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USGBC CO **Green** Schools Summit 2010

Joel Asrael, GEO

10/5/2010



Governor's
Energy Office



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GEO K-12 Programs and Accomplishments

- Goals of GEO
- K-12 Programs
 - EPC
 - HPD
 - Grants
 - Other



The New Energy Economy

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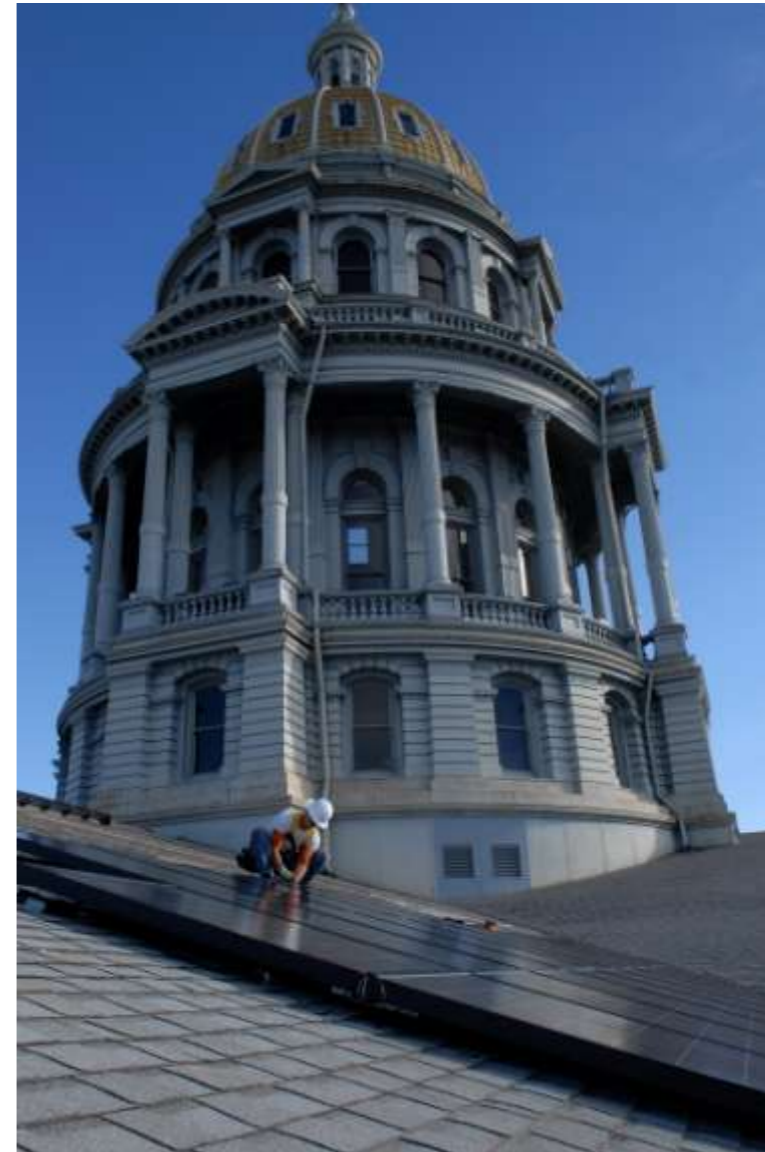
THE GOVERNOR'S ENERGY OFFICE

- The GEO plays a critical role in charting Colorado's leading role advancing the New Energy Economy.
- Work with communities, utilities, private and public organizations, and individuals to promote renewable energy, energy efficiency and clean energy technologies
- 45 total staff members



Governor's Energy Office Programs

- Public Outreach
- Residential Sector
- Weatherization
- Commercial Sector
- Public Sector
- Transmission and Utilities
- Colorado Carbon Fund
- Greening Government
- Renewable Energy
- Financing & Policy



STRATEGY OVERVIEW

Strategy: Address barriers to broad deployment of energy efficiency and renewable energy.

- **Access to Information**

- Create a one-stop-shop for actionable energy information.

- **Access to Capital**

- Assist with up front costs through rebates and grant programs, provide financing mechanisms, and provide technical assistance through performance contracting program.

