

2015 Community Carbon Inventory



Road to 2020

“Fort Collins is a community that has already made significant progress in reducing greenhouse gas emissions. **Our aspirational goal to be carbon neutral by 2050 is being lauded by our municipal counterparts around the globe.** The City is a platform for innovative solutions to market-based opportunities that will help us tackle these challenges in line with community values.”

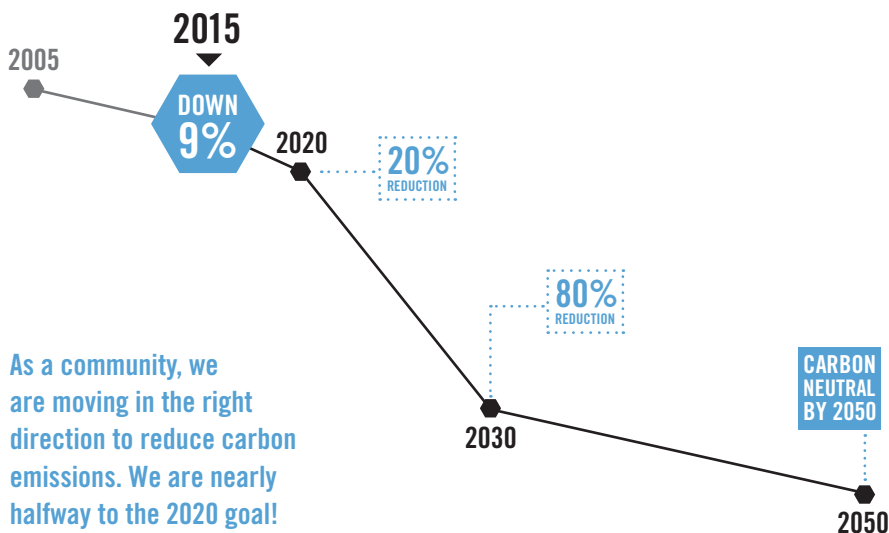
— Mayor Wade Troxell

“The Road to 2020 is a commitment by our community to protect the human, environmental and economic health that we enjoy. **Cities are a powerful force in the global efforts to be more resilient.** This report illustrates that, working together, we can make a difference in our carbon footprint while we are experiencing growth in our population and GDP.”

— City Manager Darin Atteberry

Goals on the Road to 2020

Accelerated community goals were unanimously adopted by the City Council in March 2015. The goals build on the City's original 1999 goals, in consultation with a Citizen Advisory Committee consisting of environmental, social services and business leaders.





