

2010

*Municipal Operations
Sustainability Annual Report*





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Executive Summary

The 2010 Annual Municipal Sustainability Report provides performance data and describes innovative projects. The most impressive achievement by the organization is a 10.3% reduction from the 2005 baseline year in its greenhouse gas (GHG) emissions. This places the City of Fort Collins among the few in the nation achieving significant GHG reductions.

Although this report focuses on municipal operations, Fort Collins as a community is making significant progress toward reducing its carbon footprint. In fact, although the population has grown by 13% since the baseline year, GHG emissions related to utility services provided to citizens have dropped. In 2005, 0.39 metric tons of GHG were emitted per citizen served. In 2010, 0.31 metric tons of GHG were emitted per person served.

The City's top five projects yielding both high GHG reductions and financial savings were: The Hoffman Mill Road asphalt and concrete recycling project; metal recycling; Drake Water Reclamation Facility (DWRf) electricity load shedding; DWRf methane heat recovery and conversion of some street lights to High Pressure Sodium (HPS) Lights. These projects saved the organization and taxpayers \$444,299, and reduced GHG emissions significantly.

Fort Collins is committed to sustainability as a core value. The central premise of a sustainable operation is that it balances social, economic and environmental factors in decision-making and management. This approach is nothing new to the City; it has been a part of our culture for years. However, each year the organization strengthens its strategic approach to sustainability to demonstrate leadership not only in Fort Collins but throughout the nation. Looking forward, the City continues to find opportunities to make sustainability gains. For example, based on international trends Fort Collins could increase its goal setting significantly.¹

Equity, Economy and Environment (Triple Bottom Line)

The City of Fort Collins is committed to operating in a manner that lowers its ecological impacts while strengthening its economic and societal leadership—the Triple Bottom Line (TBL). Fort Collins' City Plan defines the City's overall approach to sustainability as, "an expression of the community's resolve to act sustainably: to systemically, creatively, and thoughtfully utilize environmental, human, and economic resources to meet our present needs and those of future generations without compromising the ecosystems upon which we depend."

Why does the City care about sustainability? There are numerous global trends that signal the planet is at or beyond its capacity to support our civilization. Climate change, food and energy security, population growth, and ocean acidification are just a few of these profoundly disturbing trends. On a more hopeful note, City governments around the world are leading efforts to anticipate and deal with these extraordinarily difficult issues. Leadership in sustainability places Fort Collins at the forefront of this movement, and is critical to creating a better future for our citizens and future generations. Furthermore, the City's leadership helps the community retain and attract the best and brightest companies and entrepreneurs. Many economists believe that organizations fully embracing the principles of sustainability will be the most successful of the 21st century. Lastly, as the owner and manager of significant public infrastructure and a provider of public services, the City has an obligation to manage its resources in a way that saves money, protects the environment, and best serves our citizenry.

Core Sustainability Goals

The organization has adopted ten core sustainability goals. The goals and associated results are described in detail beginning on page 5. The overarching environmental goal is to reduce GHG emissions 20% by 2020. The GHG goal is strongly related to other environmental goals, and therefore progress on environmental initiatives often contributes to the overarching carbon objective. Thus the City's GHG reduction of 10.3% from the baseline year represents advancement in a variety of areas ranging from fuel use to building operations and solid waste management. The next few pages describe some program highlights, including a table of game-changing projects and a list of sustainability-related awards.



Game-Changing Projects

The table below illustrates the estimated annual impacts of several measurable initiatives and the projects that made a difference in 2010. (Note: Some projects, such as asphalt recycling, are on-going.) Several of the 2010 projects and on-going projects are not included in our baseline inventory.

Municipal Operations Reductions	Social Benefits	Financial Savings	CO ₂ e Reductions Metric Tons
Asphalt, Concrete and Toilet Recycling	Toilet rebates to community members and lower cost of City services. Opportunity to recycle more materials.	\$266,356	4,250
Metal Recycling	Resource conservation	\$69,000	425
Wastewater Load Shedding	Lower cost for City services	\$54,000	544
Methane Flaring	Heat recovery	\$28,943	N/A
70W High Pressure Sodium Street Lights	Lower cost for City services	\$26,000	334
Museum - Boilers	Lower energy cost	\$25,318	102
Operations - Boilers	Lower energy cost	\$25,318	102
Server Virtualization	Energy savings, lower VOCs level (Ozone)	\$24,344	21
250 W MV Street Lighting to 150 W HPS (292)	Safety - better lighting	\$24,033	237
Solid Waste Challenge ²	Promote community engagement	\$24,000	5
LED/HVAC lighting Replacements - Water Treatment	Lower energy bills for residents and lower cost for City Services	\$20,916	255
Earth Day Event	Assistance to low income families (reduced air conditioning bills) and educational outreach	\$18,000	13
Water Treatment Plant Tree Planting	Energy savings, lower VOCs level (Ozone), stormwater retention, property value increase	\$8,800	4,000
Civic Center Parking Lighting Retrofit	Health benefits - better air quality	\$6,827	145
City Hall Exterior Lighting	Lower energy cost	\$6,613	55
Northside Aztlan - 53kW PV System	Energy independence	\$5,654	50
Parks Fuel Challenge	Employee engagement	\$4,089	13
Natural Areas Tree Planting - 169 Trees	Energy savings, lower VOCs level (Ozone) stormwater retention, property value increase	\$3,718	1,690
Evacuated Tube Solar Thermal System Installed at EPIC	Health benefits - better air quality by use of solar energy for heat instead of burning natural gas	\$2,130	68
215 N. Mason St. PV System	Energy independence	\$700	2
Recreator On line	Resource conservation	\$600	12
Community Garden Project – Affordable Housing	Provide healthy activities for families	\$480	300
Electric Golf Carts	Use recreation facilities as a sustainability showcase	N/A	17
Plastic Water Piping	Resource conservation	\$400	5
Organic Waste Diversion Pilot Project - Green Cones ³	Enhanced soil and local food production	\$340	0.5
Lighting Retrofit (T12 to T8)	Reduction in NO and SO emissions	\$323	3
Organic Pilot Project - Collection	Enhanced soil	N/A	1.5
Bike to Work Day	Create a shared vision of community sustainability	\$141	.42
Coffee Timers	Educational value - phantom loads	\$30	0.33
City Green Energy Purchases	Health benefits - better air quality	Cost -1.9¢ additional per kWh	1,366
Hybrids (Compared to average vehicle MPG) ⁴	Reduction in NO and SO emissions	Cost - \$7,127	19
Alternative Fuels (Compared to traditional fuel)	Health benefits - better air quality	Cost - \$.06/gallon	1,369
Annual Totals		\$594,248	16,344

