Energy Policy – 2012 Annual Update

May 2013

City of Fort Collins Utilities

1.0 Energy Policy Update

This report provides an update of 2012 activities and results related to the City of Fort Collins *Energy Policy*, adopted in January 2009. The primary goals of the *Energy Policy* are to sustain high-system reliability and to contribute to the community's climate protection goals and economic health. The purpose of the policy is to provide strategic planning guidance for Fort Collins Utilities (Utilities). The *Energy Policy* 2050 vision is to ensure highly reliable, competitive, carbon neutral electricity supplies, managed in a sustainable, innovative, responsible and efficient manner for the Fort Collins community.

The *Energy Policy Annual Update* reviews progress made to date in the primary goal areas of the policy: reliability, climate protection, economic health and the City's collaboration with Platte River Power Authority (Platte River). The *Energy Policy* and most recent annual update are available at *fcgov.com/utilities/what-we-do.*

Key outcomes from implementation of the *Energy Policy* in 2012 include:

- Community carbon emissions from electricity use were 6% less in 2012 compared to the baseline year of 2005. Figure 1 illustrates key factors impacting the community's electricity carbon emissions, comparing 2012 to 2005. The illustration shows that electricity use has increased at a slower rate than population and economic factors, even during a record breaking weather year. The reduction in emissions was due both to factors related to the Energy Policy (increased use of renewable energy, efficiency programs impact on electricity use, improved fossil fuel power plant efficiency) and factors unrelated to the Energy Policy (e.g. availability of hydropower from Western Area Power Administration, regional economic factors).
- Electricity use per capita, for all sectors, has decreased by 8% from 2005 to 2012 (Figure 2).
- Customers continued to receive highly reliable electric service, as measured by an average system availability index of 99.9968%.
- Avoided annual carbon emissions of over 161,000 metric tons from *Energy Policy* related programs.
- Renewable energy comprised 5.2% of total electrical energy purchases in 2012.
- Efficiency programs generated over $20 million in local economic benefits through reduced utility bills, direct rebates and leveraged investment.

Major 2012 activities and highlights:

- Utilities continued implementation of the Advanced Meter Fort Collins project to modernize the distribution system.
- Customer electricity savings from efficiency programs totaled over 23,000 megawatt-hours (MWh), or 1.5% of the community's annual usage (Figures 2 and 3). This is equivalent to the annual electric use of over 2,500 typical Fort Collins homes.
- Efficiency programs saved electricity with a lifecycle cost-of-conserved energy of 2.3 cents per kilowatt-hour (kWh), compared to an average wholesale electricity cost of 5.0 cents per kWh.
- Photovoltaic (PV) capacity additions totaled 350 kW (130 kW residential and 220 kW commercial).

