



Business Energy and Education Program (BEEP)



Goals For Initiative

- Engage 1500 Businesses
- Use Partnerships to Leverage Resources and Expand Skillsets
- Develop Strong link between Sustainability and Economic Dev.
- Decrease Program Costs Per Business
- Provide Unanswered Training Needs
- Increase Profitability of Local Businesses
- Decrease Environmental Footprint

Program Info

- Established Initially By Partners Representing All Levels of The Community
- Maximize Use of Living Classroom – The Learning Source Retrofit
- ARRA Funding To Get Training Program Off the Ground
- Managed By The Learning Source with Key Leaders from Other Partner Agencies.
- Target Clientele – Lakewood Businesses and Local Students

Living Classroom



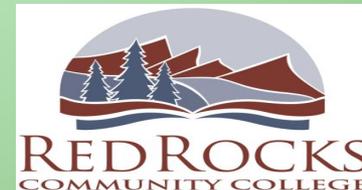
Recognition of Program

- Featured as 1 of 3 Projects at the All-American Competition - City of Lakewood was Awarded All-American City 2011



Leverage Partnerships

- Red Rocks Community College and Other Local Colleges
- Alameda Gateway Business Association
- The Learning Source
- City of Lakewood
- Other Local Non-Profits and Agencies



Opportunity



\$750,000,000,000

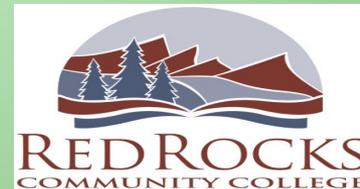
\$275,000,000,000

Economic Development & Sustainability

- Opportunity In Tough Times
- 640 Million / Year Lost through Energy Inefficiency
- Eliminate The Argument
- Develop SROI Analysis with Annual Data

Efficient Program

- Use Mix Of Highly Trained Professionals and Students
- Target Low and No Cost Measures first
- Use Of Diverse Skillsets
- Every \$1 in investment = \$3 in savings

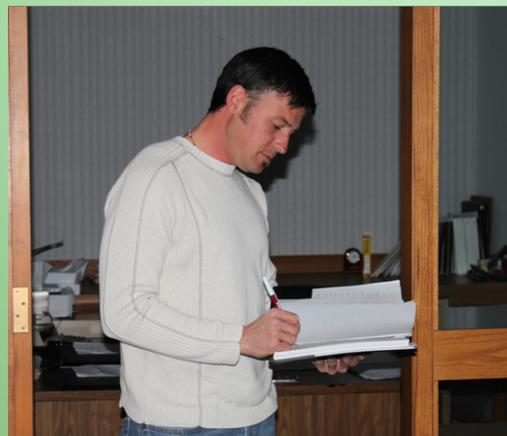


New Model for Training

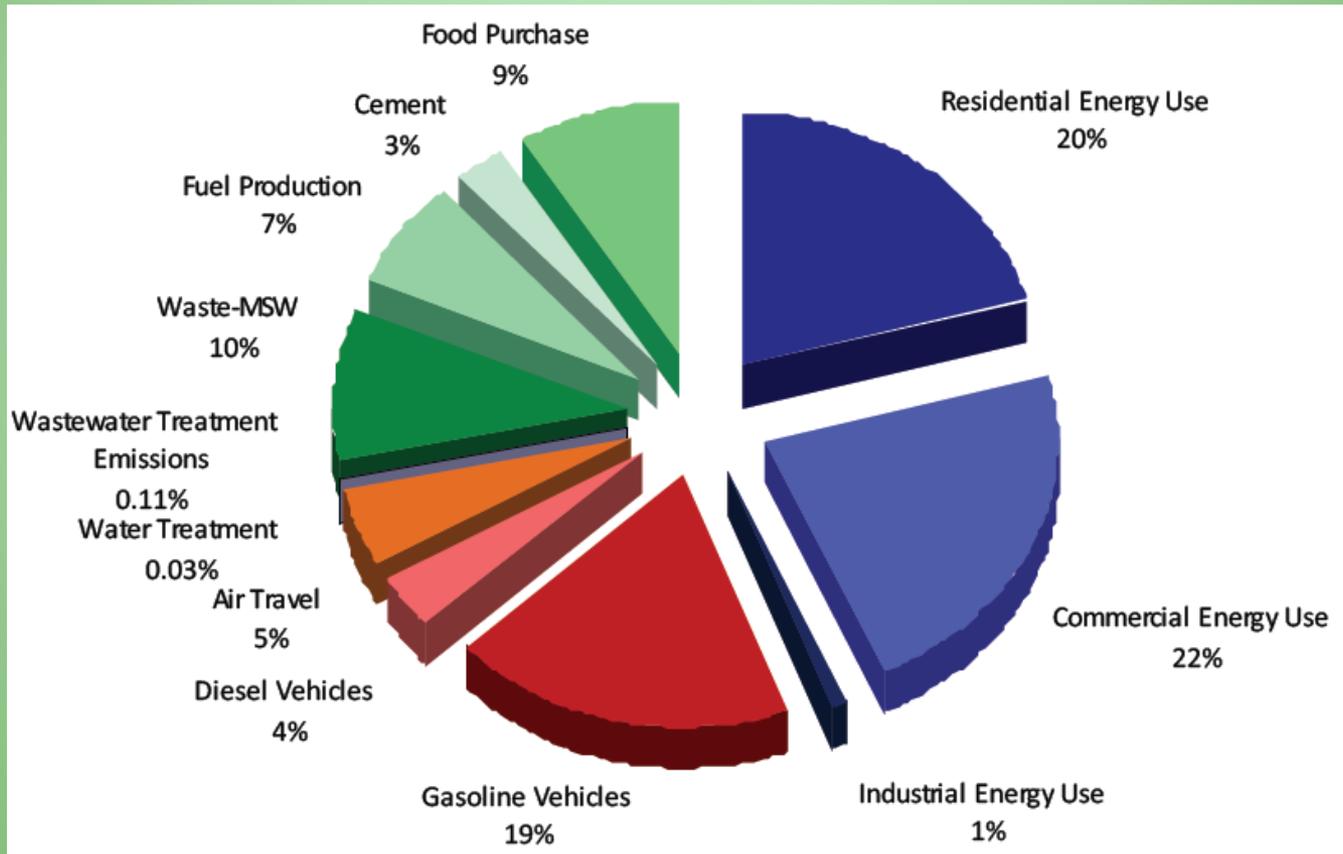
- Take the Classroom to the Streets
- Develop Direct Pathway To Employment – Niche Creation
- Answer to Pressure that Colleges are Receiving to show Results of Employment from Graduates



New Model for Training



Part of Overall Strategy



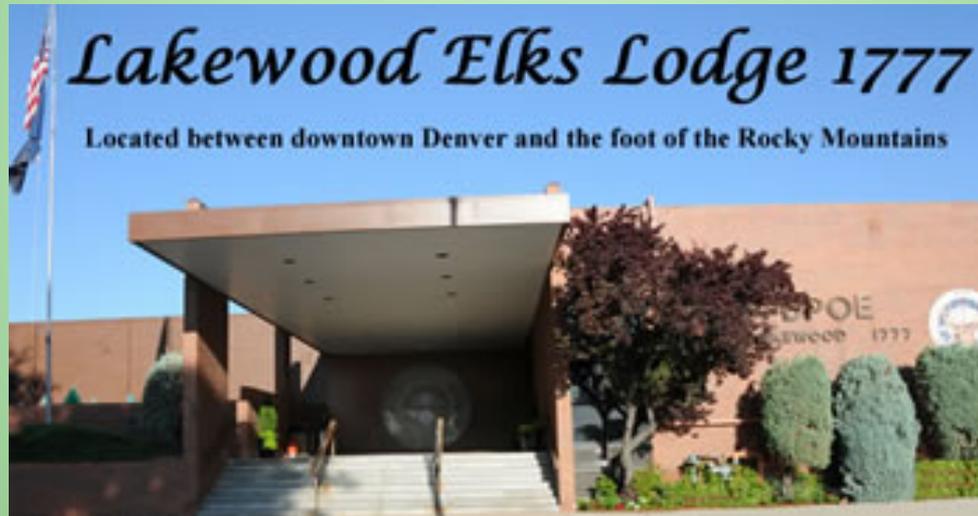
Examples of Success

- St John's Hospice Care



Examples of Success

- Elks Lodge



Examples of Success

- The Action Center



Lessons Learned / Workarounds

- Work Hard to Eliminate the Traditional Arguments
- It is Not An Easy Process to Gain Access to Energy Data from Businesses And Utilities
- It is Okay to Focus on Just Low or No Cost Energy Saving Measures such as Occupancy Behavior Training, Lighting, and Energy Saving Equipment
- Look for Synergies of Services Provided in Program

Questions?





