives and specific actions that residents and businesses are encouraged to take should be shared widely throughout our community.

Key Strategies

A wide array of strategies was analyzed based on their implementation scale and potential greenhouse gas emissions reductions. Pursuing the high-investment scenario allows Eagle to reach net zero by 2030. Below is a summary of all strategies included in the high-investment scenario which compares them based on their emissions reduction potential.

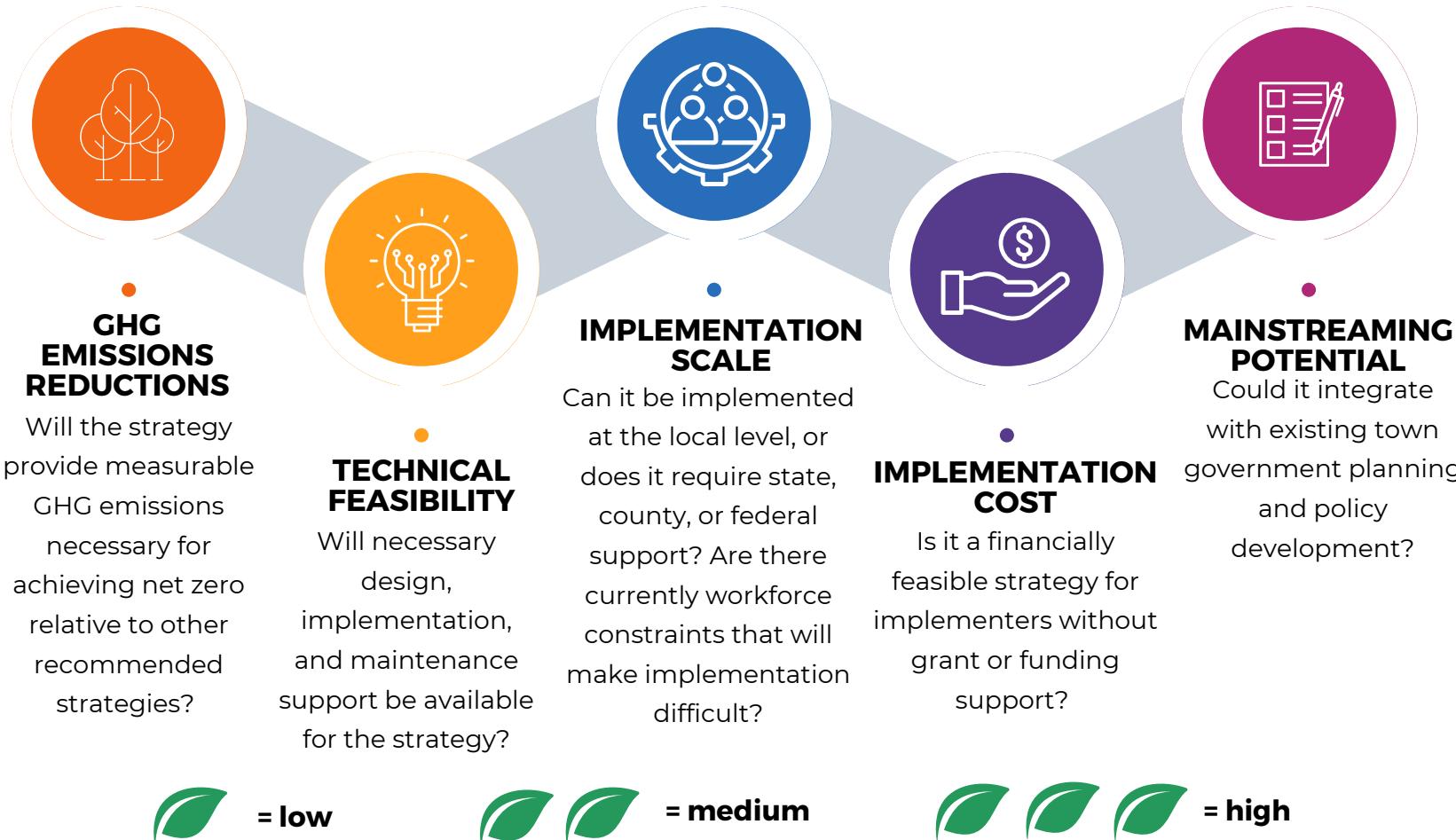
This NZAP offers key strategies in each primary sector, along with the proposed 2030 target and associated estimated greenhouse gas reductions. In addition, a projected feasibility analysis is included for each strategy, ranking actions based on technical feasibility, ease of implementation, financial viability, and mainstreaming potential.

Comparison of GHG Emissions Reduction Potential



A comparison of the greenhouse gas emissions reduction potential by 2030 of all strategies in the high-level investment scenario.

Feasibility and Process for Equitable Implementation



GHG Reduction Potential for each strategy represents how much it could reduce greenhouse gas emissions by 2030. These rankings were quantified using a proprietary modeled and simplified to a scale of 1 to 3.

Low reduces CO₂e by 400 to 1,000 tons
Medium reduces CO₂e by 1,000 to 10,000 tons
High reduces CO₂e by 10,000 to 23,000 tons

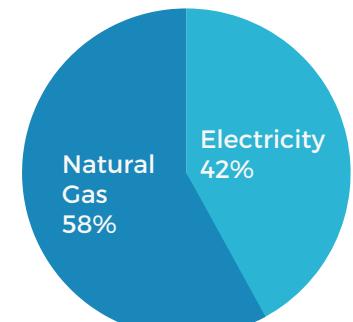
RESIDENTIAL ENERGY



Greenhouse gas emissions from the residential energy sector are associated with electricity and natural gas usage in residential spaces. Eagle's residential community is comprised of free market and affordable housing properties that vary in size, occupancy, age, and quality. While residential properties typically include single family homes, multifamily properties, and residences in mixed-use buildings, units in the latter two categories generally fall within commercial energy use when these buildings have one meter.

The occupants in these spaces are served by two utilities. Electricity is provided by Holy Cross Energy, while natural gas is served by Black Hills Energy. Opportunities to reduce GHG emissions from residential energy usage are tied to reducing energy usage and electrifying homes in order to maximize renewable energy from Holy Cross Energy.

If all objectives in the NZAP are fully and successfully implemented, greenhouse gas emissions from residential energy could be reduced by 23,658 MTCO2e.



Eagle's residential GHG emissions in 2020

The Eagle community will experience an array of co-benefits that come from successfully reducing greenhouse gas emissions in the residential energy sector. Many of the residential strategies identified in this section require significant investment into the local workforce and potential jobs, supporting economic growth. Reducing residential energy use results in improved outdoor air quality and reduced pollution.

Furthermore, many strategies encourage the transition to electric appliances and mechanical equipment in homes, which are healthier than their fossil-fueled counterparts. This helps to promote equitable access to healthier, safer, and more comfortable homes, cleaner fuel strategies, and lower utility bills for all residents. Overall, decarbonizing our residential energy use fosters increased energy independence as we rely more on locally-produced clean energy to produce our electricity.

1.1 Electrification of Existing Residential Buildings

Fuel-switching and electrification are essential for reducing fossil fuel usage. Upgrading equipment and appliances that burn natural gas, propane, gasoline, or diesel fuels to energy-efficient electric technologies will decrease greenhouse gas emissions in the short term. Accompanied with Holy Cross Energy's goal to provide 100% renewable energy by 2030, relying solely on electricity from Holy Cross to fuel our homes will provide measurable emissions reductions. Electrifying 50% of our existing homes by 2030 is the #4 strategy to achieve net zero, resulting in a savings of 10,811 MTCO₂e. **Burning fossil fuels for cooking can also create harmful indoor air pollution. Children living in homes with gas stoves are 42% more likely to have asthma.**¹¹

Water heating and space heating are the major end-uses for natural gas and propane in homes. LBNL's research indicates that there is no technical reason that nearly all the natural gas or propane used for space heating, water heating, and cooking cannot be electrified over the long term with off-the-shelf technologies. Furthermore, space heating, water heating, and cooking beneficial electrification technologies have been found to be cost-effective throughout residential implementation in Colorado.¹² Cold climate air-source heat pumps, electric water heaters, induction cooktops, and electric ovens represent the primary opportunities for electrification in homes.

Lawrence Berkeley National Laboratory (LBNL) estimates that "nearly 100% of all energy use" has the technical potential for electrification.¹³



¹¹ Weiwei Lin, Bert Brunekreef, Ulrike Gehring, Meta-analysis of the effects of indoor nitrogen dioxide and gas cooking on asthma and wheeze in children, *International Journal of Epidemiology*, Volume 42, Issue 6, December 2013, Pages 1724–1737, <https://doi.org/10.1093/ije/dyt150>

¹² GDS Associates, Inc. (2020). *Beneficial Electrification in Colorado: Market Potential 2021-2030*. Prepared for Colorado Energy Office. <https://drive.google.com/file/d/17bMnJv-5YgleW3y6NERyqYBRhtYm7BR6/view>

¹³ Lawrence Berkeley National Laboratory (2018). *Electrification of buildings and industry in the United States*. <https://ipu.msu.edu/wp-content/uploads/2018/04/LBNL-Electrification-of-Buildings-2018.pdf>

1.1 Electrification of Existing Residential Buildings

Cities and communities across the nation have started to implement a variety of strategies to remove fossil fuels from existing buildings. This includes long-term regulatory roadmaps, initiating pilot programs, and providing funding for home retrofits to allow homeowners and property owners to electrify their properties with minimal costs. Programs that support zero emissions technologies, such as new high-efficiency electrical and mechanical systems should be paired with building efficiency policies and financing solutions for residents. By creating incentives and programs to encourage widespread, accelerated, and equitable electrification, we can make progress towards net zero without compromising safety, comfort, and quality of life.

Decarbonization of the building sector, including existing homes, will require significant market transformation and workforce development. Transforming the market towards electric mechanical systems and appliances will necessitate distributing resources to all residents, including incentives and rebates for upgrading to electric equipment. Several bills introduced in the 2021 session of the Colorado General Assembly also target the electrification of buildings. This transition will create thousands of energy efficiency jobs.¹⁴ By leading the state in net zero and electrification, Eagle is primed to be at the forefront of this workforce development.



Actions:

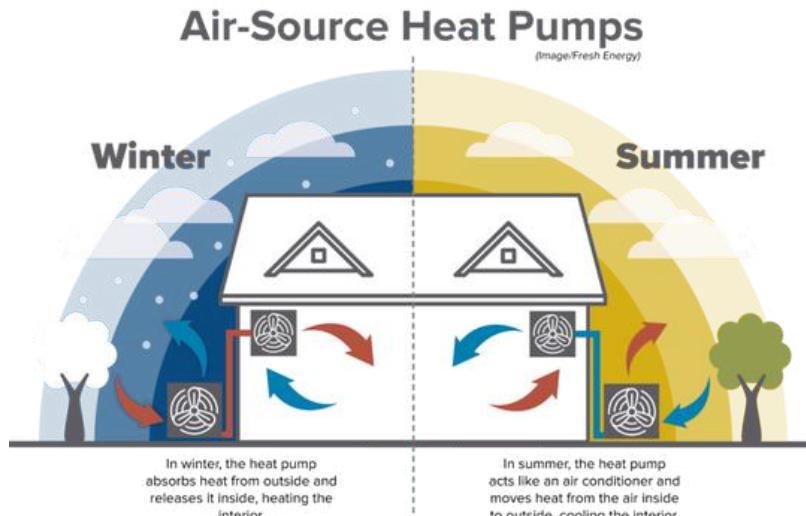
- Develop a tactical roadmap to achieve decarbonization of the residential building stock, including programs, policies, and incentives.
- Support contractor training and workforce development to build out the capacity to support electrification.
- Provide a hub for residents to access information on rebates and financing options for decarbonization.
- Develop an educational campaign to raise awareness on the health and cost benefits of electrification.

2030 Target		2030 GHG Reduction		
Electrify 50% of existing residential buildings		10,811 MTCO2e		
Feasibility of Actions				
GHC Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
3 blue leaf icons	2 blue leaf icons	2 blue leaf icons	2 blue leaf icons	3 blue leaf icons

¹⁴ Energy Efficiency Business Coalition, 2021. "New Colorado Policies to Advance Building Electrification and Energy Efficiency will Boost Jobs Statewide." https://www.eebco.org/resources/Documents/QMM_2021/QMM_JUNE%202021/EEBC_SWEEP%20REPORT_Electrification%20Boosts%20Jobs%20CO%20Workforce_5.27.21R.pdf

1.2 Residential Heat Pump Installation

The primary technology opportunity to electrify water and space heating is through heat pumps. Replacing existing natural gas heating equipment with cold-climate air source heat pumps and upgrading to heat pump water heaters was identified as the second most impactful strategy to reduce residential energy use. Cold climate heat pumps can help save families as much as \$500 a year on their utility bills.¹⁵ Heat pumps also provide cooling in summer months.



To achieve meaningful savings in an approach that will help reach our net zero goal, 700 heat pumps will need to be installed by 2030. This represents roughly 32% of the housing stock in 2020. While this is an ambitious target, it is achievable through coordinated, efficient efforts accompanied by regulatory and funding support.

Technology has advanced considerably to enable cold climate heat pumps (CCHPs) to operate efficiently in extremely cold temperatures, as low as -5 to -15 degrees Fahrenheit.¹⁵

Actions:

- Develop a regulatory program to require homeowners and property owners to replace their natural gas heating equipment with CCHPs when existing equipment reaches its end of life.
- Work with CAC and Holy Cross Energy to support workforce development and contractor training for CCHP replacements.
- Develop a program to consolidate CCHP upgrades in dedicated neighborhoods to reduce costs and homeowner efforts, similar to Solarize Eagle. Consider offering air sealing and insulation with CCHP upgrades to further reduce energy usage and costs and minimize the need for secondary heating sources.
- Establish a consolidated funding database to help homeowners easily connect with local, state, and federal incentives and rebates for CCHP upgrades.
- Consider additional rebates in Eagle for early adopters to help spark interest and market transformation for CCHPs.

2030 Target		2030 GHG Reduction		
700 heat pumps		2,171 MTCO ₂ e		
Feasibility of Actions				
GHC Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
2 leaves	2 leaves	2 leaves	2 leaves	2 leaves

¹⁵ Department of Energy (2022). "DOE Announces Breakthrough in Residential Cold Climate Heat Pump Technology." <https://www.energy.gov/articles/doe-announces-breakthrough-residential-cold-climate-heat-pump-technology>

1.3 Residential New Construction Electrification Requirement

Eagle is experiencing a significant growth in both population and housing. With over 1,500 units planned for development in the next 5-10 years, residential new construction will contribute significantly to Eagle's greenhouse gas emissions.¹⁶ Requiring new residential construction to be all-electric can help Eagle meet our net zero goal and eliminate unnecessary emissions before they start. This is one of the most straightforward and cost-effective measures to achieving net zero and setting our community up for success.

All-electric housing can improve indoor air quality, lower asthma rates by excluding gas appliances, and increase equity by providing tenants with access to clean, efficient technologies at low costs.