2010 Awards

The City and staff have received numerous sustainability-related awards. Among these are:

Internal:

- 215 N. Mason St., 281 N. College Ave. and Operation Services - ENERGY STAR® Awards
- Community/Citizen Award - Colorado Alliance for Environmental Education
- Climate Wise - Platinum Level
- Natural Resources Director John Stokes and Natural Areas Staff - Ambassador Award by the Fort Collins Convention and Visitors Bureau
- Sustainability Coordinator, Dr. Rosemarie Russo - National Geographic's Aspen Institute Environmental Scholar Award

External:

- Bicycle Friendly Community - Gold Level
- Top 22 "2010 Smarter Cities" for programs and investment in green energy by the Natural Resource Defence Council
- Natural Areas Program - Gold Award from the Association of Communication and Marketing Professions for the interpretive signs at Soapstone Prairie Natural Area
- Brian Woodruff, Senior Planner - Radon Action in the West Trailblazer Award
- Pat Stanford, Stanford Village and Fort Collins Housing Authority - Energy and Green Building Award of Excellence and Northern Colorado Renewable Energy Society Honorable Mention
- Laurie D'Audney, Water Conservation Specialist - American Waterworks Water Conservation Award
- Water Treatment Department - Director's Partnership for Safe Water Award, 11th consecutive year



City Crushing Operations



Sustainability Progress

The following section outlines trend and indicator data related to the City's top ten goals, as well as staff involvement in various projects.

Greenhouse Gas

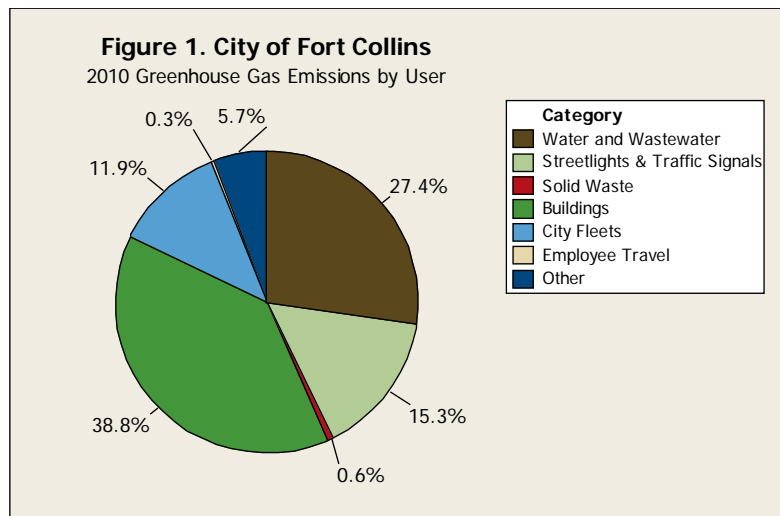
Goal Progress: The City has met its 2010 reduction target.

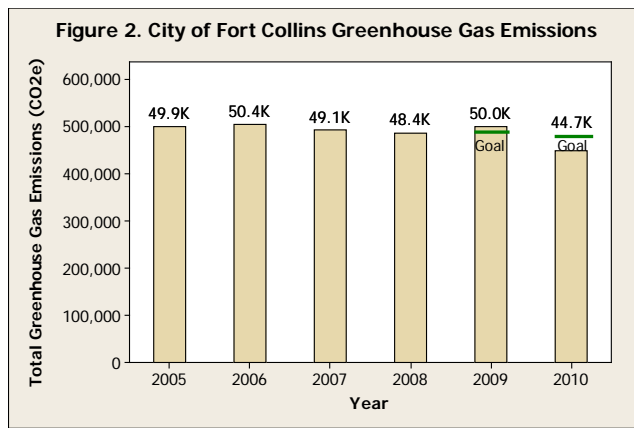
Despite increases in the number of employees and square footage of buildings from 2005–2010, GHG emissions dropped. In 2010, the City reached the 2% annual reduction target. From 2005 to 2010, greenhouse gas emissions dropped by 10.3%, or 5,170 tons.⁶

Greenhouse reductions from our baseline year are equivalent to:

- Annual greenhouse gas emissions from 1,014 passenger vehicles
- CO₂e emissions from the energy used by 448 homes in one year
- Carbon sequestered by 132,564 tree seedlings grown for 10 years
- GHG emissions avoided by recycling more than 1,801 tons of material each year
- CO₂e emissions from 12,023 barrels of oil consumed.
- In 2010, municipal operations accounted for 49,900 metric tons—approximately 2% of the community's total.