City and County of Denver

Sharon Procopio, P.E.
February 9, 2012



Our denver energy CHALLENGE Team

Jeremy Lauffenburger
Commercial Energy Advisor

Sharon Procopio
Commercial Energy Program Manager

Julie Carlton
Outreach & Marketing

Tom Herrod
Grant Manager

Liz Babcock
Residential Program Manger

Todd Bevington
Commercial Energy Advisor



ENVIRONMENTAL HEALTH
Promoting Healthy Communities

DENVER
THE MILE HIGH CITY

BETTER BUILDINGS

METRO MAYORS CAUCUS



Program Goals

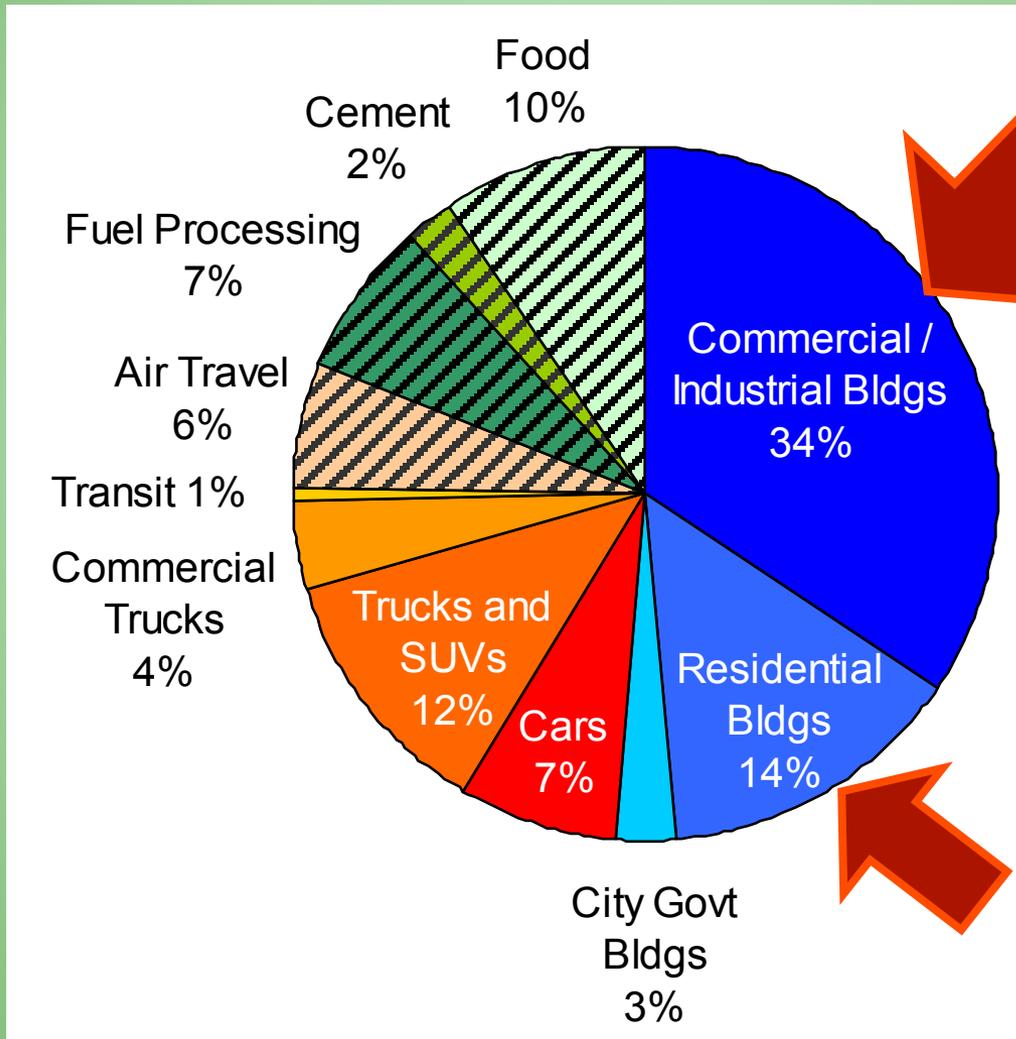
Help Denver residents & businesses save energy and \$\$\$ while reducing GHG emissions, in support of the Denver Climate Action plan.

GOALS:

- Serve 6,000 homes and 1,200 businesses
- Reduce participants' energy use by 15% or more by May 2013
 - Upgrade 1,200 homes
 - Upgrade 750 businesses

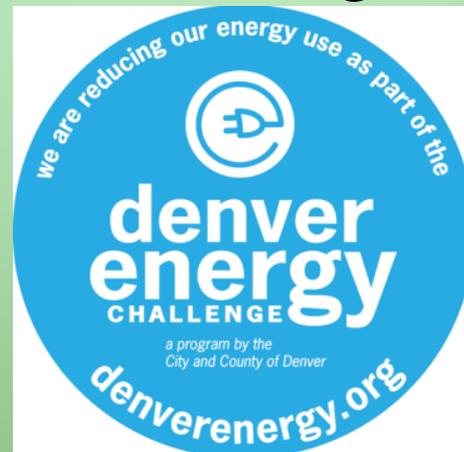
Target Clientele

Denver's top GHG emitters



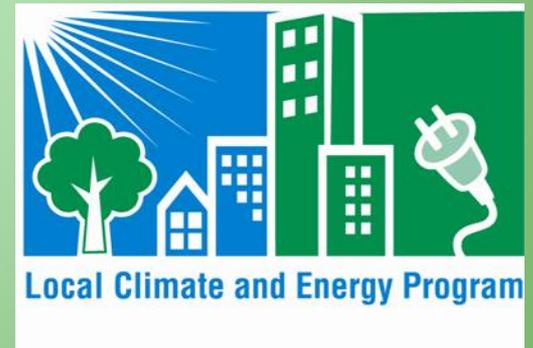
Business Services

- Free energy evaluations/recommendations
- Rebates and incentives (\$\$\$)
- Recognition and promotion (“brag” packs)
- Smaller-sized Businesses can also receive
 - Start-to-finish technical assistance and project support
 - Free efficient screw-in lights (CFLs/LEDs)



Funding Sources

SOURCE	AWARD	PURPOSE
EECBG Formula	\$500,000	Small Business Energy Program Incentives & Rebates
EPA CSC	\$491,000	Residential, Commercial, & Transportation Energy and GHG Reduction Strategies
GEO MSEI	\$ 150,000	Commercial Energy Efficiency Model/Pilot – Colfax
GEO Match	\$165,000	Commercial Program Incentives (lighting upgrades)
EECBG BetterBuildings	~\$2 million	Commercial Energy Program Rebates, Contracts, Outreach, Staff Time



Key Program Partners



DENVER
THE MILE HIGH CITY

ENVIRONMENTAL HEALTH
Promoting Healthy Communities

GREEN BUSINESS



CERTIFIABLY GREEN DENVER



DENVER
THE MILE HIGH CITY



DOWNTOWN DENVER PARTNERSHIP, INC.

