

Fort Collins

Small Utilities, Big Energy Savings

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Fort Collins Utilities
10th Annual Southwest Regional
Energy Efficiency Workshop
November 21, 2013



Fort Collins Utilities

Fort Collins Utilities provides electricity, water, wastewater, stormwater and financing services

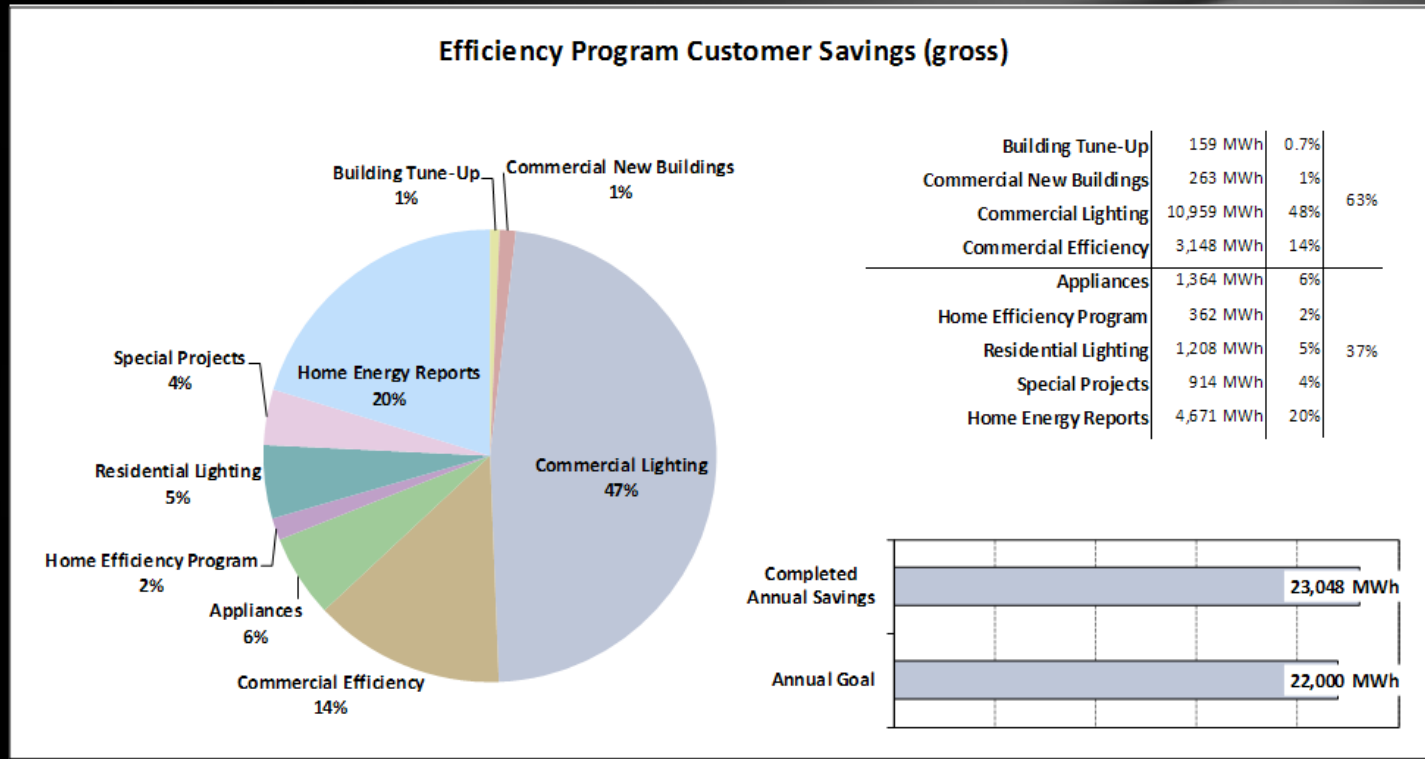
Citizen-owned, electric utility established 1935, ~64,000 customers

Highly educated, environmentally aware customers



Fort Collins Efficiency Portfolio

- Thanks for the award!
- 2012 results, 23 GWh annual savings, 1.5% of sales, 2.2 cents/kWh
- Details at fcgov.com/what-we-do



Fort Collins Efficiency - 20 Minutes

- What we offer
- Results and benchmarking
- Customer interest and support
- Related efforts
- Next steps
 - Data driven processes
 - Performance based incentives
 - New technologies
 - Revised goals and policies
 - New business models



Efficiency – What we offer

Comprehensive residential and business programs

- Products
- Retrofits
- Design
- Operation
- Regulation



Energy and Water Efficiency

Home Efficiency Audits and Rebates

Reduce costs and increase the comfort of your home with energy-saving improvements and rebates.

Efficiency Financing

No money down, quick approval and convenient repayment.

Lighting

Buy discounted compact fluorescent (CFL) and light-emitting diode (LED) bulbs year-round at local retailers.

Refrigerator and Freezer Recycling

Recycle your refrigerator or freezer and receive a \$35 rebate.

Clothes Washer and Dishwasher Rebates

Purchase an ENERGY STAR® qualified clothes washer or dishwasher and receive a \$50 or \$25 bill credit.