The sources of overall GHG emissions are listed below:

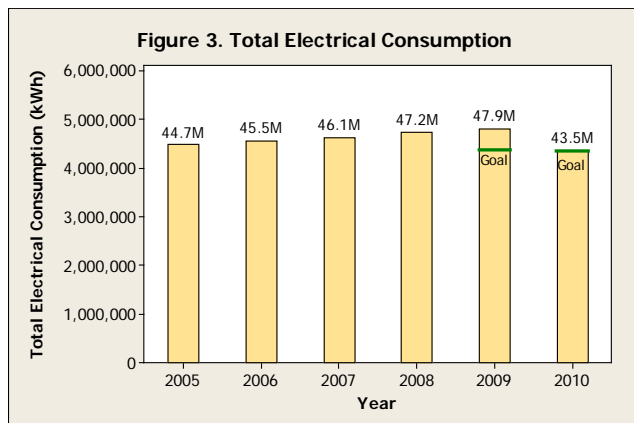




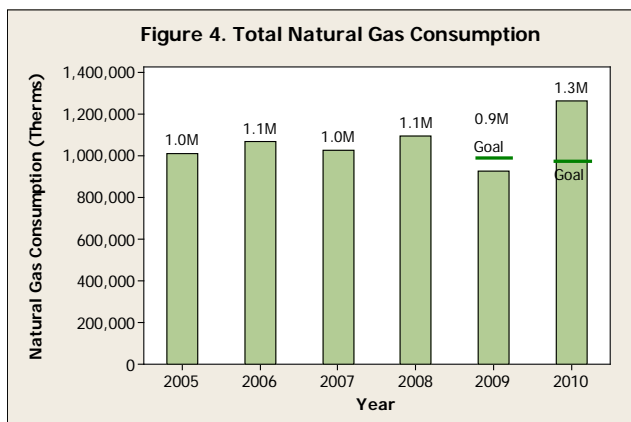
Electricity & Natural Gas

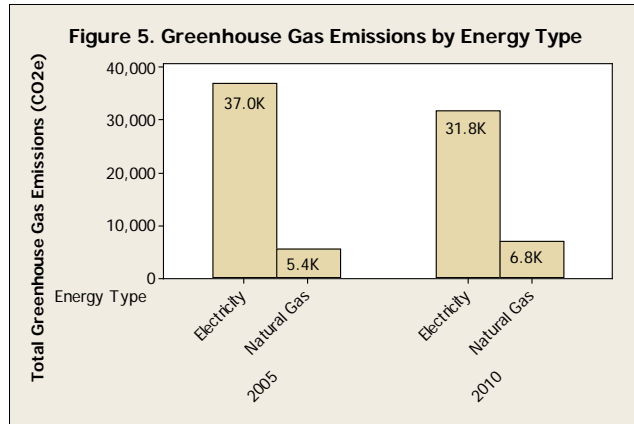
Goal Progress: The City did not reach its 2% per annum energy reduction goal, but is using less carbon-intensive fuel. The GHG reductions associated with energy decreased by 1%.

Energy use accounts for 86% of the City's GHG emissions. The 2010 electrical use is lower, but natural gas use is higher. Electrical use at the water and wastewater facilities are down by 7% and other city buildings are down by 2%. Traffic signal upgrades yielded the highest reductions.



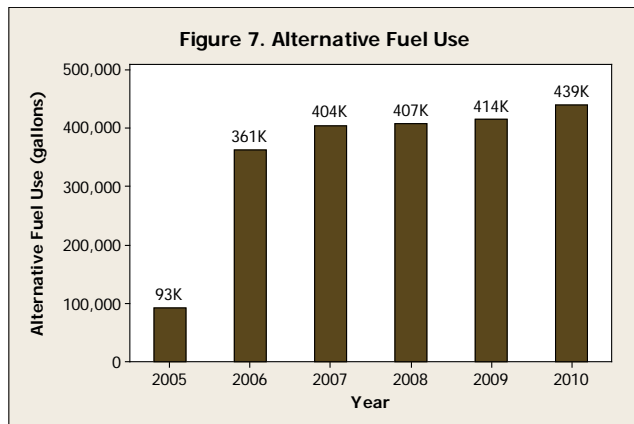
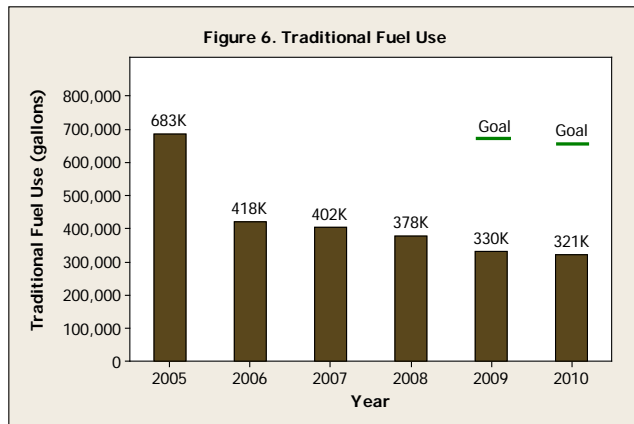
Natural gas consumption has increased by 4% since the baseline year with the addition of compressed natural gas buses and use in City buildings due to increased air circulation demands.