- **Access to Services**

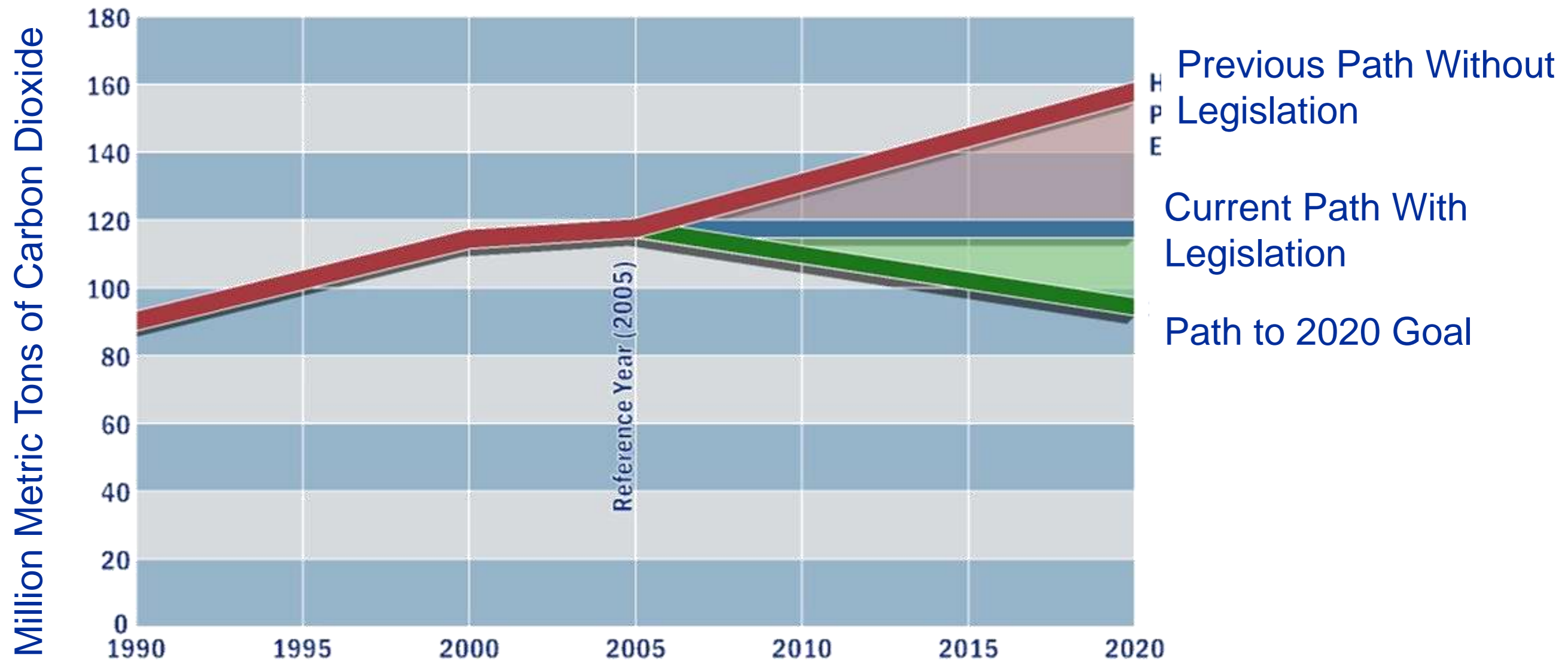
- Develop the workforce for New Energy Economy jobs through training, certification, business expansion into underserved areas, and energy economy curricula.

COLORADO'S NEW ENERGY ECONOMY

- A **national model** for creating jobs, attracting business and producing innovative clean-energy technologies.
- **Nearly 17,000 Coloradans now work** in renewable energy and energy research jobs in Colorado, the fourth-highest concentration in the country.
- **Dozens of new businesses** like Vestas Wind Systems, Siemens Wind, Abound Solar, Ascent Solar and Solix Biofuels are growing and adding jobs in Colorado.
- Colorado has nearly quadrupled the amount of **wind power on the grid** and we expect to double that by 2020.



