Fort Collins Climate Task Force Recommendations

June 2008

City of Fort Collins

May 27, 2008

Darin Atteberry, City Manager
City Hall West
300 Laporte Avenue
Fort Collins, CO 80521

Dear Mr. Atteberry:

We, the members of the Climate Task Force (CTF), are pleased to submit our recommendations to you per our charges under Resolution 2007-015.

Our recommendations cover all sectors and sources of greenhouse gas emissions, with a particular call to City government to lead by example in policy-making and implementation. The package we are recommending will meet the City Council's stated intent to reduce emissions to 2.466 millions tons by 2012, and it will set the community on the path to meet the 2020 goal. Many of our recommendations are challenging and will require serious commimtent of elected officals, City government and the community.

We believe the newly adopted goal to reduce emissions 20% below 2005 levels by 2020 allows for important strategies not otherwise feasible in the 2010 timeframe – namely promoting green building standards, sustainable land use planning and transportation demand management programs. However, we also believe it is imperative to balance these longer term strategies with early and significant progress in energy efficiency and waste diversion to get us on the right trajectory toward meeting the 2020 goal.

We would like to underscore the important role the City of Fort Collins government must play in achieving progress, through leading by example internally, setting clear policy directions that will lead the community to a sustainable future and inspiring community involvement. To successfully implement the CTF's short and long-term measures, they must be adopted, institutionalized and championed by City leadership and departments.

Sincerely,

Climate Task Force Members:

John Bleem
William Farland
William Franzen
Phil Friedman
Stephen Gillette
Blue Hovatter
Jeff Lebesch
Eric Levine
Liz Pruessner
Garry Steen
Norm Weaver
Steve Wolley

List of Participants

Fort Collins Climate Task Force

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William S. Franzen	Poudre School District
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Jeff Lebesch	Electric Board
Eric Levine	Air Quality Advisory Board
Liz Pruessner	Natural Resources Advisory Board
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Steve Wolley	Climate Wise Steering Committee

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Acknowledgements

Our gratitude goes out to every Climate Task Force participant for their invaluable contribution to this process. Thank you to citizens and Board and Commission members for sharing their insights and suggestions along the way. Thank you to the City Manager and City staff who worked in many capacities to support the process. Thank you to the Fort Collins Sustainability Group and who raised the need to update Fort Collins' Climate Plan. And thank you especially to Fort Collins City Council for leadership on the issue of climate protection.

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Executive Summary

The Challenge

Widespread consensus exists that human emissions of greenhouse gases are impacting Earth's climate system, causing the potential for unprecedented large-scale adverse health, social, economic and ecological effects. Coloradoans may not be surprised by predictions such as these because we are already seeing the changes. Observations in recent decades show that Colorado is already experiencing shorter and warmer winters, with thinner snow pack and earlier spring runoff, less precipitation overall, longer periods of drought, more wildfires and other ecological effects potentially related to climate change. These include pine beetle infestations, die-off in aspen stands and rapid spread of West Nile Virus due to higher summer temperatures.

Our Responsibility

Local communities are vulnerable to the many risks posed by a changing climate. Likewise, cities can make a difference in avoiding climate instability by exercising key powers over land use, transportation, building construction, waste management and energy and water supplies and management. It is fitting for local governments to take responsibility for emissions occurring within their jurisdictions. Local actions not only bring local benefits, they can speed the development of technology-based solutions and promote more rapid market transformation that will help drive reductions in global emission levels.

Opportunities

It is far more costly to ignore global warming than to take action to avert the worst of its impacts. An increasing number of studies show that, in addition to being less costly overall, taking action to avert global warming can be immediately profitable. As an example, Portland/Multnomah County has reduced net greenhouse gas emissions to about 1990 levels, and per capita CO_2 emissions have dropped over 12%, yet the inflation-adjusted payroll has increased 29% and employment has increased approximately 12%.

Several other local benefits accrue from climate protection activities including pollution reduction, human heath benefits, cost savings, economic development, reduced vulnerability to peak oil, reduced dependence on foreign oil, increased opportunity to attract grant funding and leadership.

Fort Collins is fortunate to have a number of organizations leading sustainability efforts locally including Poudre School District, Colorado State University and the wide array of Climate Wise partners that have publicly committed to voluntarily reduce their organization's greenhouse gas emissions. The groundbreaking work of the Clean Energy Cluster and the vision of FortZED position Fort Collins well for success in reducing emissions while maintaining a robust economy.

Fort Collins Greenhouse Gas Emissions

About half of Fort Collins' greenhouse gas emissions come from electricity use, primarily to light and cool buildings. The second largest source is emissions from combustion of fossil fuels for transportation (30%). The third largest source is natural gas use, primarily for heating buildings (~20%) and a small portion of emissions result from organic matter decay in the landfill.

Fort Collins' Commitment and Goals

In 1999 Fort Collins was among the first wave of communities in the nation to commit to reducing local emissions. City Council adopted a goal to reduce emissions 30% below predicted 2010 level by 2010 and a plan to meet it.

Through innovation, leadership and local involvement, the community has benefited significantly from climate protection actions. Thanks to the success of the voluntary Climate Wise Program, for example, innovative businesses avoided emitting more than 82,000 tons of CO_2e, while saving over $12 million since 2000. Thanks to foresight in leadership, Fort Collins established the first renewable energy standard in the State of Colorado. And our participatory community tells us through recent surveys that they not only support but also expect further greening efforts.

As 2010 approached, it became apparent that more efforts were needed in order for Fort Collins to meet the 2010 goal. City Council authorized a citizen task force representing key stakeholders to recommend actions to meet the 2010 goal and a future direction for climate protection in Fort Collins

The Climate Task Force (CTF) developed a list of short-term strategies and ideas for longer-term reduction approaches. The CTF also recommended that Fort Collins adopt the statewide climate protection goals for 2020 and 2050 and shift the 2010 goal objective to the year 2012.

In 2008 City Council renewed its commitment to climate protection through adopting Colorado's statewide goals to reduce emissions 20% by 2020 and 80% by 2050, both compared to 2005 levels, and expressed its intent that Fort Collins reduce emissions to the 2010 goal threshold by 2012.

Recommended Short-Term Climate Protection Strategies

The CTF recommended 16 new strategies for implementation between now and 2013. These new strategies, along with continuation of important existing efforts, will more than meet City Council's stated 2012 emissions objective and will set Fort Collins squarely on a path toward the 2020 goal. These 16 strategies, covering the areas of Community Leadership, Recycling, Energy Efficiency, Renewable Energy, and Transportation Efficiency, are described briefly below.

Community Leadership

Community Climate Challenge - Develop a local "Community Climate Challenge" for the residential sector, focusing on an educational campaign to reduce per capita greenhouse gas (GHG) emissions. A key component would be youth-focused programs (in-school programs, scouts, youth groups, church groups, services groups, etc.)

Government Organizations Set Greenhouse Gas Goals - Recognizing the importance of leading by example, this measure calls for Colorado State University, the City of Fort Collins and Larimer County to join Poudre School District by setting goals to reduce greenhouse gas emissions from internal operations and achieve progress on the goal.

Expand Climate Wise Program - Climate Wise is a successful program that supports local businesses and organizations in reducing and tracking their greenhouse gas emissions while saving money. This measure adds new personnel and resources to the program, enabling more partners to join and providing more assistance to partners, further increasing emissions reductions.

Local Carbon Offset Program - This measure would develop a voluntary program to identify and fund local carbon-reduction programs and projects. This win-win approach allows all those interested in purchasing carbon offsets to obtain those offsets from local projects, thus redirecting dollars back into our local economy. Fort Collins could partner with the Governor's Energy Office to implement the program.

Increase Recycling

Push Towards 50% Waste Diversion Goal - Thirteen strategies have been identified from the Fort Collins Draft Solid Waste Strategic Plan that are especially effective at reducing greenhouse gas emissions. These strategies include a residential yard waste drop-off site, the option to recycle yard waste though trash haulers and an ultimate ban on yard waste from curbside trash collection. It also recommends amending Fort Collins "Pay As You Throw" ordinance to include commercial customers, and implementing construction and demolition reduction strategies.

Save Energy

Increase Energy Efficiency Programs Above Existing Levels - The City's Electric Energy Supply Policy sets a goal to reduce per capita electricity use 10% below the 2002 levels by 2012. Current Fort Collins Utilities efficiency programs reduce 0.6% of total electricity use, on a trajectory to meet the 2012 goal. This measure proposes to increase energy efficiency and consumption reduction above the existing policy by increasing conservation programs to achieve a 1% reduction of total electricity load. One percent load reduction is an industry best practice, and it results in a net savings to program participants.

Alternative Residential Electricity Rate Structures to Promote Conservation - In 2007 48% of community-wide greenhouse gas emissions came from electricity use, making it the largest source of local greenhouse gas emissions. This strategy proposes to revise the residential electricity rate to promote conservation and potentially raise revenue to implement more conservation programs, with provisions to be developed for low-income households and all-electric homes. This recommendation works in concert with other recommended residential conservation strategies that are designed to promote energy conservation in homes and save home owners money.

Offer Low Cost Home Energy Assessments - The Fort Collins Utilities currently offers free energy assessments to local businesses. This measure would offer low cost energy assessments for residences. As analyzed, the cost of the home energy assessment would be split 50:50 between homeowner and the Fort Collins Utilities.

Smart Meters - Smart meters are advanced meters that identify energy consumption in more detail than a conventional electric meter, enabling families to see in-home energy use in real-time or in electric displays, track hourly energy usage and reduce their bill by reducing and shifting energy use. Smart meters can also allow remote meter readings and help pinpoint outages. Smart meters can reduce 8% – 25% of electricity use. This measure proposes to install smart meters in all homes by 2015.

Time-of-Sale Energy Conservation Ordinance - Natural gas and electricity use in existing building is responsible for about two-thirds of community-wide greenhouse gas emissions. This measure seeks to bring inefficient buildings up to some minimum level of energy efficiency by conducting an assessment and requiring upgrades at the time of sale. Utility efficiency programs could be designed in a way that helps customers comply with the requirement.

Natural Gas Energy Conservation - Residential natural gas use comprises 8% of Fort Collins greenhouse gas emissions. This measure would implement a rate structure for natural gas that achieves a 3% reduction in natural gas usage in the residential sector. It assumes the natural gas utility provider would have to raise rates in order to fund efficiency programs to achieve this goal.

Clean Energy

15% Renewable Energy by 2011- The City of Fort Collins' existing policy goal is to achieve 15% renewable energy for electricity use by 2017. This measure would accelerate the goal to achieve 15% renewable energy by 2011 through a purchase of 60% Renewable Energy Certificates and 40% delivered wind energy.

Provide Incentives for Individual Renewable Energy Projects - This measure provides incentives to all customers (residential, commercial, etc.) of Fort Collins Utilities for installation of small scale renewable energy projects. The incentives are split 50:50 between Fort Collins Utilities and the customer.

Increase Transportation Efficiency

Reduce Vehicle Miles of Travel (VMT) - This measure recommends four key strategies to reduce Fort Collins VMT by just under 2%. The four areas are Walking and Bicycling Improvements, Transportation Demand Management-Type Programs with Employer Focus, School Transport Management Programs and Transit Service Improvements.

Modern Roundabouts for New or Major Redeveloped Intersections - Roundabouts are an alternative to the standard traffic signal that provide

a safer, more efficient, economically advantageous and environmentally friendly way to move traffic along the roadway system. This strategy recommends that the City build five roundabouts at new or significantly redeveloped intersections by the end of 2013.

Incentives for Low Emission Vehicles - This measure would offer a $2,000 incentive for the purchase of a low emission vehicle (LEV) from a Fort Collins dealer to be registered in Fort Collins. It would also offer the incentive of preferential parking for LEVs in Fort Collins to further promote the use of these vehicles.

Timing of Short-Term Strategies

The CTF has recommended three phases for implementation of the 16 short-term strategies. Phase I starts with 3 voluntary measures that empower citizens and businesses to reduce emissions by raising awareness and offering voluntary opportunities and incentives. Phase I's primary focus is on increasing energy efficiency, typically the most cost-effective approach to reduce emissions. Building upon these successes, Phase II includes increased electric energy efficiency programs, reducing waste and increasing clean energy sources. Phase III includes all other short-term strategies. To achieve full implementation by 2013, planning and even implementation of many of these strategies will need to start in the near future.

Recommended Long-Term Strategies

While the CTF focused on recommending short-term emissions reduction strategies, they also recommended that work begin on long-term strategies. Many of these strategies require ample time and funding in order to see the benefits, yet the benefits of these actions are long-lasting and will play a critical role in reducing Fort Collins emissions.
The long-term strategies include seeking adequate funding to implement transportation existing plans, with a special focus on transit. In the area of land use, the CTF recommends implementing code changes that support emissions reductions including the promotion of infill and refill development and transit-oriented development. They recommend establishing energy performance standards for commercial buildings, requiring green building as a prerequisite for public financing and considering net zero ready homes and "LEED for Neighborhoods". In the area of energy, the CTF recommends promoting plug-in hybrids, vehicle-to-grid applications and supporting smart grid development. They also recognize the importance of community engagement and strongly encourage the City of Fort Collins to take a leadership role in implementing and promoting climate protection actions.

Fort Collins Continued Commitment

The Fort Collins community has demonstrated its leadership on the issue of climate protection and should continue to act from a position of leadership and focused intent so as to inspire other communities across the region, state and globe to likewise step up to share in the solution.

Our path to making significant progress early on is guided by the hard-working efforts of the Fort Collins Climate Task Force that developed specific, short-term strategies. They also recommended that work begin on important long-term strategies, such as setting performance standards for new buildings, establishing land use policies that will reduce greenhouse gas emissions and seeking funding to build sustainable transportation systems. Additional work will be needed to develop short-term implementation plans as well as longer-term plans to clarify the path to the 2020 and 2050 goals.

The time for action is now. We have begun this journey alongside other committed

municipalities, state agencies, universities, business and citizens in Colorado's Front Range and around the nation. Working cooperatively, we can reduce our emissions, maximize technologies and co-create the evolution of carbon markets. Together we can sow the seeds that will reap the benefits of a more sustainable life experience for ourselves and generations to come.

Introduction

Need For Climate Protection

Widespread consensus exists that human emissions of greenhouse gases are impacting Earth's climate system, causing the potential for unprecedented large-scale adverse health, social, economic and ecological effects. In the past two decades, the science connecting global warming to human augmentation of the greenhouse effect has progressed dramatically. Many changes that had been predicted are now occurring, and the observed pattern of change points to the enhanced greenhouse effect. Climate disruption is likely to cause, and may already be causing, damage to the environmental and economic health of Colorado communities, introducing risks associated with reduced snow pack that could affect both water supply and tourism and secondary impacts such as changes in agriculture economics.

Two summary reports of the International Panel on Climate Change (IPCC) released in 2007 find that global warming is real and will have significant impacts. Approximately 600 authors from 40 countries produced the IPCC reports. Over 620 expert reviewers and a large number of government reviewers also participated. Representatives from 113 governments reviewed and revised the summaries before adopting them.

In February 2007, Working Group I of the IPCC released a summary for policy makers on the science of climate change. They concluded that:

- "Warming of the climate system is unequivocal."
- "Most of the warming that our climate system has experienced in the last 50 years is 'very likely' (meaning over 90% likely) due to human caused greenhouse gas emissions."
- It is "very likely" (meaning over 90% likely) that heat extremes, heat waves and heavy precipitation will become more frequent.

In April 2007 Working Group II of the IPCC released a summary of expected global warming impacts. Their conclusions about impacts in North America include:

- Tens of millions of Americans are likely to be exposed to greater risk for injury, disease and mortality due to higher pollution levels, more frequent and more intense heat waves, more intense storms and more favorable conditions for the spread of water and insect-borne diseases, in the absence of effective counter-measures.
- Western regions are already facing increased water scarcity and are expected to experience inadequate water supplies and reliability losses as snow pack diminishes and evaporation increases.
- North American forests face escalating destruction from increasing outbreaks of wildfire, insect infestation and disease.
- Between 15% and 40% of North American plant and animal species are like to be condemned to extinction by 2050.

Coloradoans may not be surprised by predictions such as these. Observations in recent decades show that Colorado is already seeing the following:

- Shorter and warmer winters, with thinner snow pack and earlier spring runoff.
- Less precipitation overall, and more falling as rain than snow.
- Longer periods of drought.
- More wildfires, burning twice as many acres each year than before 1980.
- Widespread beetle infestation wiping out pine forests, and die-off in aspen stands.
- Rapid spread of West Nile Virus due to higher summer temperatures.

The European Union considers that a temperature rise of 2 degrees Celsius (3.6 Fahrenheit) over pre-industrial times is the threshold for "dangerous change" that must be avoided. The Center for International Climate and Environmental Research in Oslo found that, in order to have a 50% chance of avoiding this 2 degree Celsius threshold, we would have to reduce global emission of greenhouse gases by 80% by the year 2050, at the latest.

The cost of inaction may exceed the cost of taking action by an order of magnitude. Sir Nicholas Stern, head of the UK Government Economic Service and former Chief Economist of the World Bank, stated in October 2006:

> *There is still time to avoid the worst impacts of climate change, if we take action now… If we don't act, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP per year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more…. In contrast, the cost of action -- reducing greenhouse gas emissions to avoid the worst impacts of climate change - can be limited to around 1% of GDP per year.*

The evidence of climate change is overwhelming and undeniable. The vast majority of scientists agree that global warming is real, it's already happening and that it is the result of human activities and not a natural occurrence. We are already seeing changes. It is far more costly to ignore global warming than to take action to avert the worst of its impacts.

Benefits of Climate Protection

An increasing number of studies show that, in addition to being less costly overall, taking action to avert global warming can be immediately profitable.

Nations and corporations that take action to reduce greenhouse gases end up saving money. David Northrop, Director of Sustainable Development for the Rockefeller Brothers Fund, reported in July 2006, "Every company and city taking action to reduce greenhouse gas emissions has saved money doing so." Examples include:

Figure 1 - Example Economic Benefits

Entity	Greenhouse Gas Reductions	Economic Benefits
DuPont	72% since 1990	$ 2 Billion Savings
Alcoa	26% since 1990	$100 Million savings through 2006
British Petroleum	10% below 1990	$ 650 Million Net Present Value savings
IBM	38%	$ 791 Million
Germany	19% since 1990	450,000 new jobs in renewable energy

Urban regions can thrive while also reducing greenhouse gases, as demonstrated by Portland/Multnomah County. While net greenhouse gas emissions in Multnomah County are about at 1990 levels, and per capita CO_2 emissions have dropped over 12%, the inflation-adjusted payroll has increased 29% and employment has increased about 12%.

Finally, to demonstrate local benefits we need look no further than Fort Collins' own Climate Wise Program. In 2007 Climate Wise reported a cumulative cost savings from projects completed by partners through 2007 of over $12 million,

the same year the partners collectively reduced over 82,000 tons CO_2e.

The Fort Collins community could realize tremendous ancillary economic, environmental and social benefits by undertaking responsible steps to combat climate change, including:

- Support local businesses and stimulate economic development.
- Provide economic stimulation of research and development activities.
- Reduce home and business energy costs for heating, cooling and lighting.
- Reduce home and business motor vehicle fuel costs.
- Reduce dependence on foreign fuel sources.
- Reduce vulnerability to energy price increases and volatility.
- Reduce peak energy demand and improve utilization of the electricity system.
- Diversify energy supply and reduce loads on transmission system.
- Reduce air pollution emissions including ozone precursors and fine particles.
- Improve public health.
- Improve local visibility.
- Reduce waste and increase landfill diversion rates.
- Reduce vehicle miles of travel and road congestion.
- Reduce water consumption in the community.
- Increase Fort Collins' ability to adapt to a changing climate.
- Provide opportunities for regional, state and national leadership and recognition.

Local governments have strong financial incentives to address climate change. Reducing local carbon emissions means pursuing a variety of programs and practices that are energy prudent, and thus ultimately fiscally responsible.

Role of Local Governments

Local governments can greatly influence their communities' greenhouse gas emissions by exercising key powers over land use, transportation, building construction, waste management and, in many cases, energy and water supplies and management.

Cities can make a difference in avoiding climate instability. The U.S. is among the largest emitters of human-caused greenhouse gas emissions. Across the country, more and more local governments are committing to reduce emissions and developing plans to achieve their pledges. Over 160 cities and counties, including Fort Collins, have joined the Cities for Climate Protection Campaign of the International Council for Local Environmental Initiatives (ICLEI). These cities represent about 20% of the U.S. population, have reduced 23 million tons CO2 annually and have eliminated over 43,000 tons of local air pollutants.