Sprinkler Audits and Rebates

Receive free sprinkler system audits and equipment rebates.

Toilet Rebates and Recycling

Receive a rebate when you buy a high efficiency toilet and recycle your old one.

Northern Colorado ENERGY STAR Homes

Locate high-performance new homes and builders.

Renewables

Green Energy Program

Choose Green-e certified renewable energy.

Solar Rebates

Install a solar photovoltaic system and receive cash back.

Community Education

Xeriscape

Create a healthy, attractive landscape that conserves water.

Adult and Youth Education

Engage children and adults with energy and water education in schools and the community.



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11/13

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Education and Tools

Facility Assessment

Get started with a free, quick and practical energy and water assessment.

Biz Ed

Attend free monthly public programs.

ClimateWise

Partner with this free, voluntary program to reduce waste, energy, water and transportation while receiving public recognition, ongoing support, tools and education.

Efficiency Challenge

Motivate employees and inspire energy and water-efficient behavior.

Keep Current

Access the e-newsletter and online library.

Load Management

Reduce your energy demand and lower your bill.

Sprinkler Audits

Receive free audits and recommendations for HOAs.

Restaurant and Hotel Materials

Hotels can encourage customers to save water with information cards and restaurants can get free pre-rinse spray nozzles.

Rebates and Incentives

Electric Efficiency and Water Conservation

Receive rebates for efficiency improvements; details and choices at fcgov.com/business/conserves.

Building Tune-up

Improve the efficiency of your existing building.

Integrated Design Assistance

Receive incentives for high-performance new buildings.

Refrigerator and Freezer Recycling

Recycle your refrigerator or freezer and receive a \$35 rebate.

Renewables

Green Energy Program

Choose Green-e certified renewable energy.

Solar Rebates and Financing

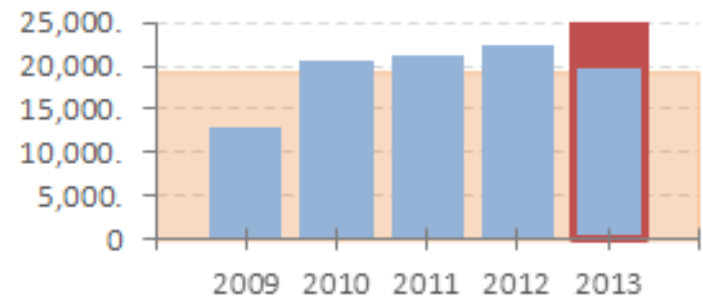
Install a solar photovoltaic system and receive cash back.

Energy Results

- Customers served since 2004
 - 2,300 businesses (41%)
 - 2,900 homes (5%)
 - 18,500 appliances
 - 421,000 bulbs
 - 40,000 on-going home energy reports (80%)

2013 Projected MWh Savings

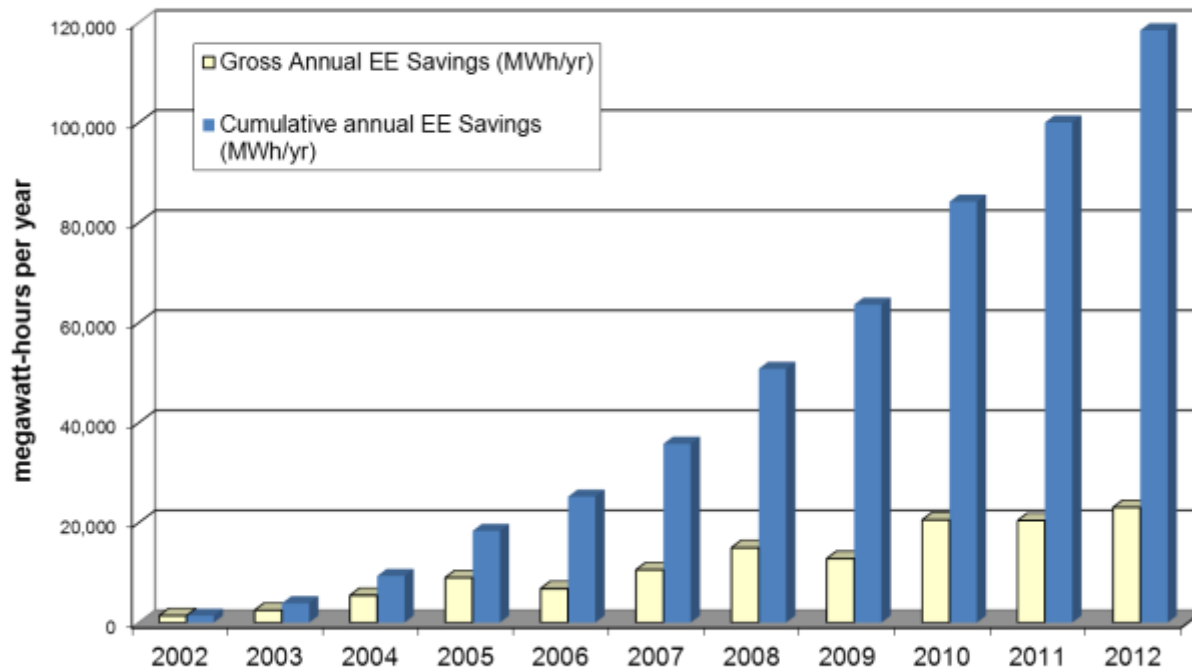
	Customer	Utility (net)
Avg (2009-2013)	19,264	15,958
Paid/Performed	20,275	17,564
Projection	29,870	27,570