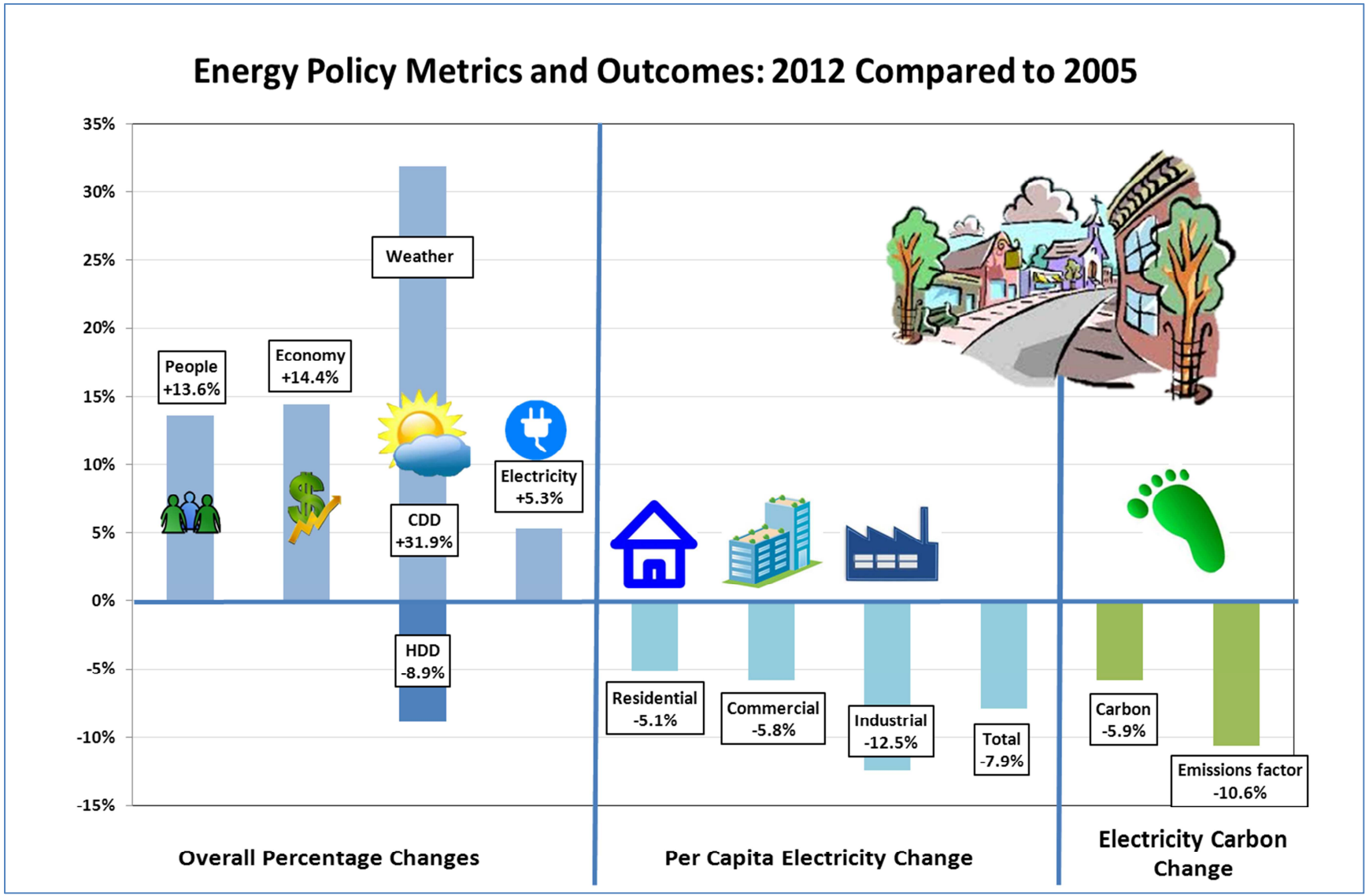

Figure 1: Energy Policy Metrics and Outcomes: 2012 Compared to 2005

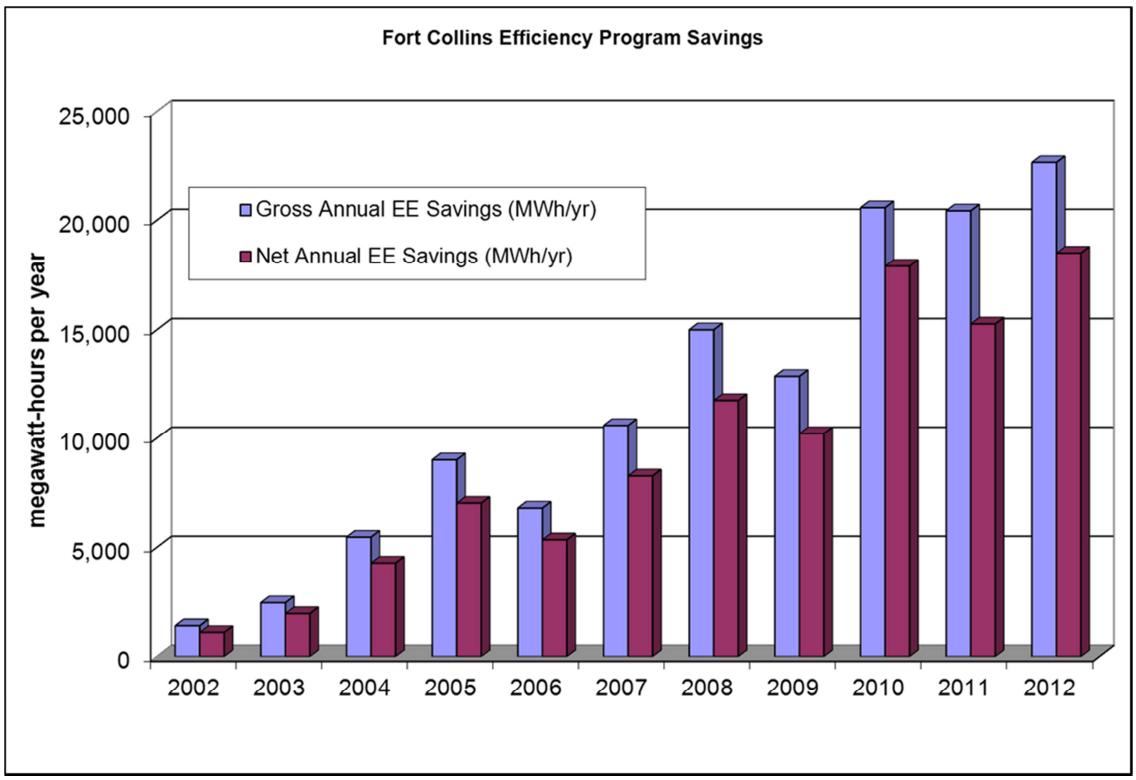

Figure 2: Efficiency Program Savings (2005 – 2012)

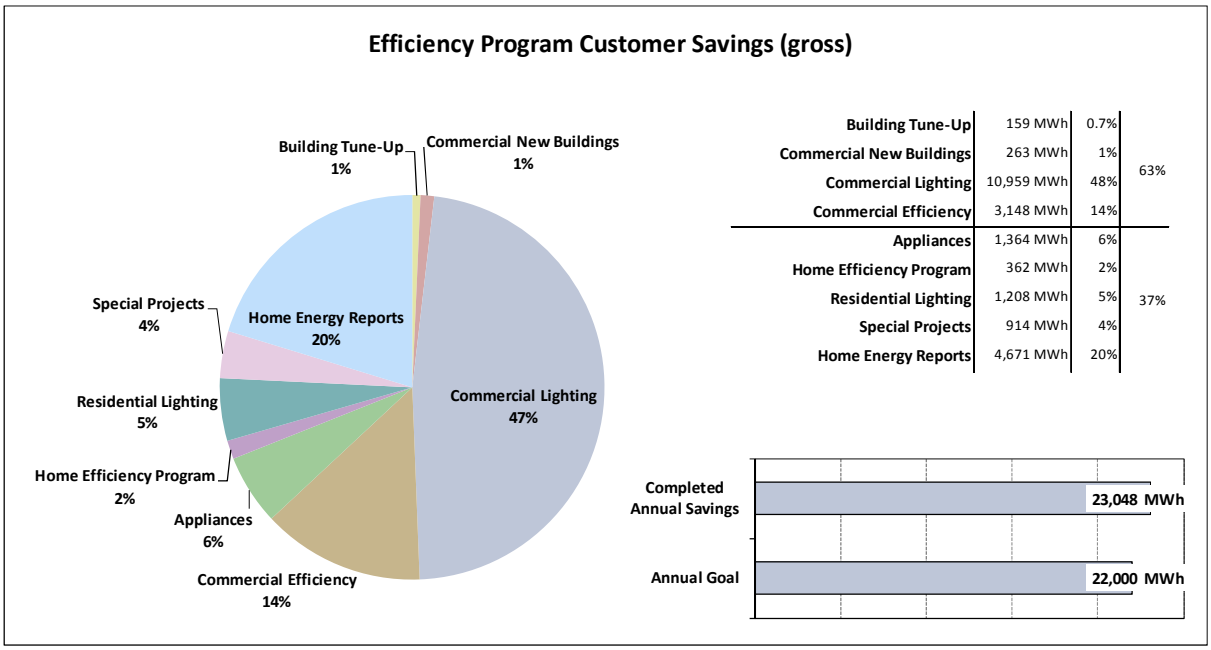

Figure 3: Efficiency Program Customer Savings (2012)

Appendix: Energy Policy Metrics Scorecard

The *Energy Policy* references goals that include specific objectives and metrics in various categories. The following tables summarize status, progress and accomplishments in 2012 related to each goal and supporting objectives. The tables use the following stoplight color coding to indicate progress and status:

●	Achieved or on-track to be achieved
●	Progress towards being achieved
●	Not achieved or at risk for not being achieved

For more information regarding any aspect of this annual update, call Fort Collins Utilities at (970) 221-6700, e-mail *utilities@fcgov.com* or TDD (970) 224-6003.

