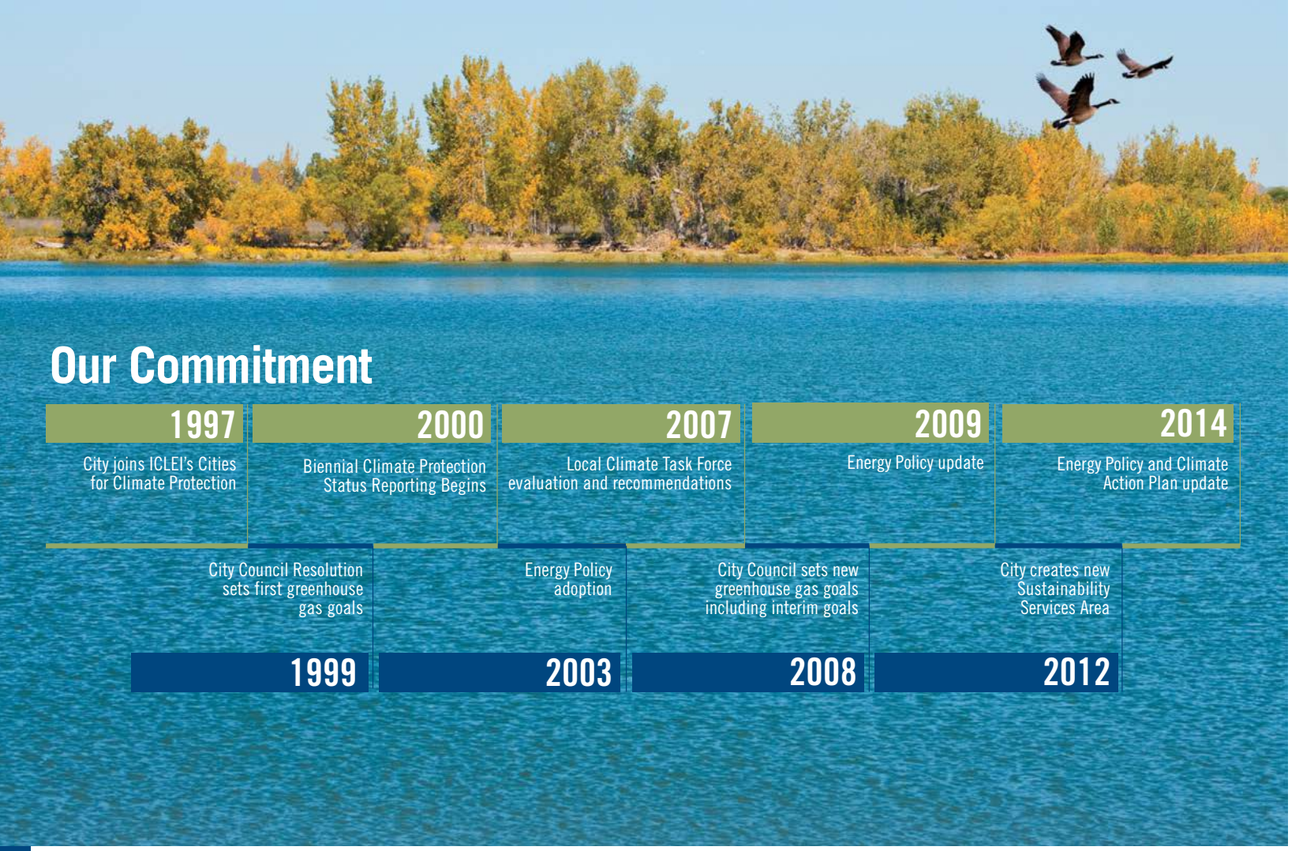
2013

CLIMATE ACTION STATUS REPORT

City of Fort Collins
Environmental Services



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City of Fort Collins Environmental Services

OVERVIEW

FORT COLLINS is a City rich in natural resources and beauty with convenient access to scenic landscapes. It is an active community that enjoys 41 Natural Area sites and over 36,000 acres of natural areas locally and regionally, 49 miles of off-street hike/bike trails, and 166 miles of bike lanes. In 2013, the City achieved Platinum-level Bicycle Friendly Community status. And, it is a City committed to keeping Fort Collins great. This is evidenced by the long record of City leadership in climate action planning and current initiatives to update the Energy Policy and Climate Action Plan (CAP). The most recent community air quality survey reported that 84% of surveyed residents feel a personal obligation to reduce greenhouse gas (GHG) emissions. The same sensibility that has made Fort Collins a great place to live can be tapped to catalyze change in the face of climate change. It could help us rethink the way we create and use energy.

Climate change, resulting primarily from the combustion of fossil fuels and other human activities, is a significant threat to the environment, economy, and communities. Climate change is already occurring; its adverse effects are well documented across the U.S. and throughout the southwestern region. The recently released National Climate Assessment is summarized in an overview at *nca2014.globalchange.gov* that describes regional impacts that were documented by a team of over 300 experts. This report has created a sense of urgency in finding ways to mitigate GHG emissions and to adapt to an already changing climate. Fort Collins' 2014 Climate Change Adaptation assessment identifies the relevant risks at a local level that includes a range of impacts from forest stress to wildfires and extreme temperatures. Aggressively reducing GHG emissions now can help avert more of the extreme predicted impacts of climate changes in the future.

Economic conditions, political trends, consumer prices, and many other factors play an important role in what can be achieved locally. Yet Fort Collins can turn this climate change challenge into an opportunity by working aggressively to set attainable carbon reduction goals and by making policies and investments that bring low-carbon choices to its citizens and future generations. It is clear that Fort Collins residents and businesses must embrace clean energy and its wise use to support these goals. An effective response will not be easy – it will require long-term dedication and a willingness to make both private and public investments. Failure could risk the quality of life (environmental, economic, and social) valued by the community and require increasing investments in ways to cope with climate change. Success will bring welcome co-benefits in new economic development, jobs, technological innovations, and cleaner air and water.

The most recent community air quality survey reported that 81% of surveyed residents strongly or somewhat agree that the City should do more to reduce local greenhouse gas emissions that affect climate change.