2012 utility cost per kWh saved = 2.2 cents

Energy Results

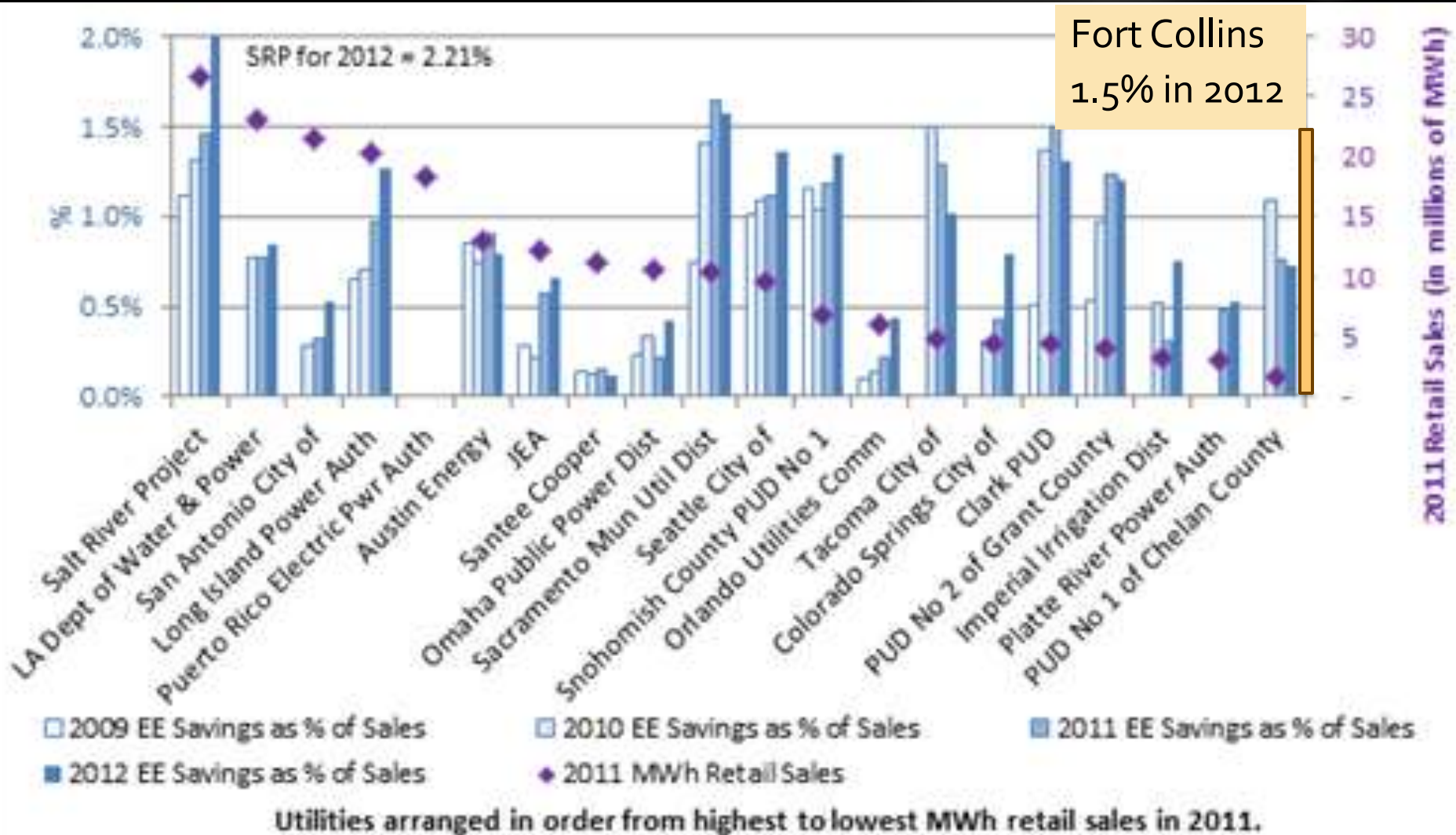
Fort Collins Efficiency Program Savings



Cumulative annual savings

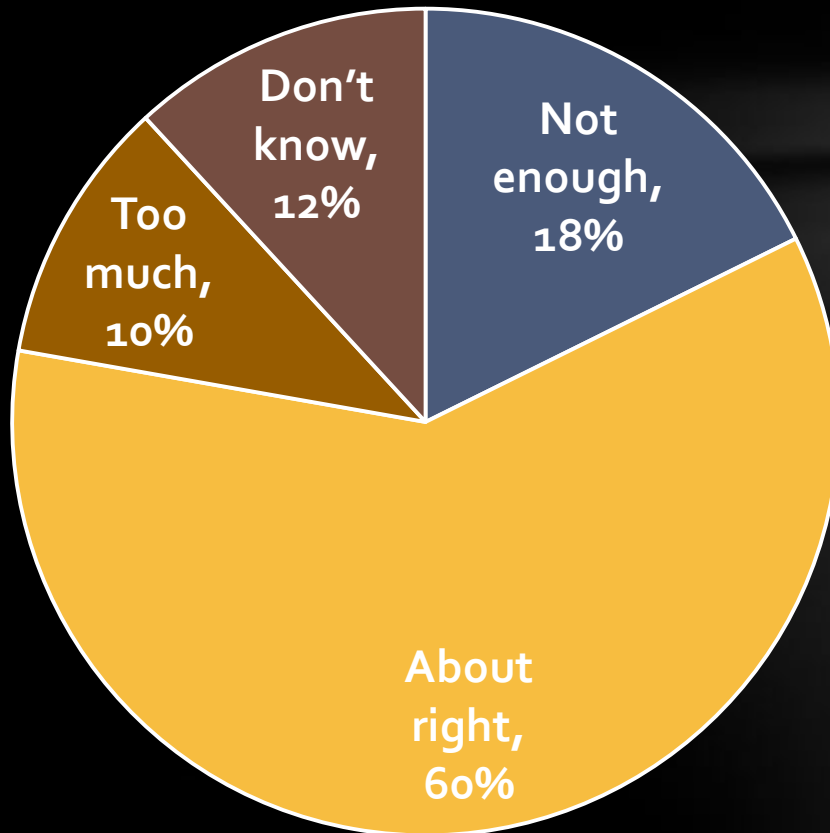
- 128,000 MWh
- Equivalent to
 - 15 MW fossil fuel
 - 44 MW wind
 - 86 MW solar

Portfolio Benchmarking



Customer Support