After rebates and tax incentives have been applied, the cost of all-electric construction is cheaper for residential building types than construction using natural gas. The most significant annual greenhouse gas and energy use savings occur when all-electric buildings comply with the 2021 IECC.¹⁷ Since the Town of Eagle intends to adopt the 2021 IECC in 2023, requiring an additional all-electric component for new residential construction would provide the maximum cost savings and emissions reductions for residents. When paired with solar PV, all-electric residential new construction properties can provide low- to no-cost utility bills for residents.¹⁸



¹⁶ EPS (2023). *Comprehensive Affordable Housing Assessment*. Prepared for the Town of Eagle.

¹⁷ Lotus Engineering & Sustainability (2022). *Eagle County Energy Code Modeling Report*.

¹⁸ RMI (2021). "Colorado Developers Lead the Way on Affordable, All-Electric Housing." <https://rmi.org/colorado-developers-lead-the-way-on-affordable-all-electric-housing/>

1.3 Residential New Construction Electrification Requirement

Eagle should also consider supplementary code amendments to help increase the cost and energy savings associated with residential new construction electrification requirements. For example, passive house building principles require homes to be built efficiently from the start, including continuous insulation, minimal thermal bridging, low infiltration and high airtightness, high-performance windows and doors, and efficient ventilation through ERVs and/or HRVs. As a result, Passive House (PHIUS) certified homes are designed to use 80 to 90% less heating and cooling energy than a typical home build to current code requirements.¹⁹ Both Denver and Boulder County include PHIUS certification as a pathway to code compliance.

Another consideration would be to require LEED-certified homes, which use 20 to 30% less energy than non-green homes, with some homes achieving up to 60% savings.²⁰ Over 35 cities throughout the U.S., including Denver, require or support LEED certification.²¹



Actions:

- Implement a Residential Building Electrification code requirement requiring residential new construction to be all-electric with no gas lines.
- Consider additional funding for affordable and income-qualified housing to install solar PV and further offset energy usage and utility costs.

2030 Target		2030 GHG Reduction		
All-electric residential new construction code requirement		956 MTCO2e		
Feasibility of Actions				
GHG Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
1 leaf	3 leaves	3 leaves	1 leaf	3 leaves

¹⁹ Colorado Passive House (2022). <https://coloradopassivehouse.com/>

²⁰ USGBC (2022). "LEED certification for residential." <https://www.usgbc.org/leed/rating-systems/residential>

²¹ Everblue (2022). "LEED Legislation by City: See Where LEED Certification is Required." <https://everbluetraining.com/cities-requiring-or-supporting-leed-2015-edition/>

1.4 Residential Weatherization

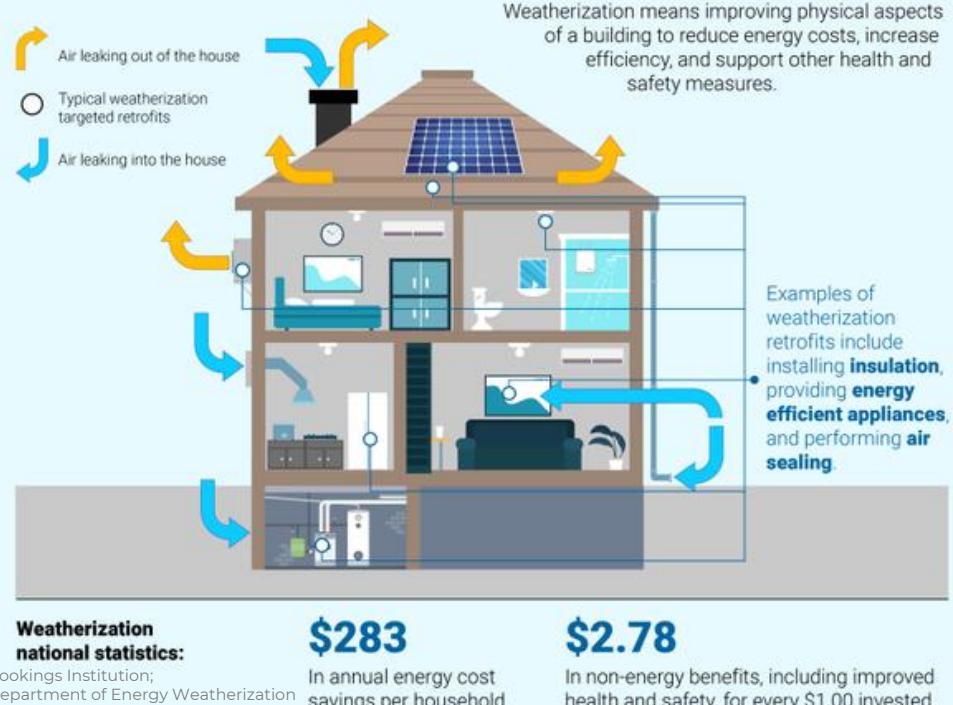
Weatherization programs typically offer insulation and air sealing measures, along with furnace or boiler tune-ups, programmable thermostats, high efficiency refrigerator and/or water heater replacements, water saving measures, and LED lighting upgrades. **Reducing energy use is critical to increasing the efficacy of heat pumps and new mechanical equipment.**

There are currently several income-qualified weatherization programs offered for Eagle residents, including Colorado's Affordable Residential Energy (CARE) program and the Weatherization Assistance Program (WAP) administered by the Northwest Colorado Council of Governments. Both initiatives have been effective at providing weatherization services for income-qualified households. Offering an expanded program for all homes in Eagle can help to further reduce energy use and emissions associated with heating and cooling costs.

Weatherizing 100 households a year until 2030 will provide emissions reductions while also helping to capitalize on the efficiency of new electrification technology. Partnering a weatherization program with home energy assessments and/or heat pump installation can help streamline contractor work and energy efficiency upgrades.

Weatherization improvements can help households save 20 to 30% on utility bills.²²

What is weatherization?



Actions:

- Develop a weatherization program available to all homes in Eagle, or set significantly higher income limits (eg. 175% AMI), to provide weatherization services to 700 households by 2030. Identify opportunities for collaboration with contractors to provide weatherization upgrades simultaneously with home energy assessments and/or CCHP upgrades, similar to Eagle County's BEECH program.
- Identify grant or IRA funding sources for expanding weatherization projects at low or no cost to homeowners and explore revolving loan opportunities with the Palmer Fund.

2030 Target		2030 GHG Reduction		
700 households		266 MTCO2e		
Feasibility of Actions				
GHC Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
2	2	2	2	2

²² National Association for State Community Services Programs (NASCSP). "Top Five Reasons You Should Care About Weatherization." <https://nascsp.org/top-five-reasons-you-should-care-about-weatherization/>

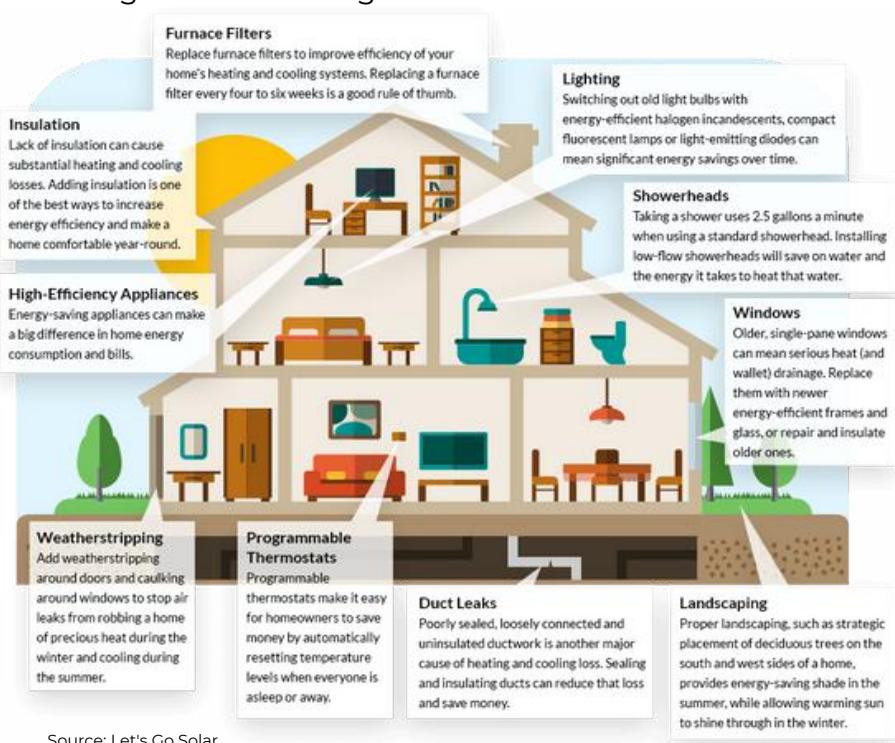
1.5 Residential Energy Efficiency Education

Educating residents and homeowners on energy efficiency measures can provide an effective way to engage with community members, offer information on additional energy upgrades, and encourage behavior change measures to reduce energy use. Energy efficiency education can also be partnered with Walking Mountains' Home Energy Assessments and during mechanical or weatherization upgrades. **Effective education and behavior change programs can help residents reduce their energy use by an estimated 10%. Strategic energy management programs and competitions can result in utility savings as high as 23%.²³**

Actions:

- Develop behavior change and energy efficiency education programs to engage households.
- Partner with Walking Mountains to provide increased energy efficiency education during Home Energy Assessments.
- Partner with Holy Cross Energy to incorporate education on utility bills and encourage awareness of time-of-use.
- Collaborate with Holy Cross Energy and Black Hills Energy to implement a strategic energy management campaign.
- Schedule and design community engagement events to provide energy efficiency education and encourage community support and involvement around the net zero goal.

Increasing energy efficiency education helps residents gain a better understanding of how their energy-efficient choices can save money, provide environmental, community, and health benefits, and increase the resiliency and reliability of the electric grid. Learning energy efficient behaviors at home typically transfer over to behavior and cultural change, inspiring energy conservation at schools and in the workplace. Effective community-based social marketing campaigns can help to encourage widespread and long-lasting behavior change.



Source: Let's Go Solar

2030 Target		2030 GHG Reduction				
350 households		116 MTCO2e				
Feasibility of Actions						
GHG Reduction		Technical Feasibility		Implementation Ease	Implementation Cost	Mainstreaming Potential

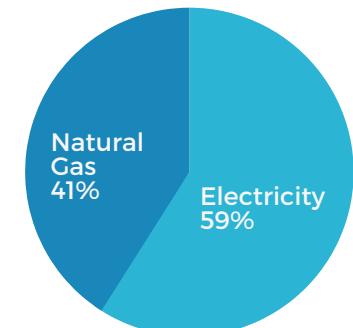
²³ ACEEE, 2016. *Behavior Change Programs: Status and Impact*. <https://www2.aceee.org/l/310911/2017-12-28/f8ldw>

COMMERCIAL ENERGY



Greenhouse gas emissions from the commercial energy sector are associated with the electricity and natural gas usage in commercial spaces. Eagle's commercial building stock is comprised of a variety of properties that differ in size, occupancy, age, and quality, and include owner-occupied and tenant-occupied businesses in single occupancy and mixed-use buildings. Commercial utility meters serve properties such as retail, restaurants, hotels, office spaces, schools, government buildings, industrial facilities, and multifamily complexes with one meter. There are over 40 commercial properties in Eagle that exceed 10,000 square feet.

The occupants in these spaces are served by two utilities. Electricity is provided by Holy Cross Energy, while natural gas is served by Black Hills Energy. Opportunities to reduce greenhouse gas emissions from commercial energy usage are tied to electrifying properties, installing heat pumps, benchmarking current energy use, and retro-commissioning existing equipment.



Eagle's commercial GHG emissions in 2020

If all objectives in the NZAP are fully and successfully implemented, greenhouse gas emissions from commercial energy could be reduced by 15,915 MTCO₂e.

Reducing our commercial energy use has a variety of co-benefits for local businesses and residents, including workforce training, increased job creation, improved outdoor air quality, and decreased air pollution. Upgrading to electric appliances and mechanical equipment in business helps to promote equitable access to healthier, safer, and more comfortable spaces for both employees and customers, cleaner fuel strategies, and lower utility bills for tenants. It's important to remember that commercial properties include our schools and many multifamily buildings. As such, improvements to these spaces provide direct health and comfort improvements for our children and residents. Decarbonizing our commercial energy use stimulates increased energy independence as well.

2.1 Electrification of Existing Commercial Buildings

Fuel-switching and electrification are essential for reducing fossil fuel usage. Similar to the residential building sector, space heating and water heating are the major end uses for natural gas and propane in commercial buildings, along with cooking. Electrifying existing commercial properties will allow Eagle to reduce greenhouse gas emissions associated with natural gas usage. Accompanied with Holy Cross Energy's goal to provide 100% renewable energy by 2030, relying solely on electricity from Holy Cross to fuel our commercial buildings will provide measurable emissions reductions. Electrifying 50% of our existing commercial properties by 2030 is the #5 strategy to achieve net zero, resulting in a savings of 5,205 MTCO2e.

Many commercial buildings can be electrified with a simple payback of less than 10 years on average, without rebates.²⁴

A full decarbonization package, which includes electrification, ventilation and energy efficiency measures, envelope improvements, HVAC controls optimization, winter heating peak demand management, and solar PV, offers a neutral or positive net present value.²⁵



²⁴ Cohn, C., and N. W. Esram (2022). *Building Electrification: Programs and Best Practices*. Washington, DC: American Council for an Energy-Efficient Economy, www.aceee.org/researchreport/

²⁵ Mohammad Hassan Fathollahzadeh and Anish Tilak, *The Economics of Electrifying Buildings: Medium-Size Commercial Retrofits*, RMI, 2022, <https://www.rmi.org/insight/economics-of-electrifying-buildings-midsized-commercial-retrofits/>

2.1 Electrification of Existing Commercial Buildings

Commercial food service kitchens and restaurants face unique challenges in pursuing electrification of commercial kitchen operations. However, food service represents one of the highest energy-use-per-square-foot segments of the commercial sector, a significant opportunity for savings. Electrification in commercial kitchens is accompanied by lower utility bills and increased comfort without the auxiliary heat produced by natural gas appliances.²⁶



Microsoft's One Estrella Food Hall includes an all-electric cafeteria that opened in March 2022.

Economic development initiatives and workforce training can also help normalize electrification, increase product access and choice, and decrease installation costs. The Town of Eagle should lead by example in piloting electrification retrofits and conducting performance testing in Town-owned buildings to encourage market confidence in electrification and increase demand for heat pump roof top units.

Actions:

- Model best practices of building electrification through energy retrofitting of government buildings. This will also help the town pursue its internal goal of achieving net zero for town operations by 2028.
- Develop a tactical roadmap to achieve decarbonization of the existing commercial building stock including programs, policies, and incentives that include engagement with the Eagle Downtown Business Alliance (DBA) and business community.

2030 Target		2030 GHG Reduction		
Electrify 50% of existing commercial buildings		5,205 MTCO ₂ e		
Feasibility of Actions				
GHG Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
2/5	3/5	2/5	3/5	2/5

²⁶ U.S. Department of Energy (2021). "Decarbonizing Kitchens: Opportunities for the Food Service Sector." <https://betterbuildingssolutioncenter.energy.gov/beat-blog/decarbonizing-kitchens-opportunities-food-service-sector>

2.2 Commercial Heat Pump Installation

Replacing existing natural gas mechanical equipment and appliances with electric options was identified as the second most impactful strategy to reduce commercial energy use. To achieve meaningful savings in an approach that will help reach our net zero goal, heat pumps will need to be installed for 10% of the commercial building stock each year by 2030.