Fuel Reduction

Goal Progress: The City surpassed its fuel goal, however, it has not reached its average vehicle ridership (AVR) goal.⁷



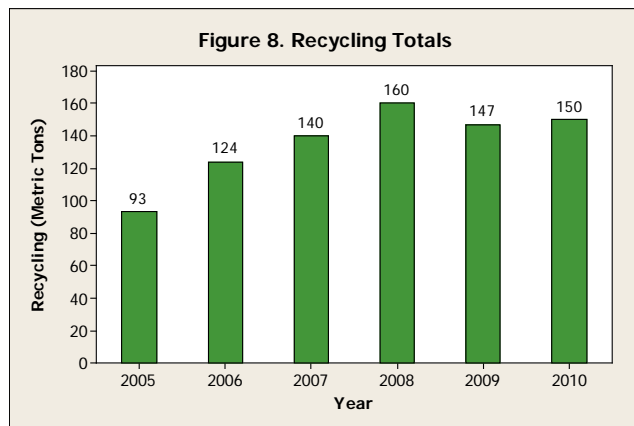
The City has surpassed its alternative fuel use goal of “reducing traditional fuel use by the City’s fleet by 20% by 2020” mainly due to the conversion of buses to CNG and the use of biofuels, which are a less carbon-intensive fuel type. In 2005 the City used 12% alternative fuel. Today, approximately

54% is alternative fuel (i.e., biodiesel, CNG, propane and E-85). Alternative fuel use yielded a 1,388 CO₂e metric ton reduction. Transport electrical use and natural gas use accounted for .02 of the total GHG emissions.

The City fleet contains 555 alternative fuel vehicles: 379 biodiesel,; 96 E-85, and 32 propane; the remainder are electric and CNG vehicles. In 2010, six CNG buses replaced traditional buses resulting in a 165 metric ton CO₂e reduction. The City has been tracking average vehicle ridership and plans to concentrate on a pilot in 2011.

Solid Waste Reduction

Goal Progress: The overall 50% diversion goal for office waste of has not been met.



Despite the fact that recycling volumes have dramatically increased 62% since 2005, the overall volume of office solid waste has increased by 9.2% over the baseline year. City departments with the highest diversion rates in 2010 include: Customer Service - 117 N. Mason St.; Equipment; 835 Wood St., South Ridge Golf Course and Poudre Fire Authority Station 8. In 2010, the City recycled 150 tons of office material for a GHG reduction of 451 metric tons CO₂e, which saved 2,550 trees and enough water to fill City Park Pool 3.5 times. Industrial waste brought to the landfill has steadily decreased due to metal recycling, wood mulching and asphalt grinding projects.

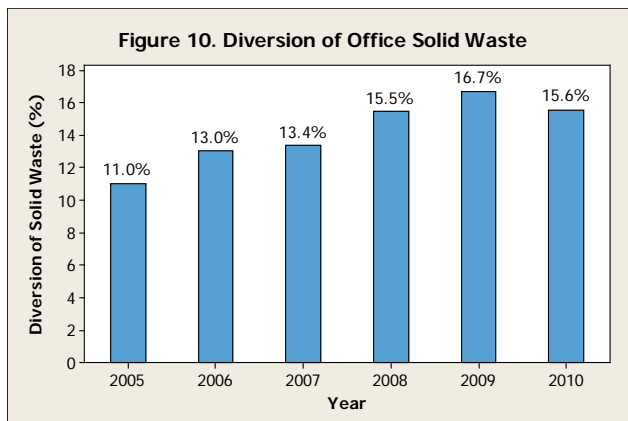


Rivendell Recycling Drop-Off Facility



Evaporative Transpiration Efficiency Audits

The 2010 office waste diversion is estimated at 16% and the overall diversion, including asphalt, metal and trees, is 97%.



Education & Outreach

Goal Progress: The City reached its goal.

Highlights include:

- Actively participated in the Children’s Water Festival, teaching more than 1,600 area third graders, teachers, parents and college students.
- Implemented a Lunch and Learn series and in-house training seminars to build operational competence. The events include films and discussions about local programs. For example, *Coal Country* featured a discussion of the FortZED energy outreach project, as well as the voluntary Green Energy program for residents and demand side energy programs for businesses. The City hosted nine Lunch and Learn events, three in-house training seminars, seven Business Environmental Program Series seminars and 11 Residential Environmental Series seminars. The City also developed sister city comparisons regarding goal setting, best management practices and progress.
- Internal efforts focused on conducting challenges with businesses and residents, reducing vehicle ridership, sponsoring two employee challenges per year, encouraging telework programs and developing user-friendly websites.

Funding

Goal Progress: The City reached its goal of tracking annual savings.

The Innovation Fund Committee evaluated and awarded funds to the following projects based on several criteria, including the return on investment and projected benefits:

- Collindale Golf Course - insulation, lighting upgrades, parking lot light retrofits and an energy management system (\$45,000)
- Senior Center parking lot lights retrofit (\$19,920)
- Expansion of EPIC Solar Thermal System (\$40,000)
- The City also received \$65,000 in rebates for hybrid vehicles purchased in 2009.