As of June 2008, 850 mayors across the country have signed the Seattle "Mayor's Agreement", pledging their community to:

- Strive to meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects and public information campaigns;
- Urge their state governments and federal government to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the United States in the Kyoto Protocol -- 7% reduction from 1990 levels by 2012;
- Urge the U.S. Congress to pass bipartisan greenhouse gas reduction legislation, which would establish a national emission trading system.

It is appropriate for Fort Collins to reduce greenhouse gas emissions even if some neighboring communities do not. City Council in 1999 adopted the policy that "The city shall proactively identify and implement actions that reduce Fort Collins' contribution to total global greenhouse gas emissions". Several other benefits accrue from climate protection activities including pollution reduction, human heath benefits, cost savings, economic development, reduced vulnerability to peak oil, reduced dependence on foreign oil, increased opportunity to attract grant funding and leadership. Collectively, climate protection activities will enhance the sustainability of our community.

It is equally appropriate for local governments to take responsibility for their emissions, even if they are overshadowed by rapidly increasing emissions elsewhere in the world. Despite this disparity, it should be recognized that the USA still leads the world in per capita greenhouse gas emissions. By acting to reduce emissions, Fort Collins joins other communities in sending a signal that will speed the development of technology-based solutions and more rapidly promote the transformations needed to drive change in global emission levels.

Cities need not wait for state or national programs to begin. It may take a few to several years before carbon emission legislation, programs and regulations are developed. The sooner local communities begin to take action, the sooner they will reap the benefits.

These are some examples of Colorado cities taking action:

- Denver has committed to reduce per capita greenhouse gas emissions 10% below 1990 levels by 2011 in their Green Print Plan.
- Boulder recently passed a carbon tax that will enable their community to reduce emissions 7% below 1990 levels by 2012 through energy efficiency increases in homes, switching to renewable energy and alternative fuels and reducing vehicle miles of travel.
- Recognizing special vulnerability to disruptions in water supply from climate change, the City of Aspen launched the Canary Initiative in 2005 to reduce global warming pollution, inform the public about impacts and solutions and advocate for actions at all levels of government.
- Carbondale has committed to reduce their greenhouse gas emissions 25 % below 2004 levels by 2012.
- Telluride has committed to decrease their emissions from 2004 levels by no less than 15% by December 2010 and by no less than another 15% of 2004 levels by December 2015.

Opportunities

"When written in Chinese, the word 'crisis' is composed of two characters - one represents danger, and the other represents opportunity."
- John Fitzgerald Kennedy

The Fort Collins community offers a unique combination of innovation and technical expertise that can be leveraged to develop long-term sustainable solutions and facilitate action by community sectors and organizations to reduce emissions.

Market opportunities and technologies are evolving rapidly to support carbon reduction activities. Technology-based advancement are occurring in the areas of biofuels, including algae-based biofuels; electricity grid distribution improvements; and bio-refineries that integrate biomass conversion processes and equipment to produce fuels, power and chemicals from biomass.

A dramatic increase in cleaner and more efficient energy technology and sources has occurred in recent years. New industries and programs bring with them strong economic growth opportunities.

Northern Colorado has become a leader in many aspects of clean energy technology development and application. The Northern Colorado Clean Energy cluster, a public/private sector partnership, aims to provide "clean" energy by using renewable energy (e.g., solar and wind), efficient energy technology, green building and energy utilization. Sixty businesses in the cluster employ more than 450 people locally. Colorado State University is recognized internationally for pioneering clean and renewable energy technologies. Additionally, FortZED, a zero-energy district in the historic downtown, will begin what policy makers and scientists deem to be the living situation of the future: balanced energy use and renewable energy sourcing. Action on climate change supports the local economy by increasing demand for the services and products that companies in the Clean Energy Cluster provide.

Markets are being created to make greenhouse gas reduction economically efficient. Carbon markets are thriving in Europe, and although the U.S. does not have a national carbon registry and trading policy, voluntary markets are emerging here as well. Examples include the Regional Greenhouse Gas Initiative (RGGI), a greenhouse gas cap-and-trade system being developed by seven northeast states; California's cap-and-trade system to enact its strict greenhouse gas emission targets; and the Chicago Climate Exchange (CCX), a voluntary mechanism for trading carbon.

The Fort Collins community has the opportunity to create a thriving future based on practical energy use.

Fort Collins Evolving Commitment to Greenhouse Gas Reduction

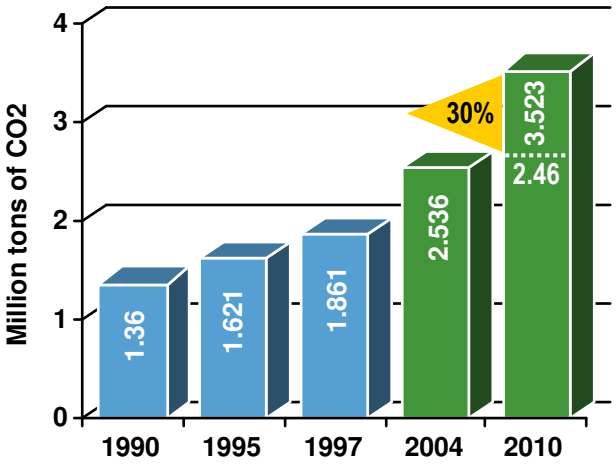
Original Fort Collins Greenhouse Gas Goal

In 1997 the City of Fort Collins joined ICLEI's Cities for Climate Protection (CCP) Campaign. In doing so, Fort Collins committed to:

- Develop a 1990 baseline greenhouse gas inventory and forecast for 2010.
- Set a greenhouse gas reduction goal.
- Develop a plan to meet the goal.

Original Emissions Inventory and Forecast

Figure 2 – Fort Collins Original Emission Inventory, Forecast and Goal (1999)



The 1990 emissions inventory shows 1.366 million tons of carbon dioxide equivalent (CO_2e), which includes carbon dioxide and methane emissions, with the majority of emissions produced by electricity use. The 2010 forecast was developed by applying 'business as usual' projections from 1997 out to the year 2010. This included a 7% annual increase in vehicle miles traveled, causing the transportation sector to increase significantly. The original 2010 forecast, often referred to as the 'worst case forecast', shows a 160% increase in emissions above 1990 levels.

Original Greenhouse Gas Goal and Plan

In 1999 City Council adopted Resolution 99-137, setting a goal to:

> "Reduce (community-wide) greenhouse gas emissions 30% below predicted 2010 levels by 2010."

A Staff Technical Team and a Citizen Advisory Committee met for over a year to identify and recommend a prioritized list of cost-effective actions to reduce local greenhouse gas emissions and achieve the greenhouse gas reduction goal.

The 1999 *Fort Collins Local Action Plan to Reduce Greenhouse Gas Emissions* (LAP) was adopted by Council Resolution 99-137. The plan outlined how to accomplish that goal.

Success to Date

Benefits to the City from implementing the 1999 LAP have been wide-ranging and include air pollution reduction, reduced waste in the landfill, increased support for local businesses and the economy and generally improved quality of life. Below are highlights from specific measures identified in the 1999 LAP that have now been implemented:

Conversion of Traffic Signals to Energy Efficient Light-Emitting Diodes

This action was ranked the highest priority for implementation in the LAP. The conversion of red and green signals to LEDs saves over $110,000/year in electricity and maintenance costs, with an initial capital cost of $370,000, for a 3+ year payback.

Climate Wise Business Outreach

The Fort Collins Climate Wise Program, a voluntary business outreach program, was initiated in 2000 and has been growing ever since. As of 2007, the 75 partners collectively avoided over 82,000 tons CO_2e in that year alone, and reported over $12.5 million in cumulative cost savings since 2001. The program has now grown to over 80 partners and the greenhouse gas reduction and cost savings are increasing as well.

2004 Update to Residential Building Code

The 2004 energy code update for Fort Collins' residential buildings requires energy efficiency improvements (R-18 walls, low-e windows, more effective furnaces, duct work, right-sized AC systems). These upgrades will save homeowners $90 - $150a year per home in utility costs and will avoid 1.2 – 1.5 tons CO_2e per home per year.

Wind Energy Program

Fort Collins Utilities has offered renewable energy to customers through the wind program since 1998. The wind program went through a rebranding in 2007 to the Green Energy program. By 2007, there were over 1,700 residential and over 110 commercial subscribers, avoiding over 25,000 tons CO_2e in 2007 alone.

Electric Energy Supply Policy

In addition to measures included in the 1999 LAP, the passage of the Electric Energy Supply Policy in 2003 has led to significant greenhouse gas reductions. The targets of the supply policy are:

- Reduce per capita electric consumption 10% from 2002 levels by 2012.
- Reduce per capita demand peak 15%.
- Achieve 15% renewable energy by 2017.

A 2% fee on utility bills funds the energy efficiency and renewable energy programs. Collectively, these rate-based programs have reduced over 63,000 tons CO_2e in 2007.

Addition of a Centralized Recycling Drop-Off Site

A City recycling drop-off facility opened at Rivendell School in March 2002. Approximately 1,400 tons of materials are recycled annually. This results in approximately 1,800 tons CO_2e avoided and provides added convenience to citizens for recycling.

Reporting & Progress

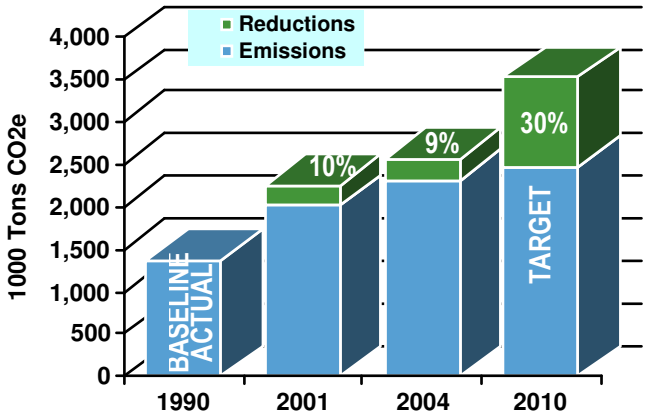
Resolution 99-137 established the original greenhouse gas goal and called for a biennial report to track progress and identify additional greenhouse gas-reducing activities that merit consideration, in recognition of changing scenarios and advances in technology. Several biennial climate status reports have been completed.

The amount of greenhouse gas emissions avoided has grown steadily, yet total citywide emissions have continued to grow as well.

Figure 3 - Biennial Climate Protection Status Reports

Report	Released	Tons CO2 avoided in year	% Reduction
2000 Climate Protection Status Report	April 2001	190,000 tons CO_2e avoided in 2000	9%
2001/2002 Climate Protection Status Report	August 2003	237,000 tons CO_2e avoided in 2001	10%
2003/2004 Climate Protection Status Report	November 2005	241,000 tons CO_2e avoided in 2004	9%
2005/2006 Climate Protection Status Report	June 2008	245,000 tons CO_2e avoided in 2006	8%

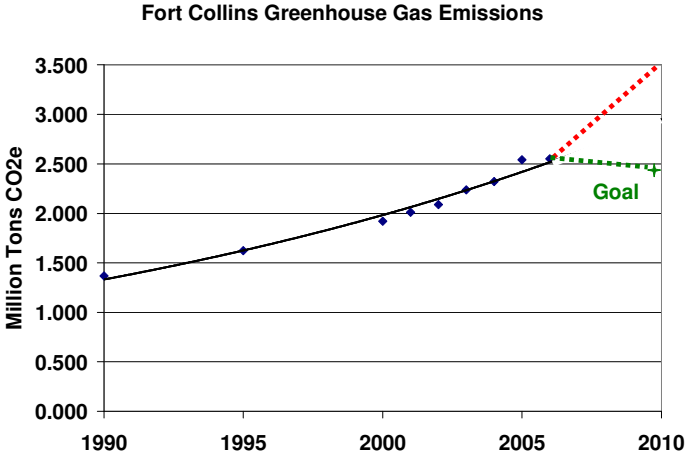
Figure 4 - Fort Collins Progress Reducing Greenhouse Gas Emissions Through 2004



Not on Track to Meet the 2010 Goal

Following the completion of the 2005 emissions inventory, it became apparent that Fort Collins was not on track to meet the 2010 goal, as 2005 emissions exceeded the 2010 goal threshold.

Figure 5 - Fort Collins Greenhouse Gas Emissions



One of the fundamental reasons Fort Collins is not on track to meet the 2010 goal is that the 1999 ***Local Action Plan to Reduce Greenhouse Gas Emissions*** included a few large strategies that were not implemented. Three large strategies were not directly within local control (Denver Commuter Rail, More Stringent Vehicle Fuel Efficiency Standards and Landfill Methane Capture), and one strategy was not met (VMT Growth Rate Not Exceed Population Growth Rate). Together, these four strategies represented over 50% of the total reduction strategies contained in the original LAP.

The consequence of including strategies not in local control in the 1999 LAP underscores the reason the current Climate Task Force is focusing on strategies that are within local control.

Additionally, the original LAP did not establish interim milestones by which to assess progress on the 2010 goal. While early biennial climate status reports identified strategies for implementation in the next budget cycle, projections of these new or revised strategies out to 2010 were not done. Some of the additional strategies were only partially implemented or were not implemented. Consequently, Fort Collins drifted off track to meet the 2010 goal, despite successful implementation of a number of measures.

Figures 6 and 7 further illustrate the discrepancy between planned reductions and achieved reductions, by category.

Figure 6 - Planned Emissions Reductions in 1999 LAP, by Category

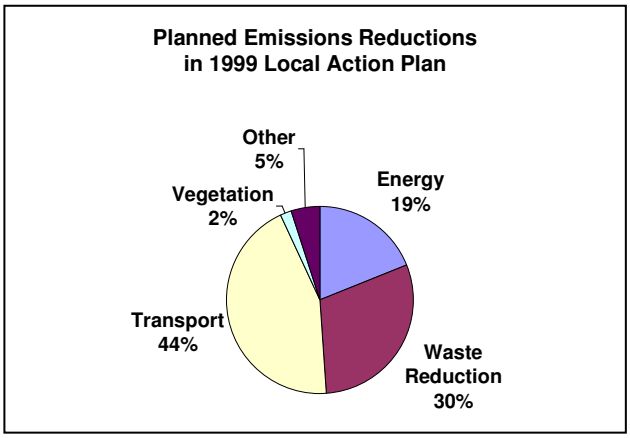
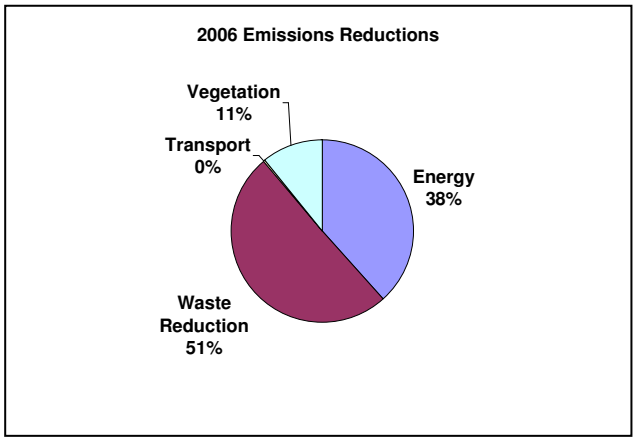


Figure 7 - 2006 Implemented Emissions Reductions



New Greenhouse Gas Goals

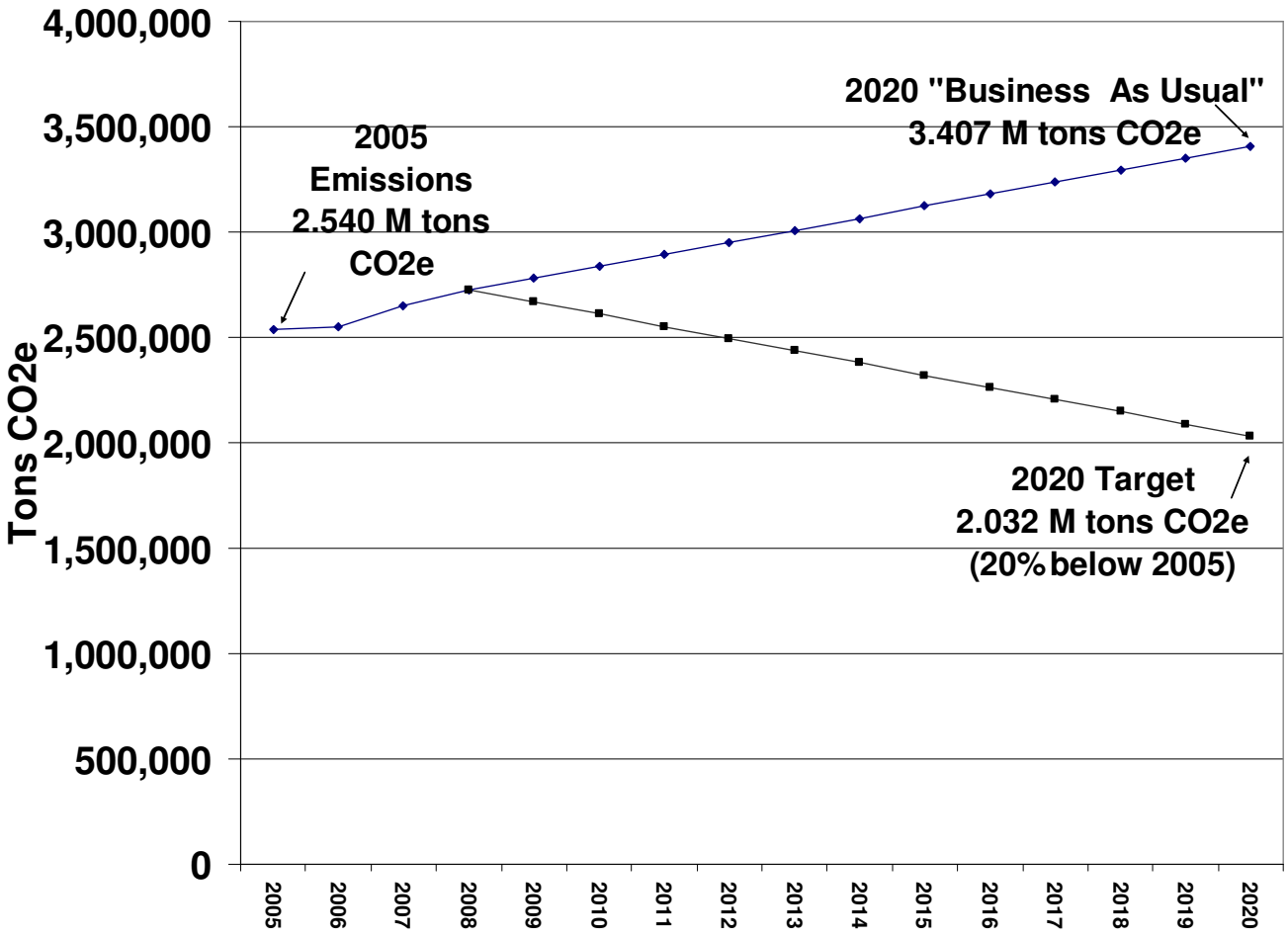
In May 2008 Fort Collins became the first municipality in Colorado to adopt the same greenhouse gas reduction goals that have been set for the State of Colorado:

- 20% reduction below 2005 level by 2020
- 80% reduction below 2005 level by 2050

The 2020 emissions target is 40% below the predicted 2020 "Business As Usual" level.

Resolution 2008-051 also established the intent to achieve the emissions level identified under the original 2010 goal by the year 2012.

Figure 8 - 2020 Fort Collins Greenhouse Gas Reduction Goal



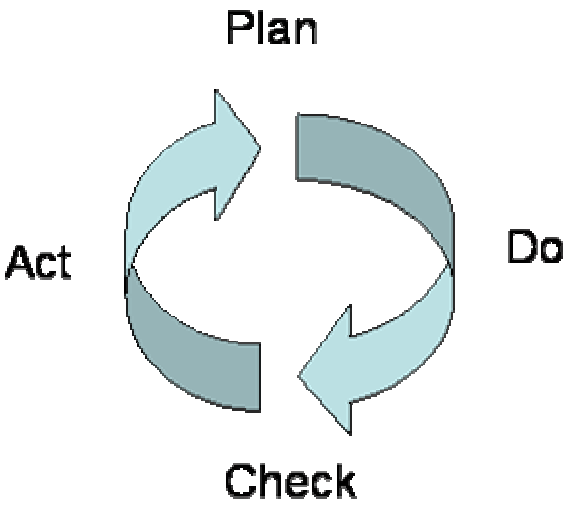
Climate Task Force

Climate Task Force Formation

Following completion of the 2005 emissions inventory, it became apparent Fort Collins was not on track to meet its 2010 emissions target. A local community group, the Fort Collins Sustainability Group, approached City Council in the Fall of 2006, asking that efforts be undertaken by the City to update the plan.