Swapping out gas-fired roof-top units (RTUs) for heat-pump RTUs is an ideal option for commercial properties to pursue electrification, as they include a limited upfront cost and technical complexity.²⁷

Actions:

- Develop a regulatory program to require commercial property owners to replace their natural gas mechanical equipment with heat pumps when existing equipment reaches its end of life.
- Work with CAC and Holy Cross Energy to support workforce development and contractor training for heat pump replacements.
- Develop a program to consolidate heat pump upgrades in dedicated commercial areas (eg. Downtown Eagle, Eagle Ranch, Chambers Ave.) and/or sectors (eg. office spaces, restaurants, schools). Consider offering an expanded electrification package with heat pump upgrades, including ventilation and efficiency upgrades, envelope improvements, demand management, HVAC control optimization, and rooftop PV, to further reduce energy usage and costs.
- Establish a consolidated funding database to help property owners easily connect with local, state, and federal incentives and rebates for heat pumps upgrades.
- Consider additional rebates in Eagle for early adopters to help spark interest and market transformation for heat pumps.

Retrofitting eligible RTUs with advanced controls and replacing older RTUs with high efficiency units can reduce energy consumption by 20-50% per year.²⁸

Supporting market development for emerging heat pump RTUs can also advance electrification retrofits. Similar to electrification initiatives, the Town should lead by example by installing heat pumps in all town-owned buildings. This can help provide contractor training and encourage local business and property owners to become more comfortable with heat pump equipment.



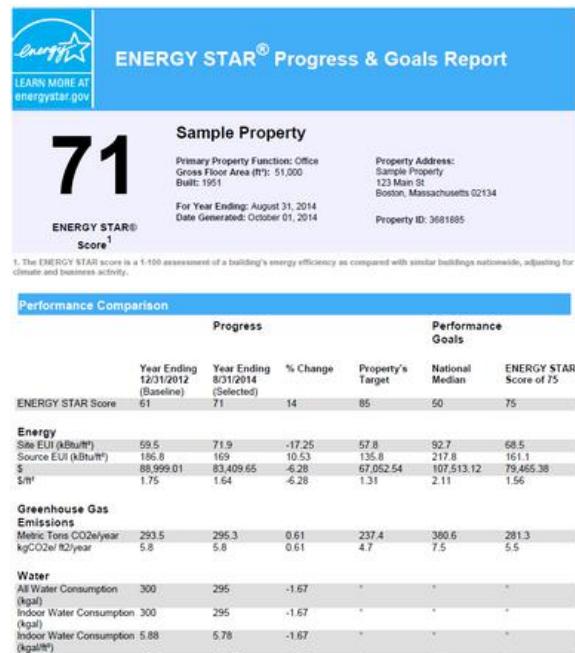
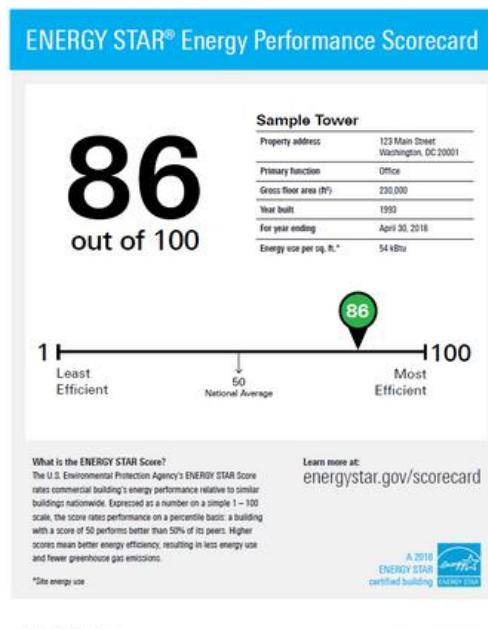
2030 Target					2030 GHG Reduction
Install heat pumps in 70% of commercial space					2,742 MTCO2e
Feasibility of Actions					
GHC Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential	
2 leaf icons	3 leaf icons	2 leaf icons	2 leaf icons	2 leaf icons	

²⁷Mohammad Hassan Fathollahzadeh and Anish Tilak, *The Economics of Electrifying Buildings: Medium-Size Commercial Retrofits*, RMI, 2022, <https://rmi.org/insight/economics-of-electrifying-buildings-midsized-commercial-retrofits/>

²⁸ Kanogia, M. (2017). "Retrofitting of Commercial Rooftop Units Results in Savings of \$5.6 Million." U.S. Department of Energy. <https://www.energy.gov/eere/buildings/articles/retrofitting-commercial-rooftop-units-results-savings-56-million>

2.3 Commercial Benchmarking

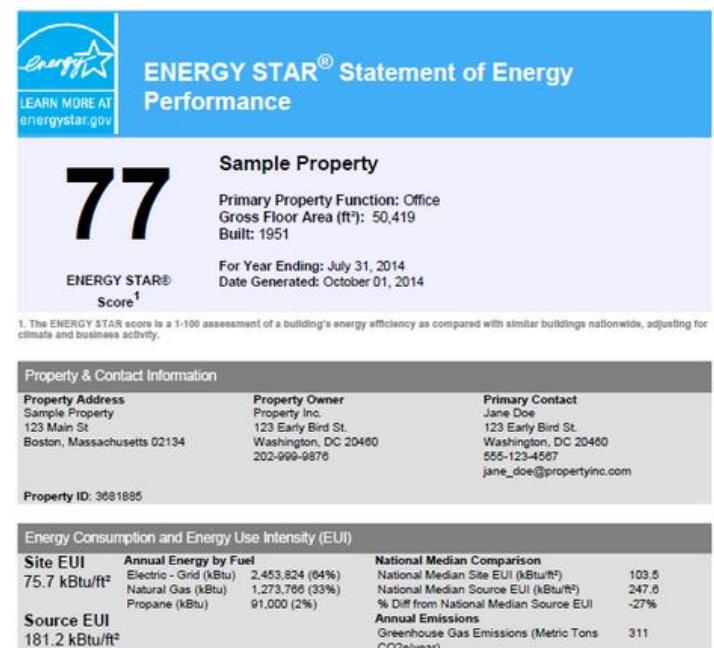
Benchmarking refers to tracking a building's energy use. Colorado recently passed a benchmarking ordinance that requires owners of large commercial, multifamily, and public buildings over 50,000 square feet to report their annual energy use to the Colorado Energy Office (CEO) using ENERGY STAR Portfolio Manager (ESPM), a free energy management tool to help track and analyze energy and water consumption. Building Performance Colorado (BPC), Colorado's benchmarking program, includes training and a dedicated help center to assist building owners in complying with benchmarking requirements.²⁹



Benchmarking programs enable building owners to evaluate cost-effective savings opportunities and prioritize investments in efficiency upgrades.

Some municipalities have also implemented performance standards requiring buildings to meet a minimum ENERGY STAR score, provided by EnergyStar Portfolio Manager, or conducted efficiency assessments or upgrades.

Buildings that benchmark their energy use regularly typically reduce their energy consumption by an average of 2.4% per year.³⁰



²⁹ Colorado Energy Office, 2023. "Building Benchmarking." <https://energyoffice.colorado.gov/climate-energy/energy-policy/building-benchmarking>

³⁰ ENERGY STAR Portfolio Manager, 2012. *Benchmarking and Energy Savings*. https://www.energystar.gov/sites/default/files/buildings/tools/DataTrends_Savings_20121002.pdf

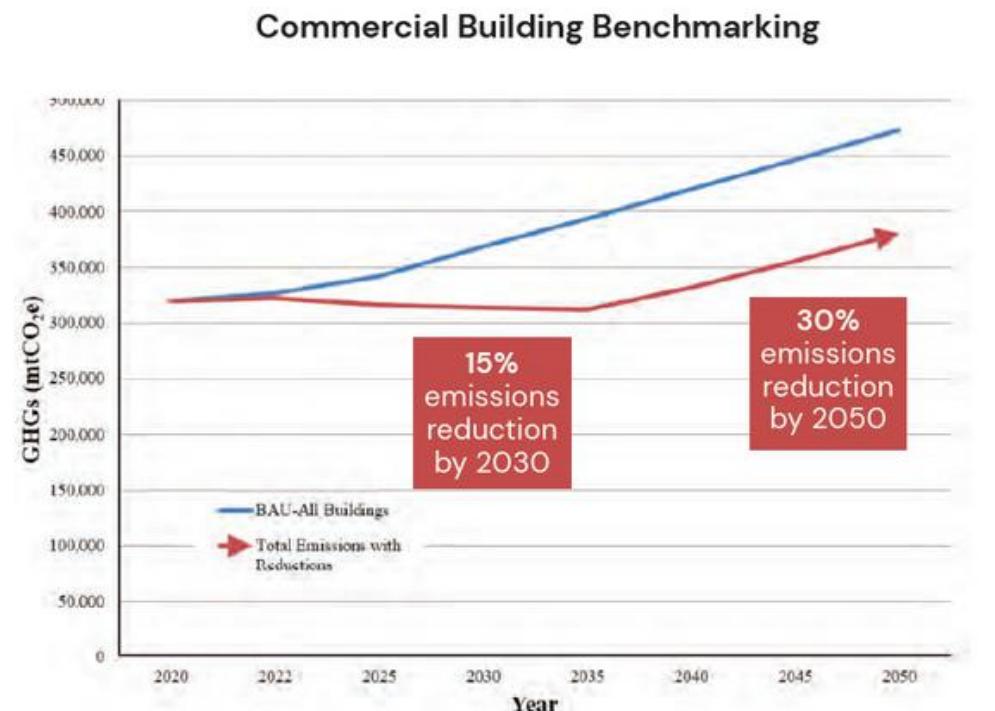
2.3 Commercial Benchmarking

To meet net zero goals, Eagle should align with the Climate Action Collaborative's (CAC) priority action to require benchmarking for all commercial buildings above 10,000 square feet, which represents a total commercial square footage of 1,220,592 square feet, beginning in 2024. This strategy also assumes a 3% per year gain in energy efficiency per building benchmarked, in alignment with CAC's strategic modeling assumptions.³¹

The graph to the right reflects the results of CAC's commercial building benchmarking strategic modeling for all of Eagle County.

Actions:

- Develop an ordinance for commercial properties 10,000 square feet and larger to benchmark their energy and water use annually beginning in 2024.
- Collaborate with CAC to align ordinance and reporting requirements with CAC's efforts.
- Coordinate with CAC and Colorado Energy Office (CEO) to offer training for property owners.



Assumptions: [Red Line] Emission reduction potential from benchmarking commercial buildings. The 50 largest commercial buildings will be benchmarked by 2022, and the remaining commercial buildings above 10,000 square feet by 2023. The scenario assumes a 3%/year gain in energy efficiency per building benchmarked., maxing out at 35% efficiency.

CAC's commercial benchmarking modeling results for Eagle County.³¹

2030 Target		2030 GHG Reduction		
Benchmarking all buildings > 10,000 sf		1,197 MTCO ₂ e		
Feasibility of Actions				
GHG Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
2/5	4/5	3/5	1/5	3/5

³¹ Climate Action Collaborative, 2020. Climate Action Plan Update.

2.4 Retro-commissioning

Retro-commissioning includes a process for identifying and diagnosing faults in building operations to make system improvements. It typically results in low-cost upgrades to control strategies, building operations, and replacement of failed components, along with recommendations for larger equipment replacements and capital improvements.

Retro-commissioning can save an average of 1.3 kWh per square feet per year and 0.065 therms per square foot per year. Accompanied by a low implementation cost, this strategy represents a high-yield option to help commercial properties reduce energy use and costs.³²



Retro-commissioning is typically completed every 10 years to ensure that buildings continue to operate as designed. Completing retro-commissioning for approximately 174,000 square feet of commercial space each year from 2024 until 2030 would allow all commercial space to be addressed by 2030.

Several municipalities throughout Colorado require retro-commissioning for commercial buildings, including Boulder and Fort Collins. The State & Local Energy Efficiency Action Network offers a local policy design guide and sample policy language to help local municipalities require retro-commissioning for commercial buildings.³³

Requiring retro-commissioning can be an effective first step towards empowering commercial property owners to start taking ownership of their energy use and potential **greenhouse gas reductions**. As with other commercials strategies, the Town should lead by example and have retro-commissioning completed for town buildings.

Actions:

- Develop a regulatory requirement for commercial properties 10,000 square feet and larger to complete retro-commissioning every 10 years.
- Collaborate with local contractors to help encourage retro-commissioning and provide workforce training as needed.
- Complete retro-commissioning for Town buildings.

Feasibility of Actions				
GHC Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
1 leaf icon	3 leaf icons	3 leaf icons	1 leaf icon	3 leaf icons

³² California Energy Commission, 2005. *Options for Energy Efficiency in Existing Buildings*. <https://www.calmac.org/%5C/publications/CEC-400-2005-039-CMF.pdf>

³³ State & Local Energy Efficiency Action Network, 2013. *Energy Audits and Retro-Commissioning: State and Local Policy Design Guide and Sample Policy Language*. https://www.energy.gov/sites/default/files/2021-07/commercialbuildings_audits_rcx_policy_guide.pdf

TRANSPORTATION



Transportation represents the largest source of greenhouse gas emissions in Eagle. The transportation sector includes the ground transportation of people and goods traveling to, from, within, and passing through Eagle. Greenhouse gas emissions are caused by the combustion of fuels in a variety of vehicles and can be impacted by urban design, commuter and visitor choices, housing and business density, business demand, transit corridors, consumer choices, and fuel type.

Air pollutants emitted by gasoline and diesel-powered cars, trucks, and buses account for almost half of our community's emissions, or the equivalent of approximately 39,868 metric tons of CO₂e.

Transportation emissions were prorated for Eagle by dividing Eagle County's entire transportation emissions by the population of Eagle. Eagle's emissions are likely slightly lower than the 2020 inventory reflects, as county-wide emissions include tourism and transportation that enters the Vail, Avon, and Beaver Creek communities but does not reach Eagle, along with I-70 corridor traffic that occurs elsewhere in the county. However, transportation emissions still represent a significant portion of our greenhouse gas inventory and require a comprehensive approach to emissions reduction. Developing a more accurate tracking mechanism for transportation emissions and vehicle miles traveled also will be critical to our pursuit of net zero.

TRANSPORTATION



There is an array of opportunities to reduce transportation emissions, including encouraging the adoption of electric vehicles, upgrading to electric buses, shifting transportation modes away from single occupancy vehicle use, and encouraging measures to reduce commuting. These strategies aim to quicken the transition from fossil fuel vehicles to zero emission vehicles and make it easier and safer for people to get around by bike, foot, and bus.

Some measures proposed in this plan have regional implications across Eagle County. For example, when residents commute to work outside of Eagle, we want to encourage them to take low- and no-emission transportation options.

