

Summit County Greenhouse Gas Emissions Summary, 2017

In 2018, Summit County completed its first greenhouse gas inventory to better understand its emissions profile and to give insight to policies and programs that could help reduce greenhouse gas emissions in the community.

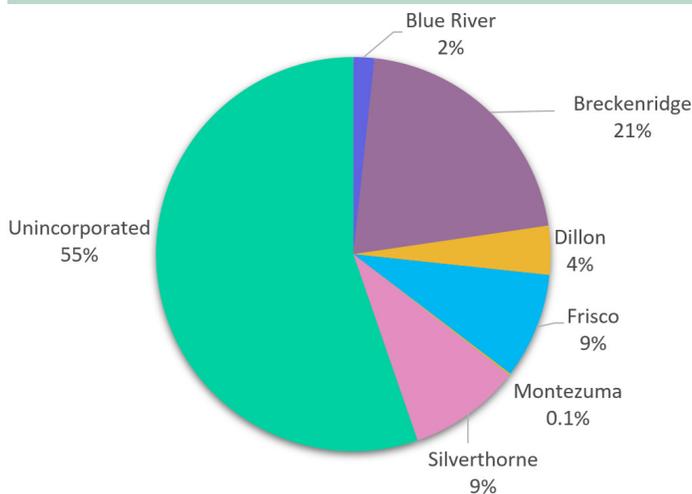
The data indicates that Summit County has a unique profile in terms of greenhouse gas emissions. For example, Summit County is among the most visited ski destinations in the world, and its temporary population grows substantially during peak ski season and summer months. In addition, Summit County is home to an exceptionally high percentage of second homes and/or rental homes. These characteristics can make it challenging to compare with other communities on a per capita or per housing unit basis.

This summary provides a high-level view of the greenhouse gas emissions resulting from residents and visitors alike. High Country Conservation Center and its partners intend to use this information to guide planning and decision making towards reducing greenhouse gas emissions within the county. Because Summit County attracts thousands of visitors each year, strategies and programs set in place have the opportunity to impact not only local residents but also tourists from near and far away.

Key Takeaways

- ✓ 815,721 metric tons of carbon dioxide equivalent (mtCO₂e) were produced from energy use, transportation, waste, and wastewater
- ✓ At 40%, the single largest source of emissions is electricity used to power homes and businesses
- ✓ Approximately 28% of electricity generation comes from renewable sources

Emissions by Municipality, 2017



Overview of Emissions

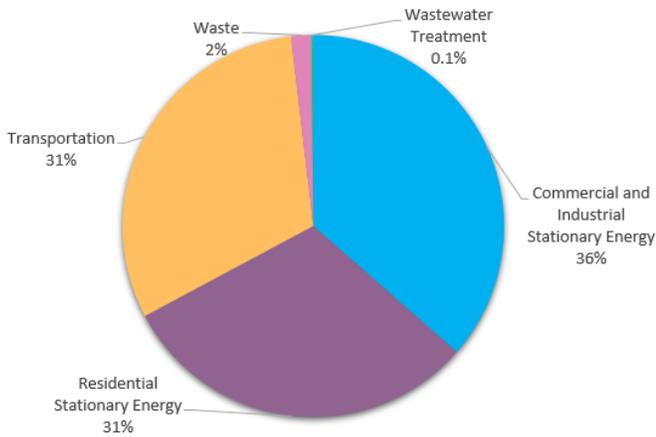
More than half of emissions arise from unincorporated areas of Summit County, followed by the larger towns of Breckenridge, Silverthorne, and Frisco. The majority of the county population lives outside of incorporated towns and, in addition, a significant amount of electricity use at ski areas occurs outside of the towns.