Parks/Natural Areas

Goal Progress: The City has met the 30% tree canopy goal.

- Natural Areas planted 169 new trees, 420 new shrubs at McMurry Natural Area and constructed 3.5 new acres of wetlands. Wetlands constitute the highest natural areas value because of increased biodiversity in those areas.
- Natural Areas botanists discovered five new state-listed rare plants.
- Parks continued their goal of using evapotranspiration (ET) rates for water conservation and reduced water use by 5% in 2010.⁸
- Parks continues to achieve Audubon Sanctuary status for the community parks, adding Fossil Creek and Spring Canyon Community Parks to the 2010 national list. Fort Collins has five certified parks and, as such, has more parks certified as Audubon Cooperative Sanctuaries than any city in America.
- A carbon baseline was measured for Natural Areas by staff for 2008. The report is available on the Citynet sustainability page.

Water

Goal Progress: The City did not reach the 10% reduction goal.

- Installed solar-power water pumps at Soapstone Prairie Natural Area.
- Drip irrigation is being installed on all new medians.
- Ten water audits were conducted at City parks.

General Purchasing

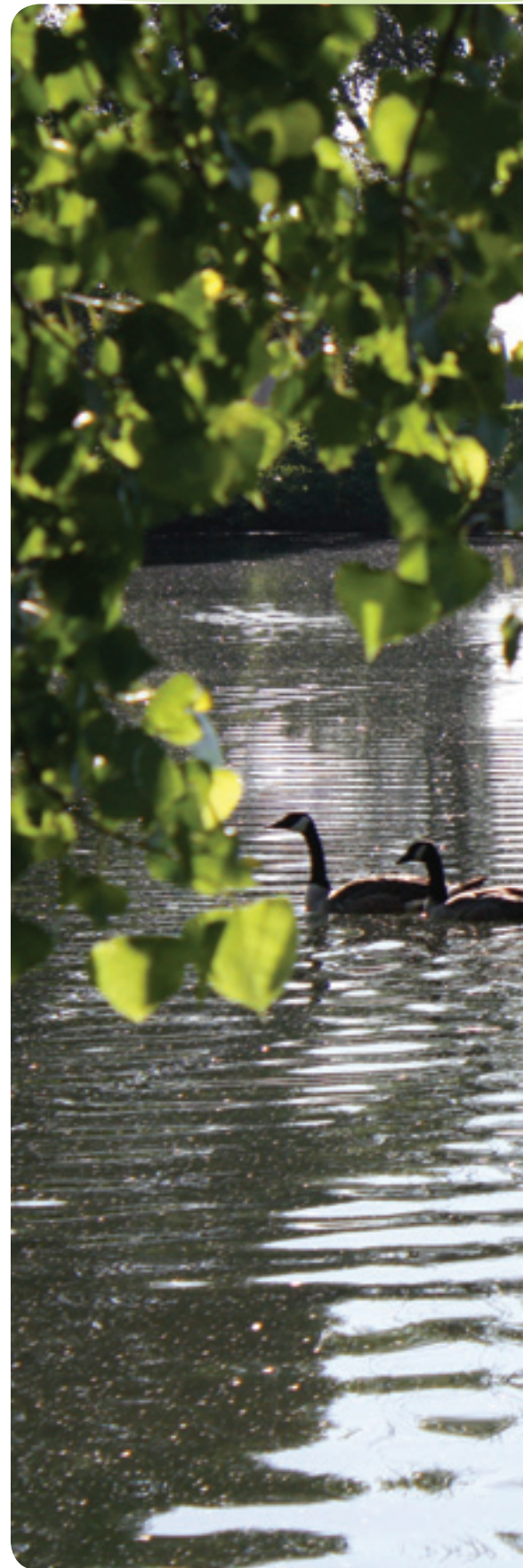
Goal Progress: No numerical goal has been set.

- Improved the collection of trash and recycling services which will allow for additional reporting aimed at reducing waste and increasing recycling levels. The new contract saved approximately \$30,000 in 2010 and includes mandatory auditing and increased data reporting.
- Purchased conversion kits for retrofitting three existing hybrids to plug-in hybrids, an International hybrid truck, six CNG buses, and leased 76 electric golf carts for SouthRidge Golf Course.
- Total environmentally preferable purchasing (EPP) expenditures for 2010 reached 43.9% (\$79,043 out of \$179,953) total spent for office supplies from Office Depot and 14% (\$62,930 out of \$198,141) for industrial purchases from Grainger.⁹

Employee Safety & Health

Goal Progress: The goal has been met of fostering a culture of health and safety, and increasing the number of employees that earn their first Well Day.

- HAZMAT team was re-certified to technician level.
- 155 employees participated in the summer Bike to Work Day and 148 in the winter event. The City hosted a zero-waste station at these events.



Sheldon Lake



Innovation and Imagination

- Streets implemented an Environmental Management System.
- The Wastewater Treatment Plant tracks energy demand and proactively reduces peak demand.
- Scott Foreman and Rick Jesser from the Water Treatment Plant converted an on-site electric cart vehicle to solar.
- The Gardens at Spring Creek donated 5,000 pounds of produce they grew to the Larimer County Food Bank.
- Operations Services retrofitted three existing hybrid vehicles to plug-ins.
- Natural Areas recycled an entire house through a deconstruction project.
- The Stormwater Utility Crew Chief brainstormed an idea to make better use of a stormwater drainage area that was traditionally trimmed and mowed for flood control. Rather than simply mowing the area regularly, the area's grass is kept longer and the grass hay is harvested and provided to The Farm at Lee Martinez Park for animal feed. Because the area will require less maintenance, this freed up crew time for other projects, required less fuel and wear on equipment for mowing, and reduced the feedstock The Farm will have to purchase for animals. An interpretive sign was placed on-site to explain the difference in maintenance and appearance of the area.

