



# Ameresco Energy Performance Contract

General Services  
*Strategic Initiatives Division*



# Overview of EPCs

## What is an Energy Performance Contract (EPC)?

- Benefits
- Energy savings guarantee
- Sustainability Goals
- CEO administration of EPCs

## EPC Process

- RFP Publication ✓
- ESCO Selection ✓
- Technical Energy Audit (TEA) ✓
- Energy Performance Contract ✓
- Implementation
- Measurement & Verification (M&V)



# Energy Conservation Measures (ECMs)

ECM #	1	2	3	4	5	6	7	8	9	10	11
Facility / Measure	Interior Lighting System Improvements	Exterior Lighting System Improvements	Lighting Controls	Energy Management Control System Upgrades	Pump Improvement Measures	Pipe and Equipment Insulation	Vending Machine Controls	Pool Covers	Building Envelope Measures	Transport Gas	Education Program & Live Energy Monitoring
Fire Station#1(HQ)	X	X		X		X			X		X
Fire Station #8	X	X		X		X			X		X
Fire Station #9	X	X									X
Police District #1	X	X		X		X	X			X	X
911 Call Center	X	X	X	X		X			X	X	X
Ashland Pool	X	X	X		X		X	X	X	X	X
Ashland Rec Ctr	X	X					X		X		X
Glenarm Rec Ctr	X	X	X		X	X	X	X	X		X
Scheitler Rec Ctr	X	X				X			X		X
Twentieth Street Rec Ctr	X	X		X	X		X		X		X
Barnum Library	X	X		X					X		X
Bear Valley Library	X	X	X	X					X		X
Eugene Field Library	X	X	X	X					X		X
Schlessman Family Library	X	X	X	X					X		X

11 Measures over the 14 buildings = **88 ECMs**



## Indoor and Outdoor Lighting

- Indoor lighting – optimized LED solution
- Exterior lighting – full conversion to LED Install occupancy controls in select areas

## Energy Management Control System Upgrades

- New BAS control systems
- Occupied / unoccupied scheduling
- More aggressive temperature setbacks
- Reduced static pressure during unoccupied periods
- Recommissioning

## Envelope & Insulation

- Foam insulation, pipe and equipment insulation
- Caulk and seal

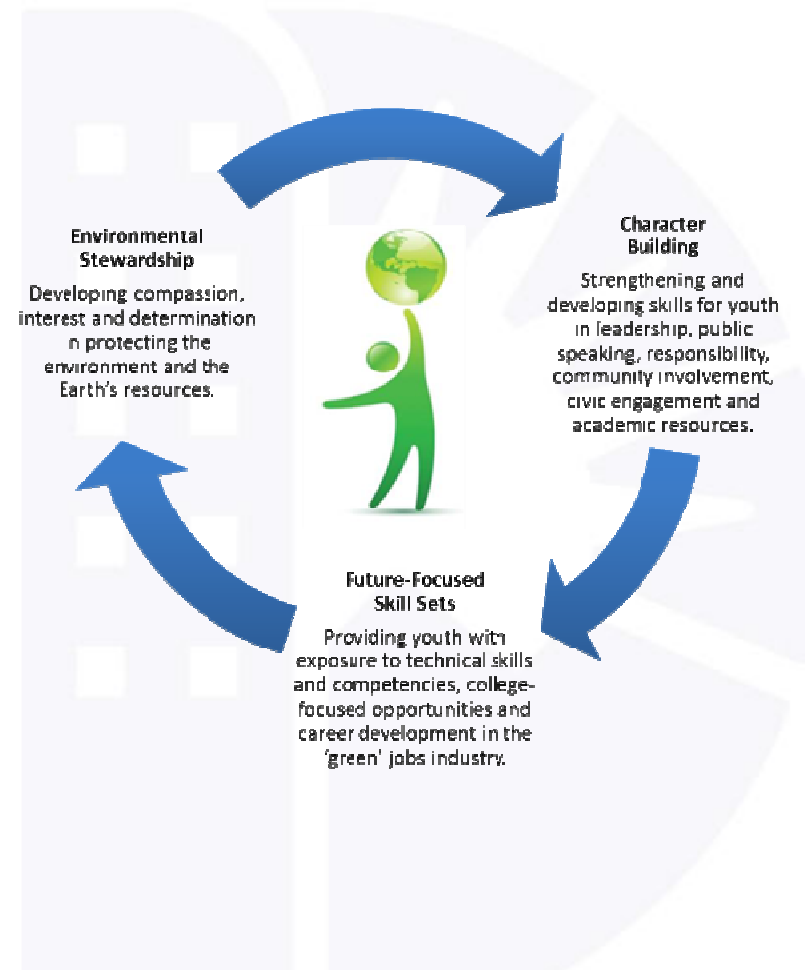
## Other Measures

- Vending machine controls
- Transport Gas
- Pool covers



# ECMs continued

- Live monitoring of utilities
- Education and behavior change program





# Potential Energy Reduction

Building	% reduction in energy use
Ashland Pool	18%
Ashland Rec Ctr	5%
Glenarm Rec Ctr	21%
Scheitler Rec Ctr	3%
Twentieth Street Rec Ctr	7%
Barnum Library	46%
Bear Valley Library	8%
Eugene Field Library	39%
Schlessman Family Library	31%
Fire Station #8	39%
Fire Station #9	2%
Fire Station#1(HQ)	5%
911 Call Center	15%
Police District #1	15%
<b>Total</b>	<b>17%</b>



# Measurement and Verification

- The Measurement and Verification (M&V) plan is designed and implemented **to ensure that CCD's guaranteed savings are being achieved**
- All M&V is verified by the Colorado Energy Office for accuracy
- Ameresco's M&V plan follows International Performance Measurement and Verification Protocol (IPMVP) which is the industry standard
- The M&V approach for each specific energy conservation measure (ECM) has been reviewed by energy engineers from the Colorado Energy Office (CEO); and accepted and approved by the City and County of Denver
- The M&V process is Ameresco's "report card" to CCD...**if the program's guaranteed savings are not achieved, Ameresco pays the shortfall directly to CCD**





# EPC Financing

- Financing for the EPC is made possible by a \$2,000,000 loan from the Environmental Services Enterprise Fund\*
- General Services will use energy savings generated from improvements to pay back this loan in annual installments over 15 years
- Energy savings will continue beyond the first 15 years, and these improvements may also result in additional energy rebates

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Cost of Implementation	\$1,992,641
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Projected Energy Savings	<b>\$2,443,988</b>
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*\*Approved with 2016 Budget*



# Next Steps

- Execute EPC (contract): *December 28, 2015*
- Install Energy Conservation Measures (ECMs):  
*January 1 – June 30, 2016*
- Measurement and Verification (M&V) period begins:  
*July 1, 2016 – June 30, 2019*
- Begin analysis / development of Phase II EPC:  
*December 26, 2016*