It's important for Eagle to support regional efforts for public transportation and zero emissions mobility, including working with the newly-formed Eagle Valley Transportation Authority (EVTA) and partner municipalities to ensure free and frequent public transportation options for commuting and traveling up-valley.

Since the Town of Eagle doesn't own or operate any public transit, but Eagle taxpayers contribute to the regional EVTA and ECO bus system, it's critical that Eagle receives the same share of benefits and services.

Advancing transportation access is key to promoting equity in our community. In addition to improving outdoor air quality and reducing pollution from fossil fuel vehicles and buses, the strategies detailed in this plan increase access to parks, green space, recreation, and economic centers, promote walkability and bikeability, and increase the affordability of transportation.

3.1 Reduce Vehicle Miles Traveled (VMTs)

To make significant reductions in VMTs, Eagle will need to expand public transportation options, facilitate and encourage biking and multi-modal transportation, and support a culture shift around when and why we travel in single-occupancy vehicles. 40% of Eagle's transportation emissions result solely from automobile travel within Eagle town boundaries, whereas 60% is from automobile travel in and out of Eagle. Since driver behavior has greenhouse gas impacts that expand beyond just Eagle's town boundaries, collaboration with Eagle County, the Climate Action Collaborative, and other nearby jurisdictions will be crucial to achieving meaningful VMT reductions in our community.

Reducing VMTs in gasoline- and diesel-fueled vehicles is the #1 strategy for achieving net zero.

The way land use and development patterns evolve over the next 5-10 years will play an important role in transportation decisions. When housing isn't located close to where our residents work, shop, recreate, or go to school, it forces longer trips, usually by car. **If our community can reduce reasons to drive, we can help our residents have more time in the day, feel more connected to our community and family, and reduce greenhouse gas emissions.** A culture shift towards flexible work arrangements and remote work will further reduce the need for residents to regularly commute to work outside of Eagle. This can also have significant economic growth benefits as residents are able to prioritize spending in Eagle when they don't have to commute to other areas for work.



3.1 Reduce Vehicle Miles Traveled (VMTs)

Multi-modal strategies will also play a major role in reducing greenhouse gas emissions from transportation. Providing easy and accessible bike routes through town and navigating through the main circles is crucial to encouraging people to walk, bike, or e-bike to their destination. Improving bike infrastructure alone can help make measurable progress towards our net zero goal by reducing over 100 tons of CO₂e by 2030. **It will also help connect our community centers, increase public health, support economic growth, and facilitate participation in outdoor recreation hubs, such as the river park and fairgrounds areas.**

Increasing public transit ridership is specifically addressed in strategy 3.3, as it is a key strategy in pursuing climate action throughout Eagle County.



Chris Dillmann/Vail Daily

Actions:

- Adopt CAC's immediate priority action to implement a behavior change campaign to reduce single-occupancy vehicle commute trips two days per week by encouraging local businesses to provide smart commuting incentives or establish policies to support multi-modal commuting, flexible work arrangements, and remote work.³⁴ The Town of Eagle should lead by example by offering remote work, flexible work arrangements, and smart commuting incentives.
- Promote CAC's Trends with Benefits campaign to encourage residents to work remotely and help businesses to establish a remote work policy.
- Adopt CAC's immediate priority action to strive for 50% of the workforce living within 5 miles of their employment center via mixed-use communities, affordable community housing near job centers, and intercommunity multi-modal transportation options.
- Adopt CAC's strategy to create a community-wide interconnected mobility system to support multi-modal transportation including park-and-rides and pedestrian and bike infrastructure to encourage transit ridership, complete and connected bike commuting paths and lanes, and safe and accessible sidewalks.
- Pilot an e-bike sharing program in Eagle to encourage more trips by bike rather than car.
- Consider approaches to reduce idling, such as behavior change initiatives or an idling ordinance.
- Collaborate with Eagle County School District to address idling in pick up/drop off lines and encourage school bus ridership.

2030 Target		2030 GHG Reduction		
Reduce VMTs by 65%		22,278 MTCO ₂ e		
Feasibility of Actions				
GHG Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
3	4	1	1	3

³⁴ Climate Action Collaborative, 2020. *Climate Action Plan Update*.

3.2 Increase Electric Vehicle Adoption

Replacing existing gas and diesel-powered vehicles with electric vehicles (EVs) is the second most impactful strategy towards achieving net zero. EV sales in the U.S. have grown by more than 40% each year since 2016, and electric vehicles options are expanding significantly in the next 5 years as the demand for EVs increases and they approach a purchase price parity with comparable gasoline- and diesel-powered vehicles. The federal government has set a target that half of new passenger cars and light trucks sold in 2030 should be zero-emission vehicles.³⁵



The Town of Eagle's new Public Works EV



Photo Credit: Andrew Maguire

Electric cars and buses are cleaner, more cost efficient to operate over time, and require less maintenance.³⁶ Federal tax credits, state and utility incentives, and fuel and operation costs savings are helping to offset initial costs.

In order to make meaningful progress towards reducing transportation emissions and achieving net zero, Eagle should aim to ensure that 75% of vehicles are EVs in 2030. To achieve this goal, it's critical that the Town of Eagle leads the transition to EVs by continuing to electrify its fleet.

³⁵ Kampshoff, P., Kumar, A., Peloquin, S., and Sahdev, S. (2022). "Building the electric-vehicle charging infrastructure America needs." *McKinsey & Company*. <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/building-the-electric-vehicle-charging-infrastructure-america-needs>

³⁶ U.S. Department of Energy. "Electric Vehicles Benefits and Considerations." *Alternative Fuels Data Center*. https://afdc.energy.gov/fuels/electricity_benefits.html

3.2 Increase Electric Vehicle Adoption

A community-wide transition to electric transportation will require increasing access to local EV charging stations, sharing easily understandable information about EVs with our community, and connecting residents with financing and funding options. Public charging is estimated to provide more than 20% of the electricity EVs will require in 2030.³⁷

Actions:

- Conduct an analysis of the driving and parking behavior of motorists in detail to determine how best to distribute EV chargers throughout Eagle. Create and implement a plan to expand public vehicle charging options in downtown areas, business hubs, public parks, schools, and other facilities, both on- and off-street.
- Develop a regulatory framework to ensure EV chargers and EV-preferred parking is incorporated into all future developments, including the redevelopment of Highway 6, future residential and multifamily developments, and commercial area expansions.
- Provide a suite of education and awareness-building services to promote electric vehicle adoption.
- Adopt a zero-emission municipal fleet and charging infrastructure plan and policy for the Town of Eagle that commits to complete transition to zero emission vehicle purchases by 2028.
- Consider rebates to encourage EV purchases.

Transitioning to more energy efficient vehicles like hybrid and electric vehicles helps to support our local economy by prioritizing the use of renewable energy generated nearby and provided by Holy Cross. The multiple fuel resources used to generate electricity, such as nearby wind, solar, biomass, and hydro facilities, also results in a more resilient and localized fuel source, adding to our nation's energy security.



Photos: Walking Mountains

2030 Target		2030 GHG Reduction		
75% of vehicles are EVs		18,764 MTCO2e		
Feasibility of Actions				
GHG Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
3 blue leaf icons	2 blue leaf icons	1 blue leaf icon	3 blue leaf icons	2 blue leaf icons

³⁷ Kampshoff, P., Kumar, A., Peloquin, S., and Sahdev, S. (2022). "Building the electric-vehicle charging infrastructure America needs." McKinsey & Company. <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/building-the-electric-vehicle-charging-infrastructure-america-needs>

3.3 Increase Transit Ridership and Switch to Electric Buses

Increasing transit ridership by 40%, and switching to 100% electric buses, will allow Eagle to meet both VMT reduction and vehicle electrification goals. While this strategy may be considered an action within those strategies, its importance to achieving net zero and promoting equity in our community is so vital that it stands as a strategy on its own.

Expanding public transit options from Eagle to up-valley hubs and Glenwood Springs is vital to reducing VMTs. Many members of our community commute east or west daily for work, recreation, school, or shopping. Current public transportation options out of Eagle are inconvenient, unreliable, and not cost effective.

Eagle had the highest population growth in Eagle County from 2000-2010, as the town doubled in size during this decade, and the second-highest projected population growth from 2010-2020, behind Gypsum. All other towns in Eagle County (other than unincorporated areas) have experienced negative or stagnant growth since 2010. Eagle is expected to capture almost a third of countywide growth by 2040.³⁸

Municipalities and employers throughout Eagle County are relying on and investing in Eagle for affordable housing to serve the Eagle Valley.

As the population in Eagle continues to grow and provide more accessible housing for families that work throughout the county, it's critical that Eagle collaborates with the Eagle Valley Transportation Authority to ensure that Eagle residents and visitors have access to free bus service to up-valley hubs, Gypsum, and Glenwood Springs, including regular express buses direct to Vail and Avon for recreation and community events.

Expanded bus ridership will require the development of new park-and-ride options throughout Eagle. This measure aligns with one of CAC's immediate priority actions as well. While our community and county works to prioritize expanding bus transit options, we should also continue to consider rail transit opportunities to utilize the existing railroad tracks for commuter and recreation transit service.



3.3 Increase Transit Ridership and Switch to Electric Buses

Many winter and summer resort communities throughout Colorado and the nation provide free, regular bus services to residents and visitors to facilitate car-free recreation and commuting access. Western mountain communities with free bus service include Crested Butte, Steamboat Springs, Telluride, Jackson Hole, Summit County, Aspen, Winter Park, Park City, Alta, & Snowbird. As Eagle is home to many residents and visitors who work, play, and shop in other areas of the county, we are truly lagging in public transportation.

It's important to note that while this strategy may not move the needle on greenhouse gas reductions in Eagle as much as others, since public transit that begins, ends, and travels through Eagle has few miles and emissions occurring within our actual town boundaries, it will have a significant impact on county-wide transportation emissions while also encouraging a cultural shift towards climate awareness. As such, this strategy will require strong collaboration within the CAC, Eagle County, and nearby municipalities. Accelerating electric bus adoption and fleet electrification will also be critical to all jurisdictions within the county achieving their climate goals.

While the Town of Vail has begun its transition to electric buses, with full electrification expected by 2032, the rest of Eagle County needs to join the transit electrification movement to make similar progress on our climate goals. Other Colorado communities that recently received federal grants to electrify their public transit fleets include the Roaring Fork Transportation Authority, San Miguel Authority for Regional Transportation, Steamboat Springs Transit, and Mesa County for Grand Valley Transit.³⁹ **With significant federal funding and grant opportunities supporting the electrification of public transit, Eagle and the Palmer Fund are primed to be key players in helping the new EVTA pursue financing for fleet electrification.**

Actions:

- Work with Eagle Valley Transportation Authority to expand free bus service across the county, including Eagle, specifically targeted at commuters and recreators. Work with local businesses to provide free bus passes to employees in the meantime.
- Launch an in-town bus circulator to provide free and continuous service throughout Eagle. Consider including Gypsum as part of this route, or as a separate Eagle-Gypsum circulator route.
- Explore microtransit options to help close the last few miles of transit from homes and businesses to park-and-ride transit hubs.
- Pursue grant and funding opportunities in collaboration with CAC and Eagle County for transit fleet electrification.
- Align with CAC strategy to continue to pursue rail transit opportunities to utilize existing railroad tracks from Dotsero to Leadville.

2030 Target		2030 GHG Reduction		
Increase transit ridership by 40% and switch to 100% electric buses		658 MTCO2e		
Feasibility of Actions				
GHG Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
	  		 	 

³⁹ Booth, M. (2022). "Summit Stage gets \$35 million federal grant for electric bus operations center that will serve ski country." *The Colorado Sun*. <https://coloradosun.com/2022/08/17/electric-bus-depot-summit-county-colorado-federal-grant/>

WASTE



Waste generation in Eagle, estimated at almost 11 pounds per person per day, is above both the state and national average. The average waste generation for Colorado is 9 pounds, which is double the national average of 4.5 pounds.⁴⁰

Waste emissions for Eagle were calculated based on our population proportion of Eagle County landfill's total waste data. Implementing waste reporting requirements for haulers will improve the accuracy of Eagle's true waste generation and associated emissions.

Total waste emissions in Eagle in 2020 resulted in an estimated 11,000 tons of CO₂e.

Some of the factors causing our community's higher waste generation include the tourism sector and active construction economy. Hospitality and construction are the two largest industries in Eagle County, and the waste generated from these activities has a measurable impact on the waste composition of the landfill.⁴¹ **The primary strategy to reducing waste emissions in Eagle is designed around reducing the carbon intensity of the materials entering the landfill.**

Improving our community's access to recycling and compost is key to promoting equity. Implementing policies to divert organics and recyclable materials from our landfill helps to ensure that all Eagle residents, businesses, and employees have equitable access to clean waste disposal opportunities. Compost and recycling programs also help to reduce pollution and litter and improve natural spaces for enjoyment by all. Implementing programs or requirements to minimize food waste can encourage local restaurants and grocery stores to donate unused food items to The Community Market or local schools, helping to promote equitable food access.

⁴⁰ City of Aspen (2020). *Aspen's Climate Action Plan: A Roadmap to Our Sustainable Future*.

⁴¹ Cowman-Souder, W. (2018). *Northwest Colorado Waste Diversion Study*. Sauder, Miller, & Associates.

4.1 Reduce Carbon Intensity of Waste by 90%

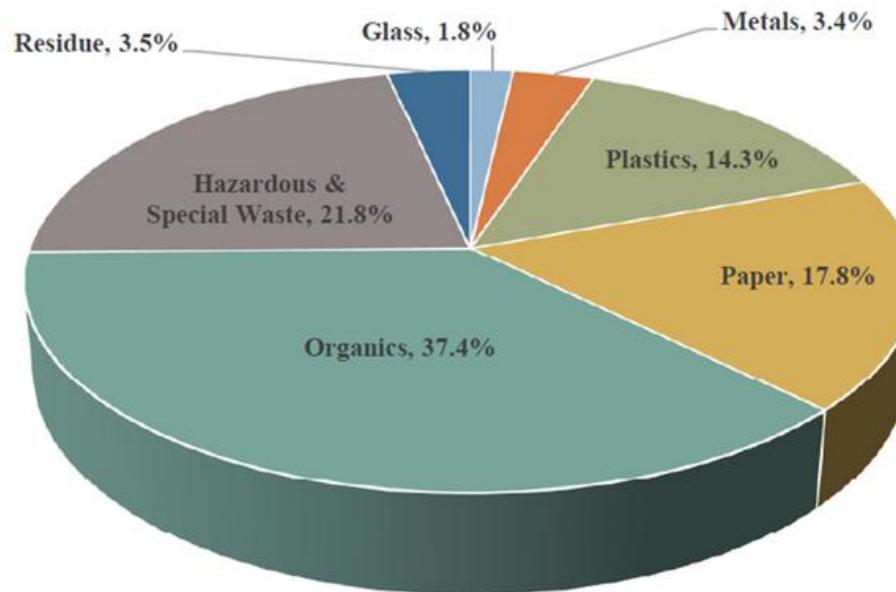
To make the progress necessary to achieve net zero, Eagle will need to reduce the carbon intensity of our waste by 90% by 2030. **This is the #3 strategy for achieving net zero.**

Requiring haulers to provide recycling and compost service to all residents and businesses, developing regulatory requirements around managing construction and demolition (C&D) waste, and designing educational campaigns to support the behavior change associated with these measures all provide key opportunities to reduce emissions in this sector. Improving waste tracking will also be critical to measuring our progress towards net zero.