The effort to update the plan follows the classic model of Continuous Quality Improvement illustrated below.

Figure 9 - Continuous Quality Improvement Model



Plan: Plan ahead for change; develop 1999 Local Action Plan to Reduce Greenhouse Gas Emissions.
Do: Execute the plan; implement climate protection actions in 2000-2007.
Check: Study the results; compile Biennial Climate Status Reports.
Act: Take action to improve the process; formation of 2007 Climate Task Force.

In March 2007 Fort Collins City Council passed Resolution 2007-015, approving the formation of a task force to address the issue. Specifically, the resolution stated that the City Manager shall appoint a task force of citizens, boards and commissions and City staff to:

- Solicit input from the public and boards.
- Develop an updated plan that describes the steps Fort Collins could take to meet the 2010 target.
- Include measures in the updated plan to promote renewable energy, energy efficiency, transport efficiency and waste reduction.
- Base recommendations on the most useful and defensible resources, including any relevant information from the Colorado Climate Project.
- Provide recommendations on how the City should develop a future direction for climate protection after 2010.

The Climate Task Force (CTF) was convened in May 2007, consisting of 12 members representing key community organizations and stakeholders in local climate protection efforts.

Findings

Through its investigation into climate protection in Fort Collins, the CTF has made the following findings:

- The Fort Collins community has demonstrated its leadership on the issue of climate protection and should continue to act from a position of leadership and focused intent so as to inspire other communities across the region, state and globe to likewise step up to share in the solution.

- The community will realize tremendous ancillary economic, environmental and social

benefits when taking responsible steps to combat climate change. Accordingly the goal and plan should actively pursue and manage these benefits including but not limited to economic vitality, community cohesion, societal and individual health, improved air quality and state and national recognition.

- The City of Fort Collins government should play a special role in energizing the community by first leading by example in greening its own operations, then by establishing policy directions that will lead the community to a sustainable future, and most importantly by inspiring community involvement.

- Fort Collins is fortunate to have a number of organizations leading sustainability efforts including Poudre School District, Colorado State University and the wide array of Climate Wise partners that have publicly committed to voluntarily reduce their organization's greenhouse gas emissions. For perspective, the Climate Wise Program represents the city's top employers (representing 12,000 employees) and the city's top energy users (representing approximately one third of Fort Collins Utilities' total annual electricity delivered). Building collaborations and sharing experiences with other leaders in the community and region will be integral to achieving success.

- Based on scientific evidence, forecasts and models under different scenarios of action, the CTF believes that the local goal should target an 80% or more reduction in our greenhouse gas emissions inventory by mid-century in order for Fort Collins to perform at a level consistent with global requirements for reversing the effects of climate change.

- In the end, we must come together as a community, a state, a nation and a globe to dedicate ourselves to the serious task of addressing climate change while not losing sight of the fact that we can make a difference and leave the world a better place for future generations.

Vision Statement

For context and to inspire the change that will be needed to meet the greenhouse gas policy goal(s) that City Council chooses, the CTF recommends that a clear vision be established. This vision can create a common understanding among the wide range of participants needed to meaningfully address climate change in Fort Collins and reduce the risk of climate plans drifting off course.

It is necessary to acknowledge the broader topic of sustainability when developing a vision around climate. Sustainability involves meeting the needs of the present without jeopardizing the ability of future generations to do the same. In other words, living off the interest of the earth, not the capital itself. The process to be increasingly sustainable addresses known issues of major social, economic and environmental importance. Climate change is one of these issues that will have major impact on the world and on the Fort Collins community, if steps are not taken to address it.

The CTF offers the following example vision statement for consideration.

Fort Collins will be a carbon neutral, environmentally sustainable, economically healthy community that offers its citizens a high quality of life. We will build on our culture of 'heroic pragmatism' to lead by example and do our part to thwart the known global environmental threat of climate change. We are inspired to action now so that as future generations look back on this period, they too can be inspired and know that we did everything in our power to create a future world that is thriving, vibrant, sustainable and full of possibility.

Guiding Principles

The CTF also developed the following principles that it used to guide the development of their recommendations:

- The City of Fort Collins must lead by example in policy-making and implementation.
- Embrace the opportunity to tap into the unique combination of innovation, creativity and technical expertise that abounds within the Fort Collins community to develop long-term sustainable solutions.
- Address all aspects of the challenge including emissions source categories (electricity, transportation, natural gas and municipal solid waste) and user sectors (residential, commercial and industrial).
- Engage all sectors, including large organizations within the community that can provide leadership and influence.
- Focus on action but use goals as guidance to develop plans.
- Ensure that greenhouse gas reduction strategies consider technical, economic, political and social feasibility, and be reasonable and prudent.
- Identify and factor the multiple co-benefits of strategies into decision-making.
- Develop strategies that promote economic vitality and prioritize investments into our community.
- Identify interim goals, milestones and reporting metrics in implementation plans.
- Commit to and institutionalize regular reporting to track progress and determine whether course corrections are needed.

Process

The CTF met 17 times between May 2007 and May 2008, in addition to a total seven subcommittee meetings of the Cost-Benefit, Outreach and Energy subcommittees. The process was facilitated by Art Bavoso of Third Sector Enterprises. Technical analysis and project management consultation was provided by Judy Dorsey of The Brendle Group. Project coordination was provided by the City of Fort Collins Natural Resources Department.

At the second meeting, the CTF developed an operational definition that success in meeting the 2010 goal would be best addressed by developing a plan to reduce greenhouse gas emissions by 1.1 million tons of CO_2e by 2010.

This is the same level of 2010 emissions reductions called for in the *1999 Local Action Plan*. This interpretation of the 2010 goal was selected in light of the challenge of accurately determining "predicted 2010 levels".

At the outset of the process, a list of existing actions that reduce greenhouse gas emission was compiled and the GHG benefits of these actions, if continued at existing levels, was estimated for the year 2010.

The CTF then gathered ideas for greenhouse gas reduction strategies from numerous sources including the Colorado Climate Action Panel's recently released recommendations (see http://coloradoclimate.org/Climate_Action_Panel.cfm); a public open house on June 26, 2007; City boards and commissions; experts; examples from other climate action plans; the CTF itself; and City staff. A list of 170 ideas was compiled from these sources. This list was collapsed down to 70 unique ideas. Measures (strategies) deemed infeasible within a 2010 timeframe were removed from the list. Brief text descriptions were developed and The Brendle Group qualitatively evaluated the 70 ideas as having "High", "Medium", or "Low" potential for Tons CO_2e reduced, implementation cost, savings and feasibility by 2010. (See Appendix A for the original list of 170 ideas and the collapsed "Tier I" list of 70 unique measures.)

Armed with this information, the CTF multi-voted to select the top one-third of measures that would receive quantitative analysis. These Tier II measures were quantitatively analyzed by The Brendle Group, with assistance from City staff and Platte River Power Authority. Two scenarios were developed for most strategies; a conservative scenario and an aggressive scenario. The CTF then discussed and ultimately voted on the measures individually to select the level of implementation (Conservative, Aggressive, or other). See Appendix B, Table B-1, for a summary of CTF votes on individual measures.

The result was the Short-Term Provisional Package that reduced 889,000 tons of CO_2e in 2010, including both new and existing measures. The Short-Term Provisional Package was presented to City Council at a work session on February 26, 2008, along with the costs and savings. At that time, Council decided to revisit the appropriateness of the 2010 goal.

To aid City Council in considering new goal options and in fulfillment of its second mandate to "make recommendations on how the City should develop a future direction for climate protection after 2010", the CTF recommended the City adopt the statewide goals to reduce greenhouse gas emissions 20% below 2005 levels by 2020 and 80% below 2005 levels by 2050. They also recommended that Council adopt a milestone to reduce emissions to 2.466 million tons or lower by the end of 2012. Achieving 2.466 million tons of emission is another interpretation of the 2010 goal. In essence, the CTF recommended that the 2010 goal be moved out to the year 2012.

Following a City Council work session on March 25, 2008, to discuss the goals, City Council adopted all these goals on May 20, 2008.

The CTF revisited its Short-Term Provisional Package in light of the new goals. The CTF retained all of the originally recommended concepts, but made some adjustments to implementation details. They also recommended several long-term reduction strategies to help make further progress on the 2020 goal. The long-term strategies were not quantitatively analyzed however.

The CTF final recommendations address how the 2012 milestone can be met and how significant progress towards the 2020 goal can be achieved.

Public Input

During this process, citizen input was gathered from several City advisory boards including the Air Quality Advisory Board, the Natural Resources Advisory Board, the Economic Advisory Commission, the Electric Board, the Transportation Board and the Affordable Housing Board.

Two public open houses were held. The first was in June 2007 to kick off the project and gather citizen ideas on reduction strategies. The second open house was held in February 2008 to gather citizen feedback on the Short-Term Provisional Package.

The CTF maintained a Web page at fcgov.com/ctf throughout the process where many of their materials are posted. The Web page provided an on-line comment form for the public to use throughout the process. The CTF also had a public comment opportunity for the first 10 minutes of every meeting. Pubic input from all these sources was provided to the CTF.

Next Steps

This CTF report was submitted to the Fort Collins City Manager in June 2008. During the summer of 2008, City Council will hold a work session to discuss the CTF recommendations and any additional staff input. City Council adoption of an updated climate plan that will, at minimum, identify the steps Fort Collins can take to meet the 2012 milestone, is anticipated sometime during the Fall of 2008.

Fort Collins Greenhouse Gas Inventory and Projections

An important first step in developing a plan to reduce greenhouse gas emissions is to understand current sources and estimate future emissions. Understanding emissions sources can help guide the selection of reduction strategies. This inventory reflects the two most common human-caused greenhouse gases; carbon dioxide and methane.

The inventory looks at total gross emissions; it does not subtract carbon sequestration by vegetation or soils. It considers consumption-based emissions within the energy sector by evaluating community usage of electricity and natural gas, rather than incorporating total electricity production at the Rawhide Energy Station. The emissions inventory does not factor in the energy needed to manufacture materials, products and food that is transported into and used in Fort Collins. The inventory methodology follows generally accepted principles and guidelines established by ICLEI and represented in the Clean Air Climate Protection Software. As inventory methodologies evolve, Fort Collins may need to update its' inventory methods.

In 2007 Fort Collins generated approximately 2,653,000 tons of carbon dioxide equivalent (CO_2e[1]). The largest source is electricity consumption, followed by the transportation sector and then natural gas consumption.

[1] CO_2e = Carbon dioxide equivalent. Since methane is at least 21 times more potent a greenhouse gas than carbon dioxide, the relative global warming potential of CO_2 = 1 and of methane = 21. When methane and carbon dioxide emissions are summed, they are referred to as CO_2e, indicating methane has been converted to CO_2 equivalent.

Below, Figures 10 and 11 show 2007 emissions by emissions source and user category.

Figure 10 - Fort Collins 2007 Greenhouse Gas Emissions, by Source

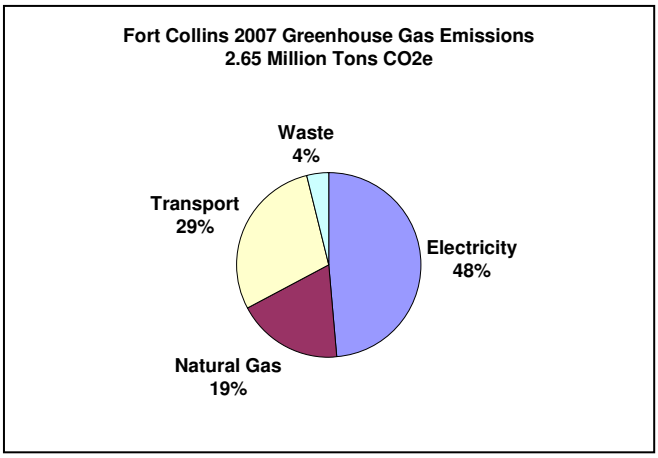
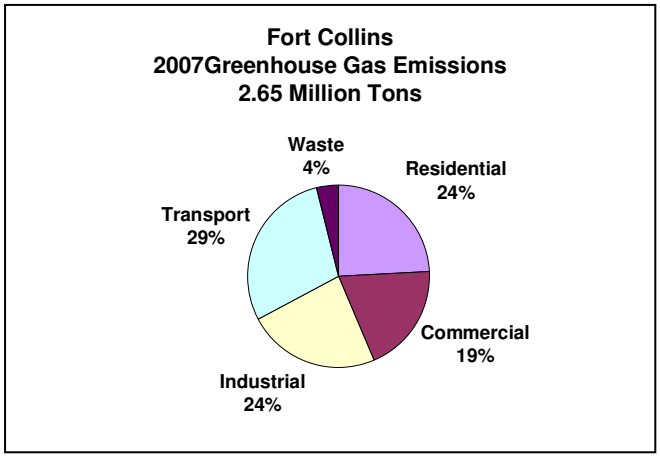


Figure 11 - Fort Collins 2007 Greenhouse Emissions Sources by Use Sectors



Emissions have grown by 94% since 1990, when community-wide emissions were 1,366,000 tons CO2e. Figures 12 and 13 on the next page compare 1990 and 2007 greenhouse gas emissions by source. The electricity sector contribution grew from 42% in 1990 to 48% in 2007, while the natural gas percentage dropped from 25 % to 19% of citywide GHG emissions for the same period. The relative increase in electricity generation's contribution to emissions may be at least partially attributed to

the fact that less hydroelectric power is used now as part of the electricity generation mix than in 1990, leading to higher average emissions per kWh generated. The transportation sector decreased slightly in relative contribution of total GHG emissions from 1990 to 2007.

Figure 12 - Fort Collins 1990 Emissions

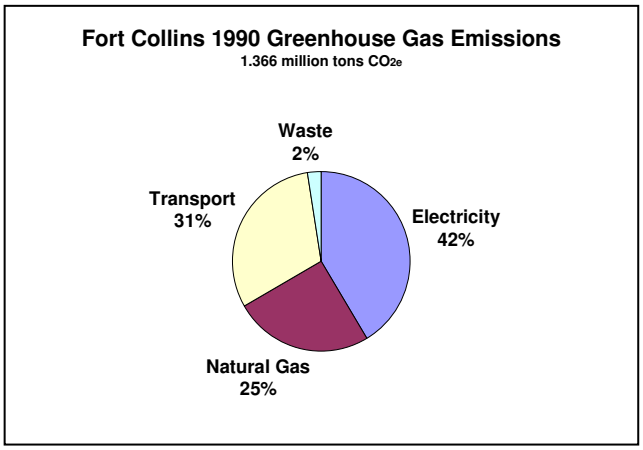


Figure 13 - Fort Collins 2007 Emissions

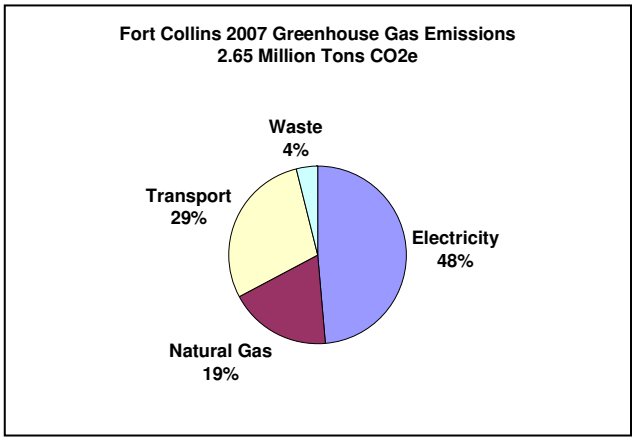


Figure 14 - Fort Collins Greenhouse Gas Emissions and Projections to 2020

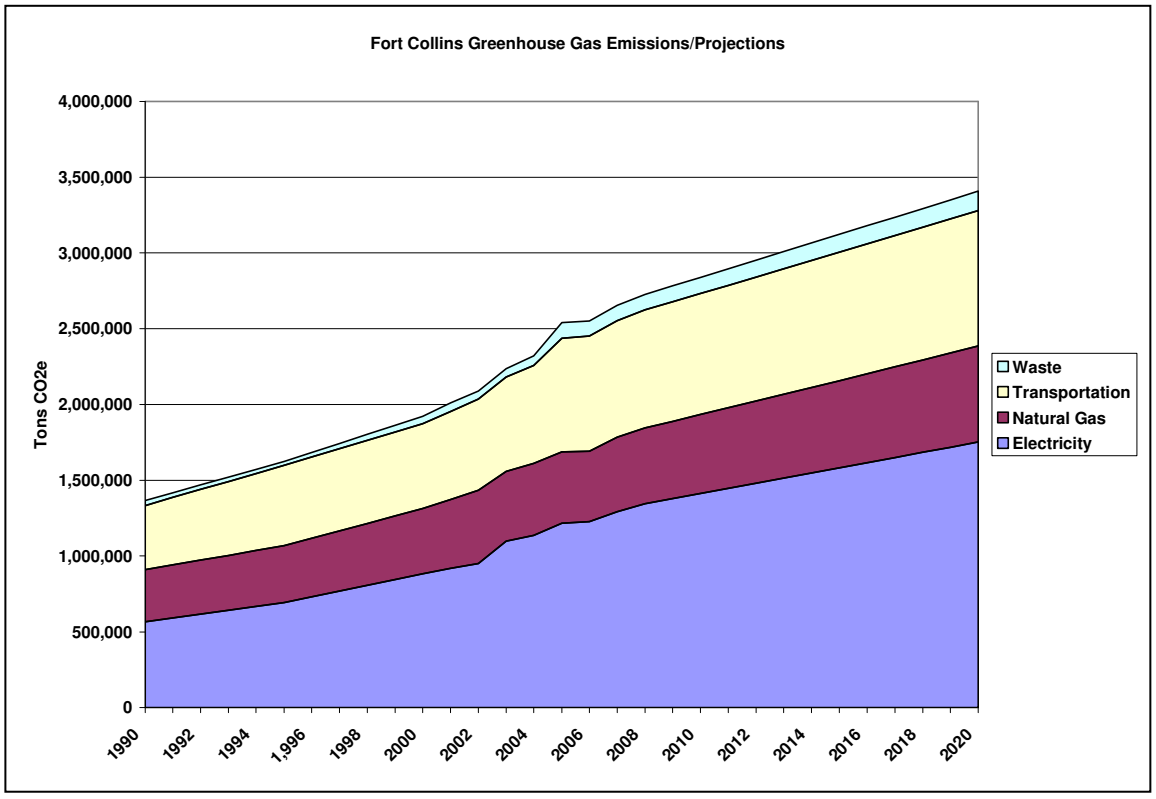
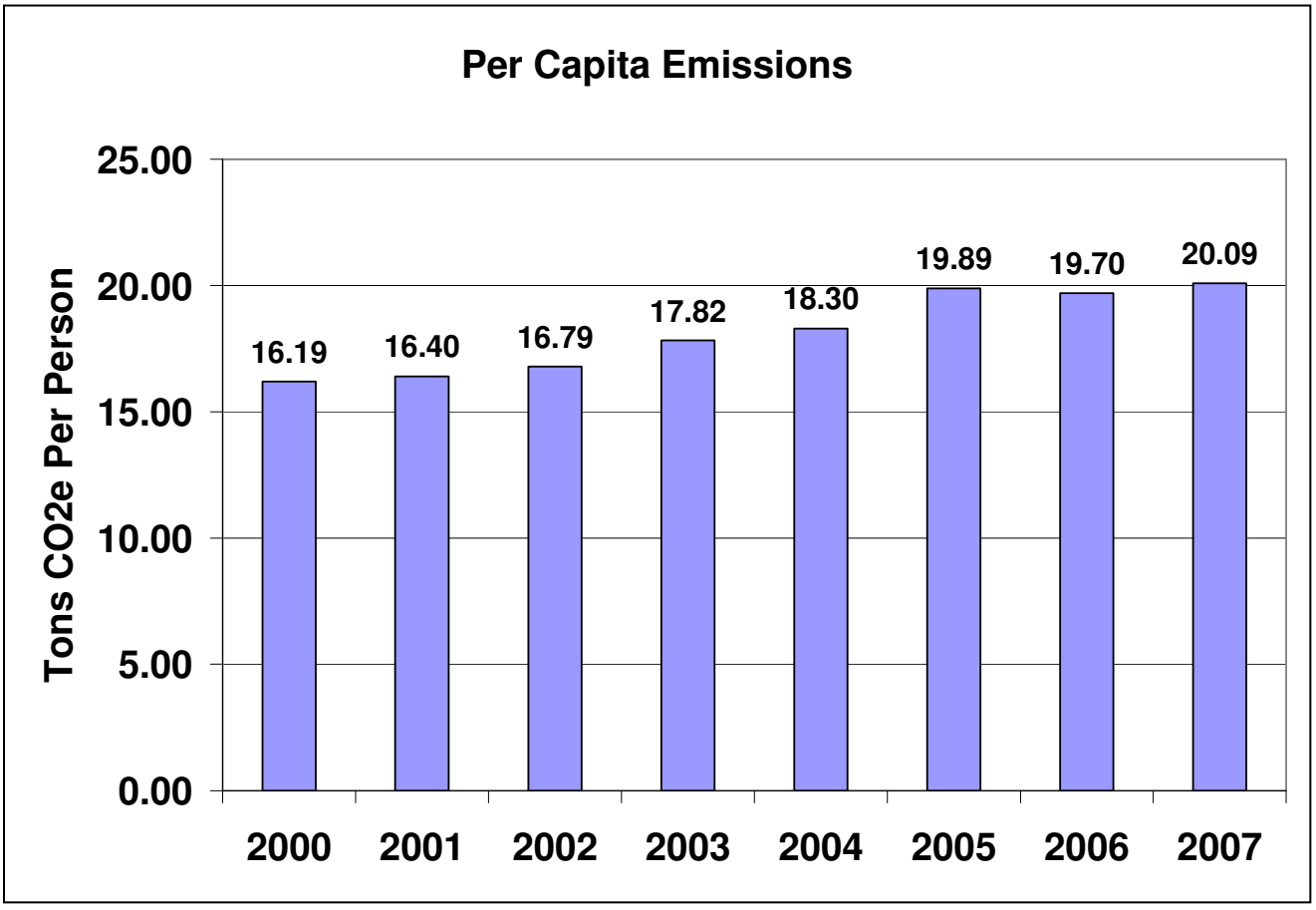


Figure 15 illustrates that Fort Collins' emissions growth is not solely attributable to population growth, as there has been a steady growth in per capita emission as well. The exception is 2006. The 2006 per capita emissions drop slightly below 2005 levels. This can be attributed to reductions in natural gas usage and the amount of solid waste generated.