Goal 1: Provide Highly Reliable Electric Service

Objectives and Metrics	Progress
Provide and maintain a highly reliable system.	
● Average System Availability Index (ASAI) greater than 99.9956%	99.9968%
● Customer Average Interruption Index (CAIDI) less than 45 minutes	42.00
● System Average Interruption Frequency Index (SAIFI) less than 0.66	0.40
Develop, implement and maintain effective capital planning.	
● Apply appropriate construction standards and material specifications for long-term reliability.	Engineering Standards personnel supported the advanced metering project by working with our installation contractor and providing logistics and materials necessary to enable the replacement of roughly 42,000 combined population of electric and water meters between March and December of 2012. Standards personnel were also instrumental in the day-to-day review and adjustment of system data pathways with an eye to improving business processes and systems affected by the advanced metering project.
● Create an asset management plan by 2010 for the long-term integrity of the electric utility infrastructure.	Utilities' asset management projects continued in 2012 with a focus on the water and wastewater systems. Planning for the electric utility infrastructure will be sequenced after the primary activities of the Advanced Meter Fort Collins project, starting with risk assessment in late 2013.
● Create a smart grid roadmap defining specific objectives and implementation plans.	Advanced Meter Fort Collins (AMFC) made significant progress in 2012. The highest profile aspect of the project concerned the 100,000 metering devices being installed for metered utilities service for Fort Collins customers. Metering devices installation and full system operational testing was completed in the Initial deployment Area (IDA) in the first and second quarters. Successful operation in the IDA was realized by full functional capability to collect data from metering devices and successful transfer of data through the various AMFC electronic data systems to the Customer Information System to create correct

	customer bills. Based on achieved successful operation in the IDA, full scale deployment of the electric meters and water modules began in third quarter. Deployment is scheduled for completion in 2013.
Manage peak loads to reduce demands on the distribution system, optimize infrastructure investment and reduce purchased power costs.	
● Maintain energy efficiency and demand side management programs targeting peak loads.	Ongoing business programs targeting peak load include LightenUP and the Electric Efficiency Program. Custom projects offer the option of calculating rebates based on peak demand reductions. Residential programs also contribute to peak load reductions. Peak demand savings from 2012 efficiency programs was 2.1 MW.
● Increase the power managed by load management, smart grid and distributed generation to at least 5% of 2005 system peak demand by 2015 and at least 10% by 2020.	Combined residential and commercial load management for 2012 was 6.5 MW, or 2.2% of 2012 peak demand.
● Support customer efforts to reduce electric costs through managing peak loads.	Business customers, through scheduling and load management, have the capacity to reduce over 7.8 MW in peak demand.
Workforce knowledge transfer and empowerment.	
● Annually report on human resources benchmarks designed to sustain a skilled and qualified Light and Power workforce.	The Utilities for the 21st Century initiative has sponsored regular communication to employees to encourage a better understanding of the issues facing the electrical and water utility industries. These include diminishing resources, regulatory compliance, workforce retention and knowledge transfer, workplace culture and fostering innovation. Utilities focused on development of a Knowledge Management program and completed a risk assessment to identify vulnerability in the work groups. A Knowledge Management Toolbox was created to mitigate known risks and budget dollars have been allocated for mitigation implementation.

Goal 2: Support Community Greenhouse Gas Reduction Goal

(20% Reduction Below 2005 Levels by 2020 and 80% Reduction by 2050)

Objectives and Metrics	Progress
Report Light and Power Greenhouse Gas (GHG) emissions inventory and results of reduction efforts.	
● Light and Power aggregate 2012 emissions (ownership and operational control)	GHG Emissions Inventory (metric tons)

	2005	2011	Percent Change
Ownership Boundary	1,725,390	1,474,265	-14.6%
Operational Boundary	1,198,083	1,127,737	-5.9%