COMMUNITY PROGRESS

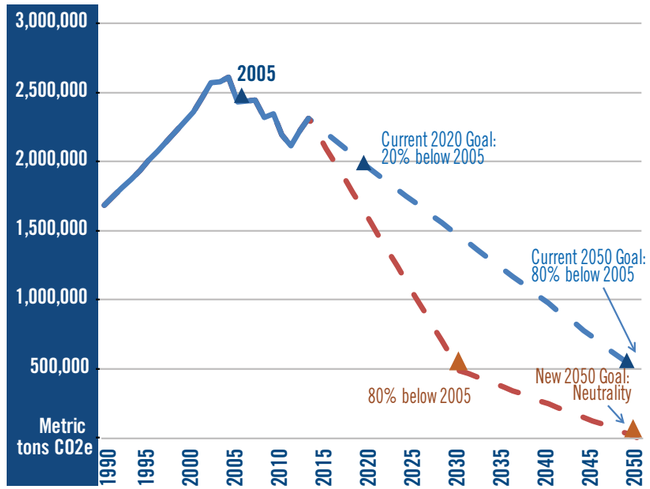
In 2008, City Council adopted GHG reductions goals for the community that reduce communitywide emissions 20% below 2005 levels by 2020 and 80% below 2005 levels by 2050. A 2014 City Resolution provided direction to develop a CAP to achieve an accelerated and more aggressive communitywide GHG emissions reduction goal of 80% with respect to 2005 levels by 2030 and to investigate steps the community could take to achieve carbon neutrality by 2050.

While the climate action planning process is an ongoing effort, the most recent analysis of community GHG emissions makes clear that achieving these new 2020, 2030, and 2050 GHG reduction goals will require significant, perhaps dramatic changes. In 2013, total carbon emission increased 3.5% over the previous year, and this was the second year in a row with an increase in GHG emissions effectively erasing the carbon reduction progress we achieved by 2011.

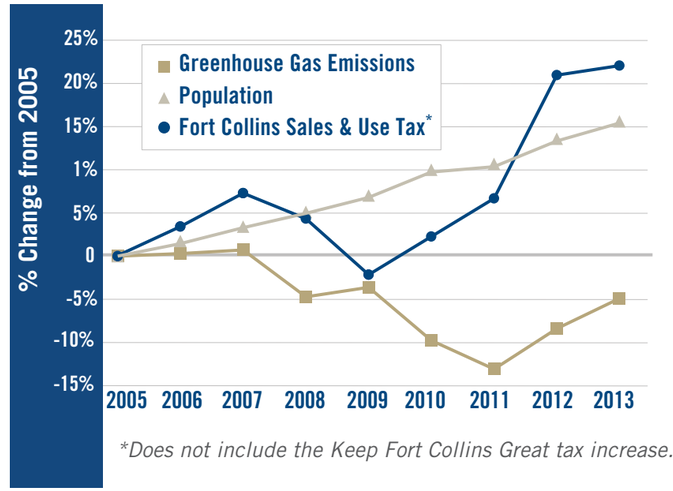
During this same 2-year period, the City's population increased by 4.9% and economic activity, as measured by City sales and use tax revenue, increased substantially by 15.4%. Still, overall community emissions are down by 4.9% since 2005, and per capita emissions in Fort Collins are at 15.3 metric tons CO_2e/year, down 17.7% from the 2005 levels of 18.6 metric tons CO_2e/year. For comparison, during 2012, the U.S. average in per capita emissions was 16.4.[1]

1 2013, Trends in global CO_2 emissions: 2013 Report, J.G.J. Olivier and M. Muntean, PBL Netherlands Environmental Agency The Hague.

Fort Collins GHG Emissions and Goals: Current & Potential New Goals



Fort Collins Greenhouse Gas Emissions, Sales & Use Tax, and Population



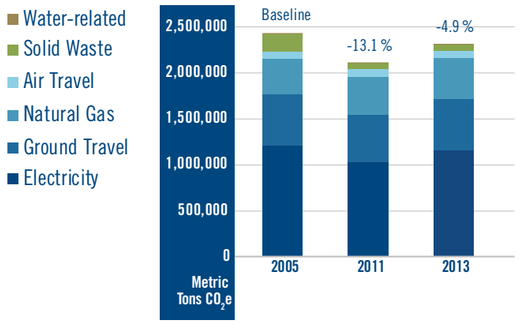
*Does not include the Keep Fort Collins Great tax increase.

2013 Highlights

Despite some trends upward in residential electricity and natural gas usage since 2005, there were some successes during 2013:

- Carbon emissions from community solid waste management are down 66% since 2005.
- GHG emissions from community air travel are down 1.7% since baseline.
- Total carbon emissions from electricity decreased by 4.2% since baseline.
- Total electricity use per capita is down by 9.4% since baseline.

Fort Collins Community Greenhouse Gas Emissions



MAJOR GREENHOUSE GAS REDUCTIONS PROGRAMS

The Fort Collins community collectively avoided over 476,000 metric tons CO_2e in 2013 — an 11% increase over avoided emissions from 2012.

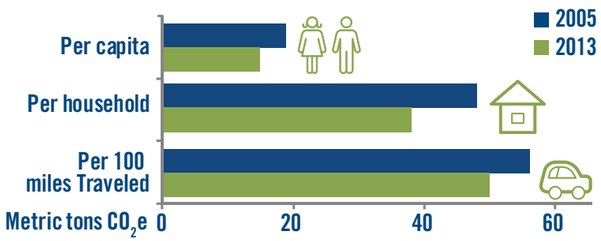
2013 COMMUNITY REDUCTIONS

Projects	Metric Tons CO_2e/yr.
ClimateWise Programs	
Electric Energy Efficiency projects	92,839
Renewable Energy Projects**	10,699
Natural Gas Projects	20,180
Recycling/Waste Diversion	43,854
Transportation	2,342
Water	1,503
ClimateWise Total	**171,417**
Energy Programs	
Electric Efficiency Program Savings (2002-2013)	
Electricity Savings	120,261
Natural Gas Savings	1,594
RFR Program CFC-11 Destruction	12,017
Metered Renewable Energy	30,803
On-site Renewable Energy	1,914
Renewable Energy Certificates**	28,787
Energy Total	**195,376**
Waste Reduction	
Communitywide Recycling	156,007
Concrete and Asphalt Recycling	9,210
Landfill Methane Gas Collection System	9,511
WasteWater Treatment Methane Flare/Boiler	22,384
Waste Reduction Total	**197,113**
Transportation	
Transfort Bus Ridership	1,417
Transfort CNG Fuel Benefit	1,320
Transportation Total	**2,737**
Total Quantified Reductions*	476,684

**Total corrected for double-counting across programs.*
***GHG reductions calculated according to Green-E protocols.*

INDICATORS

The following figure illustrates progress on additional indicators. Even with a 15.6% increase in population from 2005 to 2013, and consequent increases in households and travel miles, GHG emissions declined 11% per City resident, and 21% for both households and for every 100 miles traveled within the City. Fort Collins does not measure its progress in carbon reductions through indicators, but by absolute growth of GHG emissions. These indicators help show that the community has offset the effects of continued growth.