GreenFAX



WEST COLFAX
Business Improvement District



Present **COLFAX**



Colfax
on The Hill



the **fax**
partnership

Providing Green Alternatives for Businesses Along the Nation's Longest Avenue



MILE HIGH BUSINESS ALLIANCE

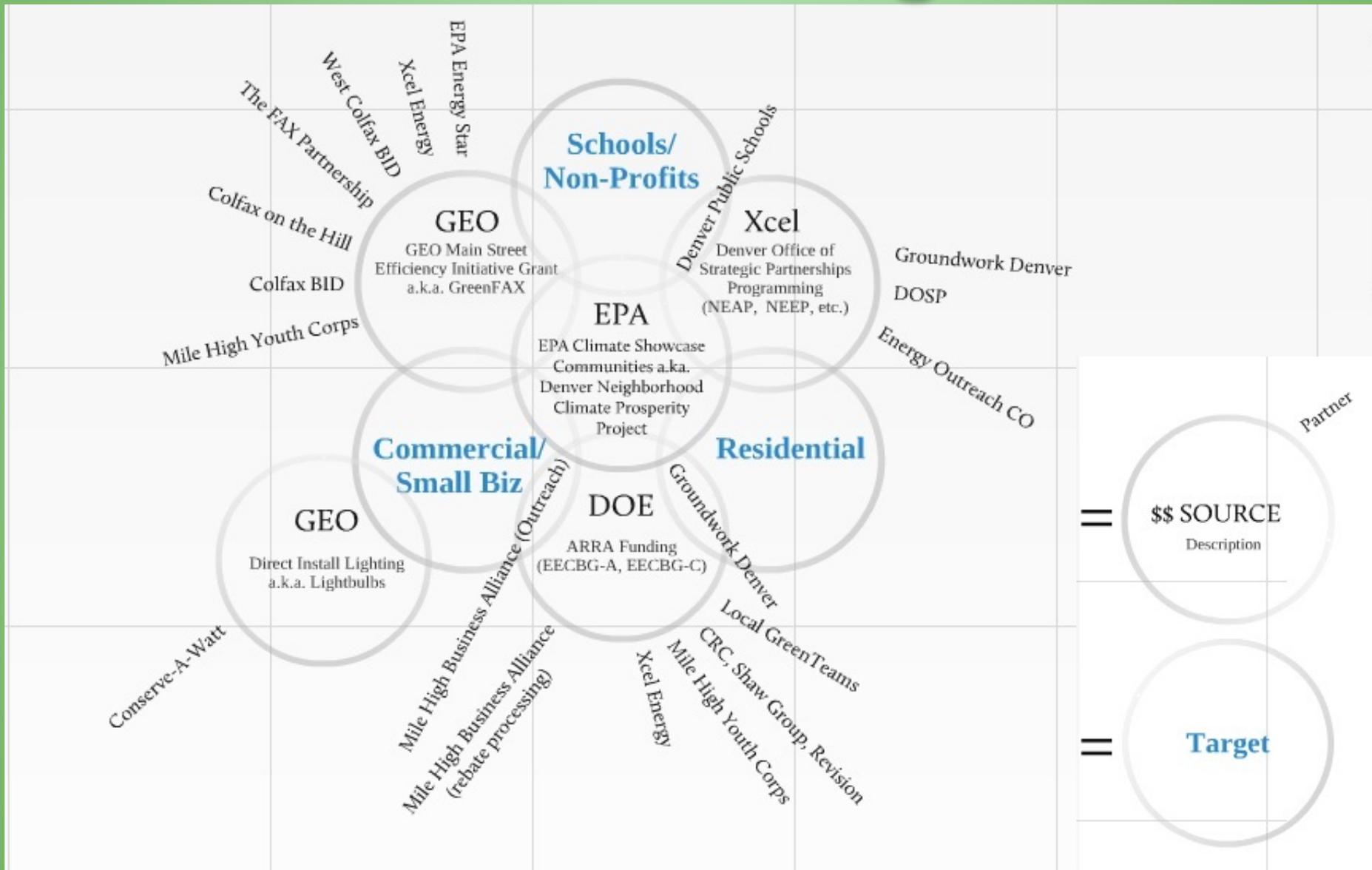
DPS Energy Challenge

facebook.com/dpsEnergyChallenge



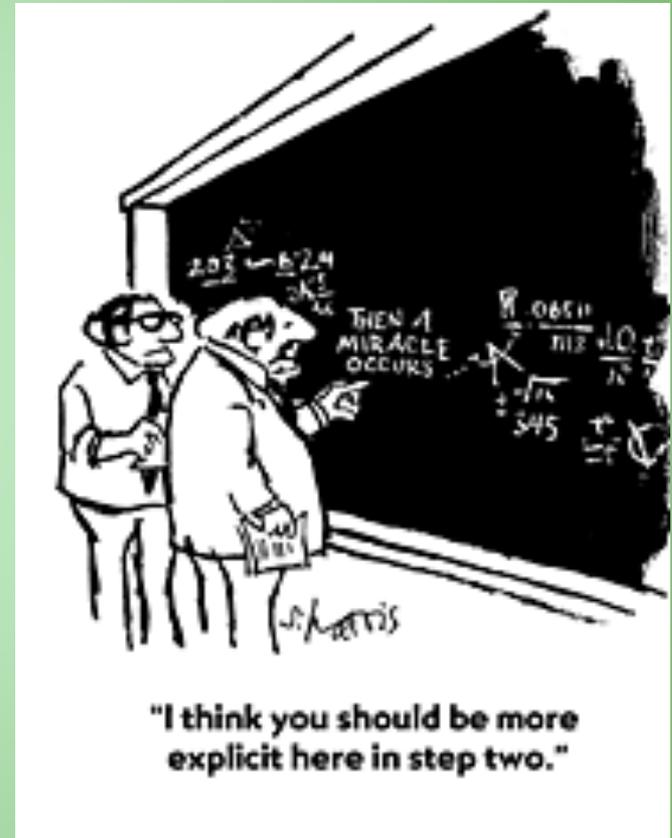
Xcel EnergySM

= Lots of Moving Parts



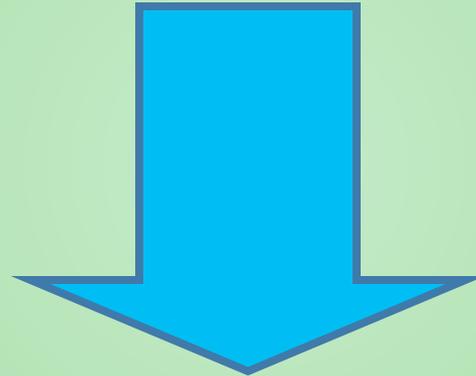
Sustaining our Efforts

1. Determine most effective services provided.
2. Determine practical value/cost to continue to provide those services.
3. Identify most feasible funding mechanisms.
4. Map out a transition plan.
5. Adapt as needed!



Long-term potential

Hundreds of business interactions/projects
2010-2013



Hundreds of relationships for ongoing improvement
and future value

Start Small

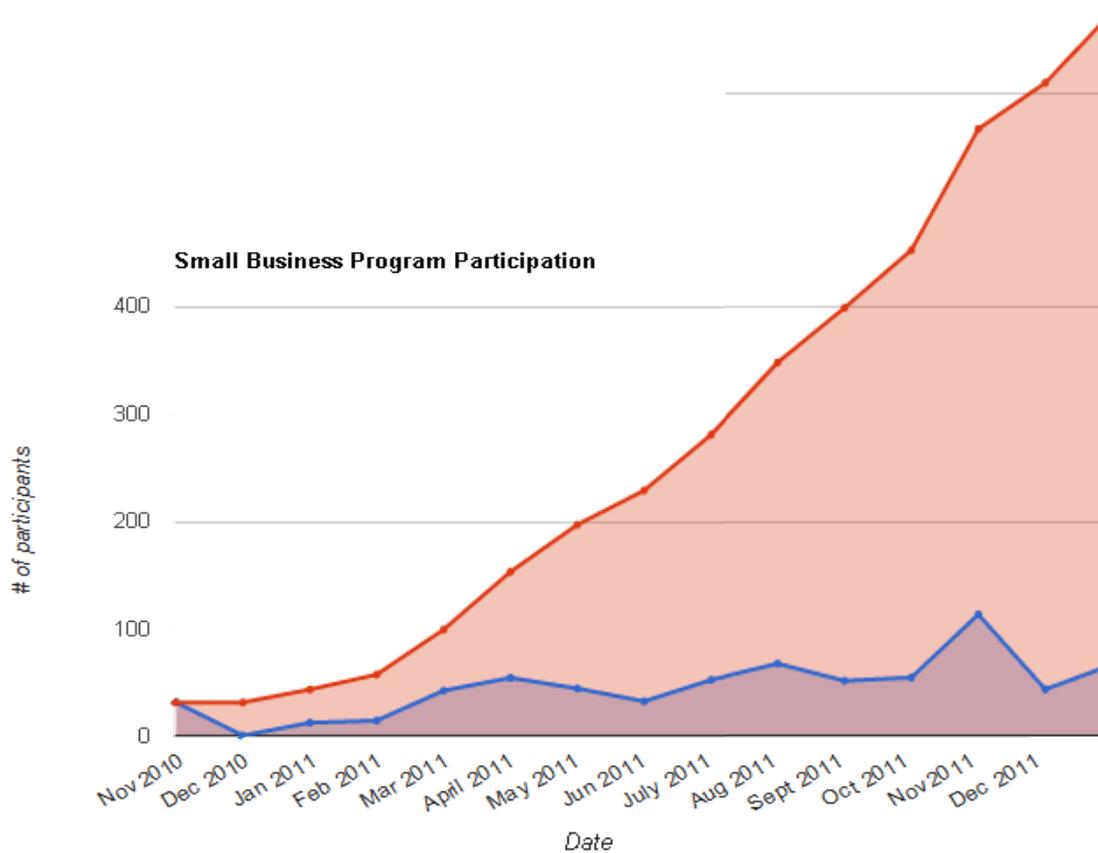
- Identify key partners and stakeholders that can *connect, engage, motivate, & promote* businesses
- Research and learn from other programs
- Start with the easy stuff first (in our case, lighting)
- Use a small group of champion participants to pilot program ideas
- Monitor, evaluate, and adjust as necessary
- Use free tools and resources where you can
- Use the 80% solution method
- Think about economies of scale, i.e. how to grow?