A waste composition study completed in 2018 indicates that organics represent 37.4% of the total waste, while paper represents 17.8%, and other recyclable materials compose a combined 19.5%. C&D waste, which includes wood and drywall, represents 14% of the total waste sent to the landfill.⁴²

Since organics have the highest carbon intensity, focusing on diverting organics from the landfill will have the largest impact on reducing emissions from the landfill and associated waste generation. Organic materials, including food waste, yard waste, wood, and drywall, within the waste stream generate methane as they decompose.

Over 80% of materials could have been diverted using typical compost, recycling, or recovery, or reuse programs. Expanding the requirement and access to compost and recycling programs in Eagle, coupled with effective behavior change initiatives, is crucial to reducing the carbon intensity of our waste.



Aggregated Eagle County Trash Results by Primary Category.⁴²

Eagle also needs to improve our community's access to and behavior around recycling. In 2020, waste diversion for properties serviced by Vail Honeywagon's residential contract was at less than 8%. While these properties are provided with both recycling and trash service and receptacles, recycling activities are remarkably low.

⁴² Cowman-Souder, W. (2018). Northwest Colorado Waste Diversion Study. Sauder, Miller, & Associates.

4.1 Reduce Carbon Intensity of Waste by 90%

The Town of Eagle adopted a resolution in February 2023 requiring Vail Honeywagon to provide curbside composting to all residential accounts within their waste hauling contract. This is a commendable option that will provide measurable emissions reductions for waste generated by single family homes. However, many multifamily and townhome complexes that fall outside the scope of Vail Honeywagon's contract do not provide recycling services for residents.

A Universal Waste Ordinance will need to be implemented to require compost and recycling service for all remaining residential accounts, including multifamily buildings and townhomes, as well as commercial accounts, to continue to make progress towards reducing the carbon intensity of our waste.

Efforts should also be designed to encourage waste reduction, particularly around food and C&D waste, in addition to waste diversion.

Actions:

- Implement a Universal Waste Ordinance requiring trash, recycling, and compost service for all residential and commercial properties in Eagle.
- Develop a waste hauler reporting ordinance that requires all haulers operating in Eagle to report tonnages of trash, recycling, and compost on a quarterly basis. Consider aligning this requirement with other municipalities in Eagle County with similar requirements, such as the Town of Vail, to streamline reporting obligations.
- Increase the access of public recycling receptacles and provide compost options in downtown areas. All trash cans should be coupled with both recycling and compost options and appropriate signage.
- Work with CAC and Eagle County to develop a regulatory framework requiring the diversion of all recoverable C&D waste from landfill.
- Develop a community-based social marketing behavior change campaign to help increase recycling, compost, reuse, and reduction.
- Support sustainable purchasing policies and practices and incorporate supply chain management systems for businesses.
- Implement town-wide collection sites for yard waste.
- Expand the food reuse program to allow restaurants and catering companies to donate unused items in good condition.

The Community Market has an existing grocery rescue program which could be expanded. Further community opportunities for food waste reduction are within restaurants, catering, and events. A beneficial next step would be value-added processing.

In the U.S., households account for 39% of food waste, which is more than grocery stores, restaurants, or farms.⁴³ Behavior change strategies will be integral to reducing emissions from households.

2030 Target		2030 GHG Reduction		
Divert 90% of waste from landfill		15,021 MTCO2e		
Feasibility of Actions				
GHG Reduction	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
				

⁴³ Shain, Susan (2023). "How Central Ohio Got People to Eat Their Leftovers." *The New York Times*. https://www.nytimes.com/2023/01/01/heatway/composting-food-leftovers.html?te=1&nl=cooking&emc=edit_ck_20230104

Strategic Summary

The following table offers a strategic summary of all recommended strategies, ranked by their anticipated greenhouse gas emissions reductions by 2030. The top four strategies will provide the greatest impact towards meeting our net zero goal. However, they may also prove the most difficult to implement at the scale necessary.

Strategy	2030 Target	GHG Reduction by 2030	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
3.1 Reduce VMTs	65% reduction	22,278 MTCO2e	3 leaves	1 leaf	1 leaf	2 leaves
3.2 Increase EVs	75% EVs	18,764 MTCO2e	2 leaves	1 leaf	3 leaves	2 leaves
4.1 Reduce Carbon Intensity of Waste by 90%	Reduce by 90%	15,021 MTCO2e	3 leaves	2 leaves	1 leaf	3 leaves
1.1 Electrification of Existing Residential Buildings	Electrify 50% of existing residential buildings	10,811 MTCO2e	2 leaves	2 leaves	2 leaves	2 leaves
2.1 Electrification of Existing Commercial Buildings	Electrify 50% of existing commercial buildings	5,205 MTCO2e	3 leaves	2 leaves	3 leaves	2 leaves
2.2 Commercial Heat Pump Installation	Heat pumps in 70% of commercial space	2,742 MTCO2e	3 leaves	2 leaves	2 leaves	2 leaves

Strategic Summary (continued)

Strategy	2030 Target	GHG Reduction by 2030	Technical Feasibility	Implementation Ease	Implementation Cost	Mainstreaming Potential
1.2 Residential Heat Pump Installation	700 heat pumps	2,171 MTCO2e	2	2	2	2
2.3 Commercial Benchmarking	All buildings > 10,000 sq. ft.	1,197 MTCO2e	3	3	1	3
1.3 Residential New Construction Electrification	All-electric new construction code	956 MTCO2e	3	3	1	3
3.3 Increase Transit Ridership and Electric Buses	40% increase in transit ridership and 100% electric buses	658 MTCO2e	3	1	2	2
2.4 Retro-commissioning	100% of commercial space	420 MTCO2e	3	3	1	3
1.4 Residential Weatherization	700 households	266 MTCO2e	2	3	2	3
1.5 Residential Energy Efficiency Education	350 households	116 MTCO2e	3	3	1	3

Annual Key Performance Indicators

The strategic modeling and associated CO2e savings for each strategy in this NZAP assumes an implementation timeline beginning in 2024 and running through 2030. In order to achieve the savings modeled here, Eagle should strive to meet an annual target for each strategy, as detailed below.

An alternative approach would be to focus on select individual strategies first, as laid out in the Roadmap to Net Zero, then plan a substantial push for the remaining strategies to ensure that the 2030 targets are met within a shorter timeframe.

Strategy	2030 Target	Annual Target	GHG Reduction by 2030
3.1 Reduce VMTs	65% reduction	7,619,618 VMTs reduced per year	22,278 MTCO2e
3.2 Increase EV Adoption	75% EVs	Replace 11% of existing ICE vehicles with EVs each year	18,764 MTCO2e
4.1 Reduce Carbon Intensity of Waste by 90%	Reduce by 90%	Divert 28% of organics each year (compared to previous year)	15,021 MTCO2e
1.1 Electrification of Existing Residential Buildings	Electrify 50% of existing residential buildings	Electrify 160 homes per year	10,811 MTCO2e
2.1 Electrification of Existing Commercial Buildings	Electrify 50% of existing commercial buildings	Electrify 2-3 commercial buildings per year	5,205 MTCO2e
2.2 Commercial Heat Pump Installation	Heat pumps in 70% of commercial space	Install heat pumps in 10% of commercial building space per year (~122,000 sq ft/yr)	2,742 MTCO2e

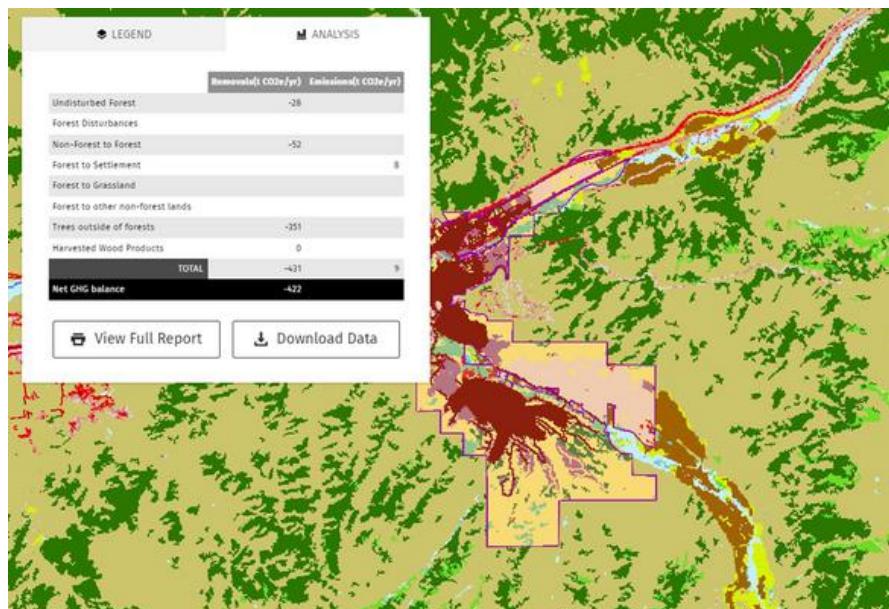
Annual Key Performance Indicators (continued)

Strategy	2030 Target	Annual Target	GHG Reduction by 2030
1.2 Residential Heat Pumps	700 heat pumps	Replace existing heating equipment with heat pumps on 100 homes per year	2,171 MTCO2e
2.3 Commercial Benchmarking	All buildings > 10,000 sq. ft.	Benchmark 10% of commercial building space per year (~122,000 sq ft/yr)	1,197 MTCO2e
1.3 Residential New Construction Electrification	All-electric new construction code	Build all new homes fully electric beginning in 2024	956 MTCO2e
3.3 Increase Transit Ridership and Electric Buses	40% increase in transit ridership and 100% electric buses	Increase bus ridership by 6% each year and switch to 100% electric buses	658 MTCO2e
2.4 Retro-commissioning	100% of commercial space	Retro-commission 14% of commercial space per year (174,370 sq ft/yr)	420 MTCO2e
1.4 Residential Weatherization	700 households	100 households per year	266 MTCO2e
1.5 Residential Energy Efficiency Education	350 households	50 households per year	116 MTCO2e

Carbon Sequestration

Natural climate solutions (NCS), including improved land management, conservation, and restoration, are actions that increase carbon storage or avoid greenhouse gas emissions in landscaped areas.

Combined with decarbonization, clean energy, and energy efficiency efforts, NCS provides some of the best approaches climate change mitigation.⁴⁴ The CAC is currently working on an NCS project that would benefit regional efforts, including a map of private lands in Eagle County that are ideal for NCS interventions. This map will allow practitioners to prioritize private lands partnerships in their conservation work by identifying key areas in Eagle County to pursue. Results from these efforts will be used to help guide potential NCS work in Eagle.



LEARN analysis reflecting estimated CO₂e removals from forests and trees.

Land use and forestry offers a unique opportunity for carbon sequestration. Since organic matter retains carbon in the soil, landscaping, land management, farming, and ranching practices that encourage healthy soil growth are crucial to capturing greenhouse gas emissions in the ground. Eagle County's Climate Action Plan made several recommendations related to carbon sequestration that Eagle should align with, including:⁴⁵

- Engage agencies, such as CSU Extension, USDA, NRCS, Betty Ford Alpine Gardens, and The Ground Up, to provide education on land management techniques that increase carbon storage.
- Reduce impermeable surfaces and encourage catchment of water that promotes healthy ecosystems.
- Encourage green roofs with native plant species that do not require a large amount of water.
- Encourage holistic approaches during revegetation and restoration after disturbances, such as after building and infrastructure construction or after natural disasters (e.g., fires and flooding).

Eagle should also continue to support Eagle County Conservation District's S.T.A.R.+ (Saving Tomorrow's Agriculture Resource) program to promote soil health.

Based on ICLEI's LEARN tool, Eagle removed an average of 422 MTCO₂e per year between 2004 and 2019.

This was calculated based on satellite modeling of forest and land cover change, as well as trees outside forests. Since significant residential growth is planned for the next 5-10 years, it's expected that we will lose some of the carbon removals associated with the current land cover in those areas. A conservative estimate assumes a decrease of 50% MTCO₂e removed as a result of reduced trees and land cover from planned development. **Based on this assumption, 211 MTCO₂e could be removed annually by 2030 through trees in Eagle.**

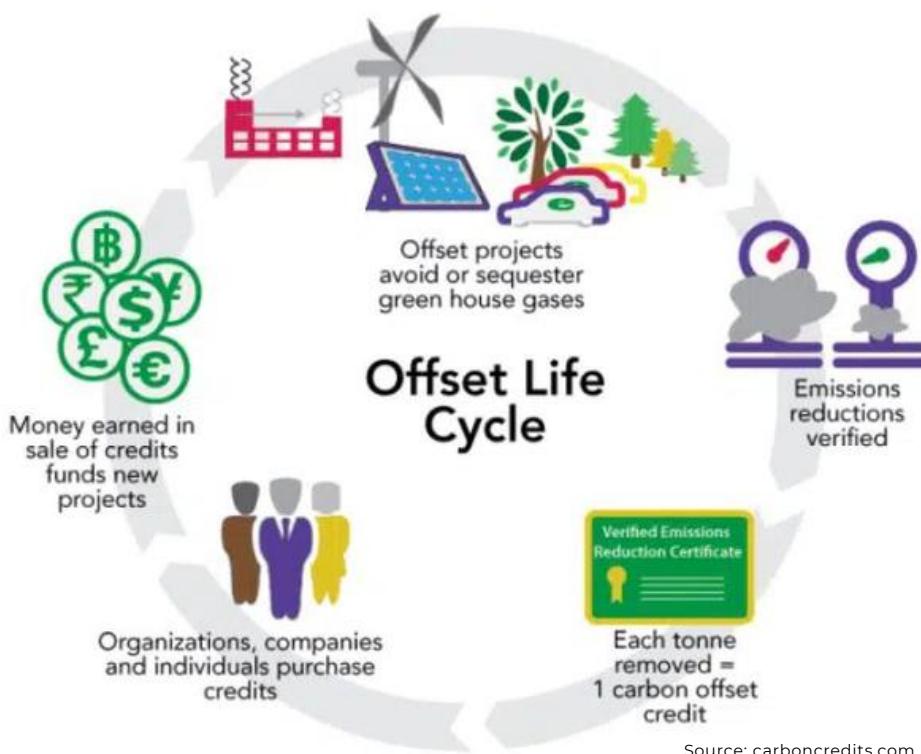
⁴⁴ The Nature Conservancy. "Natural Climate Solutions." <https://www.nature.org/en-us/what-we-do/our-insights/perspectives/natural-climate-solutions>

⁴⁵ Eagle County (2016). *Climate Action Plan for the Eagle County Community*.

Carbon Offsets

The foundation of net zero involves reducing emissions as much as feasibly possible and offsetting any remaining emissions through carbon credit investments. This NZAP provides a pathway to achieve net zero by 2030, and Eagle is committed to reaching this goal.