Fort Collins Community Greenhouse Gas Indicators

COMMUNITY LEADERSHIP

City of Fort Collins

The City of Fort Collins' 2013 Municipal Government Sustainability Management Plan contains 11 municipal sustainability goals including a goal to reduce annual GHG emissions 20% below 2005 by 2020. The year 2013 represented a year of both successes and setbacks in achieving these goals. Overall total carbon emissions are down 7.6% since 2005, but 2013 saw a 4% increase over 2012. This is primarily due to a cold winter with a 4°F drop in average annual temperature and corresponding 24% increase in natural gas usage. At the same time the City saw tremendous success in diversion of industrial solid waste through its Soils Recovery project. Utilities stormwater staff developed this program to sieve soils from stormwater projects, remove plant debris, rock, concrete and metal and to reuse or recycle these materials including the soils where possible. As a Platinum ClimateWise partner, the City is committed to reducing GHG emissions, and through its Sustainability team, identifies new projects that will produce measurable results. Progress is reported annually at *fcgov.com/sustainability.*

2013 Highlights

Changes to City organizational emissions since the baseline year of 2005:

- Total carbon emissions are down 7.6%.
- Carbon emissions from electricity decreased 9.4%.
- Electricity use for water and wastewater production are down by 5.6%.
- Carbon emissions from electricity and natural gas related to water and wastewater processing are down 11%.
- Alternative fuel usage increased 432%.
- Carbon emissions from conventional fuel usage is down 20%.
- Total solid waste generated by City operations is down 52%.
- GHG Emissions from municipal industrial waste has decreased 35%.

HIGHLIGHTS

Looking Ahead

The City has committed to reducing municipal energy use during 2014 by focusing on reducing carbon emissions from electricity and natural gas usage and from fleet operations. This targeted effort will involve confirming a new 2014 reduction target, time frame, and communicating expectations to all City employees and departments. Additional plans include:

- Adding three new sustainability goals including water quality, biodiversity on City-owned properties, and setting departmental climate adaptation goals.

Poudre School District

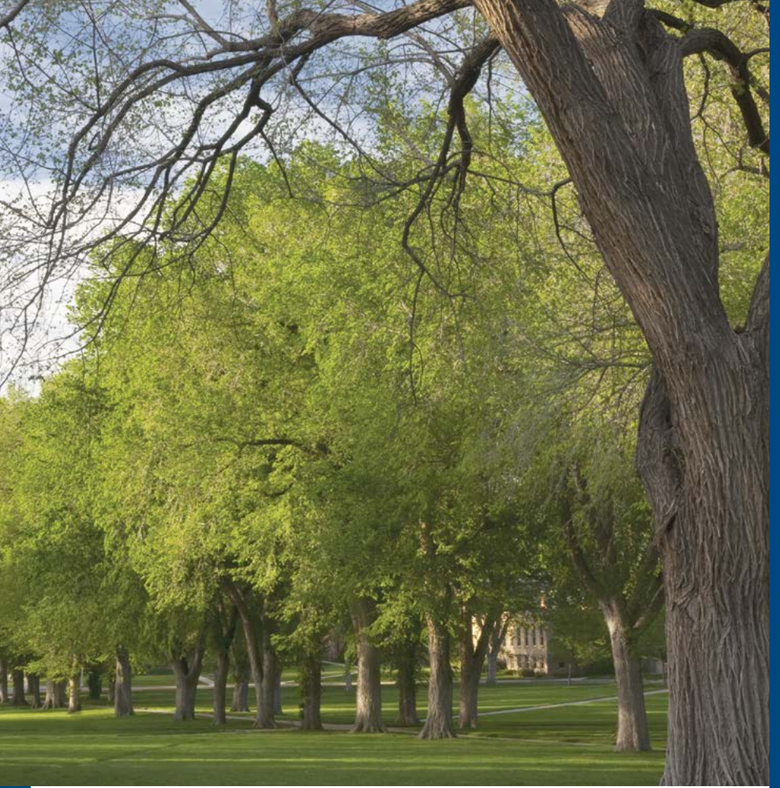
As a member of the City of Fort Collins ClimateWise program, the district will continue to embrace existing energy conservation procedures, recognizing that reduction in energy consumption has the largest impact on the district's GHG sources. The district is working to meet the same 2020 current reduction goal established by the City of Fort Collins and the State of Colorado.

2013 Highlights

- Kinard Middle School was among 64 schools from 32 states to earn the Green Ribbon School award. To earn this distinction, representatives from Kinard completed a rigorous application process that included a 17-page written application reviewed by the Colorado Department of Education (CDE) and area experts, a site visit by CDE representatives, and a final federal review.
- Eight schools received lighting retrofits for building exterior, gymnasium, flex room, or weight room lights. Over 200 lamps ranging from 100-watt to 400-watt were replaced with lower wattage lamps that will reduce electrical use by 41,500 watts, decrease electrical costs and maintenance, and provide improved lighting. Savings or rebates generated from these projects are then allocated to other energy savings projects around the district.
- A Building Automation System was installed at Red Feather Elementary School, resulting in ongoing utility cost savings of nearly 20%. In addition, the school's furnaces were replaced with units that improved efficiency from 60% to 80%.
- The lights for the collapsible auditorium seating at Fossil Ridge High School were converted from incandescent to LED, saving 2,688 watts annually.
- All district computers are automatically set to hibernate when not in use, which reduces the power use by 50% as compared to normal use. At night and on weekends, all computers are set to run at an additional 25% less power.

Looking Ahead

- The domestic water heaters at Fort Collins High School will be replaced with high efficiency units, intended to increase efficiencies from 73% to 98.9%.
- Outdoor Services will investigate using electric-powered hedge clippers, chainsaws, blowers, and truck-mounted salt spreaders instead of gas-powered equipment.
- Power over Ethernet (POE) switch gear will be used in the district's wireless infrastructure. Instead of having electrical outlets for each wireless hub, power will be pushed through the Ethernet cable along with the data.



Colorado State University

CSU is currently a City of Fort Collins ClimateWise Platinum partner and has been a ClimateWise partner since 2003. CSU continues to implement energy efficiency, conservation, waste reduction, and renewable energy projects to reduce GHG emissions.

2013 Highlights

- The CSU CAP was updated in February 2013 to demonstrate progress toward the original goals and to explain updates to the original plan to achieve their carbon neutral target date of 2050.
- CSU received STARS Gold Rating and currently has the leading score in the nation with 83.48 out of 100 possible points.
- In 2013, CSU partnered with the City's Drake Water Reclamation Facility and began diverting half a ton of dining hall food waste a day away from local landfills that are now added to the wastewater stream where the methane gas can be captured and reused for energy.

Looking Ahead

- CSU's 2013 updated CAP focuses on a number of building-related energy efficiency initiatives including demand control ventilation, heat recovery, controls upgrades, variable-air-volume terminals, heat-exchanger upgrades, and server consolidation/ virtualization.
- The University is also studying the possibility of developing utility scale wind power on university-owned property in eastern Colorado.