Gross *Energy Policy* related GHG reductions	161,634 metric tons
Continuously reduce energy use through verifiable energy efficiency and related programs.	
Adopt pricing policies that reflect the short-term and long-term costs, both direct and indirect, of generating and delivering electricity.	A three-tiered residential rate which encourages year-round energy conservation was implemented in 2012. All customer rates increase during the months of June, July and August to reflect the higher cost to generate and purchase power during that time of year. The rates also reflect the Platte River seasonal rate structure which shifted more of its cost recovery from peak demand charges to the energy charge component. Rates are expected to evolve in the next several years as Advanced Meter Fort Collins provides new pricing options including pre-pay and time-of-use.
Achieve annual energy efficiency and conservation program savings of at least 1.5% of annual energy use (based on a three-year average history).	Customer (gross) energy efficiency program savings was 23,048 MWh in 2012, 1.5% of the community's electric use. Utility savings (net) was 18,779 MWh, 1.25% of the community's electric use. Customer savings, or gross savings, include all efficiency projects. Utility savings, or net savings, discount the results to account for savings that would have occurred in absence of efficiency programs.
Promote sustainable practices in homes and businesses by requiring highly energy efficient new buildings and supporting increased efficiency in existing buildings.	Utilities' staff provided training, education, and support to the City Building Department for implementation of the green amendments to the building code. Implementation began for required business efficiency assessments for qualifying projects. The Home Efficiency Program continued to provide strong results for residential buildings, with 592 audits and 289 efficiency improvement projects completed in 2012.
Pursue and secure renewable energy investments by balancing environmental benefits, cost effectiveness, impact on electrical system operations and local economic benefits.	
Maintain a minimum fraction of renewable energy in compliance with State of Colorado requirements.	3.4% renewable energy from rate-based purchases under Platte River Tariff 7. Utilities also purchases the renewable energy credits from local solar electric systems, which contributed an additional 0.1% towards the compliance with Colorado's Renewable Energy Standard.
Offer voluntary customer-focused renewable energy programs.	24,969 MWh from Green Energy program
Increase the contribution of renewable energy to reach the 20% by 2020 carbon reduction goal, after accounting for the contributions of resource mix, energy efficiency, conservation, minimum renewable energy requirements and voluntary renewable energy programs.	5.2% total renewable energy (3.4% from rate base, 1.7% from voluntary program, 0.1% from local solar)
Include renewable energy sources that can be scheduled to maintain system stability and reliability.	Renewable Demonstration and System Integration (RDSI) and AMFC projects are advancing the technology for integration of intermittent resources.

Remain at the forefront of emerging technologies and electric utility innovation.	
● Participate in research and development, demonstration and innovative solutions.	The RDSI project completed reporting to the Department of Energy. The successful project led to a follow on grant project to create and study a microgrid. Utilities is participating in the E-Lab project managed by Rocky Mountain Institute.
● Develop a plan for reporting and continuous improvement on the sustainability of electric utility operations.	Global Reporting Initiative (GRI) sustainability reporting will continue biennially with the next report in 2014 (*fcgov.com/utilities/gri.php*). The GRI framework includes operational performance indicators specific to the electric utility sector, including reliability, emissions, emergency management, safety, resource mix and customer service practices.

3. Enhance Local Economic Health

Objectives and Metrics	Progress
Maintain the financial health of Fort Collins Utilities' Light and Power Service Unit to support the vision of the *Energy Policy*.	
● Continue to meet the Utilities Light and Power fund financial policies.	At the end of 2012, the Light and Power Fund met all working capital reserve policies and remains in a healthy financial position. With the rate increases approved for 2013, reserves and changes in net assets are projected to remain at or above minimum policy levels during the next five years. 2012 working capital reserves increased by $7.8 million due to an accounting change related to unspent bond proceeds. In 2011, $12.9 million in bond proceeds was classified as a restricted long term investment and was not included as part of year end working capital. In 2012 the unspent proceeds ($7.9 million) were reclassified and moved to the current assets investment account resulting in the significant increase in working capital reserves. Without the accounting change, year-end 2012 working capital would have remained equivalent to 2011. While the change impacted the Working Capital Reserve, it did not change the Fund's overall financial position.
● Maintain sufficient revenues through biennial budget planning for on-going operation and maintenance of the electric system and meet the projected requirements of the asset management plan.	2012 revenues and projected revenues for the 2013-2014 biennial budget remain sufficient for the on-going operation and maintenance of the electric distribution system including system additions and replacements. A strategic financial plan is in final stages of development and planning efforts will begin in 2013 for the Light and Power Fund's participation in the computer maintenance management system and asset management program.
Operate and maintain regionally competitive electric service that promotes energy efficiency and conservation.	
● Maintain competitive electric rates.	As of January 2013, Fort Collins typical residential customer bills were in the lowest 13% of 54 Colorado utilities reporting to the Colorado Association of Municipal Utilities (CAMU).