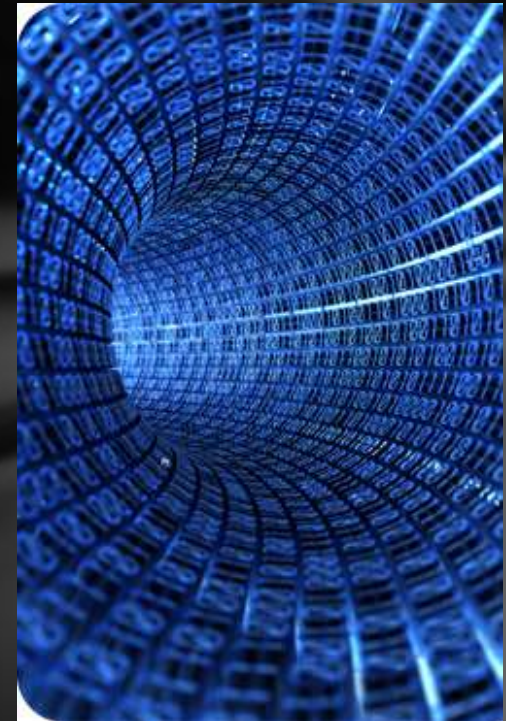
Residential - 2013



Describe the level of Fort Collins programs which support energy efficiency and conservation?

Efficiency Programs – Next Steps

- Data driven processes
- Performance based incentives
- New technologies
- Revised goals and policies
- 2014 measures and programs
- New efficiency business models

