Sharing the Success – Evaluation and Communicating Progress on Your Energy Plan

Arlington County's Experience

John Morrill, Energy Manager
Arlington County, VA

U.S. Dept of Energy – Better Buildings Challenge
2nd Annual Better Buildings Summit

Washington DC
May 30, 2013

Measuring & describing two different but related themes:

1. *Arlington County government* GHG reduction target
    - 10% reduction in GHG emissions, 2000 – 2012
    - Next steps…

2. *Arlington community energy plan*, with its own metrics

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freshaireva.us/2013/05/aire-2012-goal/

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Arlington County Exceeds AIRE 2012 Goal of 10% Emissions Reduction

May 21, 2013 — Arlington County has met and exceeded the 2007 AIRE (Arlington Initiative to Rethink Energy) goal of reducing greenhouse gas emissions from County government operations 10 percent by 2012 from a 2000 base. The County has achieved a reduction of 11.7 percent in its emissions, even as its services and facilities increased, County Manager Barbara Donnellan reported today to the County Board.

Learn more about how we achieved this goal and where we

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Memorandum

To: Arlington County Board
From: Barbara M. Donnellan, County Manager
Subject: Achieving the AIRE 2012 goal
Date: May 21, 2013

Barbara M. Donnellan

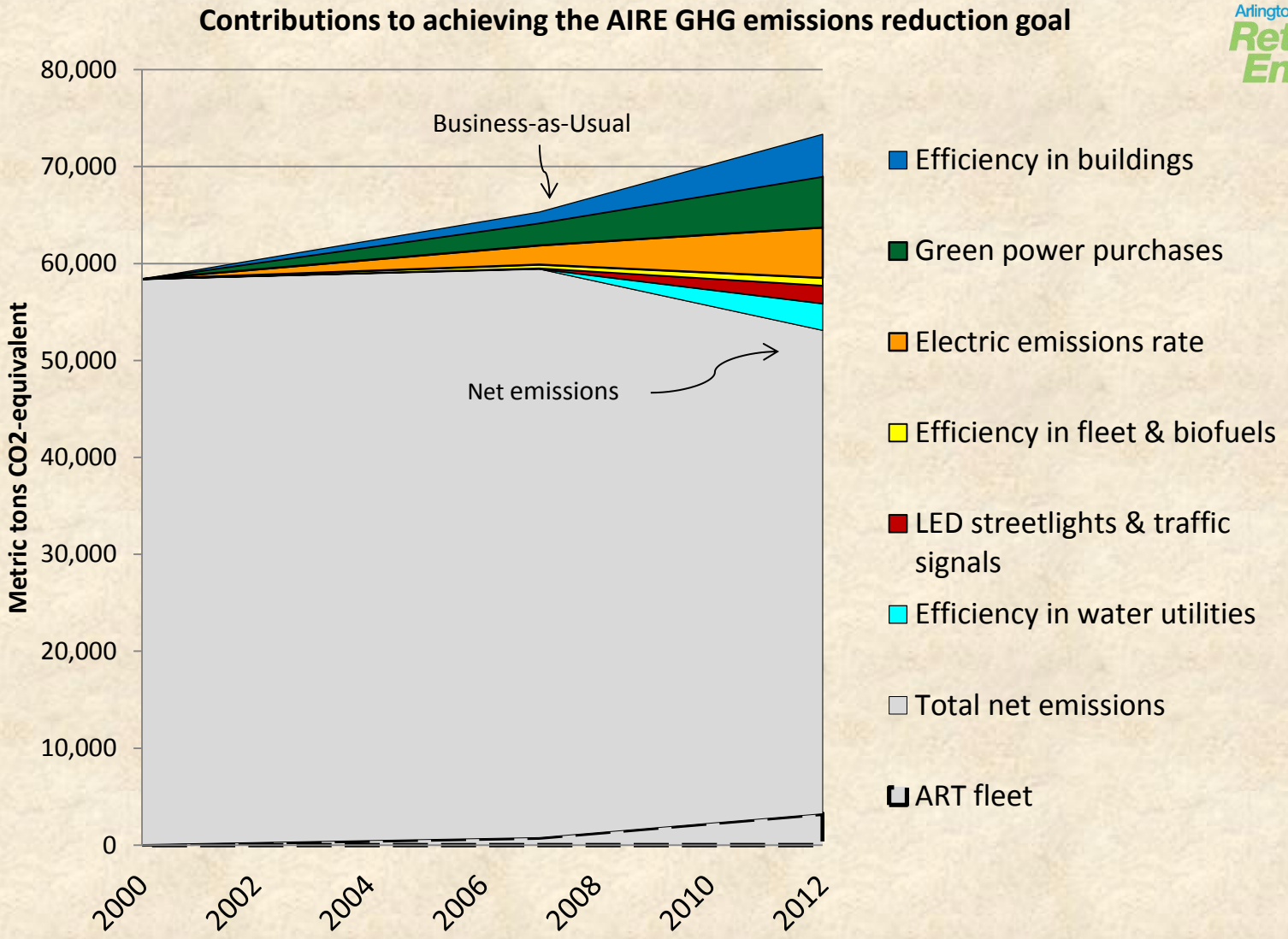
Arlington County exceeded its goal to reduce 10% of greenhouse gas emissions from County government operations. In 2007, we set the goal and launched the Arlington Initiative to Reduce Emissions (AIRE) to help us get there. As a result, the County has seen a decrease in net emissions from government activities of 11.7% between 2000 and 2012. A detailed technical report on greenhouse gas emissions by Arlington County government activities is available here on our web site. The highlights below focus on the AIRE goal and its achievement, particularly considering the increases in services to the community over the past 12 years.