Maintain efficiency and conservation programs to help keep customers' energy bills affordable.	Affordability of Utilities electric service (percentage of area median income AMI): • Average Residential Customer: 1.2% of AMI • Low Income Customer: 1.6% of AMI • Very Low Income Customer: 2.5% of AMI • Extremely Low Income Customer: 4.1% AMI Fort Collins electric and natural gas affordability for average residential customer: 2.0% of AMI.
Promote the benefits of clean energy solutions to existing and potential customers.	Utilities continued with the Fort Collins Conserves strategic outreach plan using a year-round approach with seasonal aspects. Energy Services continued residential and business focused educational programs and provided strategic, technical and financial support to the ClimateWise program. The Key Accounts program provides on-going outreach on clean energy opportunities for commercial customers and coordination with City economic health efforts directed at new and existing businesses.
Leverage Utilities programs to create local and positive economic impacts.	
Strive to invest climate improvement monies locally in programs that have long-term positive impacts.	The participating contractor list for the Home Efficiency Program includes 44 local contractors, who received best practices training for improving the efficiency of existing homes. Efficiency programs in 2012 generated over $20 million in local economic benefits through reduced utility bills, incentives, leveraged investment and indirect activity.

4. Work closely with Platte River Power Authority members and staff to further City of Fort Collins' *Energy Policy* goals

Objectives and Metrics	Progress
Develop closer working relationships with the other Platte River cities. With other member cities, provide policy guidance to Platte River to:	
Design, operate and maintain the electric generation and transmission system to minimize the risk of system outages.	Platte River has maintained an electric service reliability rate of 99.99% to the owner Municipalities over the last five years. It has also invested over $120 million to enhance the transmission system around the owner municipalities in that time frame. The enhancements increase capacity and further enhance reliability by providing two high-voltage feeds to key substations in the Front Range Cities.
Develop long-term planning policies for Platte River that facilitate innovative solutions to future energy challenges.	An Integrated Resource Plan (IRP) was jointly developed, covering the period 2012 through 2016. No new firm capacity resources are needed during this period, but additional renewable energy resources are planned in 2015. Energy efficiency programs also have been expanded for this 2012 IRP. Total funding to date has exceeded $12.5 million and annual funding of about $2 million is planned by Platte River for several common programs offered in all of the owner municipalities. An updated IRP is planned to be completed by early 2014, to address the need for new capacity in 2019 and to consider a balanced long-term portfolio that includes supply and demand-side

		resources.
●	Design, operate and maintain the electric generation, transmission and distribution system to maximize system efficiency.	Platte River generation resources continue to set new records for availability and utilization. Rawhide Unit 1 was included in a list of the best-utilized U.S. coal-fired plants in the November/December issue of "Electric Light & Power" magazine. Rawhide is the only plant ranked in the top 10 in each of the last three years. Generation efficiency at both Rawhide and Craig were increased during 2012 by about 1%, through investments of about $3.7 million in new and upgraded generation equipment.
●	Avoid the construction of new base load generation facilities.	No new base load resources are being considered in the current 10-year resource planning horizon, due in part to joint energy efficiency efforts, load control programs and expanding additions of renewable energy sources.
●	Reduce impacts from fossil fuel use in current and future generation facilities.	Emission rates continue to be reduced at Rawhide, including an additional 30% decrease in NOx emissions associated with combustion controls work completed in 2012. Plant efficiency (heat rate) has also improved, reducing the amount of CO2 per unit of energy produced. Expanded joint energy efficiency programs and new renewable resources also reduce the need for fossil fuel supply to the City.
●	Diversify the portfolio of energy sources that serve the City.	A new gas turbine was brought on line in 2008 and the Silver Sage wind site came on line in late 2009. In early 2013, Platte River issued a Request for Proposals for up to 30 MW of new wind resources. Several unsolicited proposals for solar and other resources are also being evaluated. Platte River also worked closely with City staff to evaluate potential for biomass generation on the City system. Fort Collins and Platte River continue joint efforts to meet the City's wholesale renewable supply needs for 2015 and beyond.