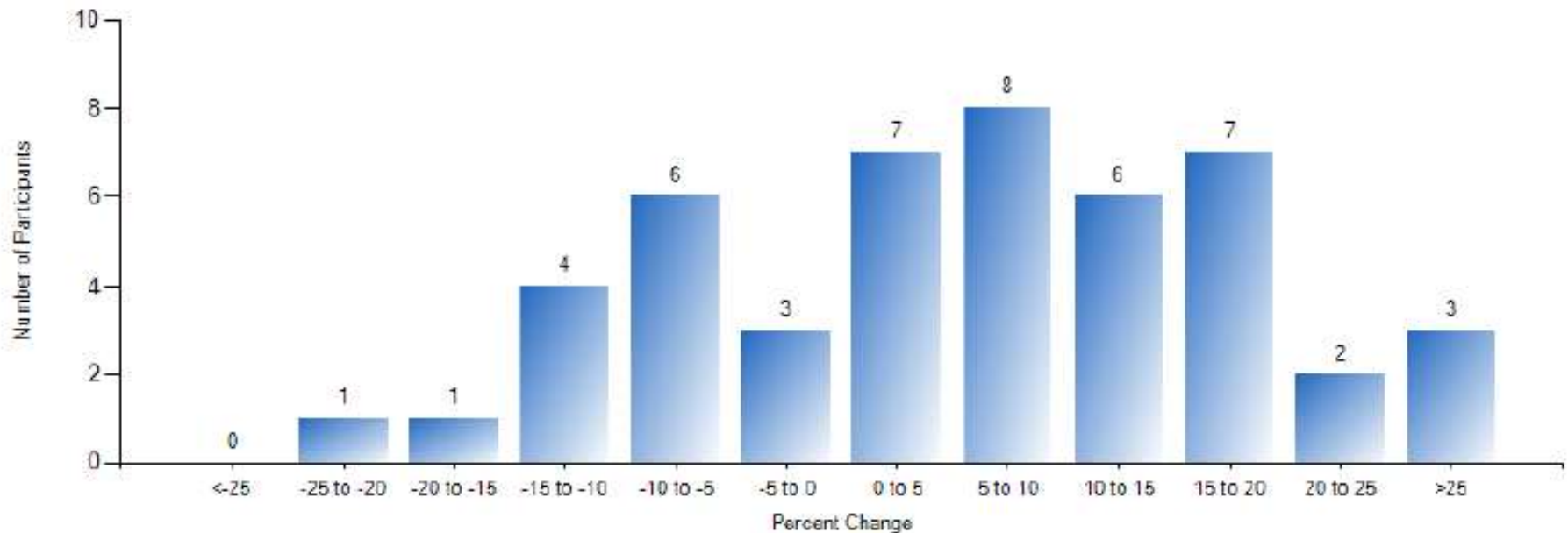


Next steps: Data Driven Electricity Savings from Insulation & Air Sealing

Relative Savings Summary

		Annual Savings per Program Participant		Confidence Interval for Average Savings ¹		
Program	Number of Meters	Median (%)	Average (%)	Absolute (+/- %)	Relative (+/- %) ²	Standard Deviation (%)
Insulate & Seal - E	48	6.3	5.4	3.9	70.9	13.6

Distribution of Relative Savings by Participant

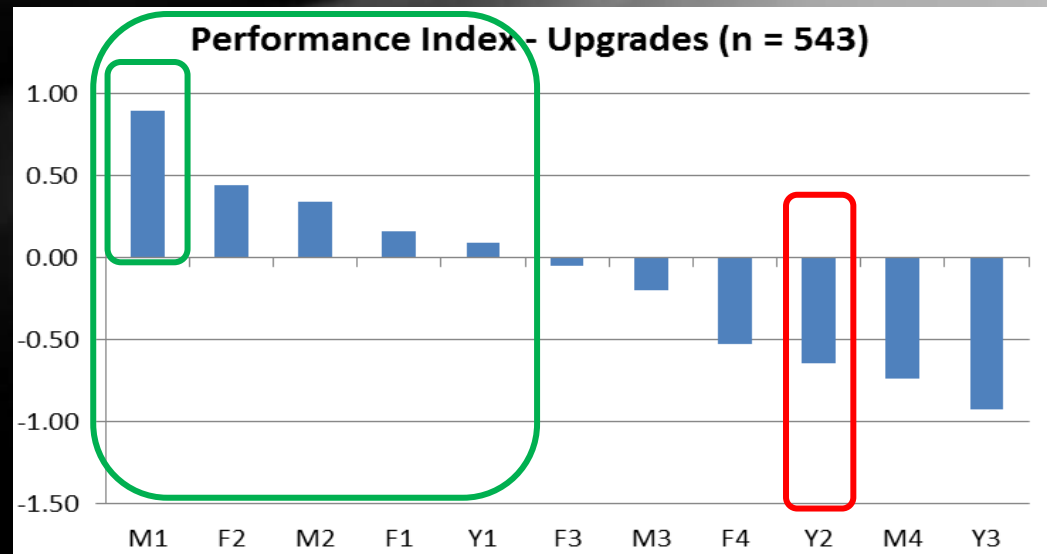
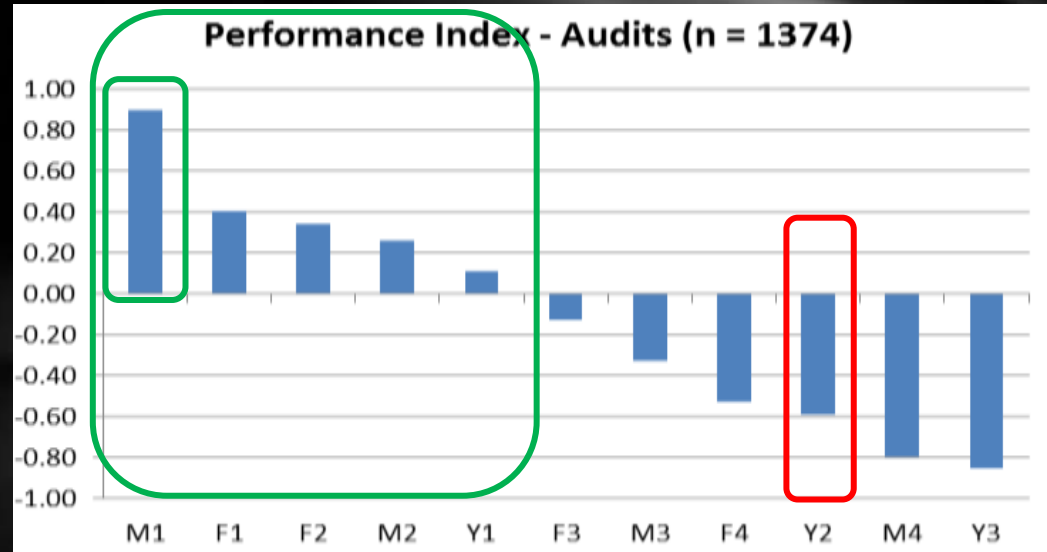