Arlington faced a significant challenge in achieving our goal. Since 2000, the County added many large facilities, expanded our transit service, and upgraded our wastewater treatment facility to meet ever-stricter standards. Thanks to a successful, multifaceted strategy of improved energy efficiency and use of cleaner fuels, we overcame these hurdles to achieve our 10% goal. If we had not implemented these measures, the County's carbon footprint would have grown by 25% to over 73,000 metric tons by 2012, instead of declining nearly 12%. In addition, in County buildings alone, annual energy and water costs would have been about $850,000 higher in 2012 if efficiency measures taken since 2007 were not in place.

The County's multifaceted approach to reducing greenhouse gas emissions offers valuable

Arlington Initiative to Rethink Energy

Achieving the 2012 AIRE GHG goal



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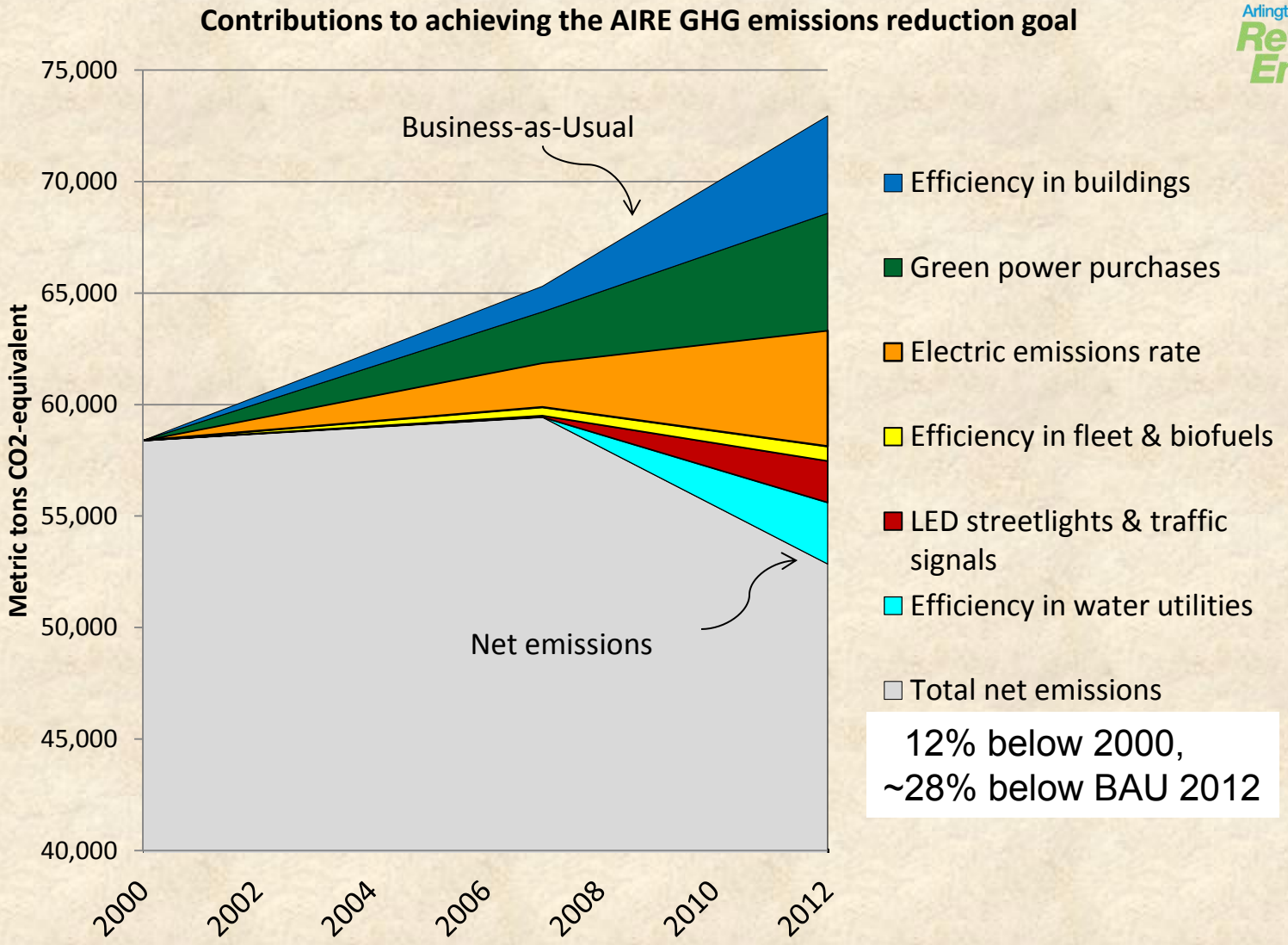

