

Today's webinar will
begin in a few moments.

Find information about upcoming NACo webinars
or view recordings of past webinars by visiting
www.naco.org/webinars



County Ideas
that Work

NACo | VIRTUAL LEARNING
COMMUNITY

Energy Efficient County Buildings: Realizing Money and Energy- Saving Opportunities



County Ideas
that Work

Energy Efficient Buildings: Realizing Money and Energy- Saving Opportunities

About the National Association of Counties

- advances issues before the federal government;
- improves understanding of county government;
- assists counties in finding and sharing innovative solutions
- provides value-added services to save counties money.

For more information visit NACo's new Website: www.naco.org.

Sponsors/Partners



**Cindy Wasser,
Infrastructure and
Sustainability
Associate**

cwasser@naco.org

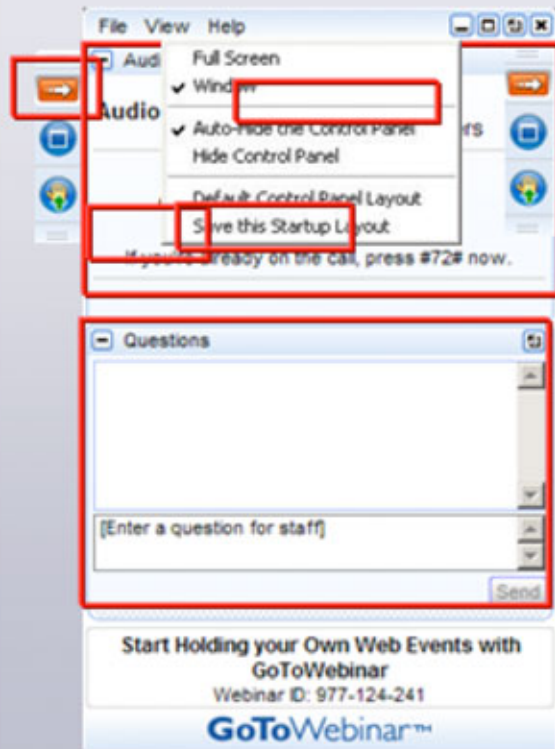
202.942.4274

**Coleman Davis
Community Services Intern**

cdavis@naco.org

202.661.8834

How to Participate



- Open and close your Panel
- View, Select, and Test your audio
- Submit text questions
- Q&A addressed at the end of today's session,

Tips for viewing this webinar:

- The questions box and buttons are on the right side of the webinar window.
- This box can collapse so that you can better view the presentation. To unhide the box, click the arrows on the top left corner of the panel.
- If you are having technical difficulties, please send us a message via the questions box on your right. Our organizer will reply to you privately and help resolve the issue.

Question & Answer Session Instructions

- Type your question into the questions box at any time during the presentation, and the moderator will read the question on your behalf during the Q&A session.

Today we will:

- View NACo and IBTS's *NEW* Building Energy Efficiency Report
- Learn about the opportunity to realize and promote energy savings through policy development, incentives, and leadership to municipalities.
- Learn about trends in energy use and management in county buildings
- Hear experiences from county planners who have implemented energy improvements in their buildings.

Energy Efficient Buildings:

Realizing Money and Energy-Saving Opportunities

NACo
Green Government
Initiative www.naco.org/greencounties

25 Massachusetts Avenue, NW
Suite 500 | Washington, DC 20001

(202)383-6226 (202)383-2630
www.naco.org



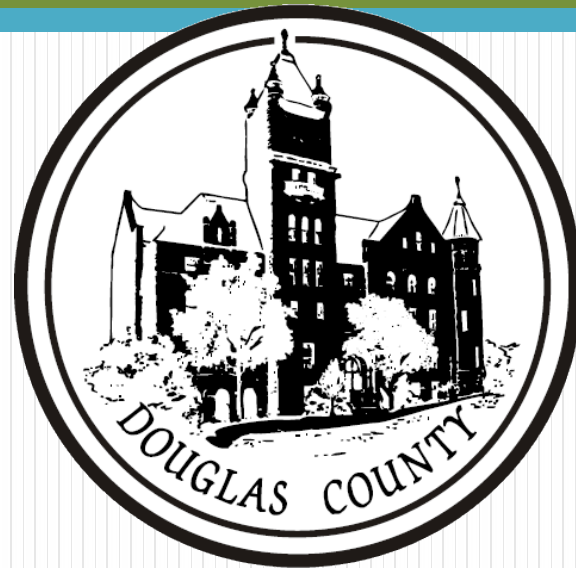
fb.com/NACoDC • twitter.com/NACoTweets
youtube.com/NACoVideo • linkedin.com/NACoDC