Road to
2020

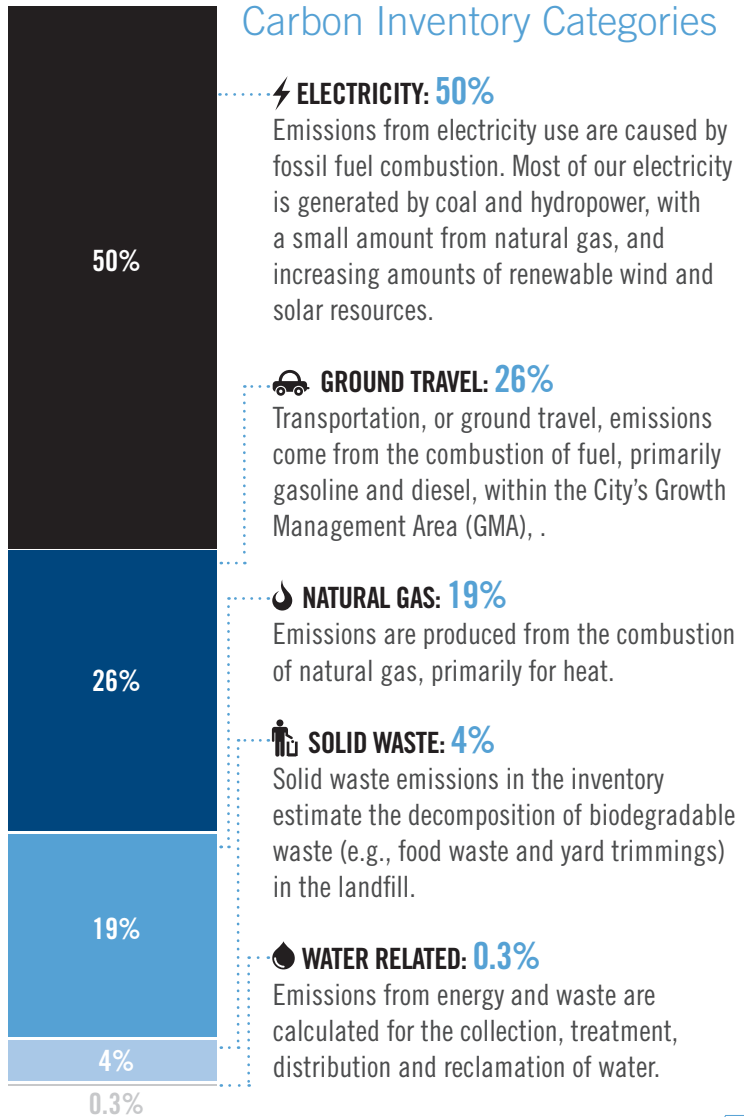
2005 to 2015

What's changed with a decade of efforts?

Using the Fort Collins Community Carbon Inventory to compare 2005 to 2015, it is clear that Fort Collins continues to reduce its overall carbon emissions.

	2005	2015
COMMUNITY CARBON INVENTORY	2.3 Million Metric Tons CO ₂ e	2.1 Million Metric Tons CO ₂ e
Net reductions: 220,807 Metric Tons (-9%)		

	2005	2015
PER CAPITA EMISSIONS	18 Metric Tons CO ₂ e per person	13.5 Metric Tons CO ₂ e per person
Per capita reductions: 4.5 Metric Tons per person (-25%)		





What are GHGs?

GREENHOUSE GASES (GHG) are gases in the atmosphere that can absorb and emit heat. Science attributes a warming of the Earth's atmosphere to an increase in GHGs.

What is CO₂?

CARBON DIOXIDE (CO₂) is a GHG emitted naturally and from fossil fuel combustion for energy and heat (e.g., coal, natural gas, gasoline and diesel). Global warming contributions from other greenhouse gases (such as methane) are referred to in terms of “carbon dioxide equivalent” or CO₂e, which represents the amount of CO₂ that would have the same global warming potential as other GHGs. Community carbon inventory goals are tracked in terms of tons of CO₂e.

Why Measure?

CITIES ARE RESPONSIBLE FOR MORE THAN 70% OF GLOBAL CARBON EMISSIONS.

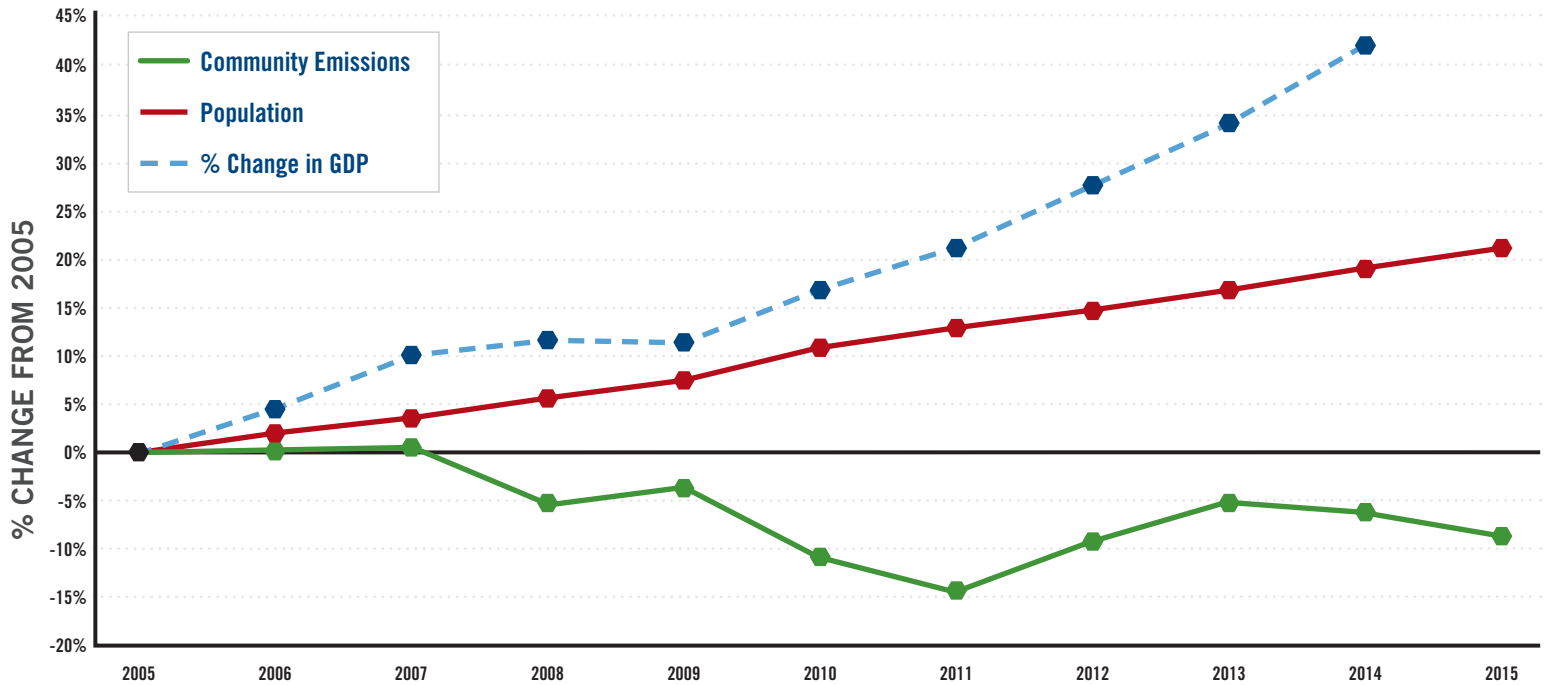
By Fort Collins committing to carbon neutrality by 2050, our community is signaling to the world we are a part of the solution. Fort Collins can have an impact by reducing more than 2 million tons of carbon from the atmosphere, and we have joined with 500 other communities, through the Compact of Mayors,* to illustrate the capacity that municipalities have to significantly impact their future.