CO Greenhouse Gas Emissions and Reduction Goal



Graphic courtesy of Hutton Architecture Studio



GEO K-12 Programs and Accomplishments

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HB 07-1309 Summary

~\$500k/yr for three years funding created from monthly collection of the severance tax for improved energy efficiency in schools.

- (a) ASSISTING SCHOOL DISTRICTS IN FINANCING ENERGY EFFICIENCY UPGRADES FOR PUBLIC SCHOOLS THROUGH ENERGY PERFORMANCE CONTRACTS...
- (b) ASSISTING IN THE DESIGN OF NEW PUBLIC SCHOOL BUILDINGS THAT ARE MORE ENERGY EFFICIENT;
- (c) ASSISTING SCHOOL DISTRICTS IN INCREASING THE EFFECTIVENESS OF THEIR UTILITY BUDGET MANAGEMENT; AND
- (d) PROVIDING TRAINING AND SUPPORTING RESOURCES RELATED TO ENERGY EFFICIENCY FOR SCHOOL DISTRICTS.



GEO K-12 Programs and Accomplishments

Energy Performance Contracting

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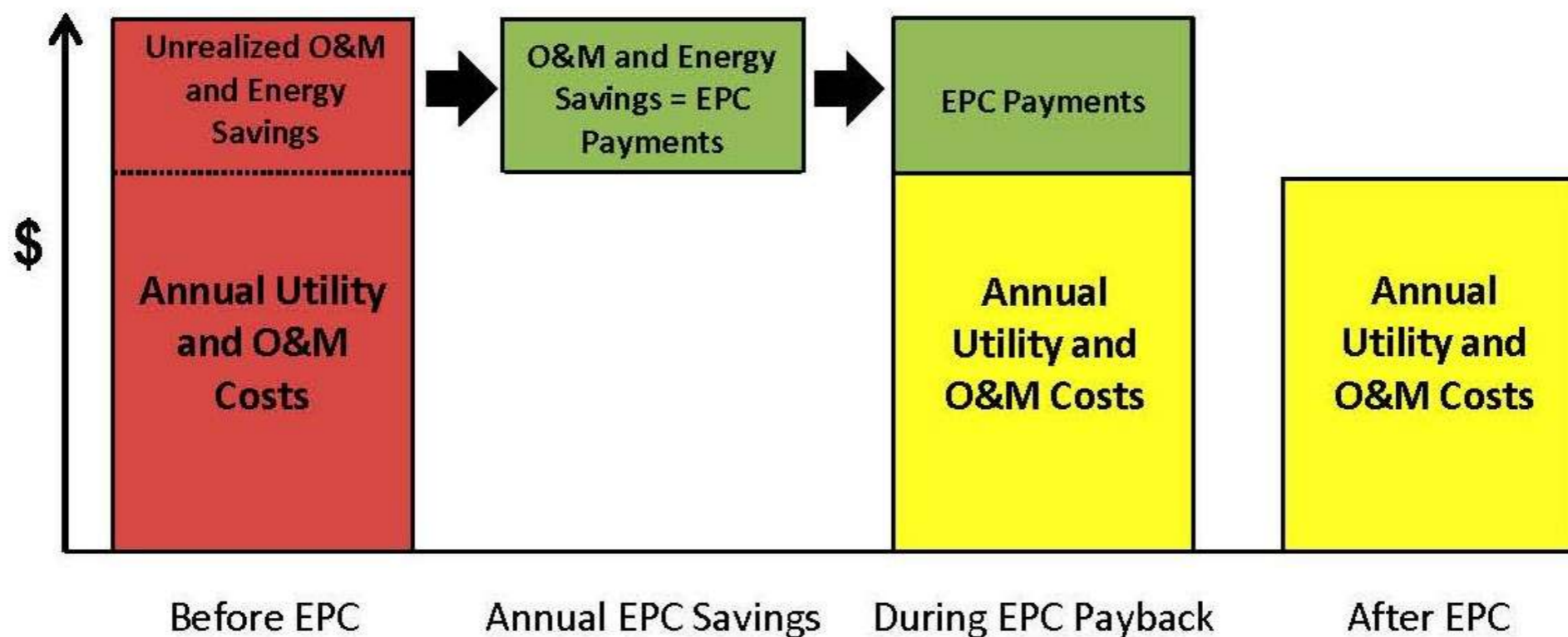
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Energy Performance Contracting