Overview of Emissions, Continued

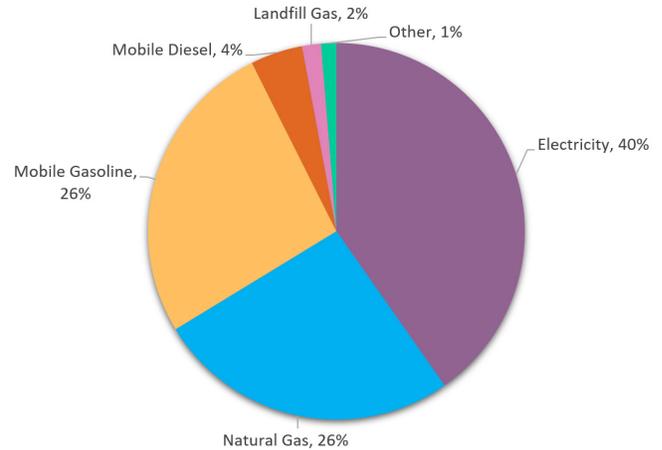
Nearly one third of Summit County emissions arise from the transportation sector, and the majority of the remainder of emissions come from residential, commercial, and ski area energy use. Waste and wastewater together comprise approximately 2% of emissions in Summit County.

Electricity generation was the primary emissions source at 40%, followed closely by natural gas and gasoline each at 26%.

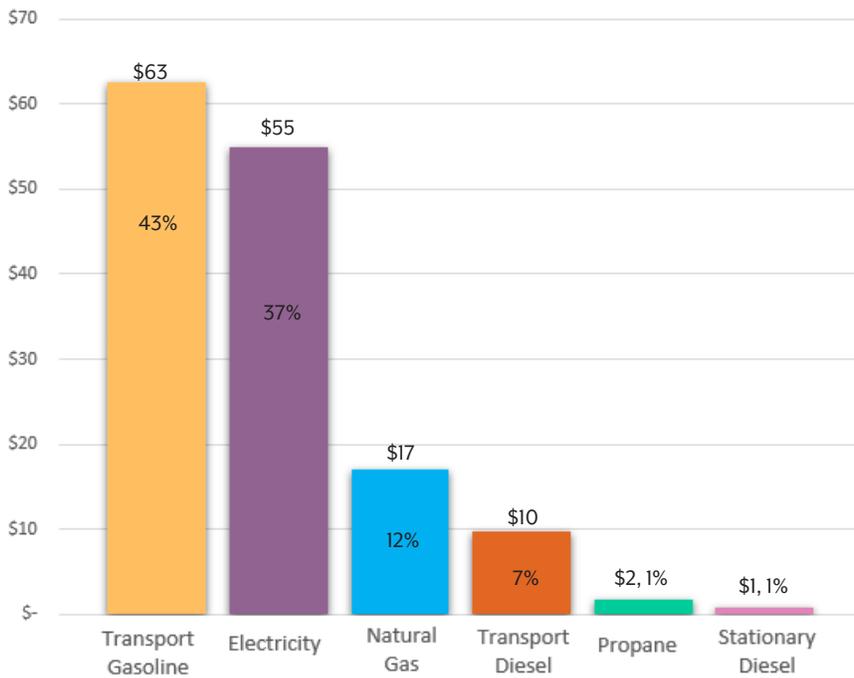
Emissions by Sector, 2017 (MtCO₂e)



Emissions by Source, 2017 (MtCO₂e)



Energy Costs by Source (Millions of Dollars)¹



Of \$147 million spent on energy in Summit County, the majority was spent on gasoline for transportation, followed by electricity use.



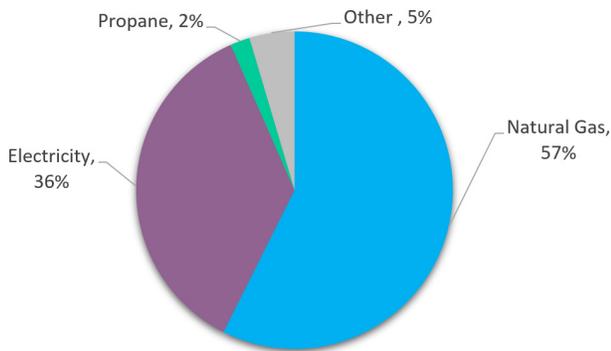
Building Energy Use

Two thirds (67%) of Summit County's GHG emissions come from energy use in the building sector.