How is the Inventory Calculated?

The community greenhouse gas inventory is calculated using the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions.** The baseline year used as a starting point is 2005, and the inventory is updated annually.

*(www.compactofmayors.org)

**(<http://iclei.usa.org/publications/us-community-protocol/>)



How Do We Predict Future Impacts?

- Future emissions are forecasted with a new modeling tool, along with assumptions about population growth and the projected use of fossil fuel resources (e.g., coal, gasoline, diesel and natural gas).
- The model also estimates the benefits and costs for specific actions to reduce fossil fuel use and carbon emissions.



2015 Progress

Electricity (50% of inventory)

**EMISSIONS HAVE DECREASED
11% SINCE 2005.**

Reductions have been achieved in part due to energy efficiency programs for new and existing homes, business and industry and also through expansion of both utility-scale and community-scale availability of renewable energy.

HIGHLIGHTS:

- Electricity use per capita decreased by 10% over the 2005 baseline.
- Non-carbon resources accounted for 30.8% of electricity in 2015 (18.6% from hydro, 11.7% from wind and 0.5% from solar).*

Ground Travel (26% of inventory)

**EMISSIONS IN 2015 ARE ABOUT
THE SAME AS ESTIMATED IN 2005.**

Emissions have remained steady despite population growth in part due to expanded mass transit options, and use of more fuel-efficient vehicles.

Increased and enhanced congestion management and more efficient land use patterns will also be important components of future strategies.

HIGHLIGHTS:

- New regional mass transit options added in 2015 included Bustang service to Denver and expanded Transfort FLEX service.
- In Northern Colorado, electric vehicle sales were twice the national average in 2015.



Natural Gas

(19% of inventory)



**EMISSIONS HAVE INCREASED
7% SINCE 2005.**

In Fort Collins, natural gas is used primarily for heating homes and businesses.

Natural gas burns cleaner than other fossil fuels, but it still contributes to greenhouse gases, and production and processing contributes to emissions outside of our community.

Fort Collins may not be able to end carbon emissions as one community, but we can be part of the solution.



Solid Waste

(4% of inventory)



**EMISSIONS HAVE DECREASED
57% SINCE 2005.**

Fort Collins continues to work toward the goal of zero waste by 2030 with increased focus on composting as well as encouraging recycling by businesses and multi-family complexes.

HIGHLIGHT:

- In 2015, 58% of the community and industrial materials generated were recycled or composted, and 5.17 pounds per day per capita of materials were sent to the landfill.