HIGHLIGHTS

ClimateWise

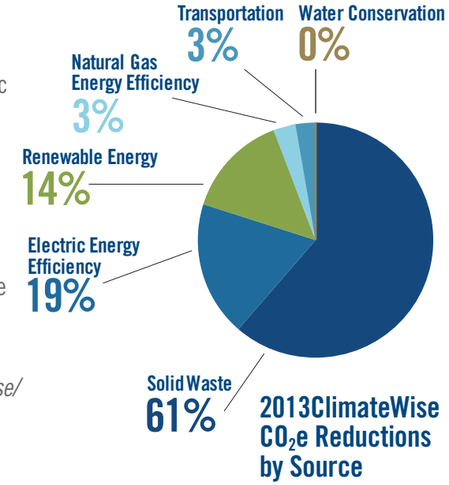
In 2013, the ClimateWise program grew by more than 52 organizations, bringing the number of currently active business partners to 362. Partners in the program employ nearly 38,192 employees ranging from small one-employee businesses to Colorado State University, the largest employer in Northern Colorado. The number of GHG reduction projects implemented by ClimateWise partners grew to more than 1,300 in 2013. This resulted in ClimateWise partners avoiding 171,641 metric tons CO_2e. Along with the valuable ongoing customized assistance to help partners reduce GHG emissions and meet program levels, ClimateWise also provides partner recognition, peer networking opportunities to share best practices, technical assistance, ongoing business support, and seminars, tools, and resources for savings. See *fcgov.com/climatewise* for more information.

2013 Highlights

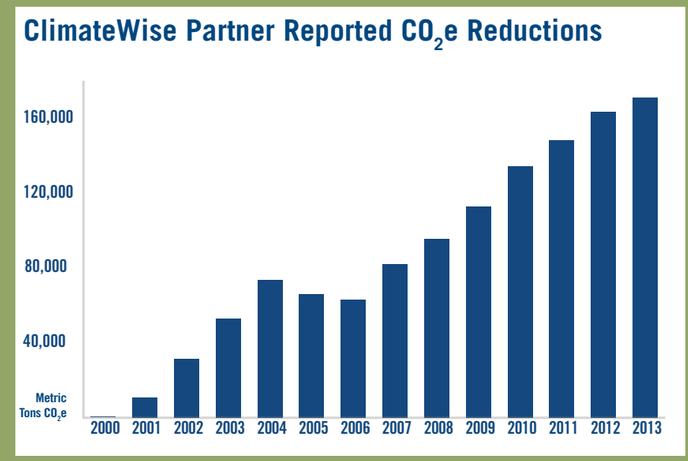
- Partner volunteers and students logged more than 1,034 hours valued at $23,187.
- Partners contributed more than $23,187 to the program through sponsorship, service and in-kind donations.
- ClimateWise hosted educational events with a total of 722 attendees and added new workshops as a result of partner survey feedback. Partner sponsorships and in-kind contributions reduced event venue costs by 51%.
- ClimateWise regionalized the Business Innovation Fair in 2013, bringing together business professionals and community members along the Front Range.

Looking Ahead

The ClimateWise program has been a success for more than 14 years in the Fort Collins community, working with businesses to implement more than 6,500 projects that have reduced 1.2 million metric tons of CO_2e and saved more than $83 million for business partners. The program is reaching maturity and City staff, in conjunction with Advisory Committee members, are working to analyze program requirements and match the changing needs of its business partners. During 2014, the ClimateWise Strategic Plan work will reflect the City's updated CAP, Transportation Plan, Energy Policy, and Strategic Plan. Read the ClimateWise 2013 Summary of Accomplishments at *fcgov.com/climatewise/progress.php.*



2013ClimateWise CO_2e Reductions by Source



HIGHLIGHTS

During 2013, the community solid waste diversion rate increased 5.9%—a large improvement attributed to several innovative local initiatives including the City's Soils Recovery program depicted in this photograph.

Over 7,000 copies of this two-sided recycling information poster were distributed by the WRAP to new tenants of multi-family complexes in 2013.

WASTE REDUCTION & DIVERSION

Community Diversion Rate

The Community Diversion Rate (which includes residential, commercial and industrially generated materials) increased from 58.7% in 2012 to 64.6% in 2013. The major factors driving this improvement were the City's Soils Recovery program, increased recycling of concrete and asphalt, and the cardboard ordinance as described in the following highlights. In 2013, Fort Collins generated 4.85 pounds of landfill-bound material per capita per day compared to the 2.78 pounds per capita waste generation goal of 2025.

2013 Highlights

- The Road to Zero Waste community input and planning project sought community feedback regarding waste reduction and recycling and resulted in a report that details the economic impacts and opportunities in new initiatives. The report is available at: *fcgov.com/recycling.*
- In March 2013, Fort Collins became the first in the state and region to pass an ordinance banning the landfill disposal of cardboard. In only 9 months, cardboard-only collection from businesses increased by 94.8% and cardboard-only recycling at the City's Recycling Drop-Off Center increased 8.9%. Further details are available at fcgov.com/cardboard.
- In 2013, Fort Collins Utilities implemented the Soils Recovery program to dry wet soils from City projects and screen out rock, concrete, and metals for reuse or recycling. The program was a resounding success leading to a 45% decrease in materials sent to the landfill since 2012.
- The City of Fort Collins operates a Crushing Facility that accepts concrete and asphalt and then crushes and resells the material for road base. Due to an increase in road projects, the amount of these heavy industrial materials recycled increased by 85% (concrete) and 24% (asphalt) since 2012.
- The Waste Reduction and Recycling Assistance Program (WRAP) assists apartment complexes and businesses in Fort Collins to start or improve their recycling programs. In 2013, WRAP reached over 7,500 individuals, of whom nearly 3,000 have new access to recycling. Since program inception in 2012, over 11,000 individuals have received assistance.

Looking Ahead

- In December 2013, the Fort Collins City Council adopted new goals for the community to recycle or compost 75% of its waste by 2020 and to reach zero waste by 2030. A complimentary goal is for the community to reduce its generation of landfilled material to 2.8 pounds per resident per year by 2025.

A Fort Collins business owner can improve building energy efficiency and lower costs by taking advantage of the City's Business Energy Assessment program. This photograph demonstrates an evaluation of the performance of a rooftop heating/cooling unit.

Energy policy programs will avoid more than 195,000 metric tons of CO_2e in 2014.

Per capita electricity use was 9.4% less in 2013 than 2005.

5.2% of electricity purchases are used to acquire renewable energy.