Weather normalized pre and post billing data statistical analysis

Next steps: Data Driven

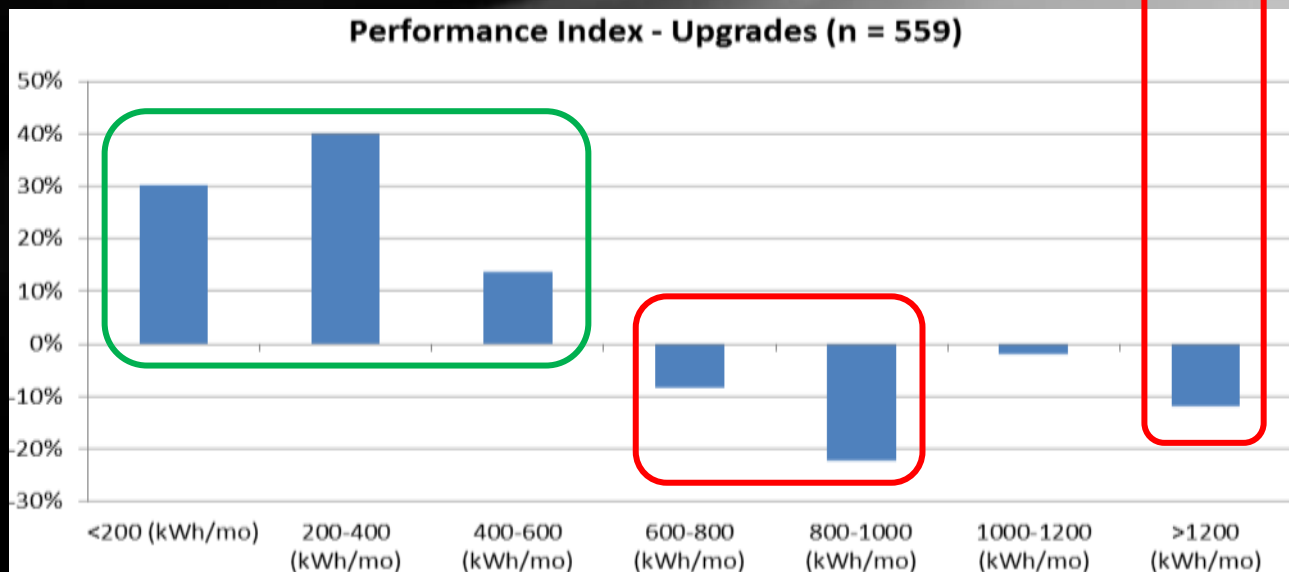
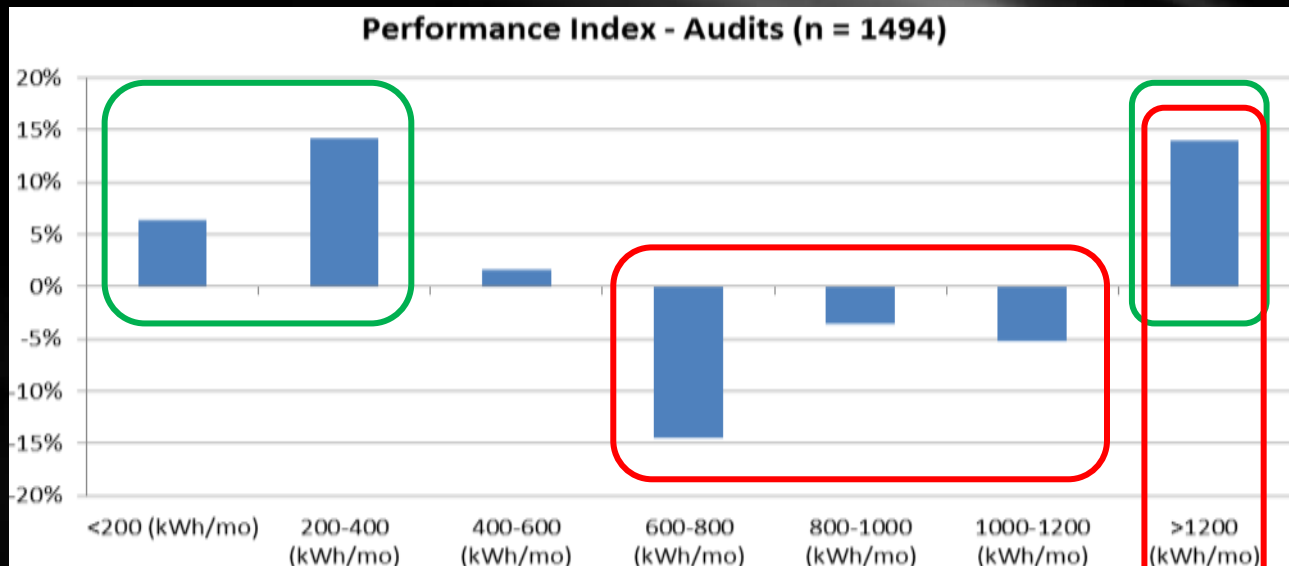
Participation in Home Efficiency Program

- Demographic segmentation (Nielsen PRIZM Lifestage)
- The “Affluent Empty Nests” (M1) are 90% more likely to get an audit or an upgrade
- The more affluent across all Lifestage classes are over performing – except the “Young Achievers” (Y2)