Figure 15 - Fort Collins Per Capita Greenhouse Gas Emissions



CTF Recommendations

Existing Measures

Any effort to identify new emission reduction strategies should start with an analysis of existing actions to reduce emissions. Fort Collins has been working to reduce its greenhouse gas emissions since 1999, when the original reduction goal was adopted. The CTF report recognizes the role that existing efforts, if continued, will have on reducing future emissions. It considers only the benefit of these actions above 2007 levels, as projected out to the year 2010 under current plans and anticipated growth rates.

Figure 16 - 2010 Anticipated Benefits of Existing Actions

Measure Name	TONS CO2e Reduced Above Current Levels
Renewable Energy Programs	18,000
Climate Wise Program	16,000
Business and Residential Recycling	16,000
Energy Efficiency Programs	15,000
Electronics Waste Ban	6,000
State-mandated Natural Gas Efficiency Programs (HB1037)	5,000
2004 Residential Energy Code	3,000
FortZED Jumpstart	3,000
PSD Greenhouse Gas Goal	2,000
Commercial Energy Code	1,000
VAN GO	300
Mason Corridor	300
Test Ride Transit and FC Bikes	100
TOTAL (After double-counting removed)	**77,000**

New Short-Term Measures Summary

The following 16 recommendations, if fully implemented, will:

- Demonstrate our community's commitment to address the serious problem of climate change
- Lower our emissions to at least 2.466 million tons CO2e by 2012.
- Place Fort Collins on the path to meet 2020 goal.

These measures address all major sources of greenhouse gas emissions (electricity use, natural gas use, transportation and waste generation). They also engage all sectors of the community (residents, businesses, governments and other organizations).

Figure 17 on the next page presents a summary of the 16 short-term measures, their GHG benefits predicted for 2010 and 2012 and their cost-effectiveness.

Figure 17 - Summary of Proposed Short-term New Measures

Start (per Analysis)	Fully Imple-mented by	Measure name	Tons CO2e* Reduced in 2010	Tons CO2e Reduced in 2012	Individual Cost Effective-ness ** (2012)	% of CTF New Package Benefit (2012)
COMMUNITY LEADERSHIP						
2009	2010	Expand Climate Wise Program	132,000	132,000	$0.3	20.2%
2009	2010	Government Organizations Set GHG Goals	22,000	22,000	($2)	3.4%
2009	2010	Community Climate Challenge	9,000	11,000	($98)	1.7%
2009	2013	Local Carbon Offset Program	58,000	62,000	$39	9.5%
RECYCLING						
2009	2011	Push to meet 50% Waste diversion goal	226,000	226,000	$33	34.6%
ENERGY EFFICIENCY						
2009	2011	Increase Energy Efficiency Programs Above Existing Levels	8,000	17,000	($1)	2.6%
2009	2013	Residential Electric Rate Structure	17,000	18,000	$3	2.8%
2009	2013	Low Cost Home Energy Assessments	5,000	15,000	($59)	2.3%
2009	2015	Smart Meter Program	11,000	22,000	($3)	3.4%
2010	2013	Natural Gas Energy Conservation	2,000	7,000	$17	1.1%
2011	2013	Time-of-Sale Energy Conservation Ordinance	0	11,000	($112)	1.7%
RENEWABLE ENERGY						
2011	2011	15% Renewable Energy by 2011	0	92,000	$63	14.1%
2008	2010	Incentives for Individual Renewable Energy Projects	2,000	2,000	$378	0.3%
TRANSPORTATION EFFICIENCY						
2009	2013	Reduce Vehicle Miles of Travel	12,000	12,000	($238)	1.8%
2008	2013	Modern Roundabouts	1,000	1,000	($282)	0.2%
2008	2013	Incentives for Low Emission Vehicles	3,000	3,000	($232)	0.5%
TOTAL (with double-counting removed)***			390,000	527,000	$15	1.00

* CO2e (carbon dioxide equivalent) represents both carbon dioxide and methane, which is at least 21 times more potent a greenhouse gas than carbon dioxide.

** Cost-effectiveness is calculated by dividing the total measure net cost by 2020 by the total tons avoided by 2020. The cost-effectiveness value facilitates relative comparison among measures. A positive cost-effectiveness indicates a net cost to the community, while a negative cost-effectiveness indicates a net savings. Revenue lost to Fort Collins Utilities from increased energy efficiency was considered in the costs.

*** Double-counting between measures with overlapping benefits was addressed as follows:
Climate Wise – 50% overlap with other measures
Gov. Orgs Set GHG Goals – 75 % overlap
Local Carbon Offset Program – 62% overlap
Time of Sale Conservation Ordinance – 50% overlap.

Emissions and Reductions in the Energy Sector

In 2007 the energy sector of Fort Collins greenhouse gas emissions constituted 67% of total emissions, or 1,783,000 tons CO_2e. Electricity use comprised 47% of emissions, while natural gas comprised 19%. The majority of these energy sources are used for cooling, lighting and heating buildings. 15 of the 16 short-term recommendations in this report address energy use in some fashion. If fully implemented, these strategies would reduce 223,000 tons CO2e each year by the end of 2012.

Emissions and Reductions in the Transportation Sector

In 2007 the transportation sector of Fort Collins greenhouse gas emissions constituted 29% of total emissions, or 770,000 tons CO_2e. Achieving significant greenhouse gas reductions from the transportation sector will require adequate time and ability to fund transportation and land use plans. A number of important long-term transportation strategies are identified in this plan but not quantified. Three short-term recommendations address transportation. If fully implemented, these strategies would reduce 24,000 tons CO_2e/year by the end of 2012.

Emissions and Reductions in the Waste Sector

In 2007 the waste sector of Fort Collins greenhouse gas emissions comprised 4% of total emissions, or 101,000 tons CO_2e. The strategy to "Push Towards the 50% Waste Diversion Goal" contains 13 sub-strategies involving both residential and commercial sectors. If fully implemented, these 13 sub-strategies would reduce over 226,000 tons CO2e. This high amount of greenhouse gas reduction takes into account not only reduced methane generation at the landfill, but reductions in upstream energy loads that occur when the need for new manufactured products or materials is reduced through reuse and recycling practices locally. These upstream energy requirements are not considered in the greenhouse gas inventory, resulting in a large emissions reduction benefits from recycling while trash generation is a very small contributor to the inventory.

Figure 18 - Emissions Sectors

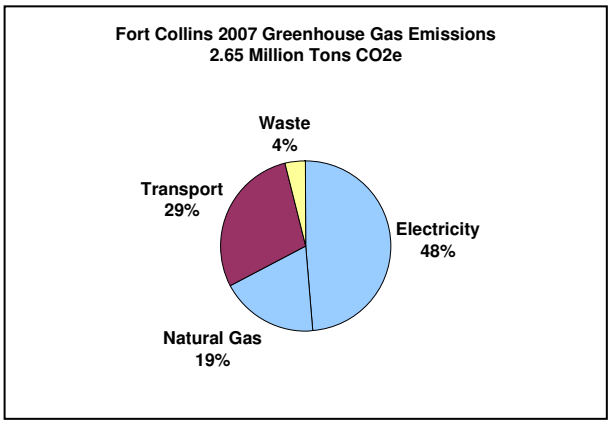
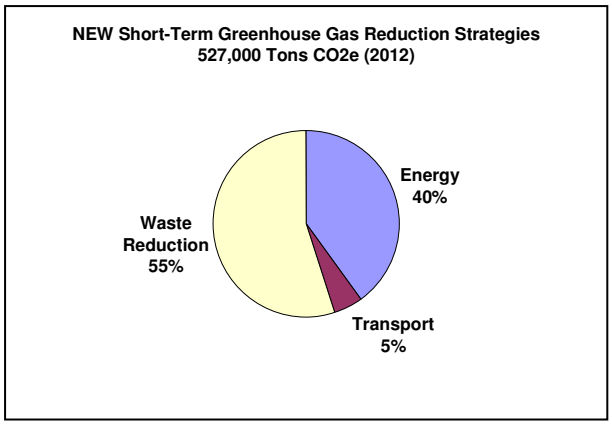


Figure 19 - New Measure Reduction Sectors



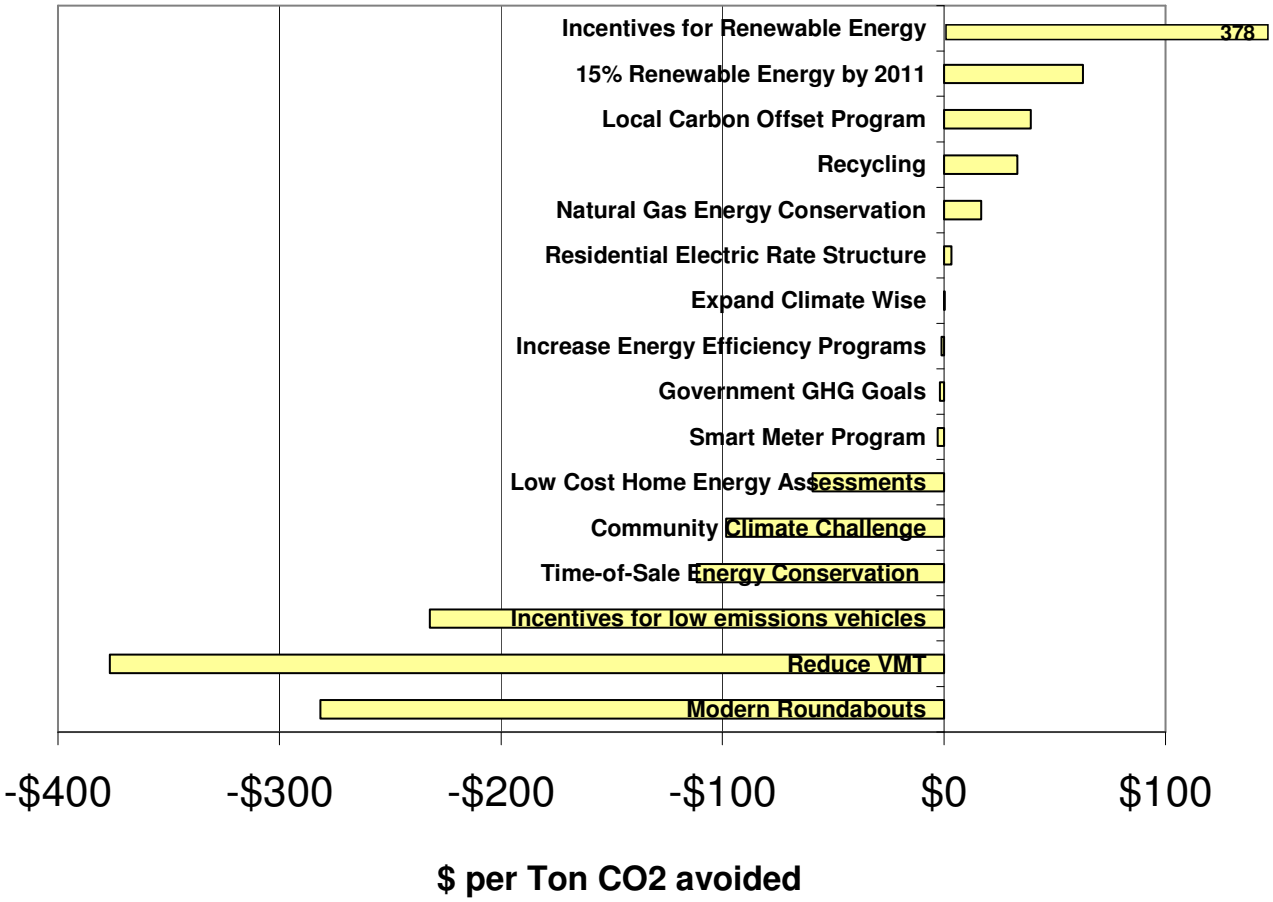
Cost-Effectiveness

The weighted cost-effectiveness of all the short-term strategies - as estimated based on 2012 levels of implementation - is $15/ton CO_2e avoided in that year. The weighted cost-effectiveness of the package in 2020 increases to only $5/ton CO2 avoided, because many CO_2e benefits compound with time.

Many of the short-term strategies recommended by the CTF are highly cost-effective. Others such as the Voluntary Local Carbon Offset Program intend to tap into an existing local market for carbon offsets and redirect that revenue back into the community.

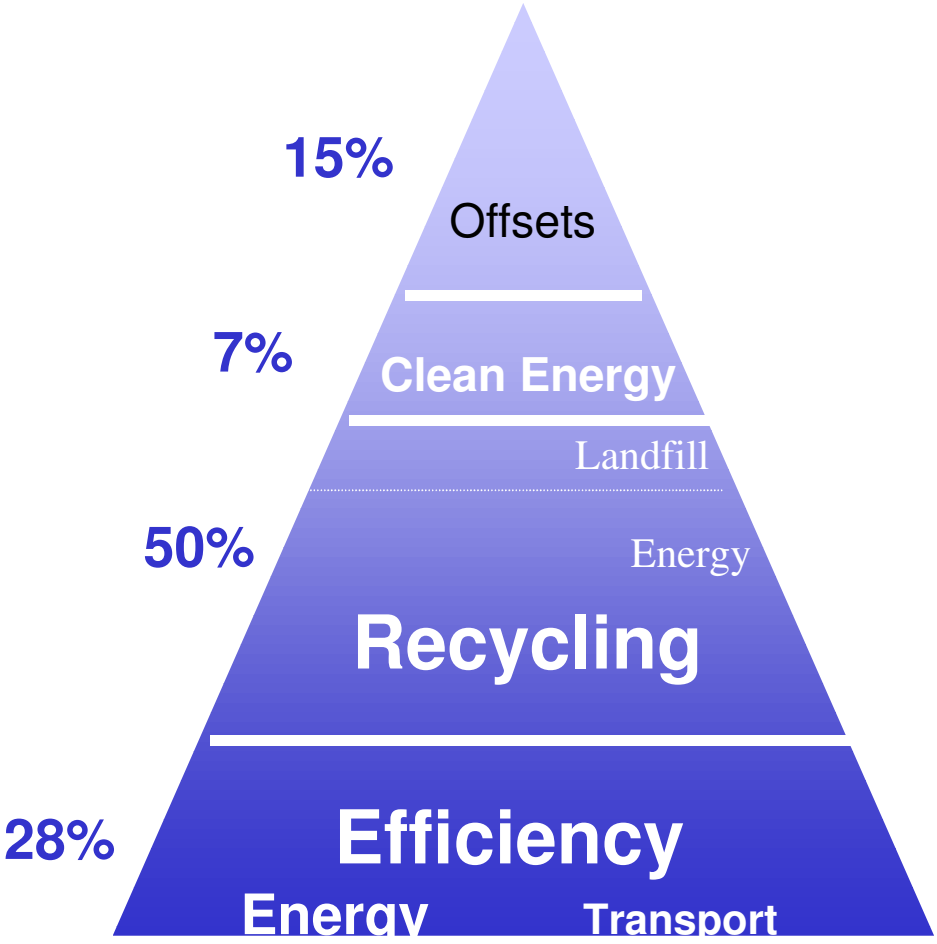
The cost-effectiveness estimate for the recycling strategies is likely to be conservative. The strategy to increase renewable energy to 15% by 2011 attempts to balance the value of investing in delivered wind energy now, before prices escalate, with the value of achieving more clean energy somewhere on the electricity grid through purchasing Renewable Energy Certificates at a lower cost.

Figure 20 - Cost-Effectiveness Ranking of Short-Term Measures



The recommended strategies build upon a base of increased energy efficiency, recognized as the most cost-effective approach to reduce greenhouse gas emissions. Yet in order to achieve substantial reductions in emissions over the next few years, they also include investments in recycling programs, clean energy programs and provide the opportunity to tap into large voluntary carbon offset markets. CO_2e benefits from recycling include reduced methane generation at the landfill and reduced energy consumption when virgin materials are not used to manufacture new products.

Figure 21 - Short-Term Strategies in the Carbon Reduction Priority Pyramid



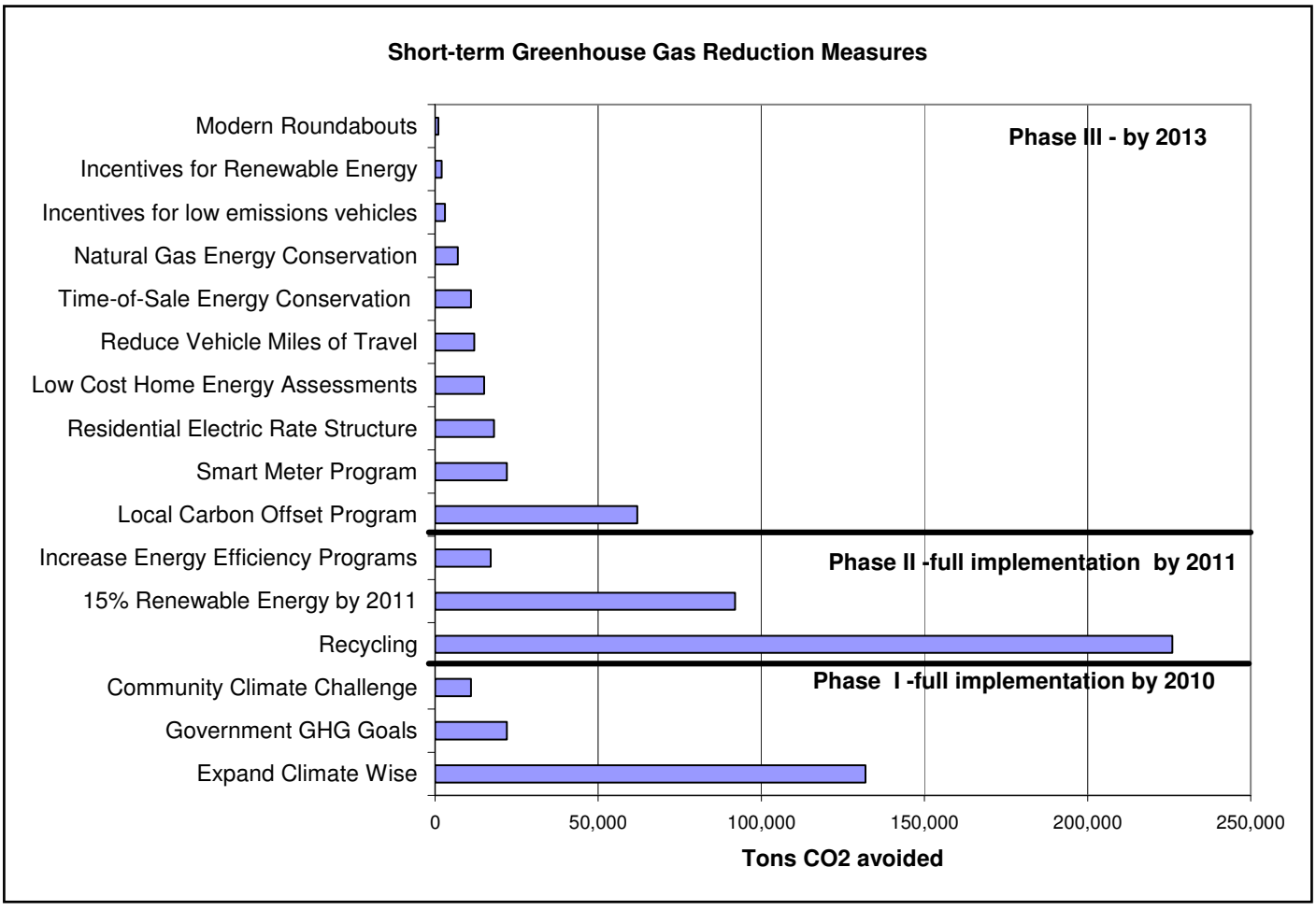
Phasing Recommendations

The CTF has recommended implementing the short-term strategies in three phases. Phase I includes the expansion of Climate Wise, the Community Climate Challenge and Local Governments Setting Greenhouse Gas Goals. Completion of Phase I would be by the end of 2010. These positive, voluntary approaches start by empowering citizens and businesses to reduce emissions by raising awareness and offering voluntary opportunities and incentives to reduce emissions. The primary focus is on increasing energy efficiency, typically the most cost-effective approach to reduce emissions.