Community Capacity-Building Programs

- Keeping the pillars of sustainability in mind—people, planet and profits for the Earth Day Celebration, the City planted trees donated from local businesses at the following locations: Fossil Creek Park for increased canopy, a low-income housing development for shade and energy savings, and Bennett Elementary School in recognition of its environmental stewardship as a Climate Wise Platinum partner.
- 2010 Utility consumer rebates included: 780 dishwashers, 1,249 clothes washers, 163 residential sprinkler systems and 500 toilets. In addition, 576 refrigerator/freezers were recycled. Moreover, 1,609 customers participated in the Green Energy Program and 31,814 CFLs were discounted as new/replacement bulbs.
- More than half of the households that recycle (54.5%) switched to larger recycling bins.
- The City distributed 46 composting “green cones” to Climate Wise Partners, 15 to residents and 13 to City employees.¹⁰
- Stimulus funds were used to improve bike lanes on Mountain Avenue, paint bike boxes on Plum Street; and improve the pedestrian path between Lincoln Avenue and Buckingham Street.
- Parks and Natural Resources partnered in a pilot program placing “Big Belly” solar trash compactors in the Downtown area and Rolland Moore Park to enhance community recycling efforts.
- To date, 3,000 residents, students and visitors have become members of the Bike Library.



City Vehicles Converted to Plug-In Hybrids

*"Those who don't change direction end up in the direction they are headed."
Chinese Proverb*

Measurable Indicators

In addition to priority goals, the City monitors progress of key indicators. These indicators align with indicators used by other organizations.

Indicators	Improving	Declining	Neutral	Insufficient Data
Carbon Emissions	X			
Electricity Use	X			
Natural Gas Use		X		
% of Renewable Energy Purchased by City		X		
# of LEED Employees			X	
% of LED Traffic Lights	X			
% of LEED Certified Buildings	X			
Energy Consumption Related to Water Use			X	
Alternative Fuel Use	X			
Average Vehicle Ridership				X
% of Hybrid Vehicles in Fleet	X			
Volume of Recycled Material	X			
Volume of Solid Waste		X		
Solid Waste Diversion	X			
Sustainability Scholarships Awarded			X	
Comparison to Peer Cities	X			
% of Forest Canopy			X	
% of Native Plantings	X			
Adherence to EPP Policies				X
Well Days Participation	X			





2010 Cool Steps (CO₂e Reduction Projects)

Hoffman Mill Asphalt, Concrete and Toilet Recycling: This ongoing project has been recognized as a national best practice project because it impacts water and solid waste reduction, avoids transportation pollution, creates greenhouse gas reductions, and generates economic revenue. In 2010, Hoffman Mill recycled more than 95,000 metric tons of material.

High Pressure Sodium (HPS) Lights: Converting 150 sodium street lights to Light Emitting Diodes (LED) reduced carbon emissions and costs.

Metal Recycling: The amount of electricity saved by recycling 445 tons of aluminum and steel is equivalent to 3,825,297 kWh. That's enough to power the average home for 131,026 days, or 494 homes for a year.

Drake Water Reclamation Facility (DWRF) Electricity Load Shedding: Staff at the Drake Water Reclamation Facility implemented a project as part of its operations to reduce both emissions and cost through equipment replacement and load shedding during the peak period. In 2010 the annual savings were \$54,000. The plant also showed a 771,428 kWh savings.¹¹

DWRF Methane Flaring and Heat Recovery: During select months the Wastewater Treatment Plant is able to recover heat from methane gas.

Water Department: In 2010 the Water Department used the old solar drying bed at the Water Treatment plant to store wet soils after water main leaks. It allowed the crews more time to separate asphalt, concrete and metals, and reduce wet soil that used to be brought to the landfill. The material can now be reused.

HVAC upgrades and LED lighting replacement: Additional improvements were made in 2010 and these improvements yielded 24,900 kWh in monthly savings.

Virtualization of 80 Servers: This project enhanced the City's current investment in high performance data storage and backup systems and resulted in 21 metric tons of carbon savings.

Automated Control System: Automated building controls for electricity load management is reducing peak demand in three buildings: 281 N. College Ave., the Downtown Transit Center and the Senior Center.

Recycling Demonstrations and Expansion: The City purchased an Earth Tub for a demonstration project for the City's organic waste and two Climate Wise restaurant partners. The City piloted two curb-side food waste collection projects at 700 Wood St. and Northside Aztlan Community Center.

Photovoltaic: A 5 kW system was installed at 215 N. Mason St.

PV Installation at 215 N. Mason St.

2011 Green Steps

GHG Emissions: The multi-departmental GHG Task Force is streamlining all data collection and reporting for the Utilities Report (GRI), Climate Action Plan Community Updates and City Operations' GHG Annual Report. A greenhouse gas database was developed using EECBG funding for City greenhouse gas accounting. Staff will begin using it to archive GHG data. The database project included third party validation of community emissions.