Carbon offsets may be necessary to offset and compensate for any greenhouse gas emissions that cannot immediately be reduced, removed, or avoided. Offsets should be made through UN recognized and/or voluntary carbon off-setting mechanisms, and/or donations to climate funds.⁴⁶



⁴⁶ ICLEI (2020). ICLEI's Climate Neutrality Framework. https://e-lib.iclei.org/publications/ICLEIs_Climate_Neutrality_Framework.pdf

⁴⁷ University of Oxford (2020). The Oxford Principles for Net Zero Aligned Carbon Offsetting. <https://www.smithschool.ox.ac.uk/sites/default/files/2022-01/Oxford-Offsetting-Principles-2020.pdf>

Carbon offsetting best practices include:⁴⁷

- Prioritize reducing emissions, using high-quality offsets, and regularly updating the carbon offsetting strategy as best practices evolve.
- Ensuring environmental integrity by using offsets that are verifiable and correctly accounted for, with a low risk of reversal or creating negative unintended consequences.
- Maintaining transparency by disclosing current emissions, reporting and accounting practices, emissions targets, and types of offsets used.
- Using carbon removal offsetting. While most offsets currently available are emissions reductions, carbon removal offsets should be prioritized in order to achieve net zero, as these scrub carbon directly from the atmosphere.
- Shift to long-lived storage methods that have a low risk of reversal over centuries to millennia, including mineralizing carbon into stable forms and storing CO₂ in geological reservoirs.
- Support the growth of offsetting aligned with net zero priorities.

Renewable Energy and Grid Optimization

There are several additional strategies that will be integral to achieving net zero and community resiliency but may not provide direct and measurable greenhouse gas emissions, including large-scale solar PV, battery storage, and microgrids. Since Holy Cross Energy achieved 50% renewable content in 2022 and is on track to provide 100% renewable energy by 2030, this renewable energy mix is already integrated into the strategic modeling assumptions in this plan. As such, additional renewable energy projects and tactics will not provide any further greenhouse gas emissions beyond what has been modeled. However, Holy Cross Energy may rely on utility-scale solar PV systems, wind generation, and battery storage to meet its renewable energy goals and support the transition to electrification. Holy Cross Energy is confident that their grid technology and resiliency is well-equipped to support the additional load required by broad-scale electrification.

DISTRIBUTED ENERGY STORAGE

Distributed energy storage systems will be essential to supporting net zero buildings, grid flexibility, microgrids, and rooftop solar. These systems enable customers to become energy producers and buy or sell power to the grid at their choosing, allowing them to avoid peak demand charges while simultaneously supporting a more resilient electricity grid. Seasonal storage is crucial when clean electricity makes up roughly 80% to 95% of generation, and there is multiday and seasonal variation between renewable supply and demand.⁴⁸ As such, using storage to increase reliance on renewable energy will provide substantial climate benefits.⁴⁹

GRID FLEXIBILITY

Grid flexibility will be critical to mainstreaming renewable energy sources. Many technologies contribute to grid flexibility, including small- and utility-scale storage, demand-response tools and programs, and constant renewables. It's important to note that developing infrastructure that allows electric vehicles to support the grid, such as through smart charging and vehicle-to-grid systems, enables grid flexibility.⁵⁰

MICROGRIDS

Microgrids will be similarly important to strengthening the resilience of electricity grids by grouping distributed electricity generation technologies with energy storage or backup generation and demand management tools. Microgrids can play a critical role in boosting both grid efficiency and flexibility.⁵¹ The Colorado Energy Office is currently offering a grant program supporting Microgrids for Community Resilience and Holy Cross Energy is actively developing a pilot in the Roaring Fork Valley with similar potential in the Eagle Area.⁵²



Photo: Holy Cross Energy

⁴⁸ NREL. "100% Clean Electricity by 2035 Study." <https://www.nrel.gov/analysis/100-percent-clean-electricity-by-2035-study.html>

⁴⁹ Hawken, Paul (2017). *Drawdown: The Most Comprehensive Plan Ever Proposed to Reduce Global Warming*. Penguin.

⁵⁰ Project Drawdown. "Grid Flexibility." <https://drawdown.org/solutions/grid-flexibility>

⁵¹ Project Drawdown. "Microgrids." <https://drawdown.org/solutions/microgrids>

⁵² Colorado Energy Office (2023). "Microgrids for Community Resilience Program." <https://cdola.colorado.gov/funding-programs/microgrids-for-community-resilience-program>

Inspiring Change

CHANGE MANAGEMENT

In addition to implementing crucial greenhouse gas reduction strategies, targeting and investing in innovative and bold ways will be key to fulfilling many of the strategies detailed in this NZAP. The first shift will need to happen within the Town of Eagle organization.

Meeting our community's net zero goals will require a change to the lens in which the Town makes decisions, prioritizes work, and implements action.

Kotter's 8 step model for change management focuses on creating urgency in order to inspire change. This framework can be utilized to help shift the mindset and processes within the town organization to help lead our community to net zero.



John Kotter's 8 step model for change management.⁵³

BEHAVIOR CHANGE

Climate policies focusing on behavioral decisions and household consumption are crucial to achieving low-carbon futures.

As household consumption behaviors are responsible for an estimated 72% of global greenhouse gas emissions, behavior change measures must accompany climate policy and programs.⁵⁴

Encouraging behavior change is a crucial step to reducing usage and emissions first before making significant upgrades and investments. Adopting new behaviors in the lens of net zero and greenhouse gas emissions reduction also helps individuals take ownership over climate action in our community.

A recent ACEEE report indicates that strategic energy management programs and competitions can encourage electricity and gas savings as high as 22% and 23%, respectively.⁵⁵

Partnering the recommended actions in this plan with community-based social marketing efforts, including recruiting leaders or energy champions for group-based programs (e.g., multifamily, community, and/or commercial), can help improve the efficacy and energy savings of climate action efforts.

⁵³ Visual Paradigm. "John Kotter Model of Change." <https://online.visual-paradigm.com/diagrams/templates/kotters-8-step-change-model/john-kotter-model-of-change/>

⁵⁴ Ghislain et al. (2019). "It starts at home? Climate policies targeting household consumption and behavioral decisions are key to low-carbon futures." *Energy Research & Social Science*, Volume 52, Pages 144-158, ISSN 2214-6296.

⁵⁵ ACEEE, 2016. *Behavior Change Programs: Status and Impact*. <https://www2.aceee.org/l/310911/2017-12-28/f8ldw>

Community-Based Social Marketing

There are five steps to successful community-based social marketing initiatives. Effectively implementing this approach will have powerful results in inspiring and leading climate action in Eagle.



SELECTING BEHAVIORS

Many of the strategies listed in this NZAP will need to be supported by some type of behavior change to be effective. The first step is identifying which behaviors need to be promoted. Potential behaviors include taking public transportation, commuting via bike, composting food scraps and yard waste, or choosing a cold climate heat pump over a natural gas furnace.

IDENTIFYING BARRIERS AND BENEFITS

Barriers that prevent people from engaging in the targeted behavior, as well as motivating factors that would encourage them to act, must be identified early in to encourage widespread sustainable behavior change. Barriers may be internal to an individual (e.g., lack of knowledge on how and what to compost) or related to external structures that must change to make a behavior more convenient (e.g., providing curbside compost or more frequent and quicker bus routes). Barriers to widespread participation in any form of sustainable behavior may be a mix of both internal and external are likely to vary among different people. Once barriers and benefits have been identified, an effective social marketing strategy can be developed to eliminate the barriers and enhance the benefits.

DEVELOPING STRATEGIES

A variety of tools that can help promote behavior change has been identified through social science research. Examples include creating community norms to encourage certain behaviors, using prompts to remind people to act, creating effective messages and incentives, gaining commitment from people to adopt a new behavior, and encouraging convenience. These techniques are most effective when implemented at the community level with frequent direct personal contact.

PILOTING

Piloting a strategy among small groups before it is implemented broadly is essential to encouraging community-wide behavior change. Pilots allow a program to be refined as needed, compared against other techniques, and highlighted for its effectiveness. Successful pilots can also demonstrate accomplishments for grant and funding applications.

BROAD-SCALE IMPLEMENTATION AND EVALUATION

Once a strategy has been implemented, ongoing evaluation is necessary to measure and emphasize the direct results from the promoted tactics and behavior. Information gained from effective evaluations can be crucial to demonstrating that a program should receive further funding.

Roadmap to 2030

There are several actions that will need to happen continuously through 2030 to allow Eagle to achieve net zero:

- **Annual data tracking and inventory update:** This includes an annual greenhouse gas inventory; updates to data tracking, such as improving waste tracking and transportation data; and collecting annual building energy use data.
- **Community engagement:** Events and opportunities should be held regularly to gather feedback, involve and inspire the community, engage with residents and businesses, and identify and address barriers. Similarly, behavior change campaigns for all strategies will need to be continuous in some capacity to encourage adoption.
- **Funding:** Both the Palmer Fund and the Town of Eagle should be regularly researching funding and grant opportunities, adjusting programmatic implementation timelines, and considering rebates and incentive opportunities to help maximize any potential funding. Collaboration with CAC, Holy Cross Energy, and Eagle County can also help to boost funding and incentives.
- **Workforce Development:** Collaboration with the CAC, Eagle County Holy Cross Energy, Colorado Energy Office, SWEEP, Colorado Mountain College, and local schools and contractors should be ongoing to provide widespread and accessible workforce development and contractor training, particularly focused on electrification of new and existing buildings and weatherization strategies.



Photo: Scott Bellow

The following roadmap prioritizes climate action strategies for 2023 through 2025. This roadmap focuses on addressing the low-hanging fruit strategies first and those with the most financial viability, along with several feasible and affordable actions that can make meaningful progress in both greenhouse gas emissions reductions and equitable access.

Several actions identified in this NZAP and the roadmap below relate directly to Town of Eagle Operations. While these measures are essential to the community-wide goal of achieving net zero by 2030, it's important that the Town completes its own greenhouse gas inventory and strategic plan to pursue its goal of achieving net zero by 2028 for town operations.

With continuous data tracking and an annual inventory update, strategies after 2025 will depend on what progress we've made at that point, lessons we've learned, gaps in greenhouse gas reductions, and available financing.

Roadmap to 2030

2023

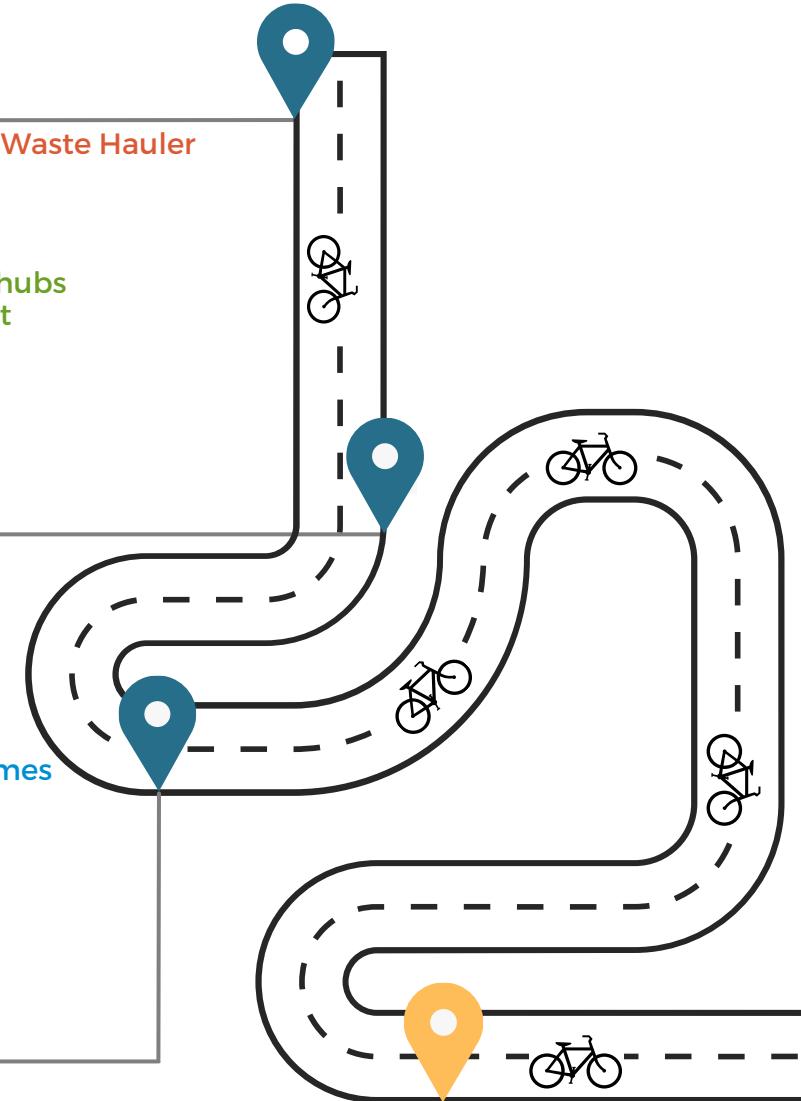
- Universal Waste Hauling Ordinance for compost & recycling and Waste Hauler Reporting Requirement
- Consider additional electrification rebates for early adopters
- Increase compost & recycling in downtown areas
- Provide free bus service to up-valley recreation and commercial hubs
- EV charging plan & regulatory framework for future development
- Residential New Construction Electrification Code Requirement
- Adopt EV municipal fleet and charging plan for Town of Eagle
- Benchmarking and retro-commissioning ordinance

2024

- Town of Eagle policies to lead by example (e.g., electrification, retro-commissioning, remote work)
- Electrify Eagle plan to streamline electrification and weatherization upgrades
- Collaborate with EVTA to expand bus routes and offer free up-valley, in-town, and Eagle/Gypsum circulators
- Expand subsidized weatherization program for all homes
- Multi-modal and bike infrastructure plan
- E-bike sharing program
- Residential energy efficiency education program
- Town-wide collection sites for yard waste

2025

- Regulation requiring C&D diversion
- Require electrification replacements for end-of-life mechanical equipment and appliances
- Explore microtransit options
- Consider EV rebates
- Expand food reuse program to include restaurants and catering
- Tactical roadmap for remaining commercial & residential decarbonization
- Pursue rail transit opportunities with CAC & Eagle County



2026 - 2030

- Assess and evaluate
- Plan for the future based on programmatic gaps and emissions



Waste



Residential & Commercial Energy



Transportation



Town of Eagle Operations

Funding

Funding may be one of the most substantial challenges Eagle faces while pursuing its net zero goal. As a small mountain town, the Town does not have a dedicated fund for climate and sustainability initiatives. Instead, funding is sourced from the general fund. It is recommended that the Town establish a budget specific to climate action work to help prioritize strategies based on funding available and to ensure reliable funding for climate action.

As climate funding grows and evolves in Eagle, it's critical that the dedicated climate action budget includes language translation, interpretation, and outreach to engage all communities in Eagle.

The Sustainability Specialist, a new position within the Town of Eagle, will be responsible for collaborating with the Town Manager, Assistant Town Manager, Finance Department, and any firm selected to provide strategic consulting, grant writing, and advocacy services to track and manage funds, prioritize strategies based on funding availability, and identify new areas of funding. The following section details funding opportunities designed to support the strategies identified in this plan.