- Energy Savings Measures funded through guaranteed savings.
- Reallocate money already being spent in utility budget to purchase efficiency and capital improvements



Energy Performance Contracting

- To simplify the process, and ensure the highest level of quality the GEO has pre-approved 14 ESCOs to implement performance contracts in Colorado
- The GEO will work with State, Higher Ed, Counties, Cities, K-12 Schools, and Special Districts to navigate the energy performance contracting process.
- You and an energy service company (ESCO) enter an agreement that allows efficiency upgrades to be paid for with savings achieved through decreased energy consumption and maintenance costs



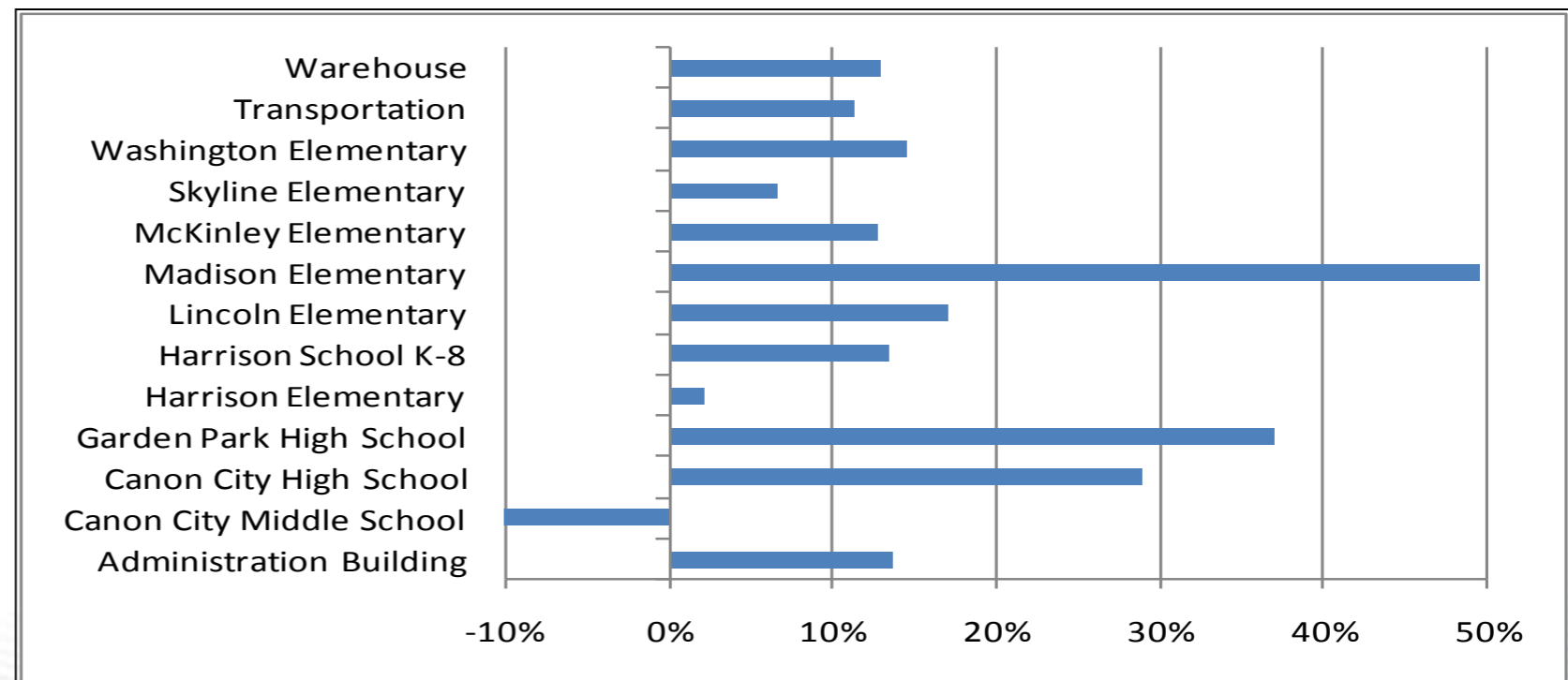
Canyon City SD in Fremont County – Approx. 3,800 Students, 10 Schools