Bluebird Theater

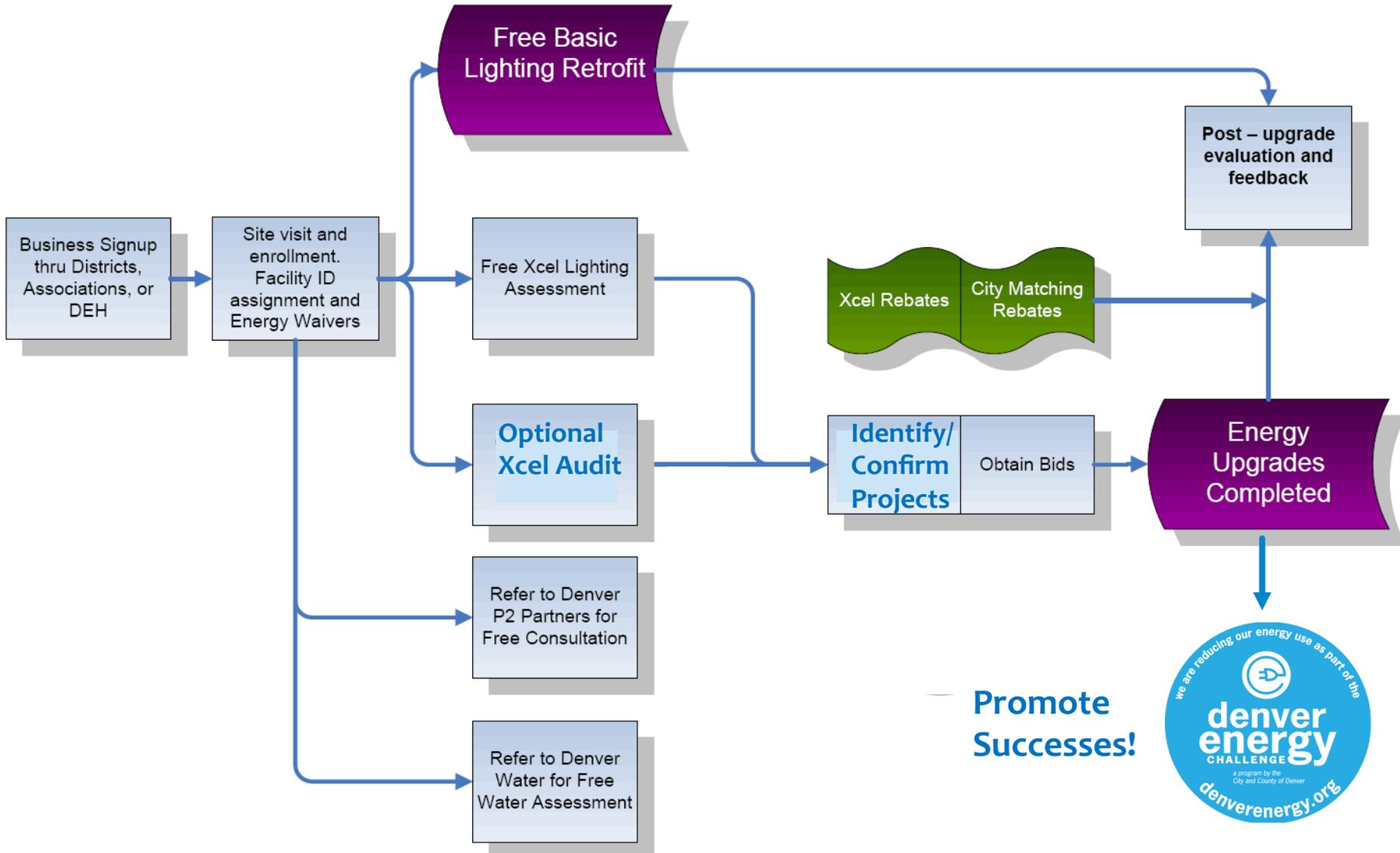


Ramp Up

How will we serve 600 as well as we served 30?



Ready, Fire, Aim!



Promote
Successes!



Overcome Challenges

- Time

- Grant roll-out process took longer than expected → **ADAPT**
- Contract processes and paperwork require careful coord. → build your contract support team **EARLY**, push **OFTEN**

- Money

- Fluctuating spend rates (rebates, contracts, etc) → **ADJUST**
- Lots of funding sources to manage at once → **PRIORITIZE, SEEK OPPORTUNITIES, BE FLEXIBLE**

- Information

- Reporting / Data Management demands → **develop a CMS**
- Market confusion → **uniform brand, clear messaging**, (connect with utility, contractors, community partners)

Program Successes

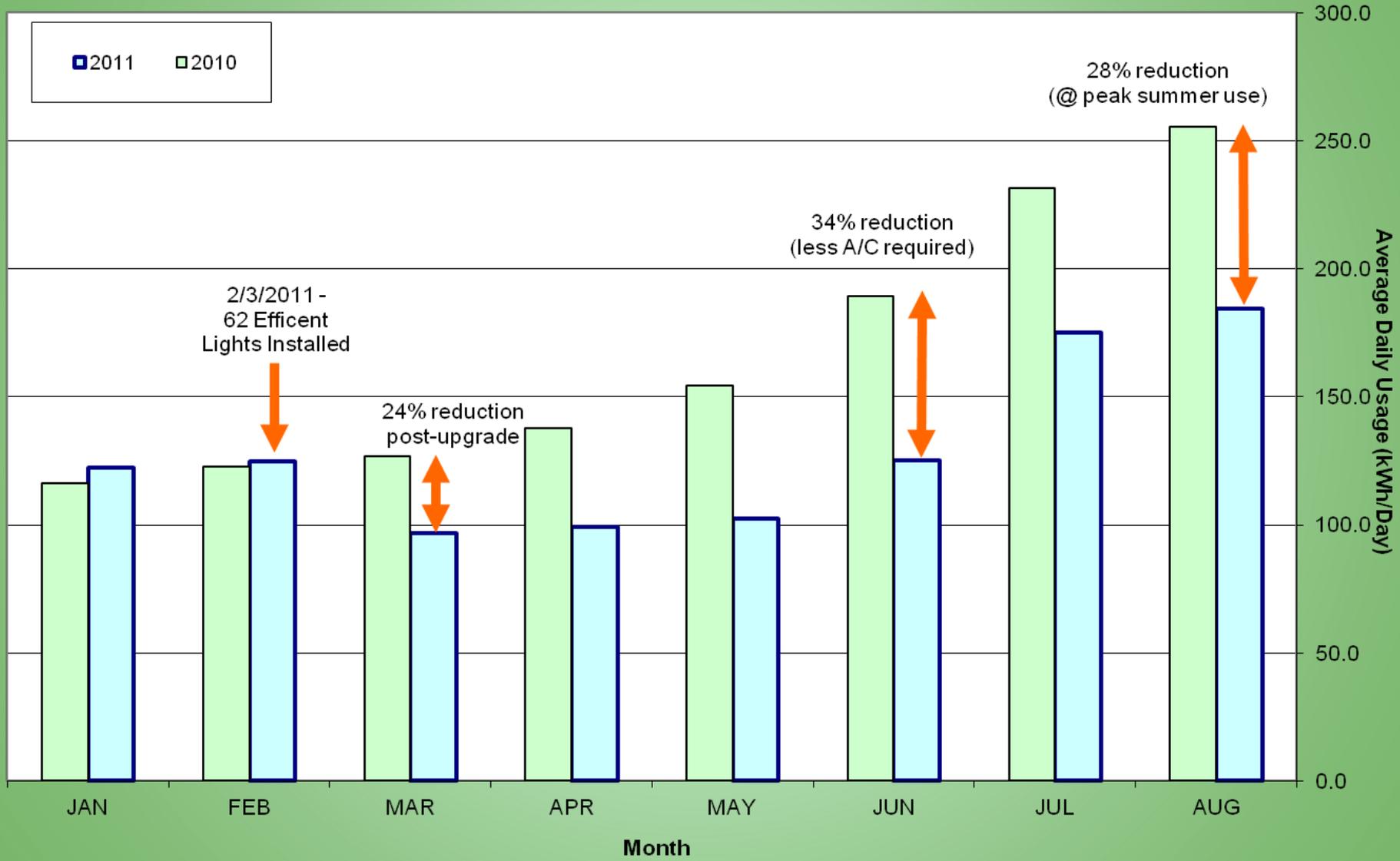
- 650 participants enrolled
 - 100 Direct Install Lighting Projects
 - 230+ projects completed
 - 250+ more pending
 - 3,000+ lightbulbs replaced
 - \$500,000 in rebates issued
 - Over 7.5 million kWh in energy savings annually
 - 1000+ cars off the road per year
 - Power ~48 ski lifts per season
- Community wide strategy added momentum
 - Shared website: www.denverenergy.org