Water Related

(0.3% of inventory)



**EMISSIONS HAVE DECREASED
9% SINCE 2005.**

Water-related sources account for only a small percentage (<1%) of total carbon emissions, but strategies related to water conservation are also important considerations for community resiliency.

Reductions have been achieved in part due to water efficiency programs for new and existing homes, business and industry.

HIGHLIGHT:

- In the past 10 years, system-wide water demand has dropped 10%.

Additional Benefits of Carbon Emission Reduction

Using less fossil fuel as a community has far-reaching benefits beyond reducing greenhouse gases in the atmosphere.

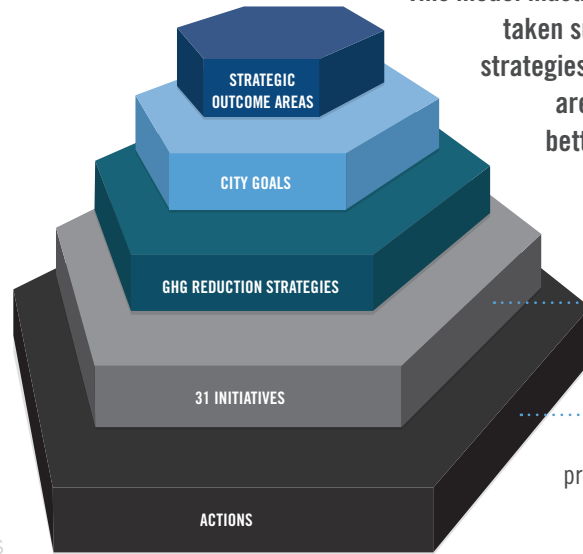
- **Cleaner air** is one of the key reasons we are so actively engaged in climate action. Sources that emit carbon are also the major sources that contribute to air pollutants such as **ozone and particulate matter that can affect our health**. These sources also contribute to haze which can obscure our beautiful mountain views.
- Reduced and more efficient use of fuel and electricity can **save money** at the pump, and on utility bills.
- Alternatives to fossil fuel dependency, such as the use of renewable energy, can lead to **increased energy security**.

Actions to Outcomes

OUTCOMES



ACTIONS

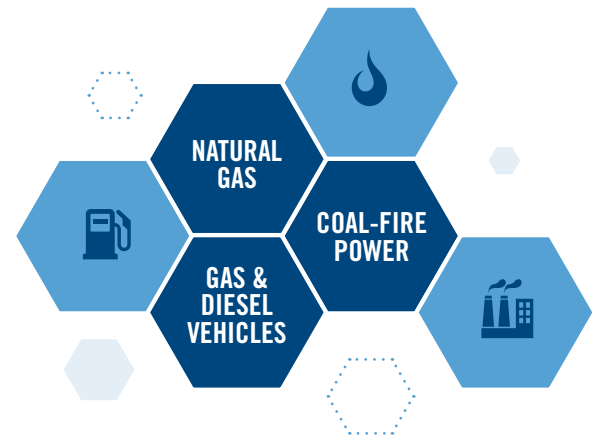


This model illustrates how the actions taken support the initiatives, strategies, goals, and outcome areas, which helps staff better map out our steps and priorities on the Road to 2020.

..... **EXAMPLE:**
Energy Efficiency

..... **EXAMPLE:**
Installing a programmable thermostat

Common Sources That Contribute to Both Carbon and Air Pollutants



Fort Collins: A Community Making a Difference



Electricity

Efficiency Focused

By the end of 2015, the Fort Collins community was well on its way to reducing its electrical and natural gas use – enough to move from 13th place into 10th place among 50 communities competing for \$5 million in the national Georgetown University Energy Prize competition. The contest measures energy use among residential customers and includes municipal and school buildings. Participants must implement an innovative and replicable energy efficiency plan and reduce energy use to stay in the top 10 by the end of 2016 to be eligible for the prize.

The Lose-A-Watt competition is a chance for communities to share best practices in energy efficiency techniques as well as public engagement to get their residents to reduce their overall energy usage. The two-year competition began in 2015.