- Three Energy Performance Contracts
 - Lighting Retrofit
 - Mechanical Systems
 - Water Conservation Measures
 - Building Automation
 - Thermal Storage
 - GSHP (reduced HVAC energy 41%)



% Reduction in Energy

- Photovoltaic
Installing (10) 100 kW systems
- Average reduction of 13 kBtu/ft² from 2007 vs. 2009



K-12 Performance Contracting

- 79 of 178 SDs
- 7 in TEA, 6 in construction, 23 in M&V, 32 in post M&V
- \$114,000,000 in EE upgrades



GEO K-12 Programs and Accomplishments

High Performance Design

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High Performance Building Program Goals

- **Reduce** energy consumption
- **Lower** operations and maintenance costs
- **Promote** occupant health, satisfaction, and productivity
- **Minimize** resource consumption – esp. water and open land
- **Utilize** local/regional materials where possible
- **Respond** to specific climates (4 climate zones in CO)



High Performance Building Program for Schools

Training & Education

- Webinars
- Workshops as requested (e-mail HPBWorkshops@state.co.us)
- Tools (Flex Energy, concept overviews, etc.)
- Case Studies

Partner Program Technical Assistance

- Have worked with 28 school districts to date
- Work with BEST and non-BEST schools to identify savings opportunities in new construction
- Work with design team and owners to provide assistance on high performance design



Park County RE-2 Fairplay Campus

- **Project Type:** PK-12 Renovation / Addition
- **Location:** Fairplay, CO
- **Project Budget:** \$28.6 million
- **Funding:** \$22.8 million - CDE / BEST Grant
- **Project Scope:**
 - 125,000 sf finished campus
 - Middle / High School addition,
 - Renovation of existing facilities,
 - Sport facilities and fields



Park County RE-2 Fairplay Campus

HPBP Technical Assistance

- Reviewed energy model baseline and helped establish a 45% reduction.
- Helped owner evaluate biomass options
- Recommendations for high R-value wall and roof assemblies
- Schematic & Design development reviews
- LEED Checklist review
- Evaluation of window assemblies
- Recommendations to replace storm water piping with bio-swales
- Recommended photocells in daylight classrooms



GEO K-12 Programs and Accomplishments Grant and All the Rest

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BOCES Energy Manager Grants

(Boards of Cooperative Educational Services)

- Mountain BOCES –
 - Buena Vista, Salida, Eagle County, Garfield 16, Garfield Re2, Roaring Fork, Lake, Park County, Aspen, Summit
- San Luis Valley BOCES –
 - Mountain Valley, North Conejos, Sanford, Sangre de Cristo, Sargent, Sierra Grande, South Conejos



Sustainability Management Systems/Plans

- Iterative decision making framework and evaluation mechanism
- Have been outreaching to CASDEM and CSPMA over the past six months
 - At least 4 regional trainings being held in Sep/October
 - Will be providing assistance to selected school districts with development of SMPs in 2011
 - Interested districts please contact Conor.Merrigan@state.co.us



Renewable Energy and Energy Efficiency in Schools (REEES) loan program

- Low-interest loans for renewable energy installations or energy efficient bus projects
- Available for schools that have investigated efficiency measures and have an ENERGY STAR score



Training and Support

School District Energy Manager Training

Identify SD Energy Manager or designated party responsible for managing energy usage and bring relevant energy training to these individuals through grant assistance.

Goal:

The GEO will establish a School District Energy Manager Training Program with which to bring energy manager training to Colorado's small School Districts in particular. Currently the GEO is partnering with the Colorado Association of School District Energy Managers (CASDEM) on this program.