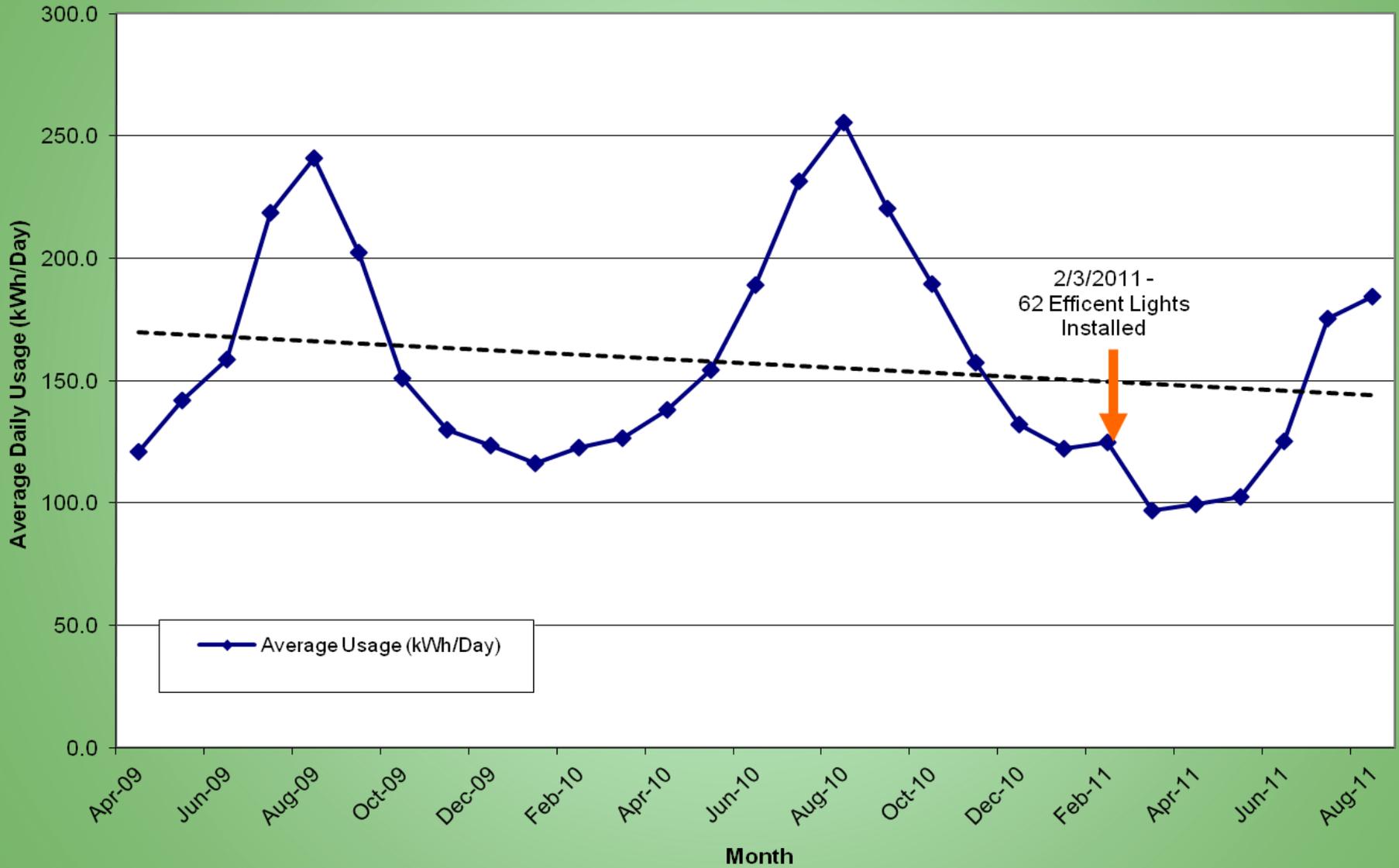
3rd Ave Studio

- 62 incandescent light bulbs upgraded to efficient CFLs
- Savings:
 - ~ 15,500 kWh/yr
 - ~\$1,500/yr
- Annual GHG Reduction ~25,000 lbs CO₂
 - 2.2 cars off the road for one year
 - Power 14 ski lifts for one day

3rd Ave Salon Direct Installation - Actual Energy Savings



3rd Ave Salon





CITY AND COUNTY OF DENVER
SMALL BUSINESS ENERGY PROGRAM
 EnergySmart from START to SAVINGS



Free Direct Install Lighting Receipt and Waiver

Business Name: 3rd Ave Studio **Address:** 5575 East 3rd Ave **Premise ID#:** **Date:** 2/24/2011

Congratulations on your new, efficient lighting. This form may serve as a reference to the type and energy use of your new lighting. When it comes time for replacement, contact a distributor listed on the following page and provide them with the bulb's Mfg#.

Lamp Description	Mfg#	Dimmable (y/n)	Price per Bulb	# of Bulbs	New Watts In	Old Watts Out	Hours of Operation per Week	Energy Demand Reduced (kW)	Est. Annual Energy Savings (kWh)	Estimated Annual \$\$ Savings*
16W Flat PAR 30 CFL	PF3016	n	\$ 6.74	53	16	75	91	3.127	14,797	\$ 1,480
14W R20 CFL	1R2014	n	\$ 4.14	5	14	35	91	0.105	497	\$ 50
14W R20 CFL	1R2014	n	\$ 4.14	4	14	50	35	0.144	262	\$ 26
Totals:								0	0	\$ -
			\$ 394.48	62	394.48	223.76		3.376	15,556	\$ 1,556

* Estimated Annual \$\$ Savings are based on the business' operating hours and an electric rate of: \$.10 / kWh

Annual GHG Reductions (lbs. CO2)	24,889	That's equivalent to taking ~	2.2	cars off the road for 1 yr
		That's enough to power ~	14	ski lifts for 1 day



The Denver Small Business Energy Program is funded by the Department of Energy's American Recovery and Reinvestment Act (ARRA) and is sponsored by the City and County of Denver.