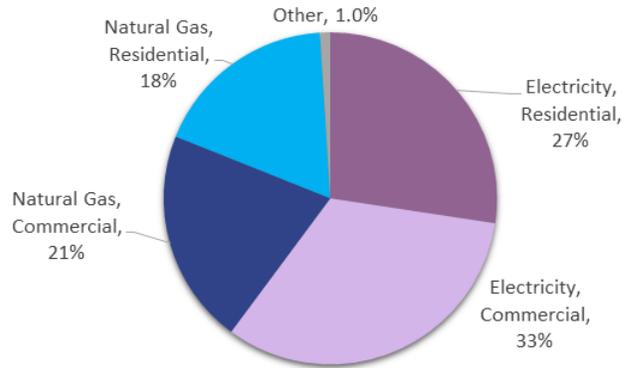
According to U.S. Census data, over half of Summit County homes heat with natural gas, followed by electric heat.

Across all sectors, emissions from electricity use are dominant at approximately 60%, with commercial use comprising 33% and residential 27%. Natural gas, used primarily for heating, accounts for 39% of emissions.

Residential Heating by Fuel Type

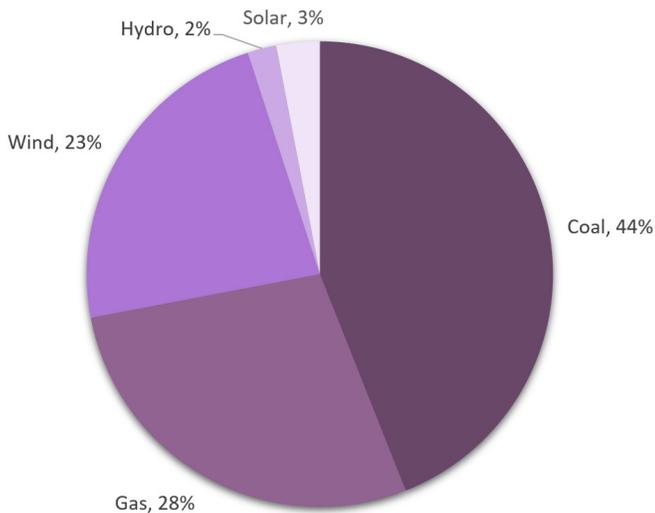


Building Emissions (MtCO₂e)



Xcel Energy provides over 99% of the electricity in Summit County with Mountain Parks Electric providing the remainder. The electricity provided to the community is approximately 28% renewable energy. Summit County community-owned renewable systems total 3,674 kW of capacity or approximately 0.68% of electricity demand.

Xcel Electricity Sources, 2017



Colorado Electricity Trends

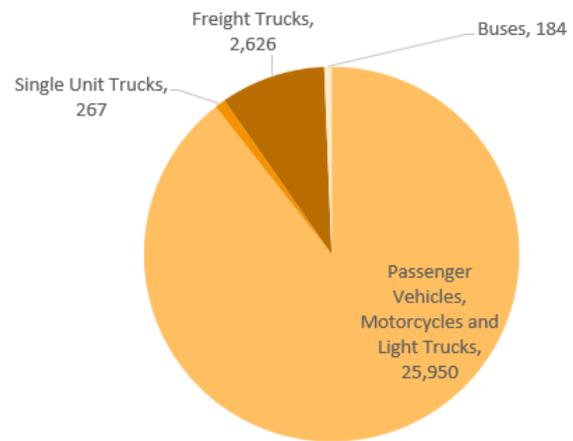
- ✓ If approved by the Public Utilities Commission, Xcel's proposed Colorado Energy Plan will:
 - o Increase their electricity resource mix to 55% renewables by 2026;
 - o Cut carbon emissions by half; and
 - o Save customers \$215 million.
- ✓ Since 2010, electricity consumption in Summit County has remained relatively consistent despite population increases.