GEO K-12 Programs and Accomplishments Resources

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GEO Regional Reps

Southern

TBD

Western

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North Central

Mona Newton

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Eastern

Robert Mailander

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Robert.Mailander@state.co.us



Community Energy Coordinators – Northwest Colorado

Moffat, Rio Blanco, and Routt

Yampa Valley Partners

Katherine (Kate) Nowak

kate@yampavalleypartners.com

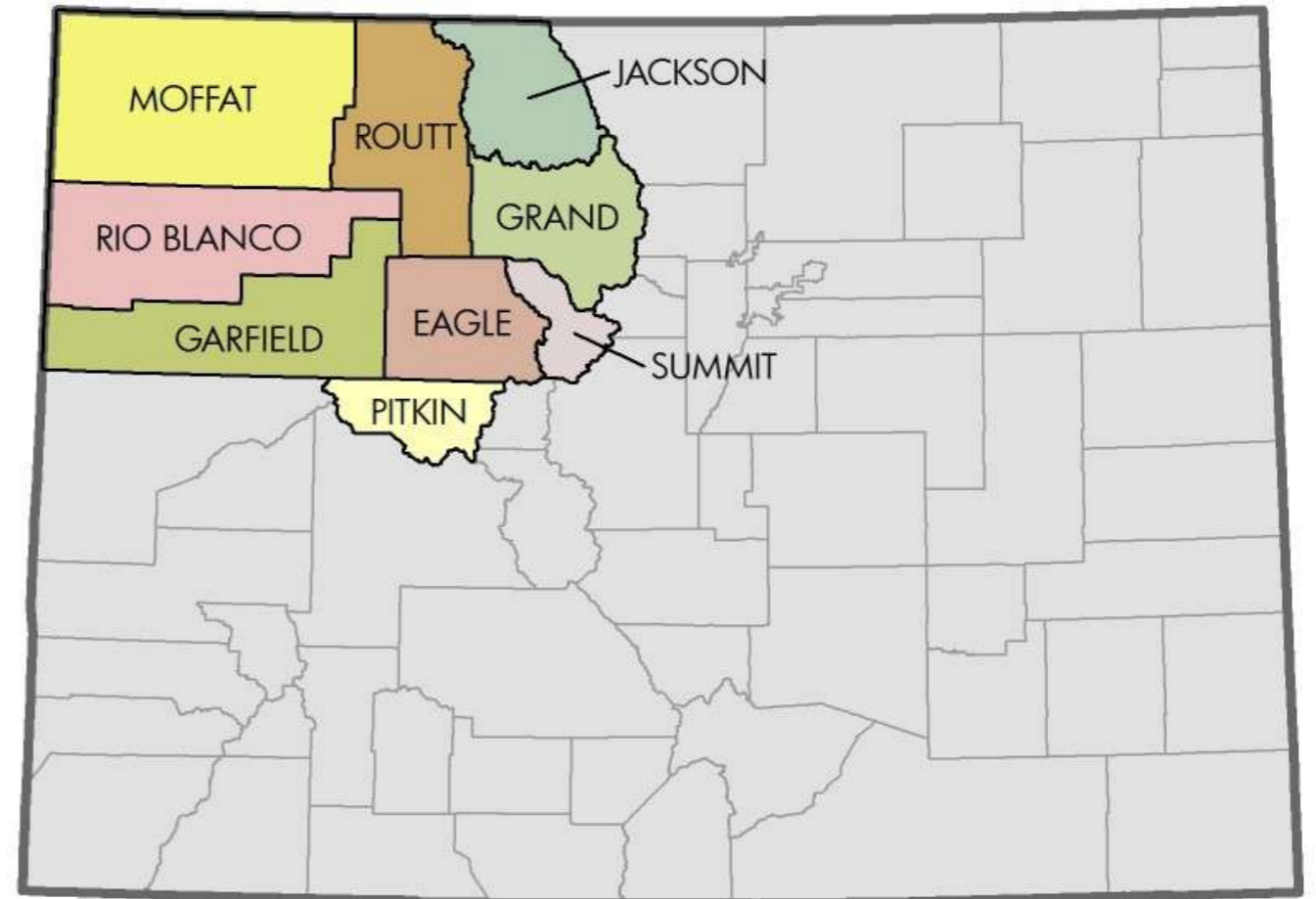
Grand and Jackson

Grand County Business and Economic
Development Association

Liz McIntyre or Becky McBride

mcinliz@aol.com

rebeccakmcbride@gmail.com



Contact the GEO for a complete list of Community Energy Coordinators throughout the state

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