Ground Travel

Bike Culture

Bike to Work Day isn't a one-time event at Horse & Dragon Brewing Co. – it's a culture built by owners Carol and Tim Cochran who encourage and reward employees for leaving their cars at home. Customers are also encouraged to bike to the brewery, which is a City ClimateWise partner, and log their miles. The Cochrans purchased “brewery bikes” for staff to run errands and asked a majority of staff to go through the City's certified Bike Friendly Driver program when they do have to drive brewery vehicles. In 2015, they offered City bike maps and bike helmets for sale, helped staff a Bike to Work Day breakfast station, closed the business to participate in the Tour de Fat and donated to numerous bicycling endeavors around town.

Carol Cochran says, “We think Fort Collins is an ideal city in which to bicycle, and we feel like people get to know neighborhoods better if they bike. Plus, they/we arrive to work or home happier and more calm after bicycling. As Fort Collins urbanizes, cycling will become more and more the way the majority of us need to get around.”



Natural Gas

MAX

How popular is MAX, the City's Bus Rapid Transit system that runs on Compressed Natural Gas or CNG?

MAX recorded a 119 percent jump in riders from August-December 2014 to August-December 2015 – an increase that contributed to an overall Transfort growth spurt of 25 percent, from 2014 to 2015. Compressed natural gas emits significantly less pollution than more traditional fueling options, releasing nearly 40 percent less carbon dioxide than gasoline. In addition to the new MAX vehicles, Transfort has gradually replaced about 80 percent of its fleet with buses that run on CNG. Overall ridership on Transfort has increased 120 percent.



Solid Waste

Foothills Mall

The 1970s gym floor now greets visitors of the new recreation center and serves as a City Hall break room table. Street lamps and salvaged steel were turned into public art at The Gardens at Spring Creek and the new City recycling center on Timberline Road. Even ceiling tiles were reused as a temporary walking path for contractors working on the redevelopment of Foothills, one of the largest redevelopment projects in the community in recent years.

As part of the redevelopment agreement that provided public financial assistance, the mall developer reused or recycled virtually all of the concrete, rock, asphalt, dirt, bricks and metals (excluding hazardous materials). About 73 percent of all other materials – wood/lumber, for example – was diverted from the landfill. According to a 2015 report from CSU's Institute for the Built Environment, more than 67,830 tons of waste from the mall redevelopment was diverted from the landfill.

Road to 2020 PLANNING

Beginning in 2015, the City organized our 2020 planning into teams consisting of City staff and community experts. Teams are organized around key strategies, which include:

- Energy Efficiency
- Clean Energy
- Multi-Modal Planning and Development
- Road to Zero Waste
- Water and Land Use
- Performance Measurement
- Financing Mechanisms
- Messaging and Engagement
- Pilot Projects and District Scale Incentives
- Preparation, Adaptation and Resilience

Strategies are also integrated and supported in other City policies and plans including:

- City Plan
- Strategic Plan
- Energy Policy
- Transportation Master Plan
- Road to Zero Waste
- Water Efficiency Plan
- Air Quality Plan



Future Planning

Future planning will also include an expanded emphasis on:

- Finding shared, **innovative financing** to more quickly gain the benefits of carbon reduction strategies such as grant opportunities, public-private partnerships, and other financing solutions.
- Efforts around **adaptation and resiliency**, to improve the resiliency of our community such as increases in wildfires, floods, and health-threatening heat waves.



It Takes a Community

How can you help?

Here in Fort Collins, we are fortunate to have a community that embraces conservation, active lifestyles and innovative solutions. **We have ambitious goals, and as a community, we can work together to get there.**

- Sign up for local 2020 related **news and events** at www.fcgov.com/climateaction.
- Take advantage of money saving opportunities from numerous Fort Collins programs including **rebates, loans for efficiency upgrades and more** at mycap.fcgov.com.

City Contacts

City Council/City Manager

- Wade Troxell, Mayor
- Gerry Horak, Mayor Pro Tem, District 3
- Bob Overbeck, District 1
- Ray Martinez, District 2
- Gino Campana, District 3
- Kristin Stephens, District 4
- Ross Cunniff, District 5
- Darin Atteberry, City Manager

CAP Executive Team

- Jeff Mihelich, Deputy City Manager
- Mike Beckstead, Chief Financial Officer
- Kevin Gertig, Utilities Executive Director
- Laurie Kadrach, Director of Planning, Development, and Transportation
- Jackie Kozak Thiel, Chief Sustainability Officer
- Lucinda Smith, Environmental Services Department Director
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Road to
2020