ENERGY

ENERGY EFFICIENCY PROGRAMS

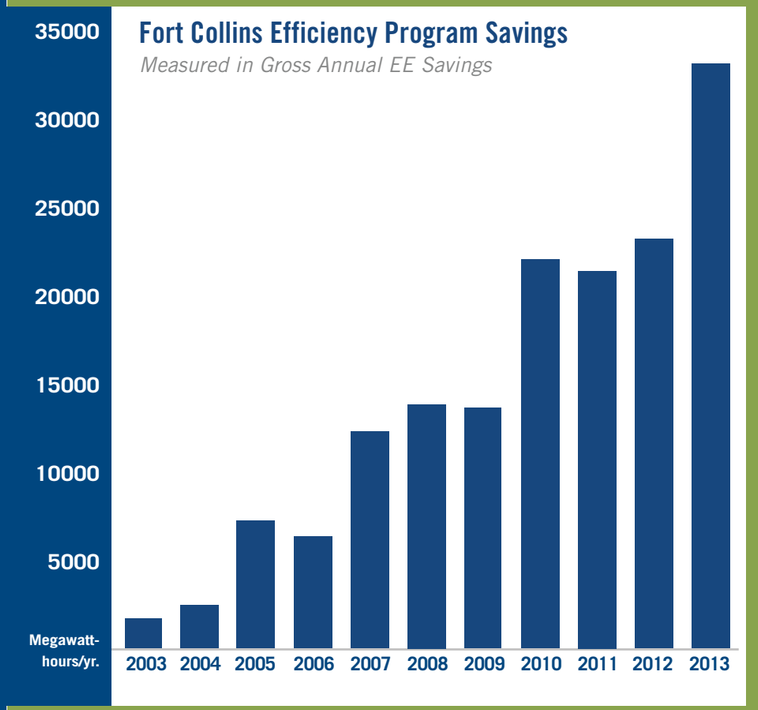
Fort Collins Energy Policy includes a goal to achieve annual energy efficiency savings equivalent to 1.5% of the community's electric use, while maintaining high-system reliability and contributing to the community's climate protection goals and economic health. Fort Collins Utilities implements a comprehensive set of programs to serve its residential, commercial, and industrial customers. These programs provide solutions, such as technical assistance and incentives, that relate to every facet of energy use, including retrofit and remodel, new construction, equipment replacement, consumer products, and behavior change.

2013 Highlights

- Avoided annual estimated carbon emissions of over 195,000 metric tons from Energy Policy efficiency and renewables programs (9% of 2013 total emissions).
- Customer electricity savings from efficiency programs totaled over 32,700 megawatt-hours (MWh) in annual electricity use, or 2.2% of the community's electric use in 2013. This is equivalent to the annual electric use of over 3,600 typical Fort Collins homes and exceeded the Energy Policy target by nearly 50%.
- In 2013, efficiency programs saved electricity with a utility lifecycle cost of conserved energy of 2.0 cents per kilowatt-hour (kWh), compared to an average wholesale electricity cost of 5.4 cents per kWh.
- Fort Collins received the 2013 Leadership in Energy Efficiency award from the Southwest Energy Efficiency Project (SWEEP). The award noted that "Fort Collins is the leading efficiency provider amongst municipal utilities in the 6 state region served by SWEEP."

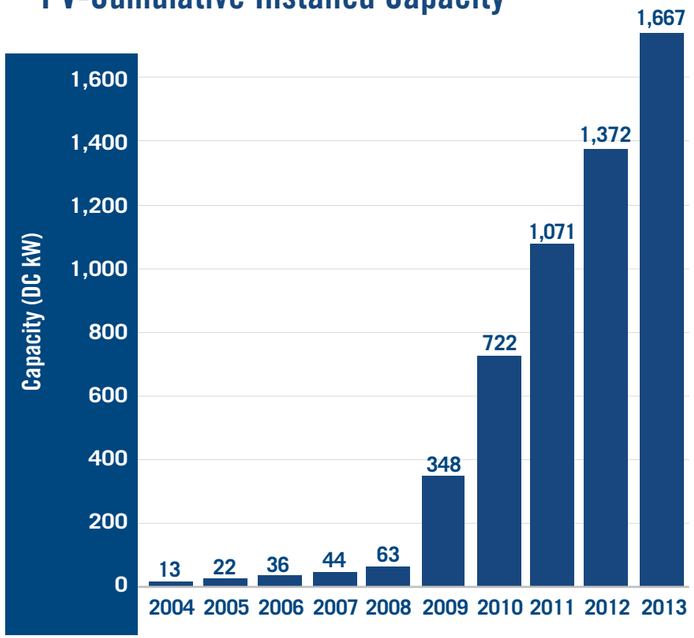
Looking Ahead

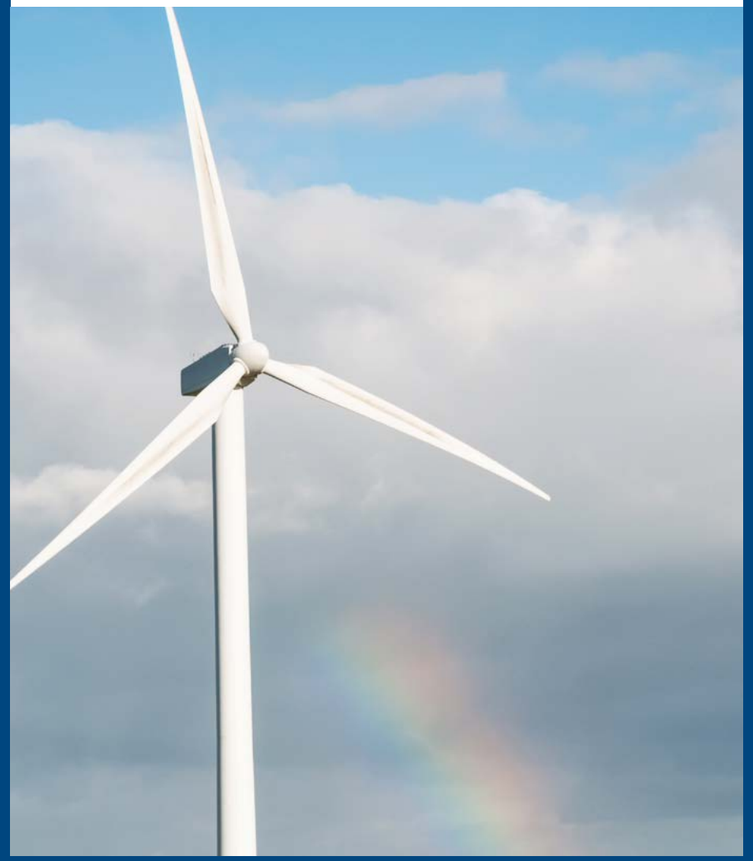
- Targeting deeper and broader participation in efficiency programs throughout the community.



HIGHLIGHTS

PV-Cumulative Installed Capacity





RENEWABLE ENERGY PROGRAMS

Fort Collins Energy Policy includes a goal to meet or exceed the community's commitments under the Colorado Renewable Energy Standard (RES), while contributing to the community's climate protection goals and economic health. A portfolio of programs supports increasing the proportion of renewable energy, customers who voluntarily subscribe for additional renewable energy and those who want to install on-site renewable energy systems.