Building upon these successes, Phase II, to be completed by the end of 2011, includes increased electric energy efficiency programs, reducing waste and increasing clean energy sources.

Phase III includes all other short-term strategies, which are to be in place by the end of 2013. To achieve full implementation by 2013, planning and even implementation of many of these strategies will need to start in the near future.

Figure 22 - CTF Recommended Phasing of Short-Term Reduction Strategies



Short-Term Measures In Detail

The primary short-term strategies are discussed in more detail on the following several pages.

Expand Climate Wise Program

Climate Wise is a successful voluntary business outreach program. It offers technical assistance and recognition to partners who reduce their emissions and report progress. This measure proposes to increase Climate Wise Program savings from 82,000 tons CO2e avoided in 2007 to 232,000 tons in 2010 by adding 130 new partners above 2007 levels and providing additional resources to assist existing partners implement and report more projects. This measure adds new personnel and resources to provide direct hands-on assistance for partners. As more partners and resources are added, the efficiency of the program will increase even further, due to economies of scale.

Greenhouse Gas Benefit

132,000	Annual Tons CO_2e avoided in 2012
20.2%	2012 Short-term New Measures
1,520,000	Cumulative Tons CO_2e avoided in 2020
$0.30/ton	Net Cost-Effectiveness

Expected Participation Level

130 new Climate Wise partners above the 2007 levels of 70 partners, for a total of 200 partners in 2010.

Relationship to Other Programs

The Colorado Climate Action Panel recommended implementation of a state-wide voluntary business program offering free technical assistance and continuous support as a means of reducing carbon emissions from energy, water, transportation and solid waste, emulating Fort Collins' successful Climate Wise Program.

Government Organizations Set Greenhouse Gas Goals

This measure recognizes the importance of leading by example. It calls for Colorado State University, City of Fort Collins and Larimer County to set goals to reduce greenhouse gas emissions from their own operations and achieve progress on the goal. These three organizations are members of the Climate Wise Program and have begun discussing internal goals.

Greenhouse Gas Benefit

The analysis assumes that these three organizations achieve a 10% reduction in greenhouse gas emission below the 2006 baseline level by 2010. Analysis costs and savings are based on historic Climate Wise data showing an average initial cost to reduce 1 ton of CO2e is $18, and the average savings per ton reduced is $20.

22,000	Annual Tons CO_2e avoided in 2012
3.4%	2012 New Short-term Measures
251,000	Cumulative Tons CO_2 e avoided in 2020
($2/ton)	Net Cost-Effectiveness – SAVINGS

Relationship to Other Programs

Poudre School District has already established a greenhouse gas reduction goal in their Sustainability Management System. It is included in the "Existing" measures analysis.

Community Climate Challenge

This measure would develop a "Fort Collins Community Climate Challenge" focusing on a broad-based educational campaign to promote actions to reduce per capita GHG emissions. A key component would be youth focused programs (in-school programs, scouts, youth groups, church groups, services groups, etc.)

Specific school-based activities might include switch-plate ("Turn off the lights!") and poster design contests, Transfort bus and bench

marketing, broader recognition of Poudre School District's "Energy Rules" program, etc. The campaign might be structured around a community "triathlon – reductions in energy, waste and transportation, possibly with separate goals/campaigns for high schools, CSU and the community at-large. An online web page could support this campaign with information, quizzes, links and tracking tools to put a local focus on "reducing your footprint and increasing your green points."

Costs would include media and promotional expenses and support for staffing at the school and community level – details will be determined at a later time. (For initial evaluation purposes, the Community Climate Challenge recommendation was assessed based on the impact of having every household reduce energy use equivalent to replacing two CFLs.)

Greenhouse Gas Benefit

11,000	Annual Tons CO_2e avoided in 2012
1.7%	2012 New Short-term Measures
106,000	Cumulative Tons CO_2e avoided in 2020
($98/ton)	Net Cost-Effectiveness – SAVINGS

Relationship to Other Programs

Many communities are implementing community climate challenges. Denver has proposed a community climate challenge that they believe will achieve 28% of their GHG goal. Burlington, VT, has the "10% Challenge", a voluntary program to raise public awareness about global climate change and to encourage households and businesses to reduce their greenhouse gas emissions by at least 10%.

Develop a Voluntary Local Carbon Offset Program

This measure proposes to develop a voluntary program to identify and fund local carbon-reduction programs and projects. This win-win approach allows all those interested in purchasing carbon offsets to obtain those offsets from local projects, thus redirecting dollars back into our local economy. The measure creates a funding source for those wishing to build local carbon offset projects and enhances local economic development. The measure stops the leakage of revenue that currently leaves our community when people purchase travel offsets, etc.

The analysis is based on the assumption that 5% of Fort Collins households would purchase enough offsets (20 tons CO2) to go "carbon neutral" each year, at a cost of $39/ton.

A May 2007 World Bank report estimates that the U.S. demand for carbon offsets under a voluntary market could increase from 20 $MtCO_2e$ in 2006 to 250 $MtCO_2e$ in 2011(almost a doubling every year). While market analysis data on potential Fort Collins revenue are not available, the recent survey by Fort Collins Utilities suggests that the community is interested in expanded green programs.

Greenhouse Gas Benefit

62,000	Annual Tons CO_2e avoided in 2012
9.5%	Percent of Total New Measures
802,000	Cumulative Tons CO_2e avoided in 2020
$39/ton	Net Cost-Effectiveness

Relationship to Other Programs

In May 2008, the Governor's Energy Office (GEO) plans to start a Colorado Carbon Fund to offer this service. Fort Collins can partner with GEO. In this model, GEO would develop certification standards for new projects, evaluate projects and administer payment collections and disbursements. The City would create and maintain a local identity for the carbon fund, promote the fund and develop and support projects.

Push Towards 50% Waste Diversion Goal

Many successes and improvements to recycling have occurred in recent years. Yet only 25-30% of Fort Collins' waste stream is being diverted from landfill disposal.

In 2006 the *Fort Collins Draft Solid Waste Strategic Plan* was completed to analyze and recommend strategies to help Fort Collins meet its 2010 goal of 50% waste diversion. Several strategies were selected from the long list as having special value for also advancing climate protection efforts. Based on modeled costs, benefits and practical considerations, 13 strategies were selected from this list of 20 as the optimal approach for advancing waste diversion and greenhouse gas reduction. These strategies include:

Residential Customers

- Adopt a requirement for service providers to collect single-stream recycling from residential customers as soon as market trends allow.
- Implement on-going curbside recycling program improvements, including more designated materials and standard options for larger recycling containers.
- Amend Fort Collins Pay-As-You-Throw residential trash rates ordinance so that rate design further enhances waste reduction efforts.
- Start by providing a residential yard waste drop-off site. Provide customers, upon request to their trash haulers, with optional curbside yard waste collection service on a weekly basis. Ultimately, ban yard waste from Fort Collins curbside collection.

Commercial Customers

- Amend Fort Collins PAYT ordinance to include all commercial customers.
- Help form recycling cooperatives for small businesses.

All Customers

- Enhance short-term education around new measures.
- In absence of appropriate private sector facilities, create City-sponsored construction and demolition (C&D) drop-off site.

City Government

- Establish contact preferences to encourage recycling and waste reduction for City C&D jobs.
- The City would encourage private partnerships for constructing multiple community drop-offs to collect more recyclables (paper, glass, etc.).

The CTF recommends that the 2015 level of implementation modeled for the *Fort Collins Draft Solid Waste Strategic Plan* be achieved by 2011.

Greenhouse Gas Benefits

226,000	Annual Tons CO_2e avoided in 2012
34.6%	2012 Short-Term New Measures
1,740,000	Cumulative Tons CO_2e avoided in 2020
$33/ton	Net Cost-Effectiveness

Increase Energy Efficiency Programs Above Existing Levels

The City of Fort Collins' Electric Energy Supply Policy currently has a goal to reduce per capita electricity use 10% below the 2002 levels by 2012. Electricity users are assessed a 1% fee on their bill to pay for energy conservation programs to achieve that goal. Existing 2007 energy conservation programs implemented by Fort Collins Utilities are expected to reduce 0.6% of total electricity usage, on a trajectory to meet the existing goal.

This measure proposes to increase energy

efficiency and consumption reduction above the existing policy by increasing conservation programs to achieve a 1% reduction of total electricity load. One percent load reduction is an industry best practice, and it results in a net savings to program participants.

Greenhouse Gas Benefit

17,000	Annual Tons CO_2e avoided in 2012
2.6%	Percent of Total new Measures
307,000	Cumulative Tons CO_2e avoided in 2020
($1/ton)	Net Cost-Effectiveness - SAVINGS

Relationship to Other Programs

The Colorado Climate Action Panel recommends ramping up electricity and natural gas demand side management (DSM) programs as a cost-effective strategy to reduce emissions, but does not identify a funding approach.

Alternative Residential Electricity Rate Structures to Promote Conservation

In 2007 48% of community wide greenhouse gas emissions came from electricity use, making it the largest source of local greenhouse gas emissions. The residential sector alone uses 485,000 MWh of electricity and produces 24% of the community wide greenhouse gas emissions inventory. This recommendation works in concert with three other residential conservation strategies that are designed to promote energy conservation in homes and save homeowners money.

This strategy proposes to revise the residential electricity rate to promote conservation and potentially raise revenue, with provisions to be developed for low-income households and all-electric homes. Initially the CTF explored a revenue neutral tiered electricity rate structure with low-income provisions. However, when they moved to support a program to install smart meters in homes, they felt this opened up a larger range of rate structures than solely revenue neutral tiered rates.

If the City wishes to pursue this strategy, the Fort Collins Utilities will develop a residential rate structure proposal. Commercial and industrial electricity customers were not considered in this analysis because they already are charged according to their electricity use.

Greenhouse Gas Benefit

18,000	Annual Tons CO_2e avoided in 2012
2.8%	Percent of Short-Term New Measures
235,000	Cumulative Tons CO_2e avoided in 2020
$3/ton	Net Cost-Effectiveness

Relationship to Other Programs

The Colorado Climate Action Panel (2007) recommendations call for tiered electric rates for all customers, starting in 2010 to promote conservation and provide revenue for DSM programs. The Denver Climate Plan (2007) also proposes tiered electric rates for all customers, to encourage conservation and provide revenue for DSM programs.

Offer Low Cost Home Energy Assessments

The Fort Collins Utilities currently offers free energy assessments to local businesses. This measure would offer low cost energy assessment for residences. As analyzed, the cost of the home energy assessment would be split 50:50 between homeowner and the Fort Collins Utilities.

If 600 homes each year received assessments and upgrades, 7,200 homes would be upgraded by 2020, or 13% of the residences in 2020. This measure would result in a net participant savings of $19,000,000 in 2020. Analysis is based on results from Boulder's pilot residential assessment program.

Greenhouse Gas Benefits

15,000	Annual Tons CO_2e avoided in 2012
2.3%	Percent of Short-Term New Measures
324,000	Cumulative Tons CO_2e avoided in 2020
($59/ton)	Net Cost-Effectiveness- SAVINGS

Smart Meters

A smart meter refers to a type of advanced meter that identifies consumption in more detail than a conventional electric meter. Smart meters enable families to see in-home energy use in real-time or in electric displays, track hourly energy usage and reduce their bill by reducing and shifting energy use. Smart meters can also aid a utility by allowing remote meter reading and pinpointing outages. Coupling immediate feedback about home electricity use levels with information on how to reduce energy use and a rate structure to promote conservation, it is conservatively anticipated that smart meters will reduce an average 8% of home electricity use. Estimates of energy conservation potential for smart meters reach as high as 25%.

This measure proposes to have Fort Collins Utilities pay for and install smart meters in homes, allowing flexibility in the start-up installation rate, but achieving complete installation in all homes by 2015. The measure also stipulates required installation of smart meters in all new homes. Energy savings tips for homeowners will also be provided.

Greenhouse Gas Benefit

22,000	Annual Tons CO_2e avoided in 2012
3.4%	Percent of Short-Term New Measures
500,000	Cumulative Tons CO_2e avoided in 2020
($3/ton)	Net Cost-Effectiveness - SAVINGS

Relationship to Other Programs

A Canadian utility, Hydro One, piloted the use of smart meters in 2004. Four hundred homes received free meters with in-home displays and tracked their electricity use for 2.5 years. Average energy use reduction was 6.5%, and that was in the absence of receiving any information about what they could do to reduce energy use. Hydro-One is now giving 30,000 in-home displays to customers.

Electricity smart metering, with time-of-use rates and in-home or in-office displays for all residential customers, was recommended by the Colorado Climate Action Panel. This was the largest and most cost-effective strategy of all nine strategies recommended in the RCI (Residential, Commercial, Industrial) section.

Alabama Power is providing smart meters to all customers within the next three years.

Natural Gas Energy Conservation

Natural gas use comprises 19% of Fort Collins greenhouse gas emissions inventory. Residential natural gas use comprises 8% of the community wide inventory. This measure is intended to implement a rate structure for natural gas that achieves a 3% reduction in natural gas usage in the residential sector. It assumes that Xcel would have to raise natural gas rates in order to fund DMS programs to achieve this goal. It specifies that any revenue generated must be used to fund local GHG reduction programs.

The CTF recommends that the City first conduct a limited investigation into replacing the current "Gas Company Occupation Tax" with a franchise fee, as is done in other communities in Colorado. In 1988 the City unsuccessfully attempted to negotiate a franchise agreement with Xcel. If that approach does not appear feasible, the City should then investigate a ballot initiative asking voters to raise the "Gas Company Occupation Tax" for Xcel. Currently, City levies a Gas Company Occupation Tax to natural gas providers of $445,000/year that has not been raised since 1988. It is anticipated that if the voters approved this tax increase, funds would be used for natural gas DMS programs.

Greenhouse Gas Benefit

7,000	Annual Tons CO_2e avoided in 2012
1.1%	Percent of Total New Measures
73,000	Cumulative Tons CO_2e avoided in 2020
$17/ton	Net Cost-Effectiveness

Relationship to Other Programs

Two other programs are already in place to increase natural gas efficiency in Colorado. First, HB1037 directs the Public Utilities Commission to develop rules and programs for investor-owned natural gas utilities (including Xcel) to spend at least 0.5% of revenue on DSM programs. The Southwest Energy Efficiency Project estimates that HB1037 will save 2.6 billion cubic feet of natural gas per year by 2010, and 15.4 billion cubic feet per year by 2020, an amount equal to about 8% of natural gas use by all residences and commercial buildings in the state. (See http://swenergy.org/legislative/2007/colorado/index.html). These savings were apportioned, based on population to Fort Collins, and are addressed under "Existing" measures.

Second, through a settlement agreement between Colorado customers and PUC, Xcel is committed to achieve 100 GWh/yr of energy savings between 2006 and 2013. This level of savings is equal to about 3 – 3.5% of projected sales.

In addition, the Colorado Climate Action Panel has recommended achieving a total of 1% reduction in natural gas use by 2013. This total is to be achieved through the HB10-37, the Xcel settlement agreement and additional programs.

Therefore, this measure would increase natural gas conservation above the three strategies discussed above to a total of 1%/year reduction in natural gas use.

Time-of-Sale Energy Conservation Ordinance

Natural gas and electricity use in existing building is responsible for about two-thirds of community-wide greenhouse gas emissions. This measure seeks to bring inefficient buildings up to some minimum level of energy efficiency. It would require energy efficiency upgrades at the time of sale for residential and commercial structures that do not meet a certain level of energy efficiency, as determined by an energy audit. Utility demand-side management (DSM) programs could be designed in a way that helps customers comply with the requirement.

Greenhouse Gas Benefit

11,000	Annual Tons CO_2e avoided in 2012
1.7%	Short-Term New Measures
57,000	Cumulative Tons CO_2e avoided in 2020
($112/ton)	Net Cost-Effectiveness - SAVINGS

Relationship to Other Programs

Several cities have a time-of-sale energy efficiency ordinance in place, including Berkeley and San Francisco, CA, and Burlington, VT, and the state of Minnesota (for multi-family housing). Austin, TX, has just passed a requirement for time of sale efficiency upgrades. Time-of-sale conservation is also included in Denver's Climate Action Plan, and a pilot project has been developed in cooperation with the local realtors to assess older homes according to a standardized checklist. The City of Boulder and Boulder County are evaluating a time-of-sale approach.

15% Renewable Energy by 2011

The City of Fort Collins' existing policy goal is to achieve 15% renewable energy for all electricity use by 2017. In 2007 6% of the City's electricity use was provided by renewable energy. This measure would accelerate the goal to achieve 15% renewable energy by 2011 starting with the purchase of RECs* and moving to delivered

renewable energy as soon as possible. This measure addresses utility-scale energy supply.

The analysis assumes the City would purchase 60% RECs and 40% wind energy in 2011 and that this mix would shift to 30% RECs and 70% wind by 2020, in line with Platter River Power Authority's renewable energy goal.

Greenhouse Gas Benefits

92,000	Annual Tons CO_2e avoided in 2011
14.1%	Percent of Total New Measures
921,000	Cumulative Tons CO_2e avoided in 2020
$63/ton	Net Cost-Effectiveness

Relationship to Other Programs

The Colorado Climate Action Panel recommended municipally-owned utilities achieve 15% renewable energy by 2020, with no more than 85% coming from large-scale wind projects.

*RECs are Renewable Energy Certificates, also known as Green tags, Renewable Energy Credits or Tradable Renewable Certificates (TRCs). RECs are the property rights to the environmental benefits from generating electricity from renewable energy sources. These certificates can be sold and traded and the owner of the REC can legally claim the environmental benefits associated with generation of renewable energy. While traditional carbon emissions trading programs promote low-carbon technologies by increasing the cost of emitting carbon, RECs incentivize carbon-neutral or lower carbon renewable energy by providing a subsidy to electricity generated from renewable sources.

Provide Incentives for Individual Renewable Energy Projects

This measure provides incentives to all customers (residential, commercial, etc.) of Fort Collins Utilities for installation of renewable energy projects. It allows for the installation of photovoltaics, solar thermal, ground source heat pumps and other available technologies. As analyzed, the measure is funded through a surcharge on utility bills and calls for preferential use of local contractors to provide the renewable energy systems. The incentives are split 50:50 between Fort Collins Utilities and the customer.

Greenhouse Gas Benefit

2,000	Annual Tons CO_2e avoided in 2012
0.3%	Percent of Short-term New Measures
27,000	Cumulative Tons CO_2e avoided in 2020
$378/ton	Net Cost-Effectiveness

Reduce Vehicle Miles of Travel (VMT)

Transportation demand management (also called mobility management or VMT reduction) includes a range of strategies that improve travel options and encourage people to use more efficient forms of travel. Reducing travel demand is in the public interest, provides multiple community benefits and is worthy of community support and investment.