Transportation Energy Use

Without any airports within county limits, vehicle use is the primary source of transportation emissions.

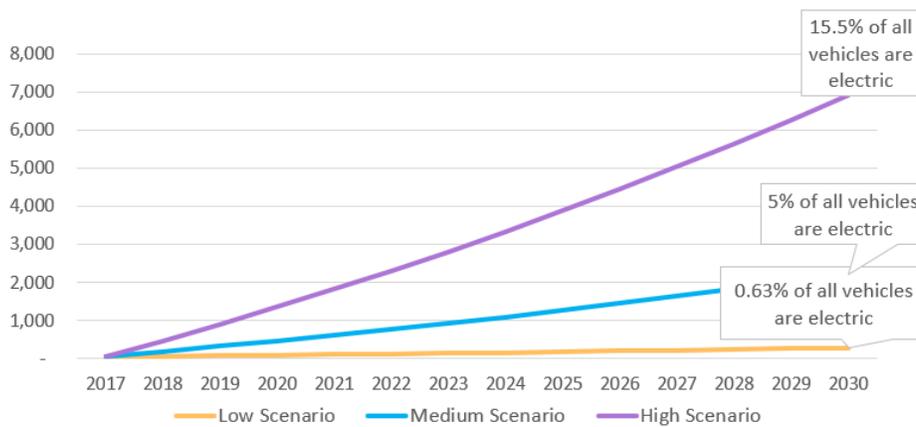
Cars and trucks are responsible for the majority of emissions, while freight trucks are a distant third. There are only 49 electric vehicles (EVs) currently registered in Summit County. However, the Colorado Electric Vehicle Plan indicates that under a high growth scenario, there could be as many as 1 million EVs on the road in Colorado by 2030, contributing to significant emissions reduction. If Summit County followed the same low, medium, and high range trends outlined in the Colorado Electric Vehicle Plan, there could be as little as 280 vehicles or as many as 7,000 electric vehicles registered in Summit County by 2030.

Summit County Energy Use by Vehicle Class, 2017
(Thousands of Gallons)²



Note: 'Single-Unit Trucks' refer to box trucks and other small delivery trucks that are larger than a pickup but smaller than a semi-truck trailer.