The Palmer Fund: Funding Through Philanthropy

The Adam Palmer Sustainability Fund (APSF) was created in memorial to Adam Palmer. Our aim is to provide funding to close the gap between the actual cost of implementation and realistic affordability for residents. The Palmer Fund is structured to provide grants and revolving loan funds for initiatives identified in the NZAP to help the community achieve net zero. Funds may be dispersed to individuals, partners, or specific climate programs and initiatives implemented by the Town.

In a revolving loan structure, cost savings from projects that help increase efficiency and/or save money will be continuously re-invested back into The Palmer Fund's revolving loan fund, allowing this capital to grow and be accessible for future projects.

As a non-profit organization, the Palmer Fund has additional access to grants and philanthropic donations necessary to funding net zero strategic implementation. Extensive community engagement will be essential to cultivating the impact that philanthropy and grant work can have on our community achieving net zero.

The Palmer Fund aims to create the first known philanthropically capitalized revolving loan fund structure for climate action. While philanthropic funding is typically cultivated to address pressing social issues, such as initiatives against hunger, volunteer grant programs, resource donations, educational programs, and health initiatives, philanthropy is missing the gap on climate action.

This Net Zero Action Plan was created on behalf of the Palmer Fund. If you are inspired to take action and ownership on achieving net zero in our community, we invite you to learn more about APSF and consider donating at apsfund.org.



Funding for Local Governments and Public Facilities

The Energy Performance Contracting (EPC) Program with the Colorado Energy Office is designed for financing public facility improvements, including local governments and school districts.⁵⁷ Energy Performance Contracting offers an innovating financing technique by using cost savings from projects that reduce energy use to repay the cost of installing energy efficiency and conservation measures. This approach allows building users to achieve energy savings without large upfront capital expenses. Eagle is currently working with Yearout Energy on an Energy Performance Contract that includes installing solar PV at the Wastewater Treatment Plant and Water Treatment Plan and water meter replacements.

Loan Loss Reserves (LLRs), which are a credit enhancement mechanism typically used by local governments to provide partial risk coverage to lenders, which allows the reserve to cover a prespecified amount of loan losses. For example, an LLR can cover a lender's losses up to 10% of the total principal of a loan portfolio. The financial institution supporting the local government can use the LLR to cover losses on defaulted loans. LLRs and other credit enhancements can be used in a variety of markets, including residential, commercial, multifamily housing, and nonprofit lending.⁵⁸

Credit enhancements, such as loan loss reserves and interest rate buy-downs, can support clean energy financing mechanisms such as bond issues, on-bill financing, property-assessed clean energy financing, and revolving loan funds. A credit enhancement relates to anything that improves the chances that financing will be repaid. These approaches improve financing options available to the private sector.⁵⁹

The Colorado Energy Office offers a **Public Building Electrification Grant** to provide funding to public buildings to implement electrification measures and associated infrastructure upgrades.⁶⁰

Dedicated climate-specific funding mechanisms, such as a climate action tax or carbon tax, have been approved by voters in other areas. Both Denver and Boulder have passed a climate tax. Taxes on greenhouse gases generally come in two forms: a tax on goods or services that produce measurable greenhouse gas emissions, such as a carbon tax on gasoline; and an emissions tax, which is based on the quantity an entity produces. 12 states have active carbon-pricing programs that are being used to successfully reduce emissions, including 11 northeast states that make up the Regional Greenhouse Gas Initiative (RGGI).⁶¹ Putting a price on carbon allows cities to make climate action fairer by assigning the greatest financial responsibility to the largest emitters, raise revenues for equitable climate action, accelerate private-sector transitions to net zero, force greater awareness and disclosure, and trigger regional action.⁶²

The property accessed clean energy (PACE) model allows a property owner to finance the upfront cost of energy or other efficiency improvements then pay back the costs over time through a voluntary assessment. In the situation of a PACE program, the assessment is attached to the property rather than the individual.⁶³

The Inflation Reduction Act (IRA) marks an extraordinary federal investment in climate change. Funding from the IRA primarily comes in tax credits and financing mechanisms. There are also smaller grant opportunities. The IRA includes climate funding for GHG reduction projects, clean electricity tax credits, residential energy efficiency and clean energy projects, energy efficiency for affordable housing, commercial energy efficiency tax credits, building energy code adoption, home energy efficiency contractor training, clean heavy duty and commercial vehicles, clean vehicle tax credits, EV charging infrastructure, community forestry, and drought mitigation. Local collaboration will be crucial to maximizing funding and strategic implementation. C40 Cities provides a comprehensive toolkit on climate action opportunities within the IRA for local governments.⁶⁴

The **Energy Efficiency and Conservation Block Grant (EECBG)** program is designed to assist local governments with implementing strategies to reduce fossil fuel emissions and energy use and improve energy efficiency. The EECBG Program Formula Grant Application includes \$550 million in clean energy and energy efficiency funding and is now open.⁶⁵

⁵⁷ Colorado Energy Office. "Energy Performance Contracting." <https://energyoffice.colorado.gov/clean-energy-programs/clean-energy-financing/energy-performance-contracting>

⁵⁸ Office of State and Community Energy Programs. "Loan Loss Reserve Funds and Other Credit Enhancements." State and Local Solution Center. <https://www.energy.gov/scep/slsc/loan-loss-reserve-funds-and-other-credit-enhancements>

⁵⁹ Colorado Energy Office. "Public Building Electrification Grant." <https://energyoffice.colorado.gov/clean-energy-programs/clean-energy-grants/public-building-electrification-grant>

⁶⁰ C40 Knowledge (2022). "How cities can put a price on carbon." https://www.c40knowledgehub.org/s/article/How-cities-can-put-a-price-on-carbon?language=en_US

⁶¹ Office of State and Community Energy Programs. "Property Assessed Clean Energy Programs. State and Local Solution Center. <https://www.energy.gov/scep/slsc/property-assessed-clean-energy-programs>

⁶² C40 Cities & Climate Mayors (2022). Climate Action and the Inflation Reduction Act: A Guide for Local Government Leaders. https://www.c40knowledgehub.org/s/article/Climate-action-and-the-Inflation-Reduction-Act-A-guide-for-local-government-leaders?language=en_US

⁶³ Office of State and Community Energy Programs (2022). "Energy Efficiency and Conservation Block Grant Program." <https://www.energy.gov/scep/energy-efficiency-and-conservation-block-grant-program>

Private Sector Funding

Additional private sector funding mechanisms allow affordable investments by both residential and commercial property owners. Examples are listed below.

The Database of State Incentives for Renewables & Efficiency (DSIRE) helps to identify local policies and incentives.⁶⁴

Residential loan products from the Colorado Clean Energy Fund, such the **Colorado Residential Energy Upgrade (RENU)**, a statewide residential loan program that offers low-cost, long-term financing for energy efficiency and renewable energy improvements.⁶⁵

Commercial loan products from the **Colorado Clean Energy Fund**, available to borrowers in industrial, municipal, affordable housing, and non-profit sectors, are designed to address finance gaps for energy efficiency and clean energy improvements that reduce greenhouse gas emissions and increase electrification.⁶⁶ There are several loan options depending on the loan amount and project scope.

The Colorado Energy Office offers a **commercial PACE financing tool** for commercial and multifamily property owners.⁶⁷

The Inflation Reduction Act (IRA) includes \$400 billion for clean energy, transportation, and environmental initiatives. Roughly \$43 billion in tax credits aims to reduce emissions through electrification, efficiency upgrades, and EVs.⁶⁸

Holy Cross Energy and EnergySmart Colorado both offer extensive rebates for qualifying energy efficiency, electrification, and EV upgrades.



⁶⁴ Database of State Incentives for Renewables & Efficiency. <https://programs.dsireusa.org/system/program/co>

⁶⁵ Colorado Clean Energy Fund. "Colorado RENU." <https://cocleanenergyfund.com/products/residential-products/renu/>

⁶⁶ Colorado Clean Energy Fund. "Commercial Loan Products." <https://cocleanenergyfund.com/products/commercial-products/>

⁶⁷ Colorado Energy Office. "Colorado C-PACE." <https://energyoffice.colorado.gov/clean-energy-programs/clean-energy-financing/colorado-c-pace>

⁶⁸ McKinsey & Co. (2022). "The Inflation Reduction Act: Here's what's in it." <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/the-inflation-reduction-act-heres-whats-in-it>

Transportation Funding

There are also several transportation-related grant and funding opportunities for electric vehicles and charging infrastructure.

Charge Ahead Colorado provides grant funding for community-based Level 2 and DC fast-charging (DCFC) electric vehicle charging stations.⁶⁹

Clean Energy Economy for the Region (CLEER) offers assistance through ReCharge Colorado to entities seeking state grant funding for EV charging infrastructure.⁷⁰

Zero Emission Vehicle Tax Credits are available in Colorado for the purchase, lease, and conversion of light, medium, and heavy duty alternative fueled vehicles (e.g., electric, plug-in hybrid or PHEV, compressed natural gas, liquified petroleum gas, liquefied natural gas, and hydrogen).⁷¹

Local Government Electric Vehicle Readiness Planning grants provides funding through the Colorado Energy Office to local and county governments and their regional partners to develop EV readiness plans.⁷²



Photo: Colorado Energy Office

The Community Accelerated Mobility Project (CAMP) will be a new grant program designed to provide funding for community-driven projects with an electric mobility component, such as community charging infrastructure, electric carshare, and eBike share. This is expected to launch in summer 2023.⁷³

Colorado Clean Diesel Program provides grants to businesses to help reduce the cost of replacing diesel equipment with hybrid-electric or all-electric equivalents. Administered through CLEER.⁷⁴

The Vehicle Exchange Colorado (VXC) program is establishing a statewide rebate program to encourage income-qualified residents to replace high-emitting vehicles with EVs, PHEVs, and other low-emitting mobility options.⁷⁵



Photo: Colorado Energy Office

⁶⁹ Colorado Energy Office (2023). Charge Ahead Colorado. <https://energyoffice.colorado.gov/transportation/grants-incentives/charge-ahead-colorado>

⁷⁰ CLEER (2023). "Decarbonizing Transportation." <https://cleanenergymarket.net/transportation/>

⁷¹ Colorado Energy Office. "Zero emission Vehicle Tax Credits." <https://energyoffice.colorado.gov/zero-emission-vehicles/zero-emission-vehicle-tax-credits>

⁷² Colorado Energy Office. "Local Government Electric Vehicle Readiness Planning Grants." <https://energyoffice.colorado.gov/local-government-electric-vehicle-readiness-planning-grants>

⁷³ Colorado Energy Office. "Community Accelerated Mobility Project (CAMP)." <https://energyoffice.colorado.gov/community-accelerated-mobility-project>

⁷⁴ Colorado Clean Diesel Program. <http://cocleananddiesel.org/>

⁷⁵ Colorado Energy Office. "Vehicle Exchange Colorado (VXC) Program." <https://energyoffice.colorado.gov/vehicle-exchange-colorado>

Vision, Governance, and Staffing

This Net Zero Action Plan should become the guiding document for all future developments and updates in Eagle. All new resolutions and initiatives should be made within the lens of net zero and climate action. Achieving net zero will become an integral aspect of how the town government operations. The partnership between the Palmer Fund and the Town of Eagle will evolve to encourage the technical expertise, funding, and the revolving loan model necessary to support net zero strategies.

Eagle Town Council and staff will prioritize development and actions that support NZAP strategies. Key staff will be identified to help implement various strategies, resolutions, and initiatives identified within the NZAP. The Town will hire a Sustainability Specialist to help lead implementation of the NZAP within the community and collaborate directly with the Palmer Fund to prioritize grants, loan funding, and partnerships necessary to achieve net zero.

The Town's future Sustainability Specialist will be responsible for the broad implementation and performance management of the NZAP, in collaboration with the Palmer Fund, the Climate Action Collaborative, Eagle County, Holy Cross Energy, and specific town staff, as applicable to their role and department, (eg. Town Manager, building department and code officials, planning, finance, public works, utilities, and administration).

An experienced Sustainability Specialist will be necessary for the long-term implementation of the NZAP and related performance management. In addition, it is likely that a Sustainability Coordinator will be required to provide additional implementation support of the plan and net zero strategies. The Town should also plan to integrate net zero priorities into existing staff roles throughout the organization, as the NZAP and net zero goal will require reframing the lens of many positions.



Town of Eagle Staff on Community Clean Up Day

What's next?

REPORTING AND VERIFYING PROGRESS

The Town of Eagle will need to complete an annual greenhouse gas inventory of community emissions to measure progress towards net zero. Data is currently available for the primary greenhouse gas emitters, including electricity and natural gas usage for both residential and commercial customers and residential waste emissions associated from the Town's waste hauling contract with Honeywagon. Improved data tracking will be required to measure emissions from transportation and commercial waste generation and diversion moving forward.

This Net Zero Action Plan relies on these primary greenhouse gas emissions from 2020 as the baseline. An annual greenhouse gas emissions inventory will help measure emissions reductions from year-to-year, and an annual or bi-annual NZAP progress report will inform our community on development toward the net zero goal.

MILESTONES AND TIMELINE

It is recommended that the Town Council prioritize a work session in Summer 2023 to review the final NZAP and consider the prioritization and implementation of strategies moving forward. With 2030 quickly approaching, it's crucial that Council direct Staff to implement the recommendations identified in the NZAP as early as possible, in accordance with the Roadmap to 2030.

The Sustainability Specialist should provide an annual update to Council to share progress towards emissions reductions and net zero, while also supporting regular community engagement and social mobilization opportunities to provide community updates and inspire action.