2013 Highlights

- Renewable energy comprised 5.2% of total electrical energy purchases in 2013 (78,334 MWh). 4.1% of the energy counted towards the RES commitments, customer voluntary green energy purchases contributed an additional 1.0% and local solar systems contributed 0.2% to the overall total.
- Photovoltaic (PV) capacity additions totaled 300 kW (273 kW residential and 27 kW commercial).
- Fort Collins Solar Power Purchase Program (SP3) was rolled out in September 2013. SP3 will add over 4 megawatts of locally installed solar by June 2015. This will nearly triple the amount of solar within the community.
- The selection process for the Community Solar Garden began in fall 2013. It will expand small-scale renewables options for customers who do not have favorable sites for roof-top solar.

Looking Ahead

- Development of new rebate models for 2015 and the addition of an income qualified solar option.

FORTZED
FORT COLLINS ZERO ENERGY DISTRICT

FortZED is a collaborative partnership between the City of Fort Collins, CSU, the Colorado Clean Energy Cluster, and the community that pioneers energy solutions to meet our environmental and economic goals. FortZED is a set of active projects and initiatives to promote innovative smart grid technologies, renewable energy production, energy efficiency and conservation, energy storage, and load management. FortZED was created in part to model these technologies on a small scale so they could be scaled up and transferred into other communities, helping Fort Collins businesses expand their markets outside of Colorado and helping promote greater energy efficiency for all communities.

2013 Highlights

The Renewable Distributed Systems Integration (RDSI) demonstration project, completed in 2013, was a successful two-phased cooperative study with the U.S. Department of Energy, City of Fort Collins and local partners. The first and largest phase demonstrated technologies to reduce peak energy load by more than 20% using renewable energy and distributed resources (such as solar PV and bio-gas). The second phase created a microgrid between the CSU Engines and Energy Conversion Laboratory and the Northside Aztlan Community Center and demonstrated cyber security technology. This collaboration among diverse partners and the successful demonstration of new technologies contributes to advancing the clean energy industry and local economic development and health of northern Colorado.

Looking Ahead

- Adding up to 45 megawatts of renewable energy and combined heat and power infrastructure to the Fort Collins energy portfolio by 2020.
- Wireless thermostat technology that works collectively to reduce energy consumption during peak use hours.
- Development of Utilities as a Service Provider model, which would provide integrated services and financing options for efficiency upgrades, demand response and renewable energy to small commercial and residential customers.
- Application technology that will highlight local businesses and provide energy performance data to users.

Green building, or sustainable design, is the practice of increasing the efficiency with which buildings and their sites use energy, water, and materials, and reducing building impacts on human health and the environment over the entire life cycle of the building.

GREEN BUILDING

Green Building

The 2013 Update to The Roadmap for Coordinated and Enhanced Green Building Services identified several key tasks for advancing the City's green building program. The program is expanding its focus to include "greening" of the entire built environment. The purpose of the enhanced program is to integrate green building principles and practices into municipal and community projects and initiatives that will reduce impacts from the built environment on human health and the natural environment. Initiatives include improving energy efficiency in the existing building stock, supporting green infrastructure, and providing for alternative modes of transportation.

2013 Highlights

- The Home Efficiency Program continued to provide strong results for improving existing homes, with 683 audits and 317 efficiency improvement projects completed in 2013.
- The Business Efficiency Program supported 878 energy efficiency projects with rebates and technical assistance.

Looking Ahead

- The Integrated Design Assistance Program was redesigned with a performance based approach in alignment with the Architecture 2030 Challenge.

TRANSPORTATION

TRANSPORTATION PLANNING

The City of Fort Collins City Plan and Transportation Master Plan (2011) include action items to reshape and/or develop green streets. “Green streets” are alternative street designs that support active modes of travel such as bicycling and walking. In addition, Enhanced Travel Corridors (ETCs) focus on connecting key activity centers with a high degree of mobility and travel options.

2013 Highlights

- FC Moves completed a planning study for the Remington Green Street Project, which has moved to final design and construction in 2014.
- A corridor plan for Lincoln Avenue from Jefferson/Riverside to Lemay Avenue was developed.
- The Midtown in Motion: College Avenue Transportation Study was initiated.
- FC Moves also kicked off an update to the Bicycle Master Plan.

Looking Ahead

- In 2014, many of the planning projects initiated in 2013 will be completed and adopted.
- Transfort ridership continues to grow.
- Continual expansion of transit services in accordance with the Transfort Strategic Operating Plan.
- FC Moves emphasizes multimodal coordination and active living/multi-modal programs encouraging bicycles, pedestrians, and transit use.

HIGHLIGHTS

MASON CORRIDOR

A major element of the City’s transit system is the development of the multi-modal Mason Corridor, a 5-mile north-south byway within Fort Collins which extends from Cherry Street on the north to south of Harmony Road. The corridor is located adjacent to the Burlington Northern Santa Fe Railway property, a few hundred feet west of College Avenue (U.S. 287). The Mason Corridor Plan was initially approved by voters in 1997. The Plan envisioned a multi-modal corridor that included a bicycle/pedestrian trail, the recently completed Mason Trail, and a Bus Rapid Transit (BRT) system. By pursuing many different funding sources for the Mason Corridor, Fort Collins leveraged limited local dollars with state and federal grants for the Mason Corridor project. The Mason Corridor includes a new bicycle and pedestrian trail as well as a BRT in a fixed guide-way for the majority of the corridor. The transit and trail components of the Mason Corridor will have significant impacts on the environment. As people utilize alternative modes, congestion and pollution levels in our City will decrease, and GHG emissions will decrease.

2013 Highlights

- MAX BRT construction completed.
- Mason Trail extension through CSU completed.
- Troutman bicycle pedestrian underpass completed in 2013.
- New bicycle pedestrian overpass completed at the Spring Creek Station.
- MAX BRT service began May 2014 (opening day celebration attracted 10,000 riders).

BICYCLING

In 2013, Fort Collins was designated a Platinum-level Bicycle Friendly City by the League of American Bicyclists, becoming only the 4th community in the country to achieve this status. Approximately 7.9% of Fort Collins’ workforce uses a bicycle as their primary means of travel to work, one of the highest rates in the nation according to the U.S. Census Bureau’s 2012 American Community Survey. Bicycling is promoted locally through a strong network of 166 miles of bike lanes, 49 miles of paved multi-use trails, 3 community bicycle organizations, and 14 Bicycle Friendly Businesses. In addition, the Fort Collins Bike Co-op collects and refurbishes bicycles locally, and the FC Bike Library offers bike check-outs for residents and visitors.