Electricity and Natural Gas:

- A shell study and re-commissioning was performed at 215 N. Mason St., City Hall and EPIC. High performance glazing was installed on the windows at City Hall.
- An evacuated solar thermal system was installed at EPIC. The benefits include: air quality improvements, a 6 ton CO₂e reduction and \$708 monthly savings.
- Civic Center Parking structure made lighting retrofits. Benefits include: air quality improvements; 145 tons of CO₂e reductions and annual savings of \$6,827.

Fuel: Operations installed electrical vehicle charging stations at 300 Laporte Ave.

Solid Waste: City purchased additional Solar Big Bellies for Downtown and parks.

Parks and Natural Areas: Natural Areas staff planted 39 acres in native seeds at Cathy Fromme Prairie, Springer and Kingfisher Point Natural Areas.

Water: Staff is conducting water audits at numerous parks.

Purchasing: Staff is assessing the City's compliance with the EPP practices through a new contract.

Education and Outreach: Natural Resources is hosting a Mindful Movie series in conjunction with Colorado State University, and a Sustainability Training Series for staff and Climate Wise partners.

Funding: The Innovation Task Force selected sustainability projects for funding based on a triple bottom line analysis.

Employee Safety and Health: There was a 79% participation in the Mayo Clinic Health Assessment.



Old Town Square




Redwing Marsh Natural Area

Strategic Opportunities and Recommendations:

- Opportunity: The hybrid fleet use dropped by 50%, which may indicate a reduction in travel or limited utilization of those vehicles.
Recommendation: Increase use of hybrid vehicles based on vehicle miles travelled (VMT).
- Opportunity: The following types of projects typically are considered strongest in their return on investment: retrofitting existing buildings, renewable energy projects, and street lighting projects.
Recommendation: Continue efforts to re-commission buildings and implement additional street lighting retrofits.
- Opportunity: Many leading sustainability cities include emissions from employees' commutes in their GHG inventories. Larimer County is piloting an aggressive Telework Program.
Recommendation: Expand municipal GHG emission inventory to include commuter emissions and consider expanded telework program.
- Opportunity: Strategically select those carbon-related projects that provide the highest return on investment.
Recommendation: Based on carbon analysis, the City should strategically select the most effective projects, while also factoring in additional considerations such as the value of piloting projects and providing leadership.
- Opportunity: Some cities have set much more aggressive GHG emission reductions for City operations. For example, Austin: 100% by 2020; Melbourne: 100% by 2020; Copenhagen: 20% by 2015; and New York: 30% by 2017.
Recommendation: Consider raising the City's reduction goal from 20% to 35% by 2020.
- Opportunity: Leading cities spend substantial resources on education and "climate change" awareness for employees and community members.
Recommendation: Increase employee and public awareness about community and municipal progress. In addition, consider creating internal carbon budgets and performance measures, and provide recognition and rewards for attaining carbon goals.
- Opportunity: Fort Collins now has community GHG data trends, which have been verified by a third party, yet most staff and residents are not aware of the progress.
Recommendation: Insert data into a dashboard or record a video about the information for Channel 14.
- Opportunity: Reducing solid waste volumes continues to be a challenge both for the City organization and community.
Recommendation: Consider developing a marketing plan to increase contractor and business use of the Hoffman Mill Road facility. Provide opportunities to increase recycling at transit sites, baseball fields and bus stops.
- Opportunity: Water and Wastewater Treatment plants use 27% of the City's energy. Cities such as Philadelphia are sending deicing fluid directly to anaerobic digestors at their water treatment plant to produce biogenic methane. Philadelphia is also developing a biogas co-generation plant.
Recommendation: Investigate these two options for the Drake Plant.

Municipal Operations Goals (Top 10 Goals)

2010 Progress		
Goal #1 - GGH Totals		
Reduce greenhouse gas (GHG) emissions (carbon dioxide and methane) from municipal operations at least 2 percent per year starting in 2009, in order to achieve a reduction of 20% below 2005 levels by Dec. 31, 2010; and ultimately to achieve carbon neutrality for the municipal organization. This represents a total reduction of 907 tons (based on baseline emissions of 49,900 tons in 2005); yearly reductions will equate to 9,980 tons per year of GHG emissions without any projected growth factored in.		GHG reduced is 5,170 tons CO ₂ e
Goal #2- Electricity and Natural Gas		
Reduce City energy consumption by 20% of the 2005 baseline by 2020, and reduce demand peak use by 15% by 2020.		86,213 therms natural gas GHG emission reduction 5,252 tons from electricity
Goal #3 - Fuel		
Reduce traditional fuel use by the City's vehicle fleet by 20% by 2020 and reach a 1.5 average vehicle ridership (AVR) by 2020 for City employees.		353,969 Gallons traditional fuel reduction
Goal #4 - Solid Waste Reduction		
Reduce solid waste generated by 50% of overall waste stream by 2012 and 80% by 2020. Interim goals will be set to reduce overall waste volume.		173 tons waste diverted from landfills
Goal #5 - Education and Outreach		
Information about the municipal sustainability program will be available to all levels of the community - students in grades K-12 and the general public - as well as internal staff.		Approximately 3,000 contacts reached
Goal #6 - Funding		
In addition to reporting on annual GHG inventory, cost savings that directly result from energy and waste conservation will be tracked, and possibly deposited into a Sustainability account to invest in appropriate projects.		Funding received from innovation funds
Goal #7 - Parks/Natural Areas		
Achieve a 30% forest canopy density in suitable areas of City parks by 2020 and maintain a set percentage of native vegetative cover goal in Natural Areas.		169 trees, 420 shrubs and 3.5 acres of wetlands restored
Goal #8 - Water		
Reduce municipal operations' water irrigation use and increase efficiency per acre. Reduce building water use (normalized to account for weather conditions), by 20% by 2020.		5% reduction in irrigation water used
Goal #9 - General Purchasing		
Implement environmentally preferable purchasing practices throughout the City organization and establish means to verify departments' compliance with purchasing policy.		43.9% office and 14% industrial environmental products purchased
Goal #10 - Employee Safety and Health		
Incorporate a Citywide program fostering a culture of health and safety. Increase the number of employees that participate in the Wellness Program from 45% to 75% by 2020 and increase the number of employees that earn their first Well Day from 414 to 500 by 2010.		421 employees earned their first Well Day