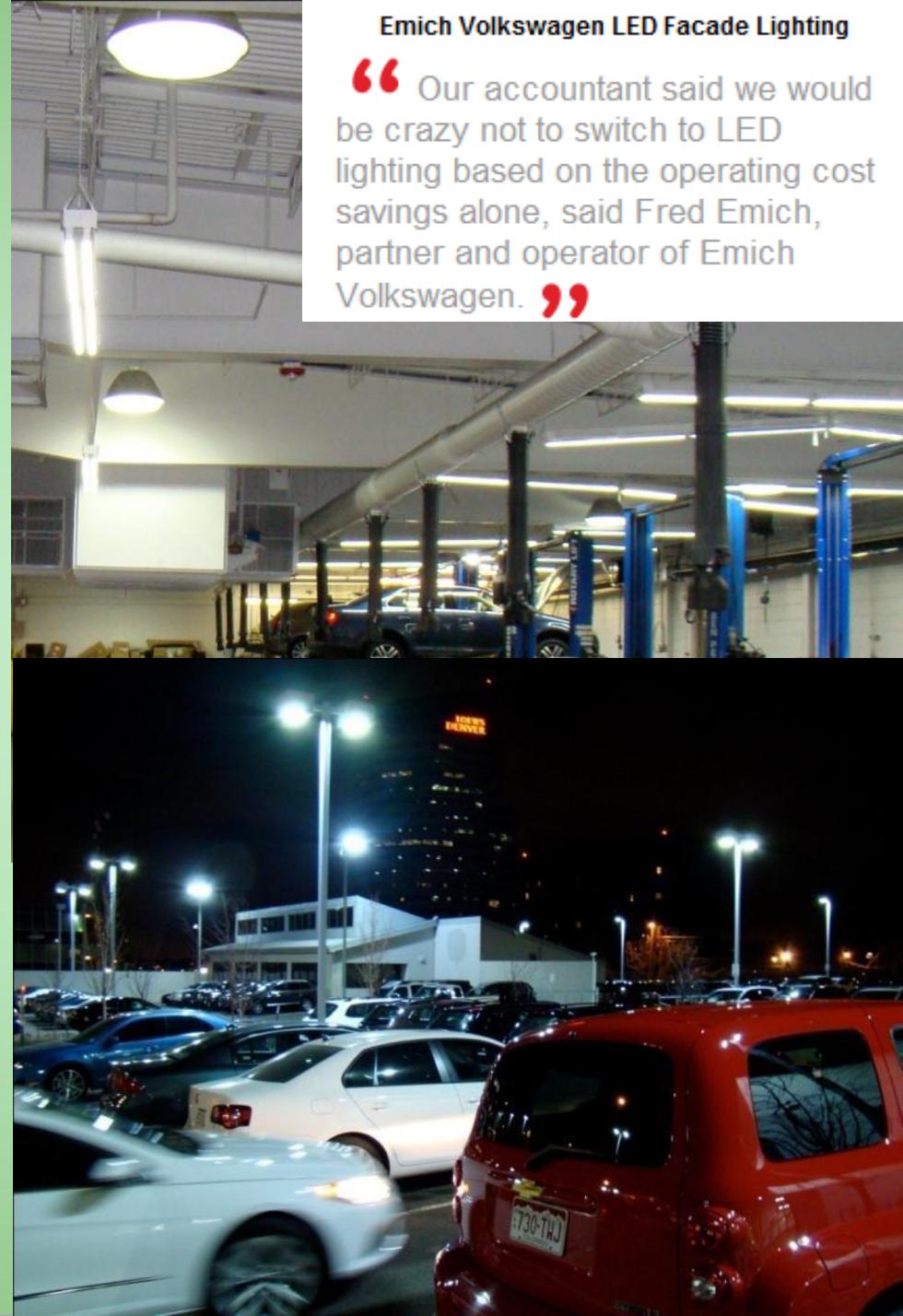


Emich VW

- 477 LED fixtures
- Estimated Savings:
 - ~95,000 kWh/yr
 - ~\$9,500/yr on bill
- Annual GHG Reduction
~152,000 lbs CO2
 - ~13 cars off the road/yr
 - ~87 ski lifts for 1 day
- Project Cost: \$143K
- Rebates (Xcel + City):
~\$14K + \$5K

Emich Volkswagen LED Facade Lighting

“ Our accountant said we would be crazy not to switch to LED lighting based on the operating cost savings alone, said Fred Emich, partner and operator of Emich Volkswagen. ”



Lessons Learned

- Businesses take action when they receive:
 - PERSONAL support and guidance
 - A clear PATH to saving money
 - PERSISTENT encouragement
 - PROMOTION for accomplishments

Lessons Learned

- Baby Steps - phases pay for phases:
 - Many businesses that receive free lighting typically follow up later to pursue additional energy projects
- Be Creative (will help overcome challenges)
- Be Nimble (adapt and make changes as needed)
- Be Patient
- Celebrate milestones & successes along the way!



Boulder County EnergySmart Commercial PACE Lending and Beyond

2008

HB
98-1350
(May)



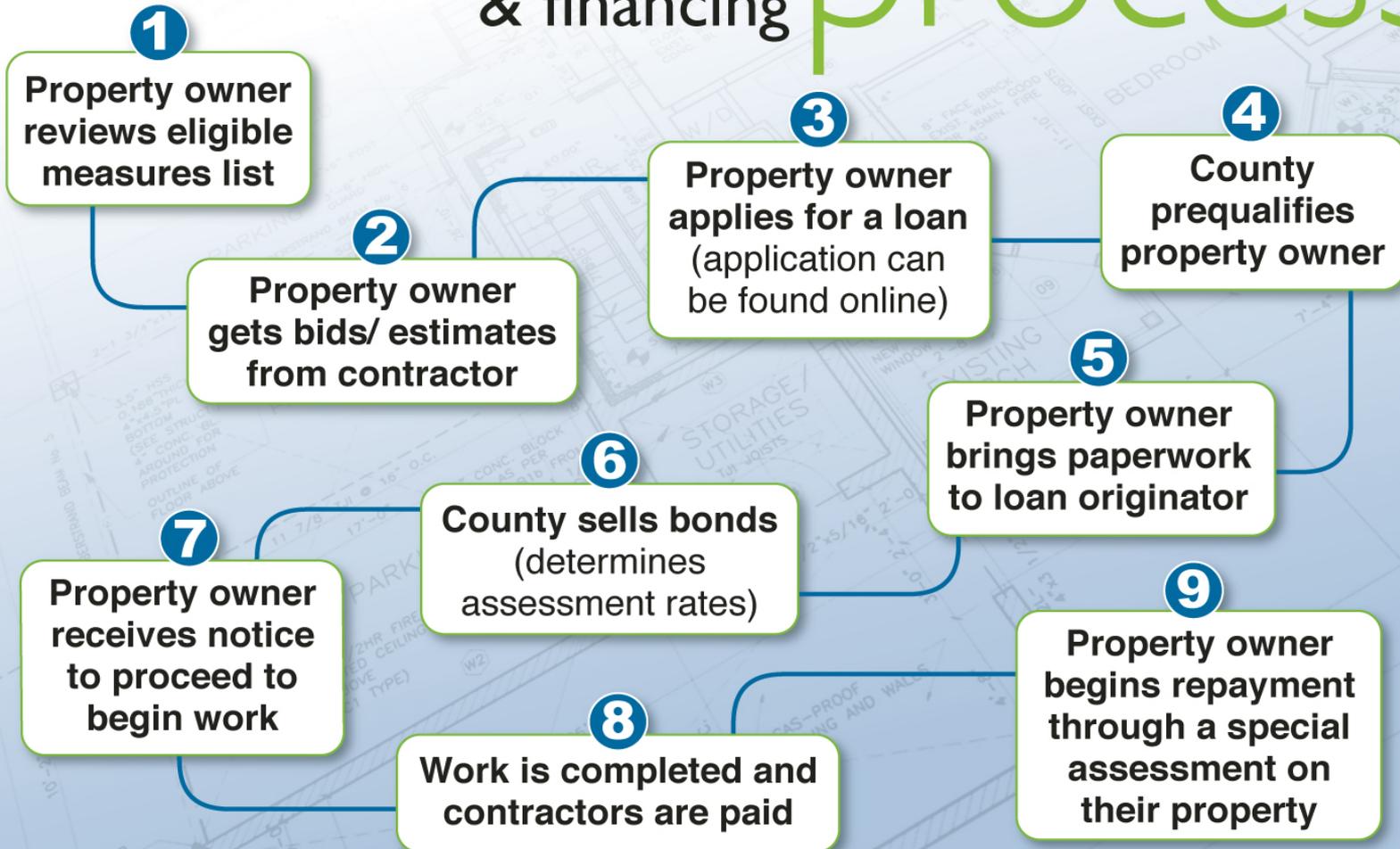
Boulder County
Ballot Measure

1A
(Nov)



- Property Owners opt in (minimized general fund impact)
- Funds from sale of bonds
- Special Assessment upon property; repayment via tax abatement, responsibility remains with the benefitted property
- Up to full cost lent, \$3000-\$210,000; 5-, 10-year terms
- Lender consent, utility waivers required

ClimateSmart loan program for commercial properties application & financing **process**



saveenergy save money saveenergy saveenergy save money

Initial Challenges

- Limited market – owner-occupied businesses only ...