Summit County Electric Vehicle Projections



Recent Transportation Trends

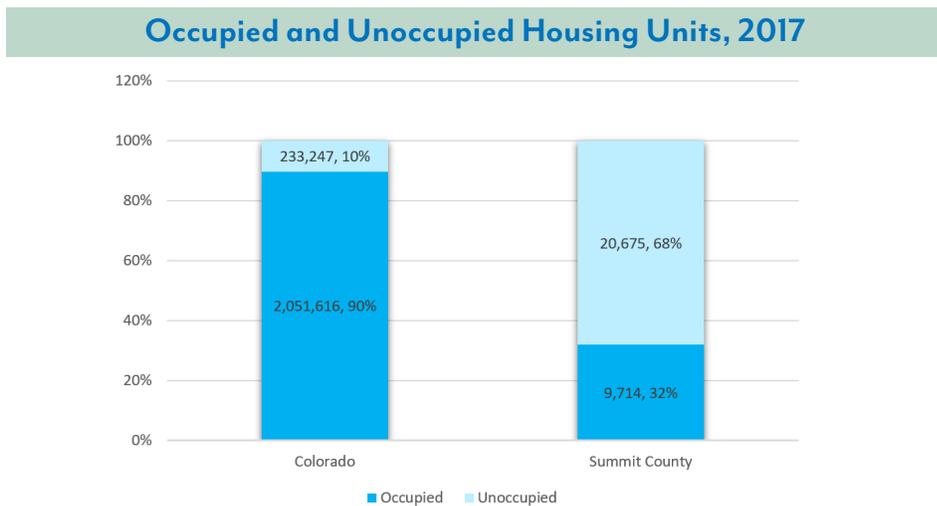
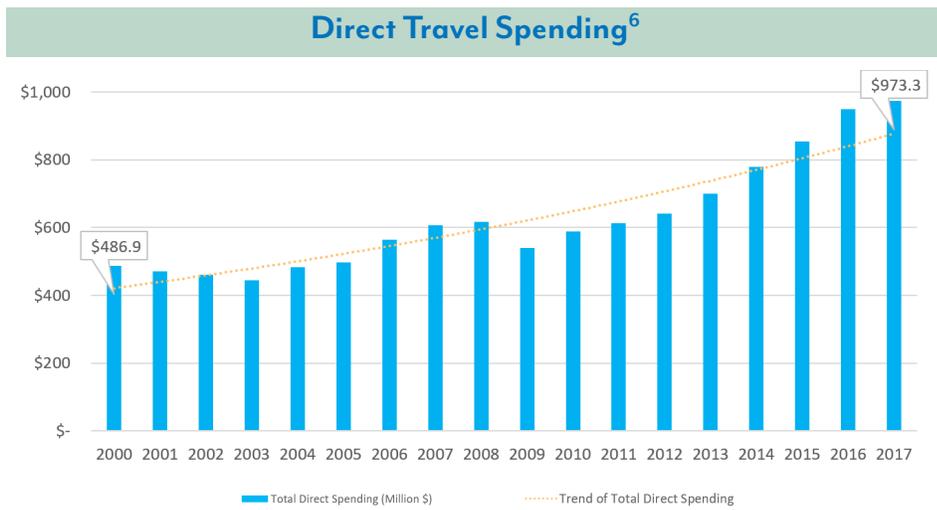
- ✓ Colorado currently ranks 8th in the nation for highest market share and seventh for number of EVs per capita.³
- ✓ Summit County currently has 9 public charging stations.⁴
- ✓ Summit County offers free public transit options for visitors and residents alike; increasing the availability of and access to these options will likely lead to decreased vehicle miles traveled in future years.



Tourism Impacts

Tourism plays a large role in the economy of Summit County, resulting in a disproportionately large number of housing units unoccupied by year-round residents. Instead, these homes are primarily used as vacation rentals.

In 2017, \$973.3 million dollars were spent in Summit County on direct travel spending – a 60% increase over the last 10 years. This upward trend is expected to continue to rise alongside number of tourists leading to additional energy use and waste creation. Peak seasonal daily population in Summit County is nearly 150,000 people⁵--a stark increase over the year-round resident population of approximately 30,000 in 2017. With millions of tourists visiting Summit County each year, tourism likely has a larger impact on emissions than the year-round resident population in the County.



Endnotes and Sources

1. Energy costs estimates are based on Xcel’s Community Energy Report, Mountain Parks Electric costs, U.S. Energy Information Administration, and Colorado AAA Gas and Fuel Guide.
2. Transportation fuel used is based off of vehicle miles traveled data from the Colorado Department of Public Health and the Environment and vehicle registration data from Summit County Department of Motor Vehicles.
- 3 & 4. The number of registered vehicles projections are based off of Department of Local Affairs population growth estimates. Low, medium, and high scenarios are based off the 2015 Colorado Energy Office’s Electric Vehicle Market Implementation Study.
5. Data on peak season population was obtained from the Summit County Multi-Hazard Mitigation Plan (August, 2013).
6. Data on direct travel spending from Dean Runyan Associates Annual Report: <http://www.deanrunyan.com/COTravellImpacts/COTravellImpacts.html>