Looking Ahead

- The Safe Routes to School program is expanding from elementary schools into middle schools, and continues to offer high quality bicycle and pedestrian safety education.

CO-BENEFITS

AIR POLLUTION REDUCTION

Reducing GHG emissions through reduced energy use also reduces air pollution emissions. The carbon reduction efforts identified in this report are estimated to have avoided over 296,000 MWh of electricity, and these improvements helped avoid the air pollutant emissions listed in the sidebar table that are harmful to human health and the environment. Of particular note is the reduction of nitrogen oxides that contribute to ground level ozone formation — a pollutant that is out of compliance with the national health standards for ground-level ozone along the Front Range region.

ECONOMIC BENEFITS

Actions to reduce local GHG emissions can boost the local economy.

- CSU installed a boiler heating plant on the Foothills Campus anticipated to save $60,000 annually.
- ClimateWise partners' projects to reduce GHG emissions saved $15 million in 2013 alone, and over $83 million since the program began in 2000.
- City revenue from concrete and asphalt recycling at the City Crushing Facility increased by 39% over 2012 sales resulting in total sales of over $779,000 in 2013.
- City Energy Policy efficiency programs generated over $31 million in local economic benefits through reduced utility bills, incentives, leveraged investment, and other economic activity.

HIGHLIGHTS

2013 AIR POLLUTION REDUCTIONS

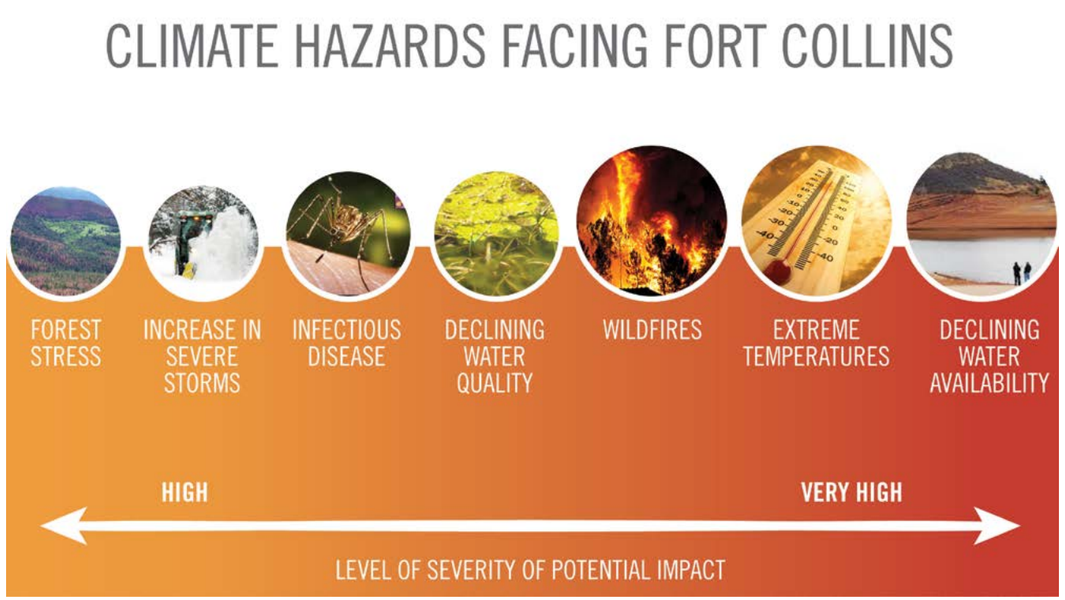
Pollutant	Avoided in 2013 from GHG reductions actions in Fort Collins (tons)
Nitrogen Oxides*	384
Sulfur Oxides*	371
Carbon Monoxide*	81
Particulates**	10

**Calculated using regional marginal emission factors.*
***Calculated using regional average emissions factors.*

A key risk identified during climate change adaptation planning was extreme storm events that may impact City infrastructure like the September 2013 flooding that impacted Natural Area trails.

CLIMATE ADAPTATION

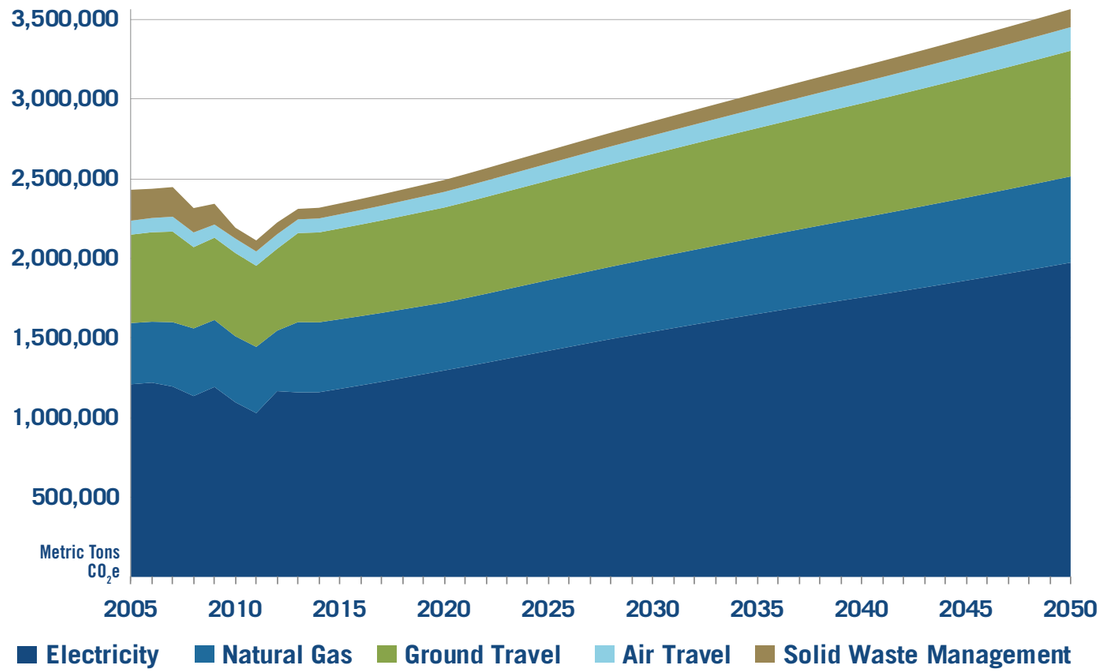
Since 2008, the City has been evaluating the potential adverse impacts to City operations and infrastructure due to climate change. In 2011, Fort Collins City Council added a new policy goal on climate adaptation, recognizing that while we continue to reduce emissions it is also our responsibility to prepare for the impacts of a changing climate. During 2013, climate change adaptation planning was initiated to provide vulnerability and risk assessments for 17 City departments. Through a series of planning workshops, the City identified specific climate hazards facing Fort Collins as a result of our changing climate and prioritized risks. Key risks include: reduced water quantity and quality, increase in extreme temperatures and heat waves, impacts from wildfires, compromised watershed and local habitat health, increased risk for invasive species and infectious disease, and extreme storm events. By reducing GHG emissions significantly now, we could avoid the most extreme climate changes in the future. The City will continue to plan, adapt, and monitor to help minimize identified risks to improve the community's response and resilience to extreme events and other climate related challenges. The City of Fort Collins is committed to ongoing climate adaptation planning and appropriate action to help prepare the community for a warming climate and the accompanying impacts.