Agenda:

- 2:00 Welcome
- 2:05 **Commissioner's Perspective: Why is Energy Conservation a Savvy thing to Prioritize?**
Hon. Mike Gaughan, Douglas County, KS
- 2:20 **Findings of NACo Energy Study**
Dustin Knutson, Director of Energy Services, IBTS
- 2:40 **Easy Wins for Energy Conservation**
Jim D'Amico, County Energy Manager, Cook County, IL
- 2:55 Q&A
- 3:15 Wrap-Up

Energy Efficiency & Sustainability: Douglas County, KS



Provided by:
Mike Gaughan, County Commission Chair

Douglas County Sustainability Goals

Douglas County will:



- incorporate sustainable landscaping practices.
- continue to implement an organization-wide document management system to reduce paper waste.
- reduce waste (priority order: reduce consumption, reuse existing equipment, recycle or buy recycled products)
- incorporate sustainable practices into road operations.
- be more efficient with fuel consumption.



- **reduce energy consumption by 30% by 2015. (2009 baseline)**
- strive to meet LEED standards for certification in new County buildings.



- create and deliver a sustainability employee education and action campaign.
- encourage sustainability as a routine and normal practice for Douglas County employees.



- adopt policy to articulate that sustainability is a valued position.



- provide services to citizens in their homes when appropriate (i.e. online services).
- facilitate community understanding of sustainability practices.

Why Energy Efficiency?

- Balances three pillars of sustainability:
 - Economy
 - Environment
 - Society
- Local action on complex global challenges.

Energy Efficiency in Douglas County: a multi-tiered approach

- **Policy**
 - Adoption of building codes
- **Municipal Leadership**
 - Best practices: audits to retrofits
 - Projects in municipal facilities
 - Revolving loan for energy efficiency
- **Community Engagement**
 - Educational programs targeted to:

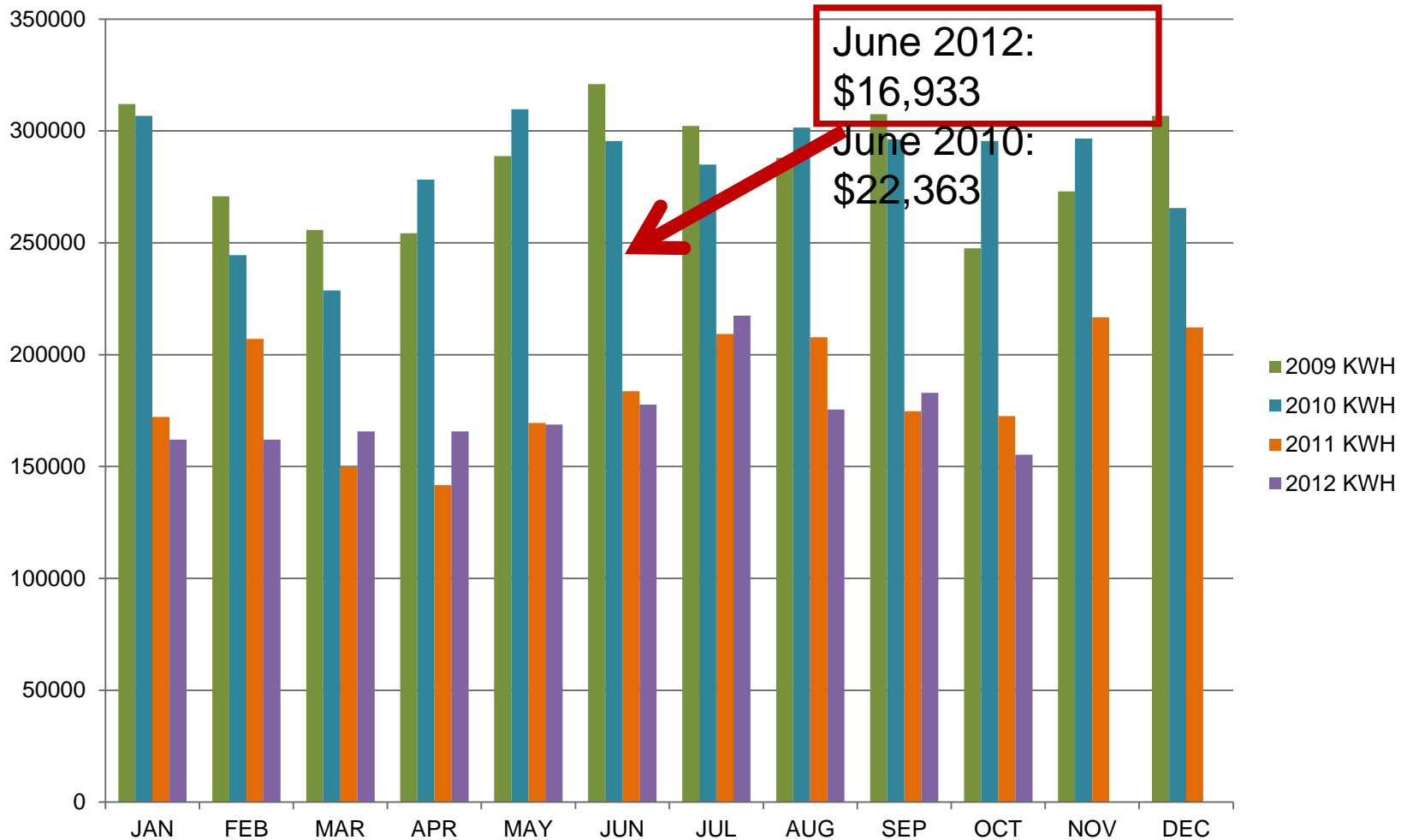


Sustainability and Energy Savings Reinvestment Fund

GOALS:

- ✓ Support departments' initiatives that meet the County's Sustainability Goals.
- ✓ Empower department and staff to design and implement sustainability projects.

Judicial Law Enforcement Center: Electricity Usage (kWh):



YTD Savings: \$103,592.00

Extension Office Energy Projects: efficiency first, solar second.

- ✓ Energy efficiency upgrades:
Lighting, insulation,
programmable thermostats,
weather stripping, etc.

4.2 kW solar PV system:

- ✓ 12,450 kWh generated to-date
- ✓ \$1,120 saved
- ✓ 19,000 lbs avoided CO2 emissions:
 - ✓ = planting 225 trees
 - ✓ = not burning 985 gallons of gasoline



Sustainability and Energy Savings Reinvestment Fund

GOALS:

- ✓ Support departments' initiatives that meet the County's Sustainability Goals.
- ✓ Empower department and staff to design and implement sustainability projects.

Priority for funding given to projects that:

1. Reduce energy costs and operations expenses.
2. Promote the implementation of innovative sustainability solutions.
3. Demonstrate County's commitment to sustainability, stewardship, and conservation.

Sustainability and Energy Savings Reinvestment Fund

- Created in November 2011
- Initially seeded with \$300,000 (in equipment reserve)
- **Projects funded to date: 8**
- Current balance = \$225,000

PROCESS:

1. Departments apply for full project or incremental costs for sustainability projects.
2. Applications reviewed by County Administrator & Sustainability Coordinator.
3. Annual reports provided to Commission with recommendations to re-fund the program (based upon previous year's savings)

Energy Efficiency Projects Funded 2011 & 2012

- Building 21 Lighting Retrofit (\$1,825)
- County Clerk: E-poll Books (\$220)
- Health Dept. LED lighting (\$892)
- KSU Ag Extension Office Lighting Retrofit (\$600)
- Hybrid vehicle for Youth Services (\$1,150)
- Recycling bins at Fairgrounds Buildings (n/a)
- Exterior & parking lot lighting retrofit at YS (\$3,580)
- United Way Boiler Retrofit (\$3,400)

(annual savings in parenthesis)

Total annual energy savings = \$11,600

Closing thoughts:

- Culture change in the County departments is really what drives continued engagement and success.
- Commission leadership is necessary, as energy efficiency upgrades often require capital expenditures.
- Be sure to capture \$ savings to fund future





National County Building Portfolio Study

January 10, 2013

Institute for Building Technology and Safety (IBTS)

“Accelerating Progress for Governments and Communities in the Built Environment”

Introduction to IBTS Energy Services

Education & Training

Capability-enhancing Workforce Development

- Training on contracting and funding energy efficiency and renewable energy projects
 - Performance Contracts
 - Utility Service Contracts
 - Power Purchase Agreements
 - Energy Management & Behavioral Savings Strategies
- Workforce development for local contractors already partnered with cities, counties, and states