Municipal Sustainability Planning & Reporting Timeline

Below is a timeline of major sustainability accomplishments:

2000–2004	
2001	Developed Municipal Climate Plan and GHG inventory
	Natural Resources Department published GHG Report
2004	Internal "Action Plan for Sustainability" approved

2005–2009	
2005	Established Sustainability Team
2007	Established baseline GHG emissions for City operations (2005) consistent with state and Climate Wise methodology
	Joined Climate Wise program to demonstrate leadership
2006 and 2007	Established top ten numerical goals for energy, electricity, fuel, trash, etc., which were approved in 2009.
	Annual Municipal Sustainability Report published Quarterly Reports prepared
2008	NRD published Municipal Quarterly Sustainability Reports
2009	Established quantifiable numerical sustainability goals for key environmental indicators
	Utilities published 2006/2007 and 2008 GRI Sustainability Report for Utilities and PRPA Operations
	Utilities established GRI teams
	ARRA 1.3 million grant (NRD), RDSI (Utilities) and Smart Grid (Utilities) grant awarded
	Natural Areas established GHG baseline for 2008 Climate Wise LEED EB assessment of 215 N. Mason St. and other City facilities completed

2010–2011	
2010	NRD published 2009 Municipal Operations Annual Report
	Environmental Steering Committee formed
	Utilities published 2009 GRI Report
	City Wastewater Treatment Plant established GHG Baseline Report and Plan
	Earned Platinum-level Climate Wise status
Carbon City and SWCA Project contracted	
2011	Streamlined data requests and collection process for internal operations



Bike Library

Endnotes/Methodology

1. Fort Collins goals were compared to C-40 cities. C-40 cities are a group of cities that have voluntarily agreed to disclose GHG emission data and climate change strategies as a first step toward developing global best practices.
2. Assumption: Participants continue the behavior changes.
3. 40 lbs. per week.
4. Estimates are based on avoiding 2,036 gallons, for \$7,127 in savings at \$3.50/gallon based on a Chevrolet Impala using E-85. The City received \$65,000 in hybrid rebates.
5. Additional cost over traditional buses.
6. There was a change in emission factors (how much GHG is associated with a given source, such as electricity) so lower emissions were reported for 2005–2009 than in previous years. The emission factor went down because the amount of owned wind energy more than doubled and the amount of fossil fuel generated declined.
7. AVR is the ratio of all employees arriving at a workplace to the number of vehicles carrying those employees. In other words, employees who bike, walk and use transit are in the numerator.
8. ET (evaporative transpiration) - is the process by which water is transferred from the land to atmosphere by evaporation from the soil and other surfaces and by transpiration from plants. Using the ET rates for different locations allows Parks to irrigate less, based on site needs.
9. Green products included certified recycled paper, energy- or water-efficient products.
10. Green cones are food digestors that are used to collect food waste and eliminate methane gases.
11. Based on 7¢ kWh cost.

For information about sustainability programs, please refer to:

- Municipal GHG Emission Inventory Quality Management Plan - citynet.fcgov.com/sustainability
- Community sustainability - fcgov.com/green
- Scholarship Program – citynet.fcgov.com/sustainability
- Climate Action Plan – fcgov.com/climateprotection
- Rebates – fcgov.com/conservation
- Utilities Energy Policy – fcgov.com/electric/energy_policy.php
- Green Building – fcgov.com/greenbuilding
- Global Reporting Initiative – fcgov.com/utilities/gri.php
- Climate Wise – fcgov.com/climatewise

For questions or comments about this report or City goals, please contact Dr. Rosemarie Russo, Sustainability Coordinator, russo@fcgov.com or 970.416.2327.

Below is a generic emissions calculator:

Source	Conversion Factor
Electricity	1 kilowatt = 1.6 lbs. of CO ₂ e
Natural Gas	1 therm = 12 lbs. of CO ₂ e
Vehicles	1 gallon gasoline = 22 lbs. of CO ₂ e
Trash	1 lb. = 1.5 lbs. of CO ₂ e
Air Travel	2,000 miles = 1,160 lbs. of CO ₂ e





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City Leadership

Karen Weitkunat, Mayor; Kelly Ohlson, Mayor Pro Tem, District 5; Ben Manvel, District 1; Lisa Poppaw, District 2; Aislinn Kottwitz, District 3; Wade Troxell, District 4; Gerry Horak, District 6; Darin Atteberry, City Manager