Next steps: Data Driven Participation in Home Efficiency Program

- By energy use?
- Really high and really low users
- Average to high users are underperforming
- Lower energy users are much more likely to make upgrades
- Where are the average to high users?
- Really high users are not converting

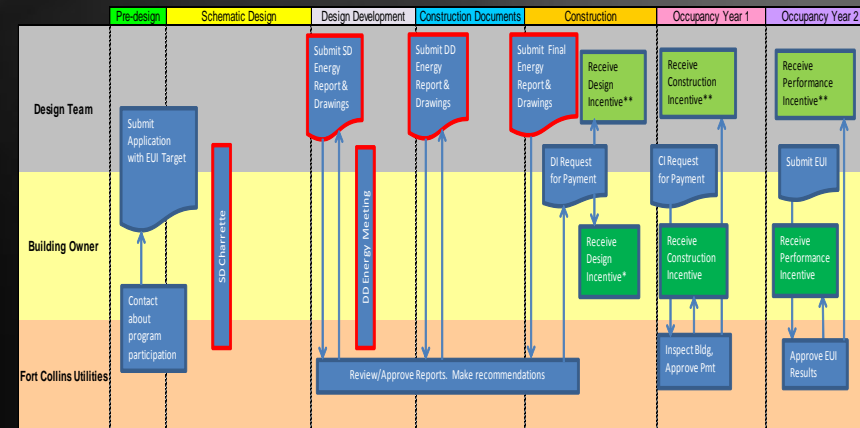


Next steps: Performance Based Incentives

Integrated Design Assistance Program (IDAP)

- Targets based on Architecture 2030 Challenge[®] initiative
- Design, Construction and Performance based incentives for electricity and natural gas for the Target EUI (BTU/SF/yr)
- Encourages high-performance design and use of renewables
- New construction and deep retrofits
- Everything counts
 - Design, construction, operations, behavior, renewables

fcgov.com/idap



*Design Team (DT) Performance Incentives are 1/3 of Owner Performance Incentives.
**Owner/Design Teams completing all 5 items receive 100% of the design/Construction Incentive for DT is 1/3 of Owner Incentive.

Next steps: Technology Advanced RTU Controllers

Estimated Annual Savings based on MV Trending

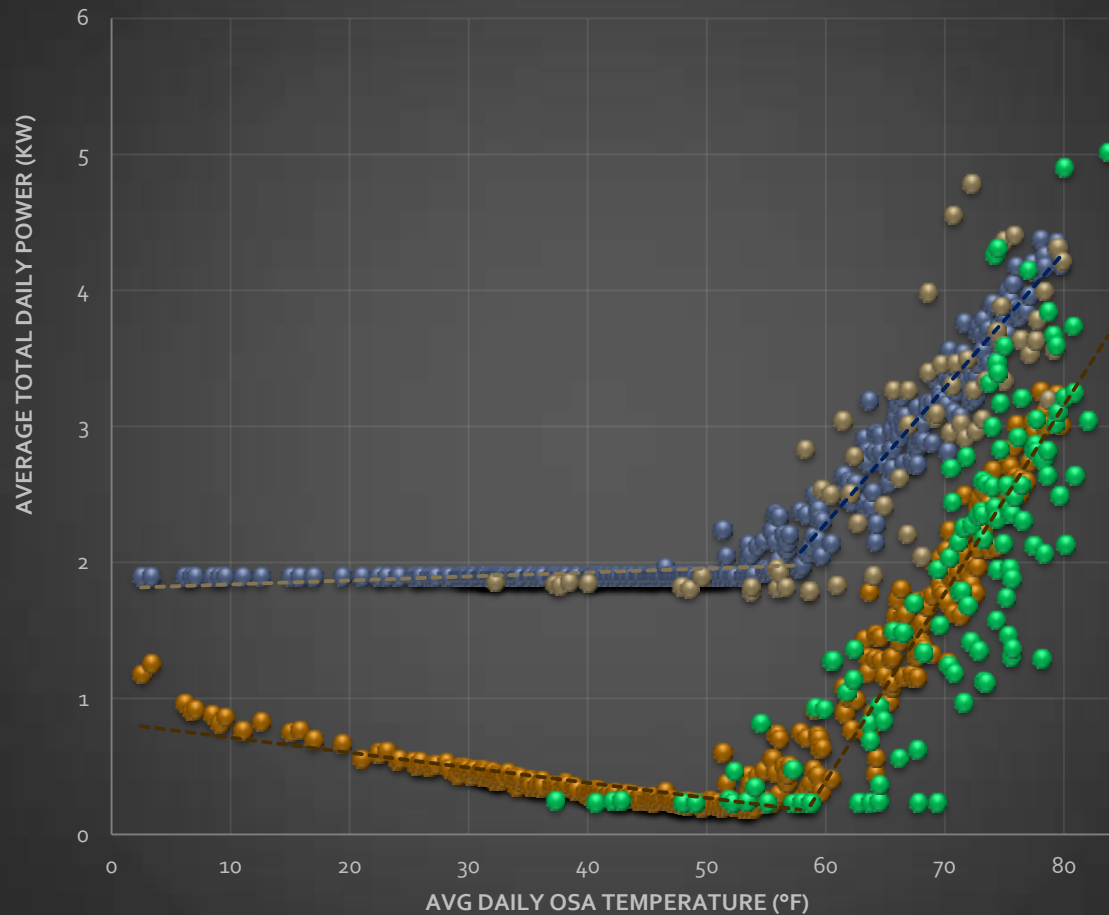
Site	Install Date	# Units	Total Capacity (Tons)	Nominal Fan Power (HP)	Runtime		Annual Savings		
					Avg Daily (Hrs)	Annual (Hrs)	Total (kWh)	%	Normalized (kWh/Ton per 1,000 h)
Office	3/30/2013	1	6	2	5 AM-9:30 PM Mon-Sun	6,025	8,900	62%	246
Fitness Center	3/20/2013	1	15	3	24/7	8,760	25,000	68%	190
Retail ¹	7/27/2013	1	10	3	7 AM-11 PM Mon-Sun	5,840	9,300	88%	159
Composite		3	31	8		6,875	43,200	70%	203