Field Services

Quality Assurance, Project Development

- Residential Quality Assurance
 - Energy Code Inspections, Solar PV Installation Quality Assurance, Home Performance with Energy Star
- Public Buildings
 - Energy Use and Cost Benchmarking, Assessment, Retrofit Opportunity Prioritization
 - Energy Efficiency and Renewable Energy Retrofits and Project Development



Research & Information

Go-to Solution Center & Data Repository

- Template contracts
- Create and publish national representations of public buildings & energy use by climate zone, building type, and other factors for comparison and goal-setting
- Produce relevant tools, publications, studies, and reports that empower your county or city
- Build upon a reputation of excellence in non-profit service through energy advisory



Agenda

- What is Energy Use Intensity (EUI)?
- Overview & Purpose of the National Study
- Methodology
- Participation
- Results
- Next Steps
- How to Participate



Energy Use Intensity (EUI)

- A building's EUI is calculated by taking the total energy consumed in one year (measured in kBtu) and dividing it by the total floor space of the building.
 - For example, if a 50,000-square-foot school consumed 7,500,000 kBtu of energy last year, its EUI would be 150.
 - A similarly sized school that consumed 9,000,000 kBtu of energy last year would have a higher EUI (180) to reflect its higher energy use. Generally, a low EUI signifies good energy performance.

County Building EUIs

- ✦ 33% of county facilities have an annual source EUI below the EPA's national median
- ✦ 48% of county facilities have an annual source EUI at least twice the EPA's national median

EUI is the measure used to calculate the Portfolio Manager Score

Source: United States Department of Energy, Energy Information Administration. *Commercial Building Energy Consumption Survey (CBECS), 2003*. <http://www.eia.doe.gov/emeu/cbecs/contents.html>, quoted in United States Environmental Protection Agency. Energy Star. *What is EUI?* <http://www.energystar.gov/index.cfm?fuseaction=buildingcontest.eui>.

Overview

- Purpose of the Study
 - In May of 2012, NACo and IBTS launched this study to learn how energy is being used in county facilities.
 - Utilizing EUI as the fair metric of comparison, we are creating a first of its kind national representation of county buildings and their energy cost of operation.



The new database will allow counties to benchmark their facilities, identify opportunities to improve their energy efficiency and reduce the costs of operation.

Benchmarking: The first step toward energy efficiency by tracking energy use for comparison against similar building types across the country or to the same facility over time.

Methodology

Goal

- Improve quality of database and the national representation the data presents

Research

- Gather data from 90+ counties representative of DOE climate zones and county populations

Approach

- Interview county energy managers and officials via phone and enter data into Portfolio Manager

Data Requested

- Number of buildings in the county
- Type/use and sq. ft. of each building
- At least 1 years' worth of monthly energy use, demand and energy cost data for each building