2020 FORECAST

The City of Fort Collins updates its community GHG inventory forecast biennially, in preparation for the biennial budget process. The 2020 electricity forecast was revised in 2014 with the most recent projections for utility usage, incorporating some of the planned benefits of policy, mandated reductions, and projected economic changes. The City updated projections for the remaining communitywide GHG emissions through 2050 for a business-as-usual scenario as a part of planning efforts to update the Climate Action Plan and evaluating more aggressive GHG reduction goals. Modifications to the 2020 GHG forecast are discussed in more detail in the Community GHG Emissions Inventory Quality Management Plan at *http://www.fcgov.com/climateprotection*.

Fort Collins GHG Emissions & Projections



NEXT STEPS

The City's current planning effort to update the CAP and Energy Policy is focused on pursuing accelerated and more aggressive carbon reduction goals for the community. This is needed to spur greater carbon reductions by the community, reverse the recent local increase in GHG emissions, and take advantage of new opportunities presented by emerging economic opportunities and technological advancements. The CAP update will involve developing more specific near-term implementation strategies to catalyze policy and practice, and seeking stakeholder and public response will be an important part of the process. In addition to the work to clearly identify actions that can be taken now and in the near future, the planning effort involves redefining the long view to accommodate the current state-of-the-science and more refined forecasts for a changing climate. Part of the challenge facing our community is deciding how we will manage the uncertainty associated with climate science and long-term forecasting. As a result of being proactive, Fort Collins will be better positioned to consider climate change in decisions, setting the City on the path to a low-carbon, climate-resilient future.

APPENDIX A

2013 Community GHG Report

Scope 1 - Direct GHG Emission	Usage		Metric tons of CO2e
Natural Gas, Residential:	3,905,638	Dth	207,608
Natural Gas, Commercial:	1,464,959	Dth	77,871
Natural Gas, Industrial and Transportation:	2,929,408	Dth	155,716
Natural Gas Subtotal	*8,300,005*	*Dth*	*441,195*
Gas Car (assumes 22.1 mpg):	25,181,937	gal.	221,097
Gas Light Truck (assumes 17.7 mpg):	28,436,475	gal.	249,672
Gas Heavy Truck (assumes 13.9 mpg):	275,673	gal.	2,420
Diesel Car (assumes 19.378 mpg):	52,344	gal.	534
Diesel Light Truck (assumes 16.859 mpg):	922,524	gal.	9,419
Diesel Heavy Truck (assumes 5.634 mpg):	7,421,426	gal.	75,773
Water Reclamation Facility Emissions:	122,392	ft3/day	1,367
Scope 1 Subtotal			**1,001,477**

Scope 2 - Energy Indirect GHG Emissions	Usage		Metric tons of CO2e
Electricity, Residential:	509,000,720	kWh	386,033
Electricity, Commercial:	502,624,656	kWh	381,198
Electricity, Industrial:	458,413,890	kWh	347,668
Electricity, Street Lights:	8,500,793	kWh	6,447
Electricity, Traffic Signals:	575,316	kWh	436
Elec., Distribution and Transmission Losses:	48,287,335	kWh	36,622
Electricity Usage Subtotal:	*1,527,402,709*	*kWh*	*1,158,404*
Scope 2 Subtotal			**1,158,404**

Scope 3 - Other Indirect GHG Emissions	Usage		Metric tons of CO2e
Solid Waste	133,931	tons	65,717
Community Air Travel	8,934,039	gal.	86,097
Water Reclamation Disgester Gas	122,392	ft3/day	1,958
Water Treatment and Distribution	7,788,198,450	gal.	5,080
Scope 3 Subtotal			**158,852**

Total Metric Tons of CO2e:			**2,318,732**
Benefit of RECs:			-28,787
Benefit of Known Offsets:			-18
Revised Total Metric Tons of CO2e:			**2,289,927**
Recyclable Waste Embodied Emissions	42,590	tons	207,987

APPENDIX B

2005 Community GHG Report

Scope 1 - Direct GHG Emission	Usage		Metric tons of CO2e
Natural Gas, Residential:	2,968,669	Dth	157,803
Natural Gas, Commercial:	1,207,770	Dth	64,200
Natural Gas, Industrial and Transportation:	3,051,712	Dth	162,217
Natural Gas Subtotal	*7,228,151*	*Dth*	*384,220*
Gas Car (assumes 22.1 mpg):	22,299,792	gal.	195,792
Gas Light Truck (assumes 17.7 mpg):	21,402,275	gal.	187,912
Gas Heavy Truck (assumes 13.9 mpg):	2,561,720	gal.	22,492
Diesel Car (assumes 19.378 mpg):	61,766	gal.	631
Diesel Light Truck (assumes 16.859 mpg):	94,660	gal.	966
Diesel Heavy Truck (assumes 5.634 mpg):	14,410,724	gal.	147,133
Water Reclamation Facility Emissions:	111,419	ft3/day	1,153
Scope 1 Subtotal			**940,299**

Scope 2 - Energy Indirect GHG Emissions	Usage		Metric tons of CO2e
Electricity, Residential:	454,070,392	kWh	376,298
Electricity, Commercial:	474,176,147	kWh	392,960
Electricity, Industrial:	464,277,920	kWh	384,757
Electricity, Street Lights:	8,123,199	kWh	6,732
Electricity, Traffic Signals:	907,818	kWh	752
Elec., Distribution and Transmission Losses:	57,766,526	kWh	47,872
Electricity Usage Subtotal:	*1,459,322,001*	*kWh*	*1,209,371*
Scope 2 Subtotal			**1,209,371**

Scope 3 - Other Indirect GHG Emissions	Usage		Metric tons of CO2e
Solid Waste	237,747	tons	194,027
Community Air Travel	9,083,951	gal.	87,542
Water Reclamation Disgester Gas	111,419	ft3/day	1,782
Water Treatment and Distribution	7,405,780,650	gal.	5,278
Scope 3 Subtotal			**288,630**

Total Metric Tons of CO2e:			**2,438,300**
Benefit of RECs:			-11,050
Benefit of Known Offsets:			0
Revised Total Metric Tons of CO2e:			**2,427,250**
Recyclable Waste Embodied Emissions	75,604	tons	369,208