This measure recommends four key strategies to reduce Fort Collins VMT by almost 2%. Since the City of Fort Collins is already implementing efforts in all of these areas, these measures refer to efforts beyond the current level. The relative anticipated VMT reduction from each program area is identified in Figure 23.

Figure 23 – Proposed VMT Reductions

Program	VMT Avoided	% of Total Fort Collins VMT
Walking & Bicycling	10,600,000	1.00%
Employer TDM Programs	8,500,000	0.81%
School Transport Programs	1,100,000	0.10%
Transit Programs	500,000	0.04%
	20,700,000	**1.96%**

Collectively, these approaches would avoid 12,000 tons CO2e/year in 2010, above the business as usual scenario. Accomplishing these objectives will require the provision of adequate

funding and increased partnership and collaboration with other organizations throughout the community.

Walking and Bicycling Improvements
According to some estimates, 5% to 10% of automobile trips can reasonably be shifted to non-motorized transport in a typical urban area, and non-motorized improvements can have leverage effects that increase their importance. This analysis assumes that through a combination of pedestrian and bicycle programs, 1% of total Fort Collins VMT could be avoided by 2010, or approximately 10,000,000 VMT/year reduced.

Transportation Demand Management-Type Program with Employer Focus
Historically, the Fort Collins SmartTrips program has worked with businesses, schools and organizations to reduce VMT. More recently, City Transportation Services has implemented several elements of TDM programs including Fort Collins Bikes, transit promotions, Test Ride Transfort, Safe Routes to School as well as the updated Passfort employer bus pass program. The North Front Range Metropolitan Planning Organization is handling VanPool and carpool activities in the region.
This recommendation calls for a special focus on increasing employee commuter outreach. Employee commute trip reduction programs have achieved noteworthy success, including the Seattle area and Utah. Denver's Greenprint plan has established a goal to increase employee transit ridership 10% over the 2005 baseline level by 2011. They assume that 20% of employees approached with a program will participate, and that those participating reduce 0.55 tons CO2/employee/year (about 1,000 miles/year/employee).

If a Fort Collins commuter outreach program achieved the same level of effectiveness, this would result in approximately 8,566,000 VMT reduced.

School Transport Management Program
School Transport Management Programs encourage parents, students and staff members to reduce automobile trips and use alternative modes for travel to and from schools. These programs generally include walking, cycling and ridesharing encouragement. In addition, these programs may have significant long-term impacts by helping children establish more multi-modal travel habits that continue later in life. (Source: Mobility Management Review at fcgov.com/airquality/pdf/mm-best-practices06.pdf)

This analysis assumes that at least 1,000,000 miles could be avoided through car pooling, Walk a Child to School, Safe Route to School, and prize-based competitions encouraging students to use and document alternative modes. The number of avoided VMT could grow through increased efforts to decrease travel by single-occupancy vehicle to school campuses.

Transit Service Innovations and Improvements
It is recognized that the Mason Corridor will serve as a key backbone to an enhanced transit system in Fort Collins. The City is optimistic about receiving federal funding to build the Bus Rapid Transit element of the corridor, with completion anticipated by late 2010. Since the focus of CTF is to recommend strategies that will achieve benefits by the end of 2010, the recommendation is to continue to implement transit promotion programs to the extent possible.

Greenhouse Gas Benefit

12,000	Annual Tons CO_2e avoided in 2012
1.8%	Percent of Short-Term New Measures
146,000	Cumulative Tons CO_2e avoided in 2020
($238/ton)	Net Cost-Effectiveness – SAVINGS

Modern Roundabouts for New or Major Redeveloped Intersections

Roundabouts are an alternative to the standard traffic signal that provide a safer, more efficient, economically advantageous and environmentally friendly way to move traffic along the roadway system. This strategy recommends that the City build five roundabouts at new or significantly redeveloped intersection by the end of 2013. The quantification is based on a recent study of 10 Virginia intersections that demonstrated 200,000 gallons of fuel savings annually, from the construction of roundabouts.

Greenhouse Gas Benefit

1,000	Annual Tons CO_2e avoided in 2012
0.2%	Percent of Total New Measures
12,000	Cumulative Tons CO_2e avoided in 2020
($282/ton)	Net Cost-Effectiveness – SAVINGS

Incentives for Low Emission Vehicles

This measure would offer a $2,000 financial incentive per vehicle to Fort Collins residents for the purchase of a low emission vehicle (LEV) in Fort Collins, to be registered in Fort Collins. It assumes 833 total hybrid vehicles will be purchased and registered in Fort Collins by 2010 as a result of this local incentive. If each of these vehicles drives 11,400 miles/year, and the hybrids have a fuel economy improvement of 19.7 MPG (up to 37.4 from 17.7) this will result in 2,871 tons CO_2e avoided.

This measure would also offer the incentive of preferential parking for LEVs in Fort Collins to further promote the purchase of these vehicles. The City could offer reduced parking garage rates for LEVs and raise the rate for others (revenue neutral). The City could also partner with organizations to provide up-front LEV spaces, or it could promote turning one of several handicapped spaces into a handicap-LEV space. LEED already has a LEV parking point. It assumes that 16 LEVs were purchased because of the additional parking incentive. Through the use of financial and parking incentives, this measure assumes that 833 LEVs would be purchased in Fort Collins, above "business as usual" levels.

Greenhouse Gas Benefit

3,000	Annual Tons CO_2e avoided in 2010
0.5%	Percent of Total New Measures
35,000	Cumulative Tons CO_2e avoided in 2020
($232/ton)	Net Cost-Effectiveness - SAVINGS

Relationship to Other Programs

Many federal tax credits for hybrid vehicles have expired. A Colorado income tax credit is still available for the purchase of an alternative fuel vehicle, including hybrids. The tax credit can range from $1,900 up to $3,000. See http://eere.energy.gov/afdc/progs/view_ind.cgi?afdc/5246/0.

The City of Albuquerque offers free, metered parking for LEVs.

Long-Term Measures

While the focus of the CTF work was on actions that could be implemented to reduce local emissions in the short-term, the CTF also developed a list of longer-term strategies. The strategies recommended below represent important steps needed to achieve significant progress on the 2020 greenhouse gas goal. Many of these strategies require ample time and funding in order to see the benefits, yet the benefits of these actions are long-lasting and will play a critical role in reducing Fort Collins emissions. In a few cases, an implementation target is suggested. Qualitative analysis of these strategies indicates that they could achieve at least an additional 170,000 tons CO_2e reduction by 2020. Appendix C provides more detailed discussion of these strategies.

Figure 24 - Summary of Long-Term Strategies

TRANSPORTATION
Potential Target: 6% reduction in vehicle miles from 2020 Business As Usual Levels Estimated benefit: 70,000 tons CO2e
- Seek Adequate Funding to Implement Transportation Plans, with funding for transit as a priority to achieve best practices - Develop Partnerships to Reduce Vehicle Travel - Parking Management - Increase Efficiency of City Government Fleet
LAND USE
- Implement Land Use Code Changes Supporting Greenhouse Gas Emissions Reductions - Promote & Pursue Infill/Refill Development - LEED for Neighborhoods - Consider Development Fees Based on Rating System - Promote Transit-Oriented Development - Require All New Developments to have Less Travel Demand than Comparable Existing Developments
GREEN BUILDING
Potential Target: Establish an Energy Performance Standard for New Commercial Buildings of 62kBTU/sq foot . Estimated Benefit: 76,000 tons CO2e
- Require Green Building as a Prerequisite for Public Financing - Net Zero Ready Homes - LEED for Neighborhoods
ENERGY
- Expand Awareness of Existing Net Metering Program - Promote Plug-In Hybrids and Vehicle-to-Grid Applications - Expand FortZED to Entire Community - Promote SmartGrid Evolution
URBAN FORESTRY
- Promote Tree Planting
COMMUNITY ENGAGEMENT
Potential Target: 50% of businesses, households and youth populations participate in Climate Protection Activities. Estimated Benefit: If community engagement enhanced the performance of the existing package of new measures by even 5%, an additional 25,000 tons CO2e may be reduced.
- City of Fort Collins Government Leadership - Education - Innovation and Collaboration: Fort Collins GHG Incubator - Support State and Federal Climate Protection Actions

Milestones, Monitoring, and Reporting

In essence, the CTF has recommended a five-year plan (2009-2013) for making progress on the 2020 greenhouse gas goal that was adopted by City Council on May 20, 2008. In order to ensure reasonable progress is being made, the CTF also recommended annual progress reporting to include the greenhouse gas emissions inventory and a list of reductions achieved. The CTF recommends setting biennial milestones and conducting a more in-depth biennial review that looks closely at whether the targets were met and, if not, identifies contingency actions. The biennial review should include a Council work session held in advance of the biennial budget cycle to optimize the opportunity for corrective actions. The CTF also recommends appointing a body to oversee implementation progress and to develop the remaining roadmap to the 2020 goal.

Annual Report

City Council Resolution 2008-051 calls for annual report tracking progress toward attainment of the goals established for 2020 and 2050. This annual report should include an evaluation of community-wide greenhouse gas emissions and a list of quantified reduction activities for the prior year.

Biennial Milestones & Review

The CTF recommends establishing biennial milestones by which progress on the 2020 goal can be assessed. Even-year milestones optimize the opportunity to make recommendations for upcoming budget cycles. Biennial milestones are suggested that fall along a linear reduction path from 2008 to 2020. The CTF recognizes that progress may not necessarily be linear and informally suggested some minor deviation from the linear path might be acceptable. If the emissions inventory for the milestone year does not meet the milestone or at least fall within 10% of it, a list of contingency actions should be developed and proposed as part of the next budget cycle. Figure 25 identifies suggested milestones.

Figure 25 - Biennial Milestone Recommendations

Year	Milestone	Biennial Review	Budget Recommendations
2010	2,611,000		
2011		Spring 2011 for 2010	Fall 2011 for 2012/2013
2012	2,466,000		
2013		Spring 2013 for 2012	Fall 2013 for 2014/2015
2014	2,379,000		
2015		Spring 2015 for 2014	Fall 2015 for 2016/2017
2016	2,263,000		
2017		Spring 2017 for 2016	Fall 2017 for 2018/2019
2018	2,147,000		
2019		Spring 2019 for 2018	Fall 2019 for 2020/2021
2020	2,032,000		

2012 Milestone

City Council Resolution 2008-051 expresses the City Council's intent to reduce emissions to at least 2.466 million tons CO_2e by the end of 2012. The short-term package recommended by the CTF would more than meet the 2012 milestone if fully implemented. CFT recommended Phases I and II alone would be adequate to meet the 2012 milestone, if fully implemented, as illustrated in Figure 26.

Figure 26 - CTF Phase I and Phase II Measures would meet the 2012 Milestone

Measure Name	2012 Tons CO2e Avoided	Percent Double Counting	Adjusted 2012 Tons CO2e Avoided
EXISTING ACTIONS	77,000	0%	77,000
PHASE I			
Expand Climate Wise	132,000	50%	66,000
Government Organizations Set GHG Goals	22,000	75%	5,500
Community-wide Climate Challenge	11,000	0%	11,000
PHASE II			
Push to Meet 50% Waste Diversion Goal	226,000	0%	226,000
15% Renewable Energy by 2011	92,000	0%	92,000
Increase Energy Efficiency Programs Above Existing Policy Levels	17,000	0%	17,000
TOTAL			495,500
2012 Gap			456,000
Excess Reductions in 2012 from Phases I and II			39,500

Conclusion

"A journey of a thousand miles begins with a single step."
-- Confucius

Fort Collins has been a pioneer in climate protection among US cities and continues to lead the way. Since taking a momentous step in 1999 when City Council committed to reduce greenhouse gas emissions, Fort Collins recognized the significance of global climate change and embraced the active role its citizens play in this challenging local task with global implications.

Through innovation, leadership and local involvement, the community has benefited significantly from climate protection actions. Thanks to the success of the voluntary Climate Wise Program, for example, innovative businesses avoided emitting more than 82,000 tons of CO_2e, while saving over $12 million since 2000. Thanks to foresight in leadership, Fort Collins established the first renewable energy standard in the State of Colorado. And our participatory community tells us through recent surveys that they not only support but expect further greening efforts.

Clearly, our community is ready to tackle the next set of climate protection action challenges that recommits our City to the shared duty of reducing our local greenhouse gas emissions. Stepping up to the plate again with vision and leadership in May 2008, the Fort Collins City Council established an aggressive goal to reduce emissions 80% by 2025, an interim reduction goal of 20% by 2020 and an insightful 2012 check-point to ensure we remain on track to the longer-term goals.

Reducing emissions 80% by 2050 sets Fort Collins on the path towards a sustainable future. The mid-term target to reduce emissions 20% by 2020 represents an ambitious undertaking that is within our grasp. Both goals will require staunch commitment and participation by all community sectors and forward-thinking leadership by City government and other large organizations in Fort Collins.

Our path to making significant progress early on is guided by the hard-working efforts of the Fort Collins Climate Task Force that developed specific, short-term strategies. They also recommended that work begin on important long-term strategies, such as setting performance standards for new buildings, establishing land use policies that will reduce greenhouse gas emissions and seeking funding to build sustainable transportation systems. Additional work will be needed to develop short-term implementation plans as well as longer-term plans to clarify the path to 2020 and 2050 goals.

The time for action is now. We have begun this journey alongside other committed municipalities, state agencies, universities, business and citizens in Colorado's Front Range and around the nation. Working cooperatively, we can reduce our emissions, maximize technologies and co-create the evolution of carbon markets. Together we can sow the seeds to reap the benefits of a more sustainable life experience for ourselves and generations to come.

APPENDIX A

LIST OF ALL STRATEGIES CONSIDERED BY CTF

Figure A-1 on the following four pages, provides information about the entire list of strategies considered by the Climate Task Force. These ideas were gathered from the public, an open house, web comments, experts, other community climate action plans, the Colorado Climate Action Panel recommendations and from CTF members themselves.

Figure A-1 - Initial list of Strategies Considered by Climate Task Force

Climate Task Force
Tier 1 -- New Measures Under Consideration - Long List (June 28, 2007)

Note: this list represents all ideas generated from the open house, Web, task force and staff to date.

Very Prelim. Suggested Groupings - Measure Name	#	Individual Measure name	Source/Referral	Status
X=same name as in column C		**ENERGY EFFICIENCY**		
		ENERGY RATES - DISINCENTIVES		
Tiered electric rates	1	Tiered rates for electricity and natural gas	Denver?	New
	2	tiered electric rate structure	FCSG	New
	3	tiered energy rates	Open Hse-Written	New
	4	Increase res & comm electricity rates	FCSG	New
	5	Fees/rates for inefficiency	Open Hse Flipcharts	New
	6	Inverted block rates for elecricity	CAP-RCI-5	
	7	"Time of Use" rate structure	FCSG	New
Carbon Tax	8	Carbon tax on polluting industries	CTF member	New
		MANDATORY CONSERVATION		
	9	2004 Residential energy code	Development review	Existing
time of sale EE ordinance	10	Time of sale energy conservation ordinance	Denver?	New
	11	Require blower door test a point of sale (res and comm) and require repair.	Climate Wise	New
x	12	Phantom load control	CTF member	New
x	13	Wasting energy ordinance	Natural Resources	New
		CONSERVATION & INCENTIVES		
	14	SB 246 Clean Energy Fund to GEO ($56mill by 09)	State Legislation	Existing
	15	Allocate part of State Clean Energy fund for low income	Open Hse Flipcharts	New
	16	HB1037 - EE programs Incentives to homeowners	State Legislation	Existing
tax credits for EE	17	Tax incentive financing for energy efficiency in new buildings	CTF member	New
	18	Tax credits or zero inter loans for for EE	Open Hse Flipcharts	New
Zero Interest loans for EE	19	Expand ZILCH to include renewable and EE modifications to existing home	CTF member	New
	20	ZILCH for C-Wise companies	Climate Wise	New
	21	20% EE for state/local gov bldg w/ ZILCH	CAP-RCI-2	
Energy Rebates/Incentive	22	Expand rebate programs for Electric energy use, esp CFL	FCSG	New
	23	Incentives for achieving xx% reduction (res & Comm)	Open Hse Flipcharts	New
	24	Evaporative cooling Incentives for homes	Open Hse Flipcharts	New
	25	Rebate programs for conservation of nat gas	FCSG	New
	26	Offer free energy audits	Open Hse Flipcharts	New
	27	Incentives for residential E program - reduce rates on next elec bill	Open Hse-Written	New
Xcel franchise fee	28	Increase Xcel franchise fee as incentive for nat gas conservation	FCSG	New
		ENERGY EFFICIENCY EDUCATION		
EE Education	29	EE education in utility bill	Open Hse-Written	New
	30	Competition between City dept./bldg. on EE, then roll out to community	Open Hse-Written	New
	31	Energy Waste Hotline	Open Hse Flipcharts	New
	32	Carbon footprint on energy bill	Open Hse Flipcharts	New
	33	Provide more energy info on utility bills	Open Hse Flipcharts	New
	34	Partner w/ residential weatherization and Habitat	Open Hse Flipcharts	New
	35	**ENERGY EFFICIENCY ACTIONS**		
DSM Growth	36	Demand side management growth from EESP	Utilities	Existing
	37	Focus on lighting	Open Hse Flipcharts	New
	38	Focus on CFL/ AC	Open Hse Flipcharts	New
	39	More companies to offer residential energy assessment and follow-up with home-owners	Open Hse Flipcharts	New
	40	EE for rental market	Open Hse Flipcharts	New
Existing buildings	41	Focus on existing building EE, not just new	Open Hse Flipcharts	New
Amber LEDs	42	LED for amber traffic signals	Open Hse Flipcharts	New
LED for Streetlights	43	Retrofit streetlights w/ LEDs	FCSG	New
Combined H&P	44	Combined heat and power	Open Hse Flipcharts	New
	45	Combined heat and power	CAP, ES-6 and RCI-9	
Suport FortZED		Support FortZED (10% district reduction by 2010)	FCSG	Pending

Climate Task Force
Tier 1 -- New Measures Under Consideration - Long List (June 28, 2007)

Note: this list represents all ideas generated from the open house, Web, task force and staff to date.