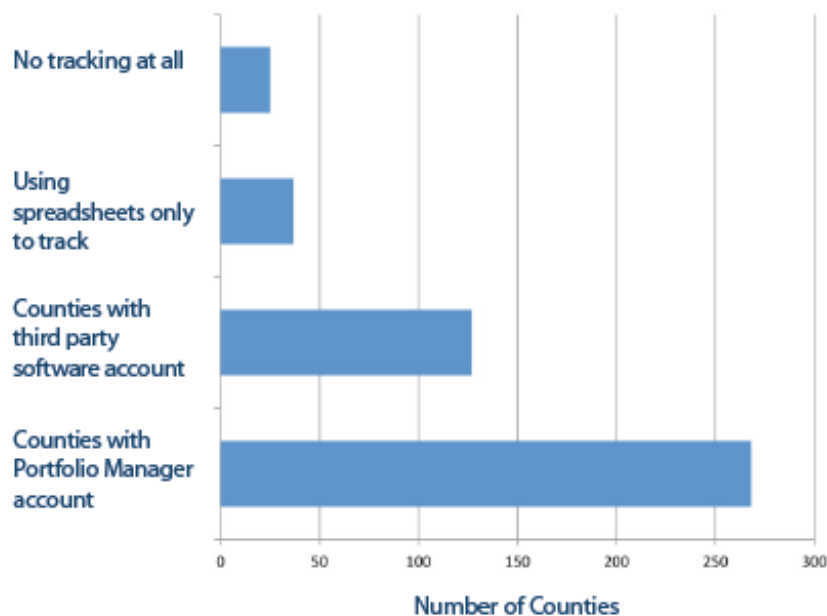
Participation

Counties that Contributed Full Portfolios to the Database

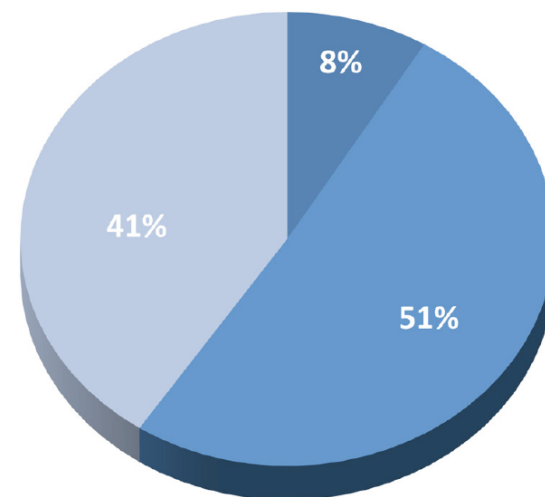


Results: Tracking Methods

Interview Counties' Tracking Methods



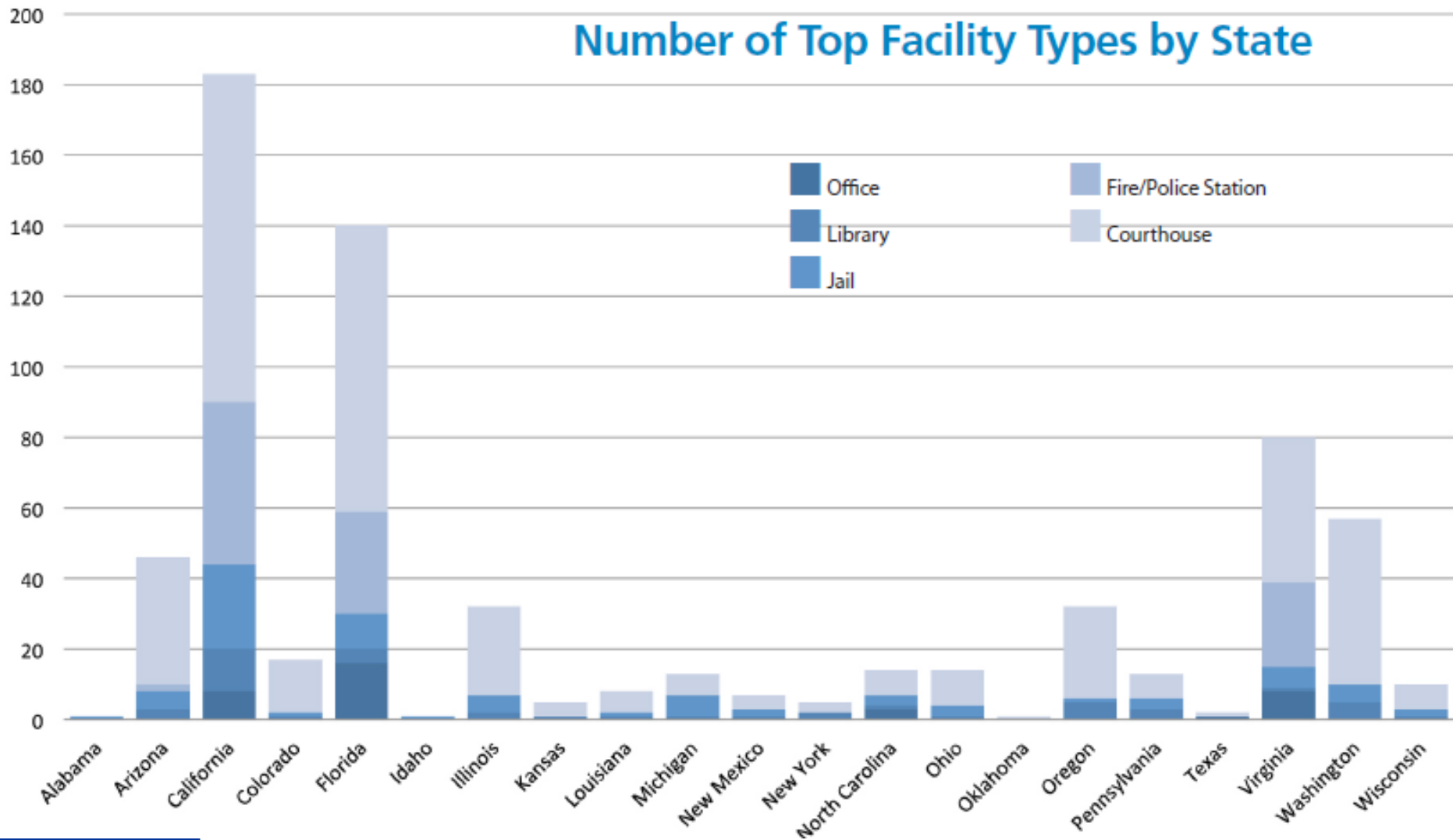
How Counties Use Portfolio Manager



- Full Portfolio in Portfolio Manager Only (No Other Software)
- Partial Portfolio in Portfolio Manager
- Portfolio Manager and Third Party Software


Results: Facility Types

Number of Top Facility Types by State



Results: Average EUI

Facility Type	Number of Facilities	Average Source Use Energy Intensity (kBtu/Sf)	Buildings with Source EUI Above National Median	Buildings with Source EUI Above 2x National Median
Office	420	245.67	315	224
Fire/Police Station	101	152.33	67	28
Courthouse	79	242.67	50	30
Jail	45	256.61	32	27
Library	36	208.38	30	23



Industry knowledge and a look at the data tells us that 10-20% efficiency gains are likely possible in a majority of facilities in the database. For a county that pays \$1M a year in utilities, that's \$100k - \$200k that could be made available through more efficient operation of facilities.

Results: Top Performers

10 Best Performing County Courthouses (average County Courthouse EUI: 242.67 kBtu/sf)

County	State	Portfolio Manager Rating (1-100)	Source Energy Use Intensity (kBtu/Sq. Ft.)
Mohave	Arizona	81	117.6
Mohave	Arizona	81	117.6
Mendocino	California	89	125.1
Mendocino	California	89	125.1
Mohave	Arizona	81	126
Manistee	Michigan	94	135.8
Bernalillo	New Mexico	89	138.3
Los Angeles	California	86	146.6
Monterey	California	78	151.9
Whatcom	Washington	77	160.7
Summit	Ohio	84	165.3
New Hanover	North Carolina	54	166



Results: Top Performers (cont.)

10 Best Performing County Office Buildings (average County Office EUI: 245.67 kBtu/sf)

County	State	Portfolio Manager Rating (1-100)	Source Energy Use Intensity (Kbtu/Sq. Ft.)
Mendocino	California	95	67.8
Douglas	Kansas	94	74.6
Snohomish	Washington	25	91.3
Whatcom	Washington	77	92.3
Orange	Florida	78	93.4