Who are they?

- Larger property owners had own sources of funding, but not yet motivated to make investments, because tenants pay energy bills
- Tough economy for potential borrowers
- Fewer borrowers = higher interest rate
- Bonding → Could not state interest rate in advance

Workarounds

- Two deadline extensions
- “Bonus Rebate” of up to 70% of project cost or \$10,000
- Outreach to contractors
- LOTS of staff time
- Special Bonding Conditions granted by our Bond Counsel

Administrative Hurdles

- Davis-Bacon Act (triggered by ARRA rebate)
 - Contractors had to pay higher wages
 - Contractors had to re-bid(and reveal margin)
 - Documentation burden for contractors and county staff
 - Wage determinations not available for EE/RE
 - Guidance difficult to get in a timely fashion
- OCC warning issued in July → new disclosure/ acknowledgement by borrowers/lenders

“National bank lenders should take steps to mitigate exposures and protect collateral positions. For existing mortgage and home equity loans, actions may include the following in accordance with applicable law... In the case of commercial properties, securing additional collateral”.

Successes: Diverse Projects

- 29 loans:
- **\$ 1,737,009 In Projects Funded**
- **\$ -259,290 In Rebates Delivered**
- **\$ 1,477,719 In Loans Originated**
- (\$108,703 10-year loans) 2.92% interest / 4.27% closing costs
- (\$1,369,016 5-year loans) 1.04 % interest / 8.09% closing costs

- 4 Cities: Boulder, Longmont, Lyons, Nederland
- Business, Nonprofit, Multifamily
- “Custom” projects that don’t receive utility rebates
- Longer-payback, longer-lifetime measures

CLIMATESMART Loan PROGRAM: HEATING AND COOLING UPGRADE AT CONCERTOS IN CHOCOLATE



"The new HVAC systems with economizers, will cool our chocolate processing area with outside air whenever the outside temperature drops to 55°F or below. We have already seen a reduction of energy cost and consumption over the summer months and expect to see larger savings with the approaching cooler weather."

**-Chris Widlar
Concertos in Chocolate, LLC**



CONCERTOS IN CHOCOLATE, LLC
6395 Gunpark Drive, Units R & S, Boulder, CO

BUILDING USE: 1-story
multi-unit, light-industrial

SQUARE FOOTAGE:
2,000

ROOFTOP UNIT UPGRADE

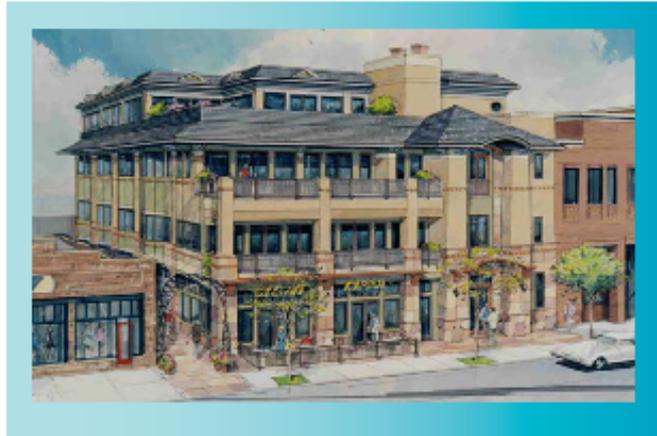
PROJECT COST	\$17,906
REBATES	\$10,580
PROJECT COST AFTER INCENTIVE	\$7,326
ENERGY COST SAVINGS/YEAR	\$945
PAYBACK (YEARS)	7.75
LBS. CO₂ SAVINGS/YEAR	11,848

CALL 877-505-6722

EMAIL signupbiz@EnergySmartYES.com

VISIT www.EnergySmartYES.com

CUTTING COSTS AND GREENHOUSE GAS EMISSIONS AT 1011 WALNUT



"The combination of attractive financing and quick payback from energy-saving replacement and recommissioned systems makes the business decision to participate in the ClimateSmart Loan Program a very sound and extremely practical choice. In addition to that, our high environmental and energy-efficiency standards attract the best tenants and build a good landlord-tenant relationship."

**- MARK MCGEE, OWNER
1011 WALNUT STREET**

1011 WALNUT LLC
1011 Walnut Street, Boulder, CO

BUILDING USE: 4-story, multi-tenant, mixed retail building **SQUARE FOOTAGE:** 22,628

HEATING & COOLING AND LIGHTING UPGRADES

PROJECT COST*	\$47,127
REBATES	\$13,702
UTILITY	\$8,417
CSLP (CLIMATE SMART)	\$5,285
PROJECT COST AFTER INCENTIVE	\$33,425
ENERGY COST SAVINGS/YEAR	\$5,370
PAYBACK (YEARS)	6.2
LBS. CO₂ SAVINGS/YEAR	90,101

* Full lighting costs were included in this analysis. Only incremental costs (increased cost of efficient over standard equipment) was included for the rooftop units. Energy Management System and DDC costs not included.

CALL 877-505-6722 EMAIL signupbiz@EnergySmartYES.com VISIT www.EnergySmartYES.com

Solar Thermal BEER



Efficient Heating/Cooling Units

Solar Water Heating

Solar Shades

Big Ass Fans

Lighting

Direct Digital Control
Energy Management Systems

Low-E Windows and Film



Efficient Furnaces

Wall and Roof Insulation

Photovoltaics

Condensing Boilers

Cool Roofs
Daylighting

Efficient Motors and Drives

Air Sealing

Lessons Learned

- Marketing is essential
- Launch firmly, don't let requirements change
- Davis-Bacon burdensome to administer on many small, private projects
- Contractors will sell a good program
- Businesses and nonprofits take time to make decisions, and may not be able to follow a very complex application process
- Contractors want to work only with the business (not with the government)

New Boulder County Financing Program

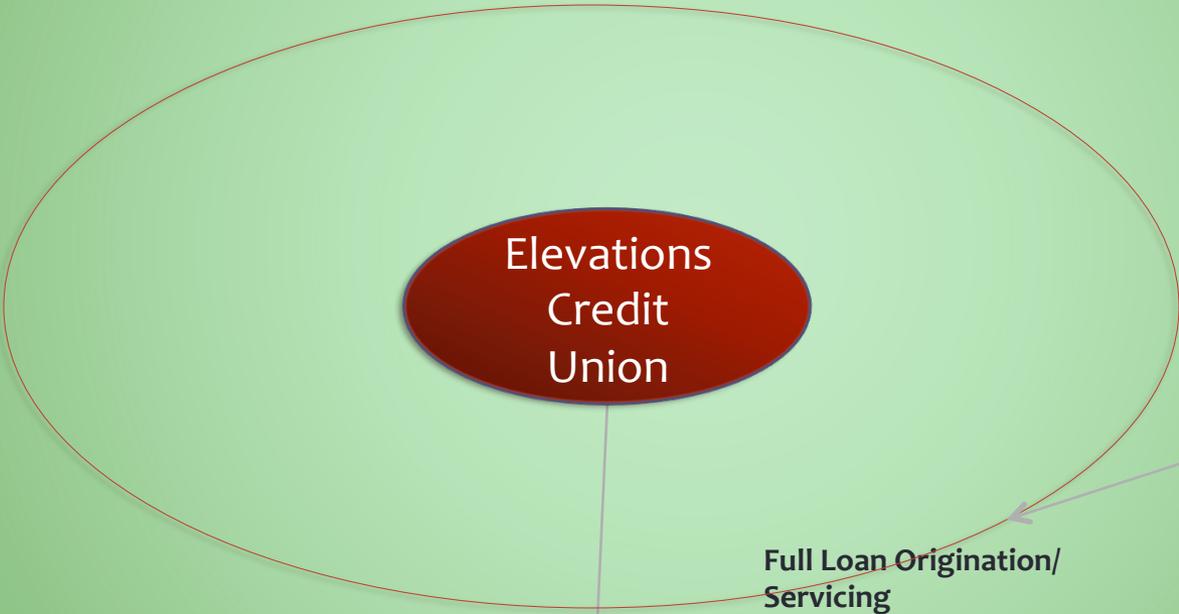
- Residential and Commercial
- Public-private partnership
- Public Loan-Loss Reserve
- Private funds for lending (no Davis-Bacon!)
- Revolving Loan Fund (for sustainability)

Design Principles

- Must comply with relevant DOE regulations and/or goals
- DOE Regulatory Maximums for financing:
 - 20% max of award for a Revolving Loan Fund
 - 50% of \$25 million award for finance activities
- 5:1 leverage goal built into Funding Opportunity
- Announcement (FOA)
 - Leverage consists broadly of private capital brought to the table as a result of the award.
- Boulder award specifies:
 - \$8.8 million for finance activities divided between credit enhancement and revolving fund and subject to above maximums.