Appendix A

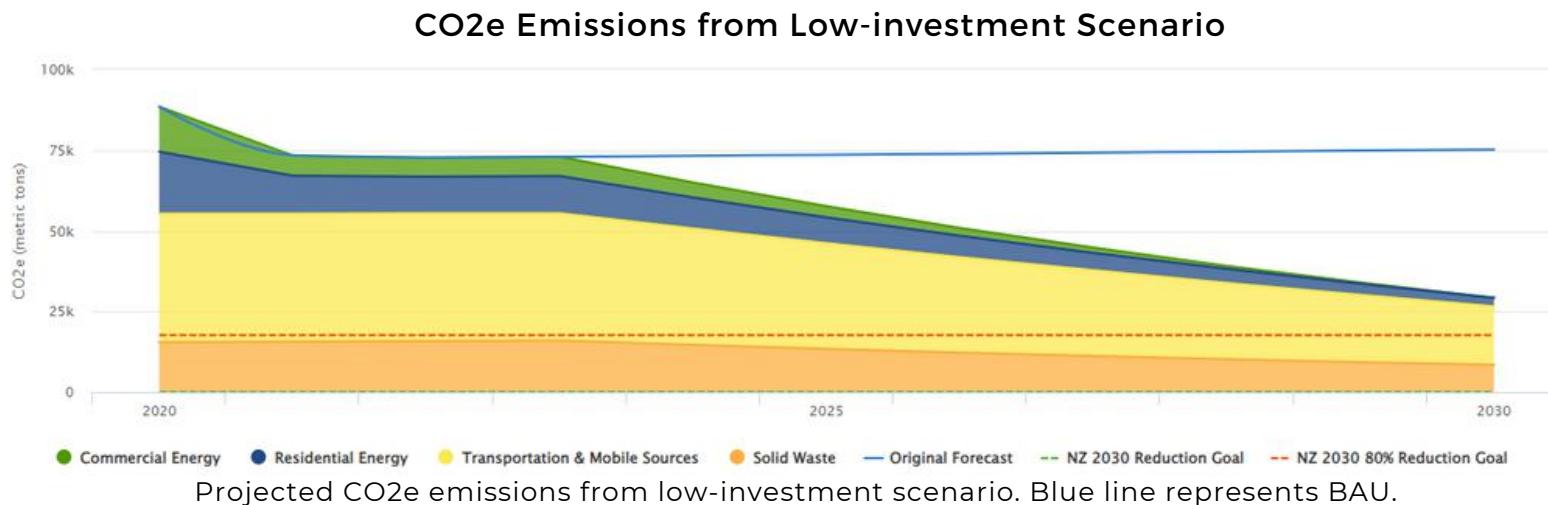
Several strategies were modeled at a low-, medium-, and high-investment scenario, as detailed below:

Strategy	Low	Medium	High
Residential Heat Pumps	50/year	75/year	100/year
Residential Electrification	25% by 2030	40% by 2030	50% by 2030
Residential Weatherization	50 households/year	75 households/year	100 households/year
Commercial Electrification	10% by 2030	25% by 2030	50% by 2030
VMT Reduction	25% by 2030	40% by 2030	65% by 2030
EV Adoption	50% by 2030	60% by 2030	75% by 2030
Organics Diversion	50% by 2030	70% by 2030	90% by 2030

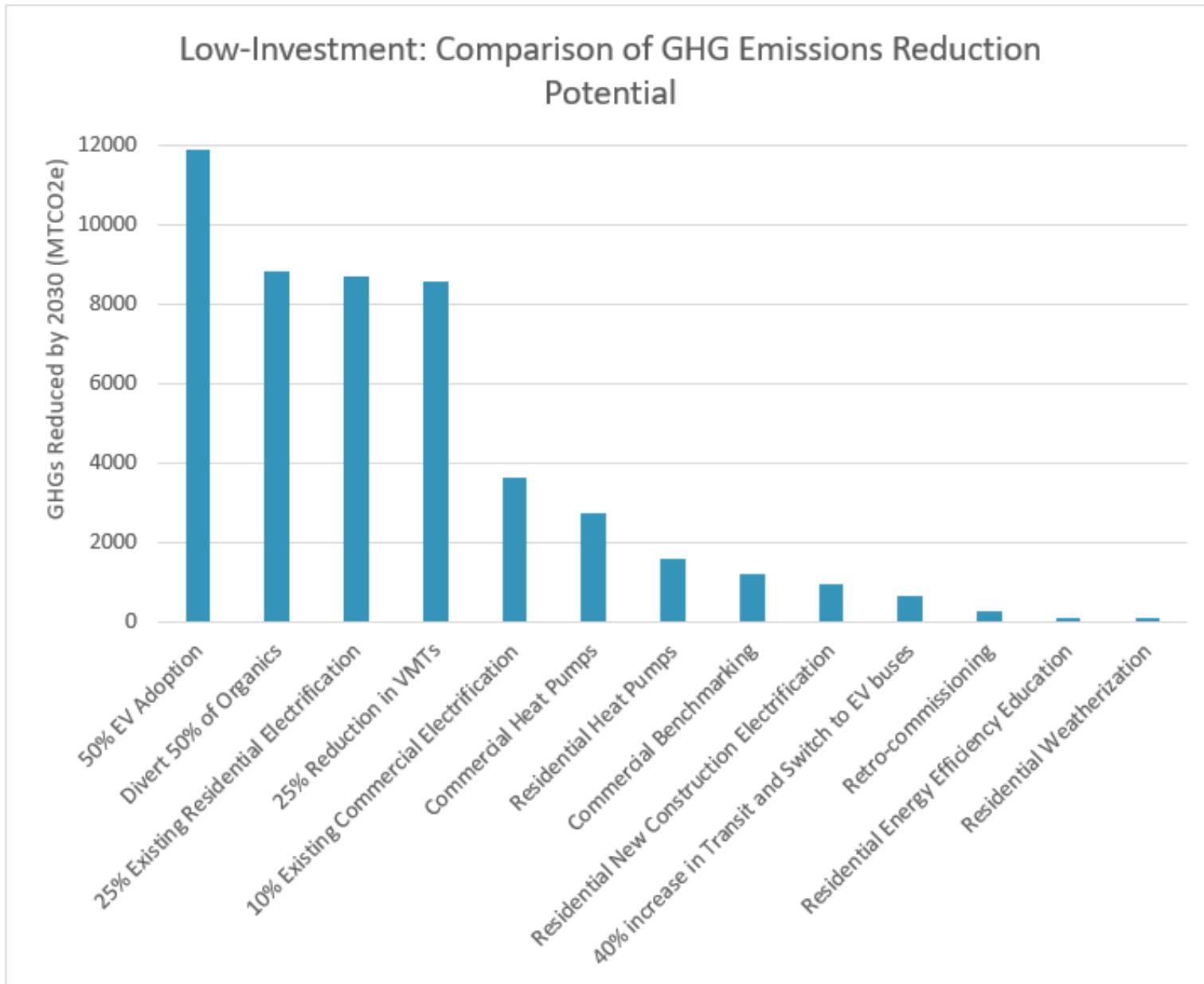
LOW-INVESTMENT SCENARIO

The low-investment scenario allows Eagle to eliminate emissions associated with commercial energy use by saving 91 MTCO₂e. However, actions under this scenario still produce 2,700 MTCO₂e from residential buildings, 18,095 MTCO₂e from transportation, and 8,496 MTCO₂e from solid waste. While this approach allows us to make measurable progress towards net zero, it only reduces our emissions by approximately 63% from the BAU scenario.

The graph below shows the projected CO₂e emissions for the low-investment scenario combined with BAU assumptions, while the following graph provides a comparison of greenhouse gas emissions reductions for strategies in the low-investment scenario.



Appendix A



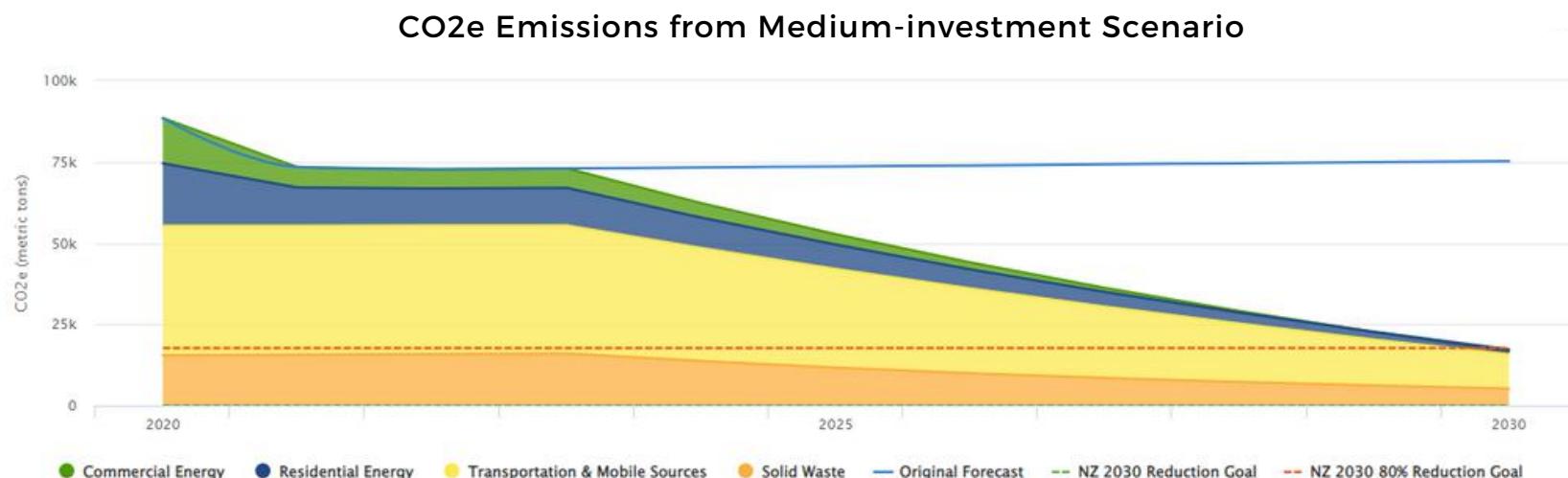
Comparison of greenhouse gas emissions from strategies in low-investment scenario.

Appendix A

MEDIUM-INVESTMENT SCENARIO

The medium-investment scenario allows Eagle to eliminate emissions associated with commercial energy use by saving -590 MTCO₂e. However, actions under this scenario still produce 1,551 MTCO₂e from residential buildings, 10,454 MTCO₂e from transportation, and 5,253 MTCO₂e from solid waste. While this approach allows us to make measurable progress towards net zero, it only reduces our emissions by approximately 78% from the BAU scenario.

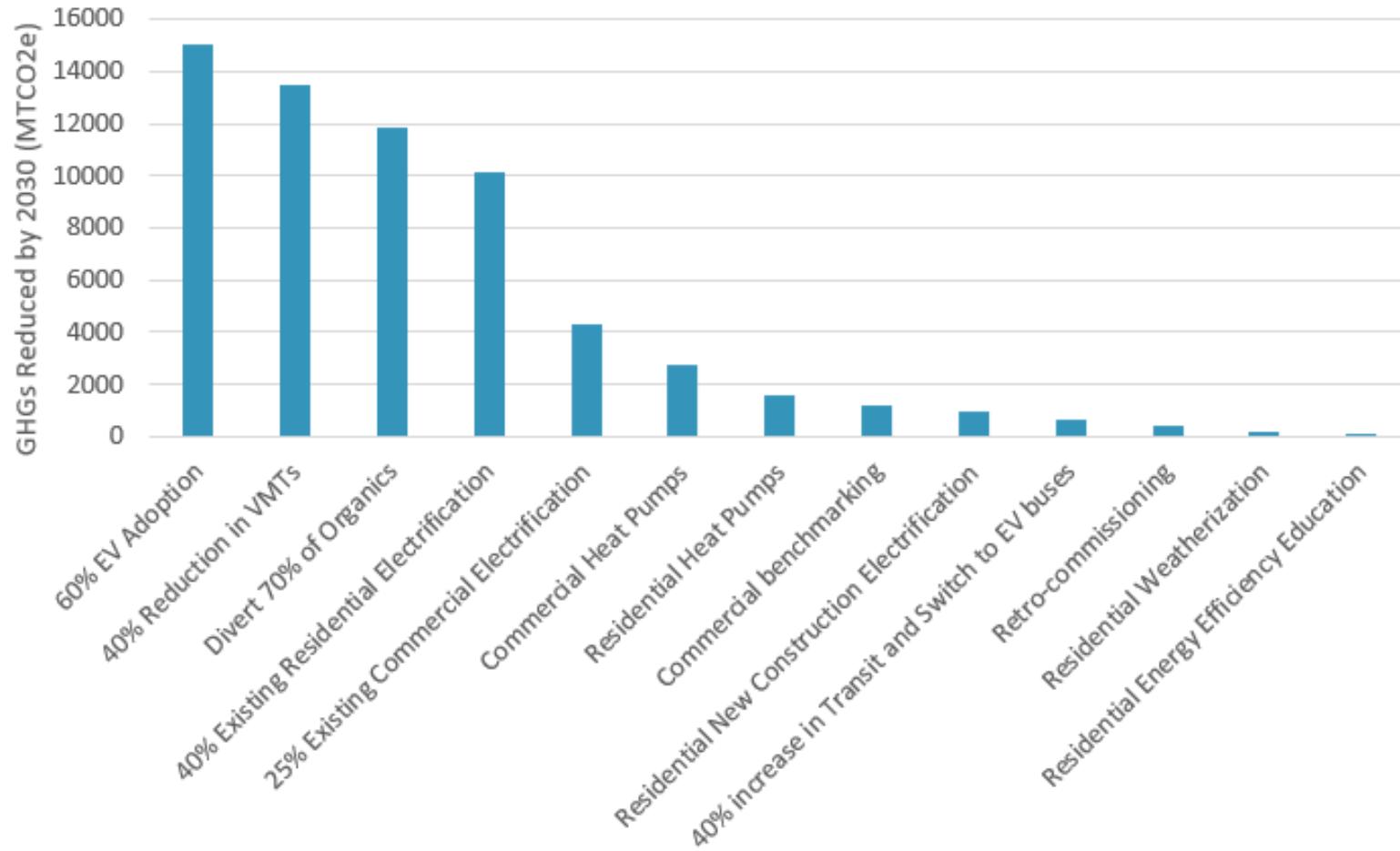
The graph below shows the projected CO₂e emissions for the medium-investment scenario combined with BAU assumptions, while the following graph provides a comparison of greenhouse gas emissions reductions for strategies in the medium-investment scenario.



Projected CO₂e emissions from medium-investment scenario. Blue line represents BAU.

Appendix A

Medium-Investment: Comparison of GHG Emissions Reduction Potential



Comparison of greenhouse gas emissions from strategies in medium-investment scenario.

Appendix B: Acronyms

- ACEEE – American Council for an Energy-Efficiency Economy
- AFOLU – Agriculture, Forestry, and Other Land Use
- AMI – Area Median Income
- BAU – Business as Usual
- BEECH – Beneficial Electrification for Eagle County Homes
- CAC – Walking Mountains' Climate Action Collaborative
- CAMP – Community Accelerated Mobility Project
- CARE – Colorado's Affordable Residential Energy program
- CCHP – Cold Climate Heat Pump
- CEO – Colorado Energy Office
- CLEER – Clean Energy Economy for the Region
- CSU Extension – Colorado State University Extension
- DBA – Eagle's Downtown Business Alliance
- DCFC – DC fast-charging
- EIE – Google's Environmental Insight Explorer
- ESPM – EnergyStar Portfolio Manager
- EV – Electric vehicle
- EVTA – Eagle Valley Transit Authority
- GHG – Greenhouse Gas
- GPC – Global Protocol for Community-Scale Greenhouse Gas Emission Inventories
- HVAC – Heating, Ventilation, and Air Conditioning
- ICLEI – Local Governments for Sustainability
- IECC – International Energy Conservation Code
- IRA – Inflation Reduction Act
- LEARN – ICLEI's Land Emissions and Removals Navigator tool
- MTCO2e – Metric tons of CO2 equivalent
- NRCS – Natural Resources Conservation Service
- NSC – Natural Climate Solutions
- NZAP – Net Zero Action Plan
- PV – Photovoltaic
- RTU – Rooftop unit
- SWEEP – Southwest Energy Efficiency Project
- USDA – U.S. Department of Agriculture
- VMTs – Vehicle Miles Traveled
- WAP – Weatherization Assistance Program