¹Initially installed 3/20, but existing Stat was not functioning

²Results based on data collected from install to 9/26/2013

Next steps: Technology Advanced RTU Controllers

Office Bldg Avg Daily HVAC Power vs Avg Daily OSA Temp



- Calibrated Model Standard Mode
- Calibrated Model CATALYST Mode
- Measured Standard Mode
- Measured CATALYST Mode

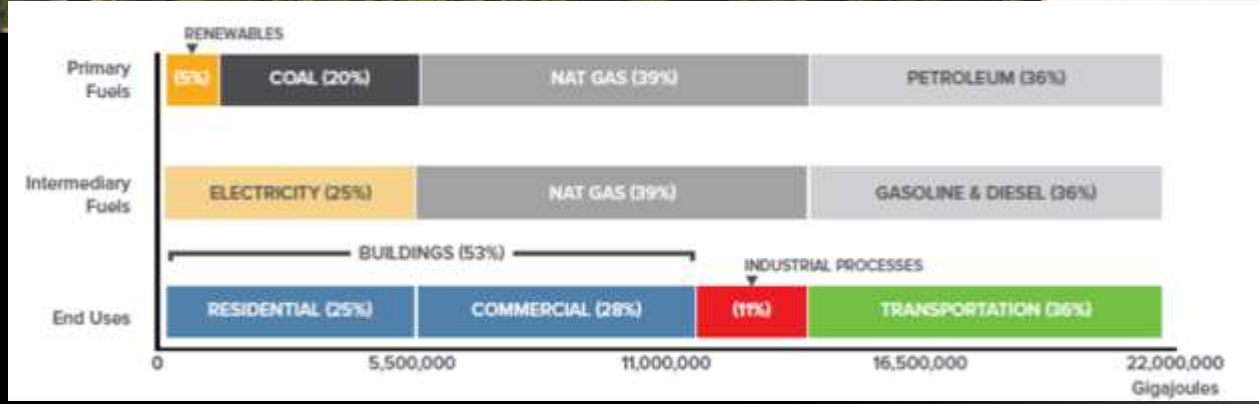
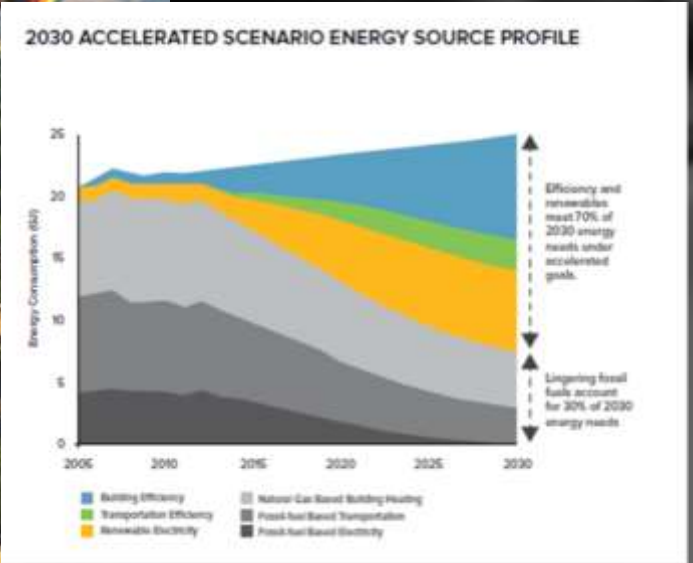
Next Steps: Goals and Policies

City of Fort Collins
Light & Power

STEPPING UP: BENEFITS AND COST OF ACCELERATING FORT COLLINS' ENERGY AND CLIMATE GOALS

BY ROCKY MOUNTAIN INSTITUTE,
IN PARTNERSHIP WITH FORT COLLINS UTILITIES

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Next Steps

Efficiency Programs and Measures

- Lighting
 - Review specialty CFLs
 - LED / low watt T-8 mid-stream
- HVAC
 - Advanced RTU controllers
 - Early retirement
- Small Business Efficiency Grant (continued)
 - Bonus for multiple measure types (equipment, controls, redesign)
- Multi-family (direct install, group replacement, comprehensive)
- AMI web portal
- Demand Response – Wifi stats and HW heater controllers



Thanks!
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