Mendocino	California	81	93.5
Snohomish	Washington	85	96.2
Mohave	Arizona	95	96.5
Pierce	Washington	61	96.8
Allegheny	Pennsylvania	79	106.6



Further Study

- Additional participation is needed to improve accuracy of the averages as national representations
- Typologies and trends can be reached with greater confidence the more that counties participate

NACo and ENERGY STAR®'s Portfolio Manager Services

- * 93 Counties are ENERGY STAR Partners
- * 110+ Counties are using NACo's Benchmarking Assistance Program through Portfolio Manager
- * There are 1,816 Buildings in NACo's Master Portfolio Manager Account
- * 1,060 County buildings have been added to Portfolio Manager over the life of the program

For more information about NACo's Benchmarking Assistance Program, visit www.naco.org/energystar



How to Participate

How your county can participate...

- Whether you are just starting in this process or have already been actively looking at reducing energy use in your buildings, now is a good time to engage with NACo following these steps:



Thank You





George W. Dunne Cook County Office Building:
ENERGY STAR Certified 2008-2012

Richard J. Daley Center

ENERGY STAR Certified
2009, 2011, 2012



Cook County Department of Corrections

- Announced in December 2012
- Three-year, \$34 million dollar project
- Partner with NORESKO
- Replace HVAC systems
- Install new insulation
- Upgrade lighting systems
- Projected 20 year payback



Provident Hospital

LEED Silver Certification Status (2012)



Question & Answer Session Instructions

- Type your question into the questions box at any time during the presentation, and the moderator will read the question on your behalf during the Q&A session.

For more information about NACo membership, contact
Andrew Goldschmidt at agoldschmidt@naco.org

Thank you for attending today's webinar.

Download your copy of NACo's *NEW* Building Energy Efficiency Report, visit www.naco.org/greencounties

To learn more about upcoming NACo webinars, please visit www.naco.org/webinars