Very Prelim. Suggested Groupings - Measure Name	#	Individual Measure name	Source/Referral	Status
		MANDATORY RENEWABLES		
	46	HB1281-Increased RPS to 20% by 2020 (muni's 10%)	State Legislation	Existing
	47	30% RE by 2020, incl muni's	CAP-ES2	
X	48	Renewable energy growth from EESP	Utilities	Existing
X	49	Require all new homes to have solar hot water	Climate Wise	New
x	50	require new homes above $300/$500K to have 50%/100% of their energy from on-site generation	Climate Wise	New
	51	**RENEWABLE INCENTIVES**		
	52	Tax credits for res & comm RE	CAP-RCI-8	
Solar incentives	53	More tax credits for solar	Open Hse Flipcharts	New
	54	incentives for solar thermal	Natural Resources	New
	55	Local rooftop solar	Open Hse Flipcharts	New
x	56	rebates for customer-owned RE (small turbine, PV)	FCSG	New
X	57	Encourage solar hot water and private windmills	Web comment	New
		RENEWABLE ACTIONS		
X	58	CSU Green Power Project	CSU	Existing
RECS v. local	59	Purchase third-party certified RECS	FCSG	Existing
	60	Use $ spent on REC instead as incentives for customers to install local RE	Open Hse-Written	New
x	61	Expand wind capacity - more turbine and transmission capacity	FCSG	New
X	62	PSD SMS – Greenhouse Gas Goal	PSD	Existing
x	63	expand net metering (Xcel 0.6% impact)	Open Hse Flipcharts	New
x	64	Power plant fuel switch	Open Hse Flipcharts	New
x	65	FortZED – DOE Jump Start Zone	Many	Pending
x	66	on-site renewable energy at landfill	FCSG	New
X	67	New small Hydro	CAP-ES-11+D43	
		LAND USE		
	66	HB1167 Forest improve districts	State Legislation	Existing
x	67	Carbon sequestration in restored natural areas	Natural Resources	pending
	68	Land Use code to increase core densities	Open Hse Flipcharts	Existing
		MIXED		
		GREEN BUILDING		
	69	SB-51, LEED Gold for State Bldgs if >25% from state funding	State Legislation	Existing
Commercial code EE	70	Commercial energy code, pending	Development review	Pending
	71	minimum E-Star rating for new buildings	Natural Resources	New
	72	LEED requirements for all new buildings	CTF member	New
	73	Require LEED for all commercial bldgs	Natural Resources	New
	74	Require LEED on leased buildings	Natural Resources	New
	75	Green points-type program (like Boulder)	Natural Resources	New
x	76	Require new home to have N-S orientation	Climate Wise	New
Green Roofs	77	Green roofs	Open Hse Flipcharts	New
X	78	Carbon neutral city buildings	Denver?	New
		EDUCATION		
X	79	Corporate and residential climate challenge	Denver?	New
	80	Half-time educational position to do outreach to all sectors	CTF member	New
X	81	GREEN POINTS progam for 20k Climate Wise employees	Natural Resources	Pending
Climate Wise growth	82	Climate Wise growth	Natural Resources	Pending
	83	Increase marketing to build customer demand for CW membership	Climate Wise	New
x	84	Rebates or Grant program for C-Wise partner projects	Climate Wise	New
x	85	Carbon Concierge edu program to reduce carbon footprint, w/ possible recognition	FCSG	New
x	86	PSD Carbon footprint posters for city buildings	Natural resources	New
x	87	Personal Sustainability plan for employees (Walmart)	Open Hse Flipcharts	New
	88	Seek cultural behavior change	Open Hse Flipcharts	New
		INCENTIVES		
	89	Incentives to reduce unnecessary consumerism	Open Hse-Written	New
	90	State Carbon "Cap n Trade" or Tax	CAP, ES-4	
		ACTIONS		
X	91	Municipal GHG Goals	CAP, CC-5	
	92	Expand partnership for green building (city/PSD/CSU)	Natural resources	New
X	93	Trash utility district	AQAB	New
	94	Holistic approach; build less roads and houses	Open Hse-Written	New

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Very Prelim. Suggested Groupings - Measure Name	#	Individual Measure name	Source/Referral	Status
		TRANSPORTATION		
		MANDATORY		
x	98	Enforce odd/even day driving restrictions	Open Hse-Written	New
X	99	HD Diesel vehicle idle reduction	CAP, TLU-4	
X	100	Fuel tax inxcrease and variable priced insurance	CAP-TLU-8	
x	101	Emission sticker program in FC	Open Hse Flipcharts	New
		ACTIONS		
Expand Transit	102	Establish "express bus routes" for commuters	Open Hse Flipcharts	New
	103	Increase transit marketing to youth- hip & trendy	Open Hse Flipcharts	New
	104	Extend bus service hours	FCSG	pending
	105	Increase bus frequency	FCSG	pending
	106	Incentives to use transit (higher parking fee, employer incentives)	Open Hse Flipcharts	New
	107	Plan for grid-based bus system and increased headways	FCSG	pending
	108	Replace large empty transit busses with on-demand vehicles	Web comment	
Expand Bike	109	FC Seek Platinum designation (League of American Wheelmen)	Open Hse Flipcharts	New
	110	"walk or Bike to market" programs	Open Hse-Written	New
	111	Provide additional bike parking	FCSG	New
	112	Provide additional bike lanes	FCSG	New
	113	$ incentives to buy bikes	FCSG	New
	114	Encouraging bicycle commuting	CTF member	New
Car share	115	Car share program	Open Hse Flipcharts	New
	116	Flex Car	Open Hse-Written	New
NuRide	117	NuRide program for Fort Collins (employers, retailers fund incentives for ride-share)	Open Hse-Written	New
Expand Trolley	118	Expand the trolley	Open Hse-Written	New
x	119	Retail carpool service	Open Hse Flipcharts	New
	120	VanGo within Fort Collins	Open Hse Flipcharts	New
	121	Employee Commuter Benefits Program	CAP-TLU-10	
x	122	Reinstate SmartTrips	CTF member	New
Parking Measures	123	Parking fees as a fcn of vehicle GHG emissions (London)	Open Hse Flipcharts	New
	124	Install Parking meters and raise parking garage fees	FCSG	New
	125	Encourage local gov pkkng mgmt strategies	CAP-TLU-9	
	126	Free parking for low emission vehicles	FCSG	New
Telework	127	incentive for businesses to support telecommuting	Open Hse-Written	New
	128	Work at Home day	Open Hse-Written	New
PHEVs	129	charging stations for city-owned PHEV	FCSG	New
	130	Promote Plug-In Hybrids	Open Hse-Written	New
	131	Promote cleaner vehicles	Open Hse-Written	New
	132	Charge for bigger cars	Open Hse Flipcharts	New
small vehicles	133	Incentives for scooters, mopped, elec wheelchairs	Open Hse-Written	New
	134	Neighborhood electric vehicle	CTF member	New
incentives for low GHG ve	135	tax credits for more efficient cars	Open Hse Flipcharts	New
	136	Econ Incentives for Low GHG vehicles	CAP-TLU-2	
	137	replace City LDV with low emission vehicles as they age	FCSG	pending
X	138	haulers report VMT	Open Hse Flipcharts	New
X	139	trash redistricting	Open Hse-Written	pending
X	140	Incentives for res and comm to use elec lawn mowers	Climate Wise	New
X	141	Low Carbon Fuel standards	CAP-TLU-5	
X	142	Algae ponds - biodiesel	Open Hse Flipcharts	
X	143	Voluntary travel offset program check	Denver?	New

Climate Task Force
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Very Prelim. Suggested Groupings - Measure Name	#	Individual Measure name	Source/Referral	Status
		MANDATORY		
mandatory paper recycling	144	Require ≤ 50% recycled content paper for City gov	FCSG	New
	145	Require trash haulers to require office paper recycling	Open Hse-Written	New
mandatory recycling	146	mandate recycling like Europe	Open Hse Flipcharts	New
	147	mandatory business recycling	Open Hse Flipcharts	New
x	148	deposit fund for beverage containers	Open Hse Flipcharts	New
	149	fines for trash in recycling bins	Open Hse Flipcharts	New
		INCENTIVES		
	150	HB 1288 Waste reduction/recycling incentives	State Legislation	Existing
	151	Offer lower trash rates to res/comm who recycle	FCSG	New
		ACTIONS		
x	152	City composting program	CTF member	New
	153	Push to meet city's 50% diversion goal for waste	CTF member	pending
x	154	Trash districting	CTF member	pending
x	155	landfill methane capture	FCSG	pending
	156	Recycle more materials	Open Hse-Written	New
	157	Recycle more paper	Open Hse Flipcharts	New
	158	(more) public sites for recycling	Open Hse Flipcharts	New
Organics	159	Yard waste curbside collection	Open Hse Flipcharts	New
	160	food waste composting	Open Hse Flipcharts	New
	161	engage CSU in recycling more material (e.g.. Beet waste)	Open Hse Flipcharts	New
x	162	ban plastic bags/ bottles at work	Open Hse Flipcharts	New
	163	Up-cycling??	Open Hse Flipcharts	New
x	164	offer water filters to residents (reduce bottled water?)	Open Hse Flipcharts	New
x	165	Improve multi-family recycling	Open Hse Flipcharts	New
x	166	C&D recycling	Natural Resources	New
		WATER		
Xeriscape	167	Promote xeriscape and prohibit HOA from limiting it	Open Hse-Written	New
	168	Promote xeriscape	Web comment	New
x	169	change gray-water legislation (w/ CML)	Natural resources	New
x	170	Denver Water-type incentives for water conservation	Natural Resources	New

APPENDIX B

SHORT-TERM MEASURES INFORMATION

Figure B-1 below provides the short-term measures identified in the CTF recommendations, along with the source of the idea and the CTF votes on each individual measure. The last two rows identify the CTF vote for the complete short-term package and the long-term list of strategies.

Figure B-1 - Source of and CTF Votes for Recommendations

Measure Name	Source(s)	CTF Votes
Expand Climate Wise	Natural Resources	11 of 11 in favor
Government Organizations Establish GHG Goals	Evolved from Natural Resources idea	8 of 11 in favor, 3 opposed
Community-wide Climate Challenge	Open house, Various CTF members, FC Sustainability Group, Denver Climate Action Plan	11 of 11 in favor
Local Carbon Offset Program	Evolved from Open House and FC Sustainability Group suggestions	11 of 11 in favor
Push to meet 50% Waste diversion goal	CTF member	10 of 11 in favor, 1 abstain
Increase Energy Efficiency Programs Above Existing Policy Level	Fort Collins Utilities	12 of 12 in favor
Residential Electric Rate Structure	Colo Climate Action Panel; Denver Climate Action Plan; FC Sustainability Group; Open House	11 of 12 in favor of the aggressive scenario
Smart Meter Program	CTF member	12 of 12 in favor
Low Cost Home Energy Assessments	Open House	12 of 12 in favor of the concept, 7 of 12 in favor of the aggressive scenario
Natural Gas Energy Conservation	Colo Climate Action Panel; Denver Climate Action Plan; FC Sustainability Group; Open House	12 of 12 in favor of the concept, 7 of 12 in favor of the aggressive scenario
Time-of-Sale Energy Conservation Ordinance	Denver Climate Action Plan	10 of 12 in favor
15% Renewable Energy by 2011	Evolved from Colo Climate Action Panel; FC Utilities ideas	9 in favor , one opposed, one abstain
Incentives for Individual Renewable Energy Projects	Colo Climate Action Panel RCI-8 ; Open House; FC Sustainability Group; Web comment; Natural Resources	11 of 11 in favor
Reduce Vehicle Miles of Travel	Open house, Compilation of ideas from Mobility Management report through CTF member	Later combined after 4 individual votes below
Walking and cycling		12 of 12 in favor
School Transport Management		12 of 12 in favor
Reinstate TDM-type program (Employer trip reduction focus)		12 of 12 in favor
Transit Improvements		11 of 12 in favor
Modern Roundabouts	CTF member	12 of 12 in favor
Incentives for Low Emission Vehicles	Colo Climate Action Panel AP-TLU-2, Open House	12 of 12 in favor
Final short-term measures vote		10 of 11 in favor, PRPA Rep abstain
Long-term list of strategies		11 of 11 in favor

Figure B-2 - Annual Average Implementation Costs of Short-Term Measures

Measure name	TONS CO2 Reduced in 2012	Individual Cost effectiveness (2012)	Annual Avg City Cost ($/yr)	Annual Avg Participant Cost ($/yr)	Notes
COMMUNITY LEADERSHIP					
Expand Climate Wise	132,000	$0.3	277,000	(238,000)	City cost for 2 additional FTE and program funding.
Government Organizations Set GHG Goals	22,000	($2)	$0.00	(39,000)	The city is considered a participant in this case.
Community-wide Climate Challenge	11,000	($98)	166,000	(934,000)	This cost is based on provision of CFL's to households.
Local Carbon Offset Program	62,000	$39		2,423,000	Estimated average cost of carbon offsets is $39/ton CO2. This may be high.
RECYCLING					
Push to meet 50% Waste diversion goal	**226,000**	$33	800,000	6,420,000	More analysis is needed on implementation costs.
ENERGY EFFICIENCY					
Increase Energy Efficiency Programs Above Existing Policy Levels	17,000	($1)	1,495,000	(1,470,000)	Analysis assumes Utilities (rate-payers) provide 50% of incentives, participants fund the remaining 50%.
Residential Electric Rate Structure	18,000	$3	67,000	0	Analyzed as revenue neutral.
Smart Meter Program	22,000	($3)	1,030,000	(2,499,000)	Utilities average annual cost to install smart meters in all residences, plus O&M and lost revenue.
Low Cost Home Energy Assessments	15,000	($59)	90,000	(1,692,000)	Assumes Utilities pay for 50% of assessment, participants pays other 50% plus all upgrade costs.
Natural Gas Energy Conservation	7,000	$17	0	123,000	Costs estimates based on average cost of natural gas DSM programs, passed on to rate-payer.
Time-of-Sale Energy Conservation Ordinance	11,000	($112)	60,000	(859,000)	Buyer or seller funds assessments and upgrades, and realizes utility bill savings.
RENEWABLE ENERGY					
15% Renewable Energy by 2011	92,000	$63	5,780,000	0	Based on 60% REC purchases at $16/ton CO2 and 40% delivered wind energy at $100/tons CO2e.
Incentives for Individual Renewable Energy Projects	2,000	$378	1,000	780,000	Assumes a utility surcharge will fund 50% of projects; participants fund the additional 50%.
TRANSPORTATION					
Reduce Vehicle Miles of Travel	12,000	($238)	1,830,000	(4,551,000)	Employers may bear some of the costs assigned to City for employee trip reduction programs
Modern Roundabouts	1,000	($282)	(269,000)	$0.00	Assumes roundabouts are less expensive than traditional intersections
Incentives for low emissions vehicles	3,000	($232)	127,000	(753,000)	City pays $2000/vehicle for 800+ LEVs.
With Double-counting removed	**526,560**	**$15**	**$11,454,000**	**-$3,289,000**	

APPENDIX C

LONG-TERM MEASURES DESCRIPTION

Transportation

Funding to Implement Transportation Plans, with a Focus on Transit

The 2004 Transportation Master Plan contains numerous strategies to improve transportation efficiency, yet there is inadequate funding to fully implement the plan.

In addition to the Transportation Master Plan, the City has numerous plans that support reduced single-occupancy vehicle trips, including the Bicycle Plan Update, the Pedestrian Plan and the Transit Plan. Further, Transportation Demand Management (TDM) strategies are most effective when they are implemented as an integrated package, where strategies can support each other (e.g., improved transit along with improved pedestrian access to bus stops).

The Climate Task Force recommends that the City dedicate resources to pursue funding to finance the key components of the 2004 Transportation Master Plan and associated TDM Plans, with a special emphasis on expanding transit infrastructure and completing enhanced travel corridors.

Develop Partnerships to Reduce Vehicle Travel

Seek to develop effective partnerships among major community and regional institutions to reduce single-occupancy trips. Optimizing mobility management in Fort Collins will require active support not only from the City Council, but also from the North Front Range MPO, major employers, Poudre School District, Colorado State University, the Chamber of Commerce, Downtown Business Association and many others.

Figure C-1 - Multiple Benefits of Transportation Demand Management

Economic	Social	Environmental
• Reduced congestion • Road and parking cost savings • Consumer cost savings • Crash cost savings • Increased local employment and business activity	• Improved mobility for non-drivers • Increased community livability • Improved public health and fitness	• Energy conservation • Reduced air, noise, and water pollution • Reduced pavement and sprawl

As large Fort Collins institutions examine their footprint (environmental, economic and social impacts), the Fort Collins City Council could encourage each of them, including the City of Fort Collins, to include the impact of all the vehicle trips taken to and from their campuses, and to become active in finding ways to reduce them. The City Council could perhaps offer a sample resolution that each organization could adopt.

Parking Management

Parking Management includes a variety of strategies that encourage more efficient use of existing parking facilities, improve the quality of service provided to parking facility users and improve parking facility design. Current parking planning practices (such as generous minimum parking requirements and public provision of on- and off-street parking) tend to result in abundant and generally free parking at most destinations. This subsidizes automobile travel and encourages lower-density land use patterns. More efficient parking management can address these problems, helping to achieve a variety of transportation, land use development, economic and environmental objectives. Examples of parking management programs include:

- Create a downtown parking district to optimize the parking resource and reduce pollution and congestion.
- Optimize the availability and use of parking garages.
- Encourage use of low emission vehicles by offering free parking spaces or low cost parking to those vehicles.
- Implement parking cash out programs that allows employees to opt-out of having a parking space and instead receive compensation.

Increase Efficiency of City Government Fleet

The City of Fort Collins has an important opportunity to lead by example by further greening its fleet of City vehicles. City vehicle are especially visible to the pubic and the selection and use of vehicles makes at statement about the City's commitment to sustainability.

The City has long had a commitment to using alternative fuels. Currently, all diesel vehicles and equipment use B20 (205 biodiesel, 80% petroleum diesel). A number of fleet vehicles are flexible fuel and can accommodate compressed natural gas or ethanol. The number of hybrid vehicles in the fleet is growing.

In 2005, Governor Ritter established the following goals for state transportation fleets:

- Reduce volumetric petroleum consumption by 25% from the 2005 baseline.
- 50% of the fleet fuel purchases will be alternative fuels.
- Fuel 20% of diesel vehicles with biodiesel.

The City of Fort Collins should reduce emission of its municipal fleet by either committing to the goals identified the Colorado 2005 Greening Government Executive order or by adopting an ordinance (as Arlington, MA did) or a City Administrative Policy that each vehicle purchased must be the most fuel efficient model available that will fulfill the intended municipal function.

Land Use

A number of land use strategies that are often identified to help communities reduce their greenhouse gas emissions are already part of Fort Collins' land use policies and codes. These

strategies include:

- Encourage compact development (through City Plan and the Structure Plan).
- Encourage mixed use development.
- Promote transit-oriented development.
- "Complete street standards" that prescribe a level of service for all modes.
- Require Urban Growth Boundaries.

The strategies below have been identified as having special relevance to Fort Collins' efforts to reduce transportation-related greenhouse gas emissions.

Implement Land Use Code Changes that Support Greenhouse Gas Emissions Reductions

City Plan contains the community's 2010 greenhouse gas policy goal to reduce emissions 30% below predicted 2010 levels by 2010. Additionally, City Plan and the resulting Structure Plan were built upon the analysis of a range of density and land use configurations. The final scenario upon which these plans were built optimized transportation and land use efficiencies.

While City Plan policies and the Structure Plan support smart growth, the City could improve the speed of implementation. Many of these changes would be made within the Land Use Code that implements City Plan and the Structure Plan. Specific recommendations for Fort Collins include: Adhere to the existing Structure Plan.

- Implement Green Roofs.
- Marry historic preservation efforts with green building.
- Establish requirements for green building in affordable housing developments.
- Establish and require a minimum level of green building standards for any development project to receive City subsidies.
- Enhance public/private partnership to support green building and sustainable design.
- Consider incentives in the development review process for green building.
- Develop a revolving zero interest loan fund to help developed of green projects overcome initial upfront high development costs.

Promote and Pursue Infill and Refill Development

Infill and refill development has the potential to address air quality and greenhouse gas emissions by reducing the number of vehicle miles of travel (VMT) and allowing easier access to transit and pedestrian-oriented facilities. According to the Center for Clean Air Policy's Transportation Emissions Guidebook, infill and brownfield redevelopment has the largest potential for reducing site-specific VMT. These strategies are believed to reduce VMT 15-50%. (The only other strategy showing up to a 50% VMT reduction potential in this source is "smart school siting".)

Redevelopment and infill can help revitalize aging commercial areas, contribute to the vitality of Fort Collins downtown area and add variety to our housing opportunities. Experience has shown, however, redevelopment and infill projects frequently encounter particular challenges - obsolete

structures, contamination, poor access to utilities, public opposition, etc. impeding development.

In 2006 EDAW completed a report for the City of Fort Collins that identified a number of challenges and solutions to refill development. The "Refill Fort Collins" 2006 report specifically identifies the challenge that the City fee structure can be unreasonably burdensome for infill and redevelopment projects. Recommended solutions include:

- Consider the use of public/private financing mechanisms to pay for needed infrastructure improvements and infill/refill areas.
- Consider reduction of fees in specially designated redevelopment areas.

LEED for Neighborhoods

The LEED for Neighborhood Development Rating System integrates the principles of smart growth, urbanism and green building into the first national system for neighborhood design. LEED certification provides independent, third-party verification that a development's location and design meet accepted high levels of environmentally responsible, sustainable development.

Currently in its pilot period, LEED for Neighborhood Development is a collaboration among the U.S. Green Building Council, the Congress for the New Urbanism and the Natural Resources Defense Council. The City of Fort Collins should consider incorporation of LEED for Neighborhood requirements into the development review process.

Consider Development Fees Based on Rating System

Increasingly, municipalities are reducing fees or waiting periods associated with the approval process for community projects that can demonstrate a commitment to sustainability. For example, successfully completing the first stage of LEED for Neighborhood Development certification (pre-review approval) may assist projects that are still in the planning stages to gain the necessary approvals as expediently and cost-effectively as possible.

Promote Transit-Oriented Development (TOD) along Harmony

Transit-oriented development is one of the top strategies for reducing a community's carbon footprint from transportation. The Center for Clean Air Policy's Transportation Emissions Guidebook lists this as typically reducing VMT by 20-30%. Fort Collins already has established at TOD overlay zone along the Mason Corridor. A second potential location would be along the Harmony Corridor.

Require All New Developments to have Less Travel Demand than Comparable Existing Developments

The City of Aspen has includes a strategy in their Climate Action Plan to establish a city policy to require a net decrease in transportation-related emissions compared to existing developments, such as affordable housing projects. For some developments, this may involve purchasing carbon offsets for new emissions.