• RESIDENTIAL AND <\$40,000 BUSINESS LOANS

Boulder County



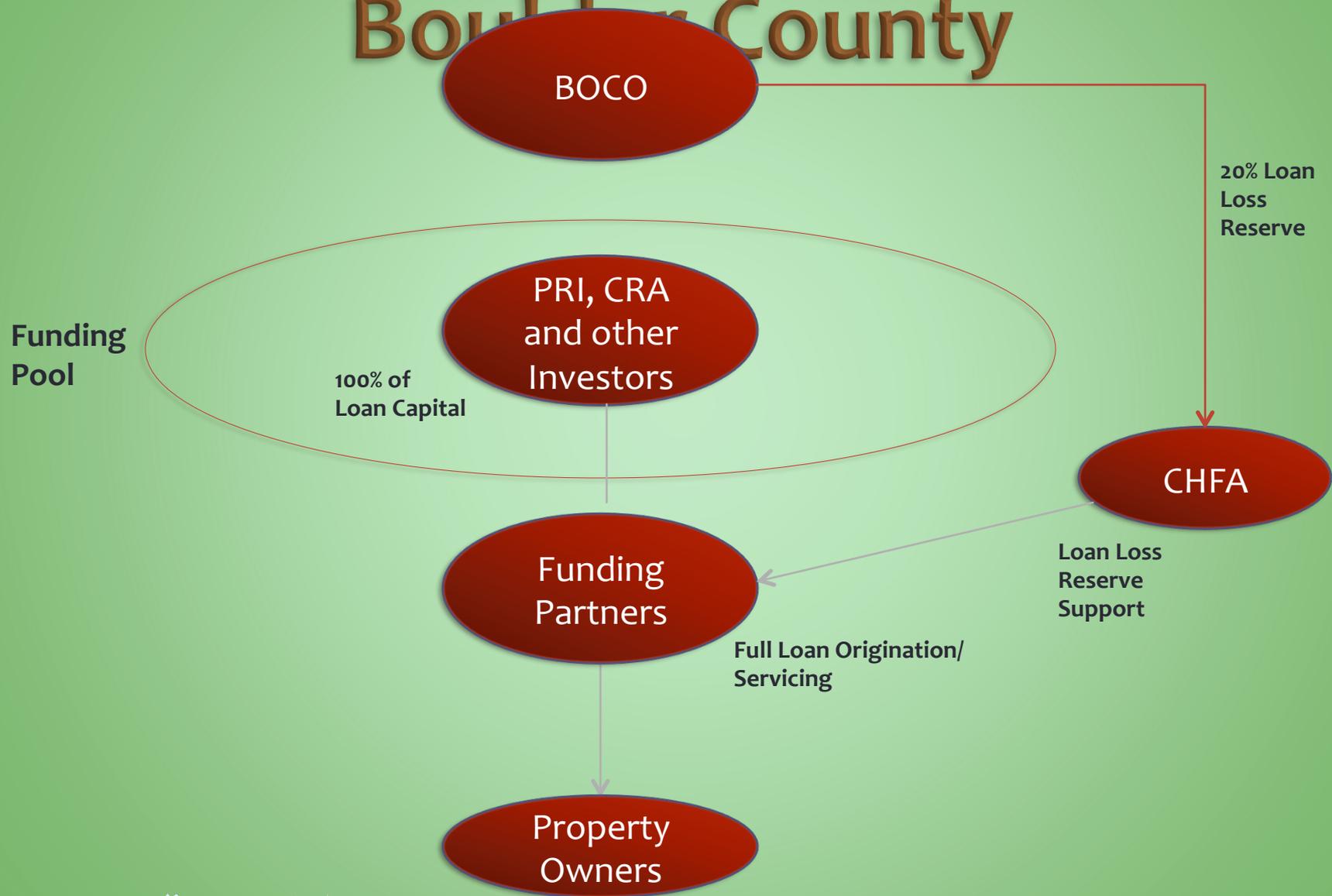
20% Loan Loss Reserve

Full Loan Origination/ Servicing

Loan Loss Reserve Support

- LOANS TO NON-PROFITS AND >\$100,000 COMMERCIAL

Boulder County



BBC Research and Marketing Energy Efficiency Loan Demand Study Key Residential Findings

- **Expected Residential Uptake in 2012**
 - ≈ 1,410 Boulder Homes (based on 1.88% of 75,000 owner occupied homes)
 - ≈ 2,364 Denver Homes (based on 1.78% of 132,793 owner occupied homes)
- **At an average Residential loan of \$5,000**
 - \$7,050,000 in Boulder
 - \$11,820,000 in Denver
- **Mean Interest rates** (homeowner would be willing to pay)
 - Denver 3.4%
 - Boulder 3.8%

Energy Efficiency Loan Demand Study Key Commercial Findings

- **Expected Commercial Loan Uptake in 2012**
 - ≈ 180 Boulder Businesses (based on 3% of 6,000 business establishments)
 - ≈ 396 Denver Businesses (based on 3.3% of 12,000 business establishments)
- **At an Average Commercial loan of \$15,000**
 - \$2,700,000 in Boulder
 - \$5,940,000 in Denver
- **Mean Interest rates (Business owner would be willing to pay)**
 - 4.7% in Boulder
 - 4.4% in Denver

Loan Specifics

- **Commercial Loans**

- \$1,000 to \$150,000+
- 3,5,7 or 10 year terms
- Add 1% interest rates to chart at right for commercial
- Funding Partners will capitalize non-profit and loans over \$40k

- **Residential Loans**

- \$500-\$25,000
- 3,5,7 or 10 year terms
- Rates to the right ->

- **All Loans**

- Include Advisor Service
- Must come from our Eligible Measures list
- Can include renewables if 15% efficiency first met
- Can be Coupled with our Rebates
- Must be an Elevations CU Member
 - \$25 deposit required

	FICO >		36month	60month	84month	120month
A+	740		2.750%	3.500%	4.500%	6.000%
A	720		2.875%	3.625%	4.625%	6.125%
A-	700		3.000%	3.750%	4.750%	6.250%
B+	680		3.125%	3.875%	4.875%	6.375%
B	660		3.500%	4.250%	5.250%	6.750%
B-	640		3.875%	4.625%	5.625%	7.125%
C+	620		4.375%	5.125%	6.125%	7.625%
C	600		4.875%	5.625%	6.625%	8.125%
C-	580		5.375%	6.125%	7.125%	8.625%

Program Marketing

- \$600,000 for direct marketing of the loan program in Boulder and Denver Counties
 - Largest single-program marketing budget in County History
- Essential for getting funds disbursed
- Radio, Events, Contractor engagement, Social media
- Targeting to Elevations' 90,000+ member base
- Always marketed alongside EnergySmart and Denver Energy Challenge advisor services

Property Owner Outreach

- Bottom-up (requests from the tenants for upgrades)
- Top-down (direct outreach to the property owner)
- Go to them: provide dedicated Advisor and hand-hold through the process.
- Understand their business model
- Use financial case studies
- Do the busywork for them (rebate apps, waivers.)
- Once you have one well-known property owner, the others will start to listen