



# Green Madison Update

## Georgetown University Energy Prize (GUEP)

Monday June 20, 2016



**ELEVATE ENERGY**  
Smarter energy use for all

**COWS** | BUILDING  
THE HIGH ROAD



project**home**

**cool  
choices**  
act today, preserve tomorrow

# Lightning Talk – Topics we will touch on

- Brief Recap of the Team
- Municipal Approach
- Residential Approach + energy impacts to date
- Overall energy savings and success to date

# Our Team



**ELEVATE** ENERGY

**C O W S**

center on wisconsin strategy



project**home**

cool  
choices

act today, preserve tomorrow

# Municipal Buildings

- Energy assessments in all buildings + corresponding workplan

Category	kWh saved	therms saved	kBtu saved	Total Savings (\$)	Total Cost (\$)	Simple Payback (years)
<b>Interior Lighting</b>	1,755,200	0	5,989,000	\$179,800	\$1,014,500	6
<b>HVAC</b>	162,300	32,500	3,804,000	\$39,800	\$808,900	20
<b>Controls</b>	430,200	33,600	4,828,000	\$73,200	\$923,200	13
<b>Plug Load</b>	264,100	0	901,000	\$31,500	\$308,800	10
<b>Water Distribution</b>	3,696,391	0	12,612,000	\$346,600	\$1,543,500	4
<b>Street Lights</b>	4,824,318	0	16,461,000	\$342,500	\$5,488,200	16
<b>Total Package</b>	11,132,509	66,100	44,595,000	\$1,013,400	\$10,087,100	10

# Municipal Leadership Academy (module 1)

- To educate facility managers/key staff

Months 1-2



The Energy Management Process: Audits to Measurement and Verification

Month 3



Engagement and Awareness Strategies

Months 4-5



Improving and Understanding Building Operations and Controls

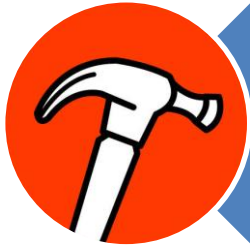
Month 6



Exploration of specific energy topics (commissioning, HVAC, renewables, etc.)

# Municipal Leadership Academy (module 2)

- To educate facility managers/key staff



Implementing the Actions for the Georgetown University Energy Prize



Leadership Skills and Applying Lessons Learned



Professional Energy Credentialing (Certified Energy Manager, Sustainable Facilities Professional, Certified Control Systems Technician, etc.)

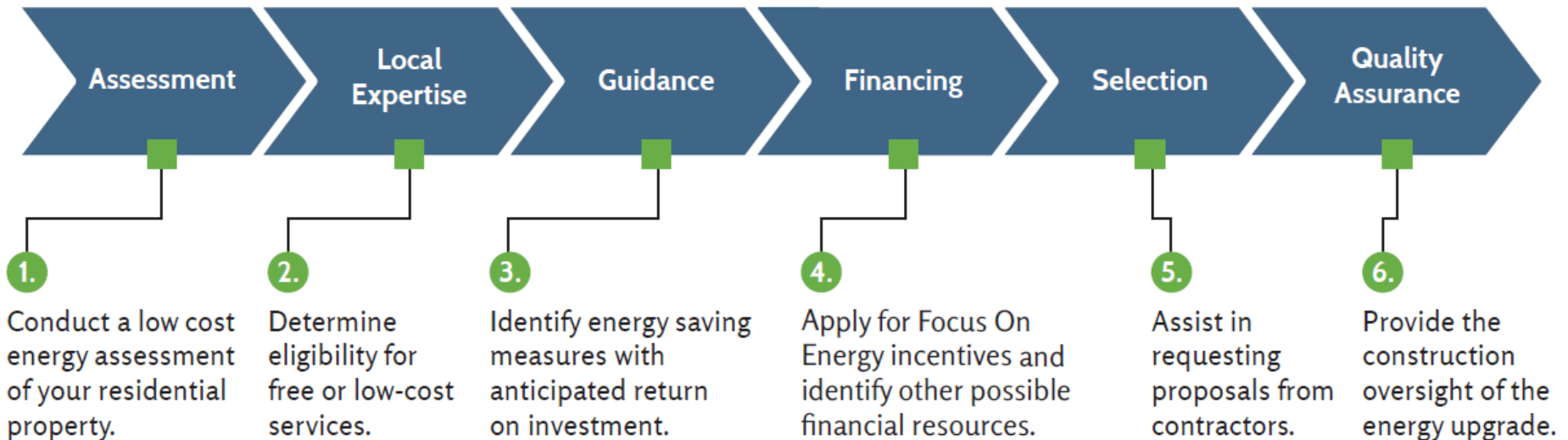


# Municipal Policy/Program

- Retro-commissioning program in development – Warner Park Community Center pilot
- LEED certified for all new and remodeled city buildings
- EnergyCap software to track energy
- Using FOE programs
- Madison Megawatt – building one megawatt of renewable energy and saving a megawatt by 2020
- Continue Training through Facilities and Energy Leadership Academy

# Residential Buildings Approach

- One-stop-shop approach to assist building/homeowners from beginning to end





# Residential Buildings – Single Family House Parties

- 36 energy house parties with over 240 guests, resulting in twice as many additional energy audits conducted

<https://www.youtube.com/watch?v=e28MedWFJNw>



- 58 construction projects completed/underway
  - 36 air sealing improvements
  - 42 insulation improvements (attic; wall; basement)
  - Furnace/boiler replacement
  - Several surprises: foot-wide gap to open air in basement; 1 major furnace safety issue

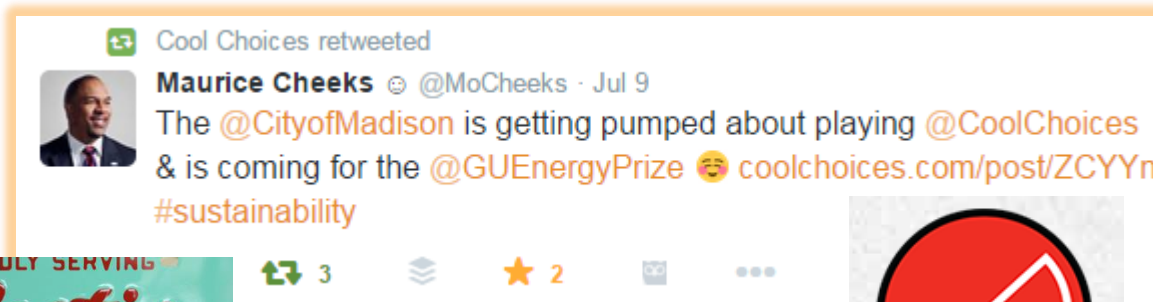
# Residential Buildings – Multifamily Buildings

- 51 multifamily energy assessments conducted
- 21 construction jobs completed
- 16 buildings received air sealing improvements
- 16 buildings received CFL/LED lighting upgrades; low flow shower heads; faucet aerators
- 14 buildings with attic insulation improvements
- 8 buildings with new 95% high efficiency heating systems (majority boilers)
- 20 units upgrade refrigerators to EnergyStar appliances



# The people *inside* the buildings – Behavior Based Strategy

- **Cool Choices** implemented 2 online games – city staff + communitywide
- Participants logged energy-saving actions to track financial, energy, water and carbon savings
- \$350,000+ in savings to potentially be reinvested back into the community!
- Game provides platform for participants to share ideas and encourage each other
- Local sponsorship adds to player experience



# Success to date

- In 2015, reduced energy consumption against baseline by 8.79%
- Q1 2016 shows reduction by more than 12% against Q1 2015 (data not yet weather normalized)