Green Building

Establish Energy Performance Standards for New Buildings Comparable to LEED-Silver

Many community climate action plans include strategies to establish building energy performance standards. For example, the Denver Greenprint Council recommends that all private buildings and infrastructure projects comply with LEED Silver or an equivalent energy performance standard, and that existing buildings also attain LEED Silver. Where LEED Silver is not currently available (as in residential developments), they recommend that EPA's Energy Star or an equivalent standard be required.

This strategy recommends establishing a performance standard for new commercial construction of 62 kBTU/sq foot. The level of energy use is consistent with the energy usage of a LEED Silver new commercial building, yet allows the construction market to achieve that benchmark as desired, rather than calling for buildings to be LEED Silver compliant. If new commercial construction in Fort Collins were to meet this level of efficiency starting in 2010, it would result in over 350,000 tons CO2e avoided in 2020, assuming 1.1 million square feet are constructed annually. It also recommends partnering with the Governor's Energy Office Task Force on the establishment of a standard energy rating system for buildings.

Require Green Building as a Prerequisite for Public Financing

The City of Fort Collins' *Roadmap for Green Building* calls for a mid-term strategy (within three years) to require green building as a prerequisite for any projects that offer public financing. The City already has a Leadership in Energy and Environmental Design (LEED) goal for new City buildings. This strategy recommends developing new policies requiring green building targets for projects that receive direct or indirect public financing from the City.

As one example, the Portland Development Commission's Green Building Program requires developers receiving financial assistance from the commission, as well as direct commission funded projects, to integrate green building practices into construction projects and meet established LEED standards.

Net Zero Ready Homes

A net zero energy homes is connected to the grid and uses energy from a local utility like typical homes. But unlike typical homes, it adds state of the art energy efficiency components and renewable energy systems that return as much energy to the grid as it uses, on an annual basis.

This measures calls for the exploration of building codes and ordinances requiring that all homes over a certain size be required to achieve net zero energy use and the expansion of this requirement, over time, to all new homes.

Austin, TX, intends to pass a series of code amendments that will make new homes built by 2015 all

"net zero" capable. (ci.austin.tx.us/council/downloads/mw_zech_release.pdf)

Boulder County has included a "Net Zero Energy Homes" strategy in it their Sustainable Energy Plan (bouldercounty.org/sustain/pdf/SEP_final_draft.pdf) approved by County Commissioners in February 2008.

LEED for Neighborhoods

See page 55, under Land Use.

Energy

Expand Awareness of Existing Net Metering Program

Fort Collins Utilities currently has a pilot net metering project that offers residential electric customers generous full retail buy-back provisions for electricity generated by solar photovoltaic (PV) systems connected to the electric grid. In 2006 the program had nine residential customers and two commercial customers whose solar PV systems have been inspected and are operational. The total peak capacity of these systems is 24.4 kilowatts. The pilot allows up to 25 participants. Expand awareness of the existing program to encourage more renewable energy projects. Ensure that the net-metering program allows for other forms of renewable energy beyond PV.

Promote Plug-In Hybrids and Vehicle-to-Grid Applications

Plug-In Hybrids (PHEV)

Wickipedia defines a plug-in hybrid electric vehicle (PHEV) as a hybrid vehicle with batteries that can be recharged by connecting a plug to an electric power source. The cost for electricity to power plug-in hybrids for all-electric operation in California has been estimated at less than one quarter of the cost of gasoline. A 2004 California Air Resources Board study show that battery-electric vehicles emit at least 67% lower greenhouse gases than gasoline cars. And PHEV get cleaner as they age, because the power grid is getting cleaner. Plug-in hybrids use no fossil fuel during their all-elecric range if their batteries are charged from renewable energy sources. Other benefits include improved national energy security, fewer fill-ups at the filling station, the convenience of home recharging, opportunities to provide emergency backup power in the home and vehicle-to-grid applications.

Although plug-in hybrid passenger vehicles are not in production as of April 2008, Toyota, GM, Ford and a few start-up companies have announced their intention to introduce production PHEV automobiles, with the first models expected in 2009.

"Vehicle-to-Grid" technology (V2G)

Electric-drive vehicles, whether powered by batteries, fuel cells, or gasoline hybrids, have within them the energy source and power electronics capable of producing the 60 Hz AC electricity that powers our homes and offices. When connections are added to allow this electricity to flow from cars to power lines, we call it "vehicle to grid" power, or V2G. When the car is in the V2G setting, the battery's charge goes up or down depending on the needs of the grid operator, which sometimes must store surplus power and other times requires extra power to respond to surges in usage. The

ability of the V2G car's battery to act like a sponge provides a solution for utilities, which pay millions to generating stations that help balance the grid.

This strategy recommends proactive exploration of policies and programs in Fort Collins to support PHEV and V2G.

Expand FortZED to the Entire Community

The UniverCity Connections Sustainable Energy Group has completed a recommendation to create a "Zero Energy District" in downtown Fort Collins, dubbed "FortZED". FortZED seeks to transform the UniverCity area, which encompasses Old Town, the Colorado State University campus and the downtown river corridor, into a Zero Energy District, or ZED. This means that the district would create as much thermal and electrical energy locally as it uses within its built environment. "Local" is defined as within a 50-mile radius of the district. The FortZED project will require the energy generated to be clean energy balanced with efficiency and conservation to reach its net goal. FortZED will position Northern Colorado as a leader in distribution systems and renewable energy innovations and boost local economic development through the creation of primary jobs in the clean energy industry. In 2008, Fort Collins was awarded an $11 million Department of Energy grant to "jumpstart FortZED.

This strategy envisions the completion of FortZED and expansion of the zero energy district to a larger area within the Fort Collins community.

Promote SmartGrid Evolution

The existing transmission and distribution system in the United States uses technologies and strategies that are many decades old and include limited use of digital communication and control technologies. To address this aging infrastructure and to create a power system that meets the growing and changing needs of customers, initiatives are underway to develop "smart" grids that use advanced sensing, communication and control technologies to generate and distribute electricity more effectively, economically and securely. The Smart Grid integrates new innovative tools and technologies from generation, transmission and distribution all the way to consumer appliances and equipment.

While the strategies discussed above provide seqential steps for moving towards SmartGrid technologies, this strategy calls for long-term focus on local development of a "SmartGrid".

Urban Forestry

Promote Tree Planting

Urban trees are a good economic and environmental investment. A study published in 2003 in collaboration with the USDA Forest Service, the Center for Urban Forest Research, and the City of Fort Collins (*Benefit-Cost Analysis of Fort Collins' Municipal Forest*) concludes that the 31,000 park and street trees in Fort Collins provide substantial environmental and economic benefits for taxpayers. For every $1 invested in tree management, residents receive $2.18 in benefits. The net cost benefits are presented below.

Energy savings	$112,045
Carbon dioxide reduction	$43,686

Air quality improvement	$18,472
Stormwater	$403,597
Property value	$1,596,247
TOTAL BENEFITS	**$2,147,047**

Goals should be established to maximize responsible tree planting on public and private property to fill empty planting spaces. Trees should be strategically planted to optimize building energy efficiency by reducing heating and cooling needs. Trees should be selected and maintained in a way that minimizes carbon emissions associated with maintenance, fertilizers, and irrigation.

Partnerships with other local organizations could be developed to increase local tree planting. For example, the City of Boulder set a long-term goal to increase industrial canopy cover from 7% to 9%. Denver set a goal to plant thousands of new trees annually in parks, natural areas and on private property, thus increasing Denver's tree canopy from 6 percent to a total of 18 percent tree cover, as identified in the Denver Parks Game Plan. Portland planted 750,000 trees and shrubs between 1996 and 2005 to help sequester carbon emissions.

Community Engagement

Establish a Long-Term Target to Engage 50% of Businesses, Households and Youth Populations in Climate Protection Actions

Building public support for climate protection activities is perhaps the most critical success factor for achieving sustained change. Surveys show that the public generally supports green actions. Yet it is not uncommon for the average citizen to feel overwhelmed by a deluge of information, guilt at the inability to act at a level in line with their values and/or powerless to make a difference in the issue of global climate change.

The Denver's Climate Action Plan set out a goal of reaching 50% of the population in three target segments: businesses, neighborhoods, and youth. The recommended expansion of the Climate Wise program will increase focus on businesses and the recommended “Community Climate Challenge” intends to focus on residents, including youths. If community engagement enhanced the performance of the recommended short-term new measures by even 5%, an additional 30,000 tons CO2e might be reduced by 2020.

City Government Leadership

The City government is well positioned to influence a community’s carbon footprint through modeling best practices for the internal organization, and establishing policies that support greenhouse gas reduction within the community.

This strategy recommends that the City of Fort Collins identify and communicate overarching organizations goals that will support greenhouse gas reduction, not only for the municipal government but for the community. It is also recommended that the City adopt a standard management framework such as ISO14001, an Environmental Management System or a Sustainability Management System to implement and track progress on these over-arching goals.

Education

A civic engagement campaign should have a strong education component to raise community awareness about climate change and peak oil. It should identify key audiences and messages. It should clearly yet simply make the case for taking action, and use simple illustrations to provide context for abstract concepts like "a ton of CO2". It should inform the community about the challenges associated with climate disruption and the benefits and opportunities associated with climate solutions. It should inspire action across all sectors of the community and celebrate successes along the way. Engagement strategies for consideration include:

- A community/blue ribbon panel to help develop or review a pubic engagement campaign.
- A series of community dialogues and/or informational programs in partnership with other organizations.
- A school contest for climate campaign theme.

The community-based social marketing approach finds that initiatives to promote behavior change are often most effective when they are carried out at the community level and involve direct contact with people, according to the CBSM Web site cbsm.com. The CBSM process involves identifying barriers to a sustainable behavior, designing a strategy that utilizes behavior change tools, piloting the strategy with a small segment of a community, and finally, evaluating the impact of the program once it has been implemented across a community.

Innovation and Collaboration: Establish a Fort Collins GHG Incubator

Fort Collins is fortunate to have a number of organizations leading sustainability efforts including Poudre School District, Colorado State University and the wide array of Climate Wise partners that have publicly committed to voluntarily reducing their organization's greenhouse gas emissions. Building collaborations and sharing experiences with other leaders in the community and region will be integral to achieving success.

This strategy recommends seeking state and other matching funds to develop a Fort Collins Greenhouse Gas Incubator to promote the creation of innovative solutions and promote collaborate among the various partners working on climate protection. A Fort Collins GHG Incubator could provide an important coordination point for numerous existing efforts such as the Clean Energy Cluster, Envirofit and the CSU Engines and Energy Conversion Lab, various research efforts at CSU that pertain to carbon mitigation and multiple other entities working on climate solutions.

Promote Climate Protection and Adaptation Strategies at the State, Regional and Federal Levels

While Fort Collins' climate protection efforts should not be unduly reliant on actions at other levels of government to reach its stated goals, local progress could be greatly advanced by passage of climate protection programs at the state and federal levels. Fort Collins should support or lobby for legislation that cost-effectively reduces greenhouse gas emission. Some programs are better addressed at high levels of government. Examples include regulations to reduce the greenhouse gas intensity of transportation fuels and/or establish greenhouse gas emissions standards for new vehicles.

APPENDIX D

City Council Resolution 2007-015 and City Council Resolution 2008-051

RESOLUTION 2007-015
OF THE COUNCIL OF THE CITY OF FORT COLLINS
CONVENING A TASK FORCE TO UPDATE THE CITY OF FORT COLLINS CLIMATE PROTECTION PLAN AND TO PROMOTE RENEWABLE ENERGY, ENERGY EFFICIENCY, WASTE REDUCTION AND TRANSPORTATION-RELATED TECHNOLOGIES, SERVICES, AND PRACTICES

WHEREAS, reducing dependence on fossil fuels is widely recognized as beneficial to the national, state, and local economies; and

WHEREAS, local businesses currently provide goods and services that reduce the reliance of national, state, and local economies on fossil fuels; and

WHEREAS, local businesses currently have energy efficiency and renewable energy practices that reduce the reliance of local economies on fossil fuels; and

WHEREAS, promoting additional green businesses and business activity in climate protection activities would benefit the local economy by providing jobs, property tax revenue, and sales tax revenue; and

WHEREAS, the City Council has recognized the importance of promoting the development and application of clean and renewable energy sources by passing Resolution 2006-037, which directs the City Manager to join with other local institutions to develop a Clean Energy Cluster for Northern Colorado; and

WHEREAS, the development and application of clean and renewable energy sources and energy efficiency technologies would reduce the emission of greenhouse gases, which are widely recognized as contributing to global climate change; and

WHEREAS, the magnitude of climate change now forecast by the scientific community is predicted to cause severe and costly disruption of human and natural systems throughout the world generally and in Colorado in particular; and

WHEREAS, the scientific community believes that significant reductions in the emissions of greenhouse gases can slow and minimize the negative impacts associated with climate change; and

WHEREAS, the City has previously recognized the importance of evaluating and mitigating the cumulative impacts on the environment caused by greenhouse gas emission through its participation in the Cities for Climate Protection Campaign; and

WHEREAS, by the adoption of Resolution 1999-137, the City Council has previously stated its commitment to reducing its greenhouse gas emissions to the equivalent of 2,466,100 tons of carbon dioxide or less by 2010; and

WHEREAS, if present trends continue, the City will be responsible for the emission of 30% more greenhouse gases than the target established by Resolution1999-137;

WHEREAS, the City's long-term goal is for the City organization to be climate-neutral in its operation and in the provision of services to the citizens of Fort Collins and the City Council wishes to consider undertaking additional, affirmative steps toward achieving that goal; and

WHEREAS, in 2006, Mayor Hutchinson was appointed as one of ten project directors of the statewide Colorado Climate Project sponsored by the Rocky Mountain Climate Organization, the goal of which project is to bring Coloradoans together to study alternatives and develop recommendations to reduce the state's contribution and vulnerability to climate change.

NOW THEREFORE BE IT RESOLVED BY THE COUNCIL OF THE CITY OF FORT COLLINS as follows:

Section 1. That the City Manager shall appoint and convene a task force consisting of members selected from citizens, members of City boards and commissions, and City staff to solicit input from the public and from City boards and commissions charged with advising the City Council in connection with matters related to energy conservation and environmental quality, and to develop an updated plan that will describe steps that the Fort Collins community could take to meet the greenhouse gas emissions target established by Resolution 1999-137.

Section 2. That said updated plan shall include measures to encourage local businesses, governments, utilities, schools, universities, non-profit organizations, homeowners, and other individuals to develop, provide, and apply (as appropriate) technologies, services, and practices to promote renewable energy, energy efficiency, transportation efficiency and waste reduction within the City of Fort Collins.

Section 3. That it is the intent of the Council that said task force identify and incorporate the most useful and defensible technical and policy resources as the basis for its recommendations, including consideration of any relevant information from the Colorado Climate Project.

Section 4. That in addition to preparing recommendations for an updated 2010 plan, the task force shall also make recommendations on how the City should develop a future direction for climate protection after 2010, and shall report its findings on the matter to the City Manager.

Passed and adopted at a regular meeting of the Council of the City of Fort Collins this 6th day of March, A.D. 2007.

Mayor

ATTEST:

City Clerk

RESOLUTION 2008-051
OF THE COUNCIL OF THE CITY OF FORT COLLINS
ESTABLISHING CITY GREENHOUSE GAS REDUCTION GOALS

WHEREAS, there is widespread consensus that human emissions of greenhouse gases are impacting the earth's climate system, causing the potential for unprecedented large-scale adverse health, social, economic and ecological effects; and

WHEREAS, climate disruption is likely to cause, and may already be causing, damage to the environmental and economic health of Colorado communities, risks associated with reduced snow pack that could affect both water supply and tourism, and secondary impacts such as changes in agriculture economics; and

WHEREAS, local governments can greatly influence their communities' greenhouse gas emissions by exercising key powers over land use, transportation, building construction, waste management, and, in many cases, energy and water supplies and management; and

WHEREAS, there currently is no comprehensive federal regulations of greenhouse gas emissions and the United States is itself the largest per capita emitter of greenhouse gas emissions; and

WHEREAS, it is appropriate for local governments to take responsibility for emissions occurring within their jurisdictions since local community actions can speed the development of technology-based solutions and more rapidly promote market transformation that will help drive reductions in global emission levels; and

WHEREAS, the Fort Collins community could realize tremendous ancillary economic, environmental, and social benefits by undertaking responsible steps to combat climate change; and

WHEREAS, by the adoption of Resolution 1999-137, the City Council established a policy that the City shall proactively identify and implement actions to reduce greenhouse gas emissions within the City by at least 30% below predicted 2010 levels by 2010 while achieving cost-effectiveness in each program; and

WHEREAS, the City has demonstrated its leadership on the issue of climate protection through the implementation of Climate Wise, the Electric Energy Supply Policy, recycling initiatives and other programs to reduce emissions, and should continue to lead by example so as to encourage other communities across the region, state, and globe to share in the solution to the problem of greenhouse gas emissions; and

WHEREAS, despite this progress, Fort Collins is not on track to meet the greenhouse gas emissions goal established by Resolution 1999-137 to reduce carbon dioxide emissions to an inventory level of 2.466 million tons in the year 2010; and

WHEREAS, the Fort Collins community offers a unique combination of innovation and technical expertise that can be utilized to develop long-term sustainable solutions and facilitate all sectors and organizations in Fort Collins in taking action to reduce emissions; and

WHEREAS, scientists have identified a need to reduce the global emission of greenhouse gases by 80% by the year 2050, at the latest, in order to avert the worst impacts of global warming; and

WHEREAS, the 2007 recommendations of the Colorado Climate Project convened by the Rocky Mountain Climate Organization to reduce the state's contribution and vulnerability to climate change include reducing statewide emissions in the vicinity of 20% below 2005 levels by 2020 and 80% below 2005 levels by 2050; and

WHEREAS, the 2007 Colorado Climate Action Plan establishes these same goals; and

WHEREAS, the City Council is intent upon continuing its efforts to achieve meaningful reductions in local greenhouse gas emissions; and

WHEREAS, aligning local greenhouse gas goals with state goals will minimize confusion on the part of the public and facilitate statewide collaboration in reducing the damage caused and risks created by greenhouse gas emissions; and

WHEREAS, the Fort Collins Climate Task Force has recommended that Council include in this Resolution an additional goal to the effect that the Fort Collins community reduce its current greenhouse gas emissions so that, by the end of 2012, such emissions do not exceed 2.466 million tons.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF FORT COLLINS as follows:

Section 1. That the Council hereby establishes the goals of reducing Fort Collins' community-wide greenhouse gas emissions 20% below 2005 levels by 2020 and 80% below 2005 levels by 2050.

Section 2. That, pending attainment of such goals, the Council hereby expresses its intent to reduce current community-wide greenhouse gas emissions by the end of 2012 to a level not to exceed 2.466 million tons.

Section 3. That the City government must lead by example in this area by minimizing greenhouse gas emissions in its own operations through the establishment of policies and directions that will lead the community to a sustainable future, and, most importantly, by inspiring community involvement in the effort to reduce greenhouse gas emissions.

Section 4. That the City Manager is hereby directed to prepare for Council consideration an updated plan to reduce greenhouse gas emissions within the Fort Collins community that identifies interim milestones needed to put Fort Collins on a trajectory to meet the 2020 goal, including the milestone for the year 2012 referenced in Section 2 above.

Section 5. That such updated plan shall include a list of strategies demonstrating how interim milestones can be met and that these strategies should: consider relevant technical, economic, political, and social factors; promote economic vitality and prioritize investments in the Fort Collins community; address all emissions sectors; and promote involvement by all segments of the community (local businesses, governments, utilities, schools, universities, non-profit organizations, homeowners, and other individuals).

Section 6. That the City Manager is further hereby directed to: (a) prepare an annual report tracking progress toward attainment of the goals established herein, including a community-wide greenhouse gas emissions inventory and a list of quantified emission reductions actions for the preceding calendar year; and (b) biennially, at least six months in advance of the City's biennial budget preparation, prepare a report evaluating progress on greenhouse gas reduction relative to established interim milestones and recommending actions for consideration in the upcoming budget cycle.

Section 7. That the Council hereby recognizes that new data, scientific findings, mitigation technologies, and quantification methodologies may emerge over time and that future Councils may choose to update the community greenhouse gas goal to take in account evolving science, technology or other opportunities.

Passed and adopted at a regular meeting of the Council of the City of Fort Collins this 20th day of May A.D. 2008.

Mayor

ATTEST:

City Clerk / Chief Deputy

Fort Collins Climate Task Force Recommendations

June 2008

For more information, see fcgov.com/ctf, or call the City of Fort Collins Natural Resources Department at (970) 221-6600.