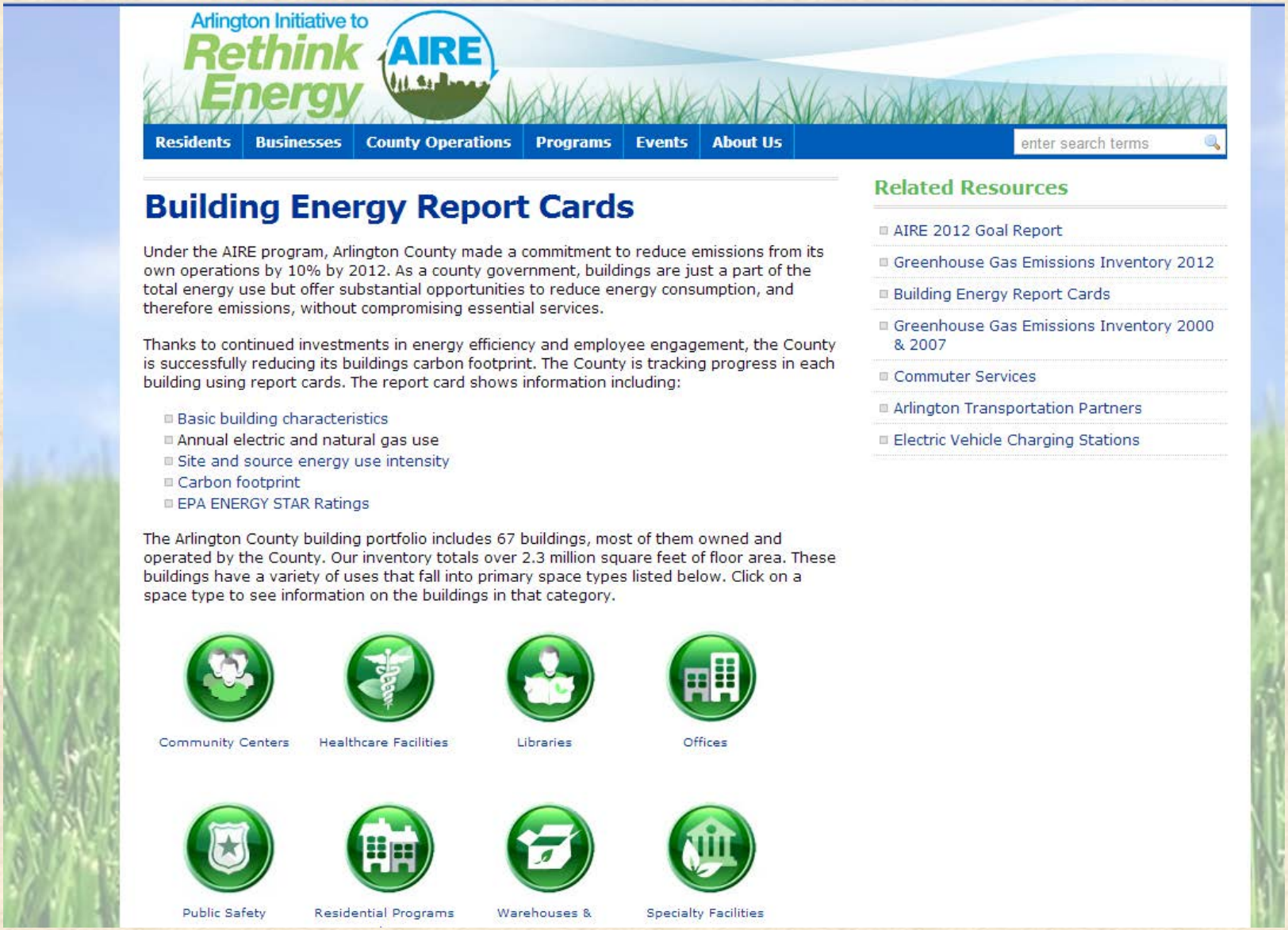
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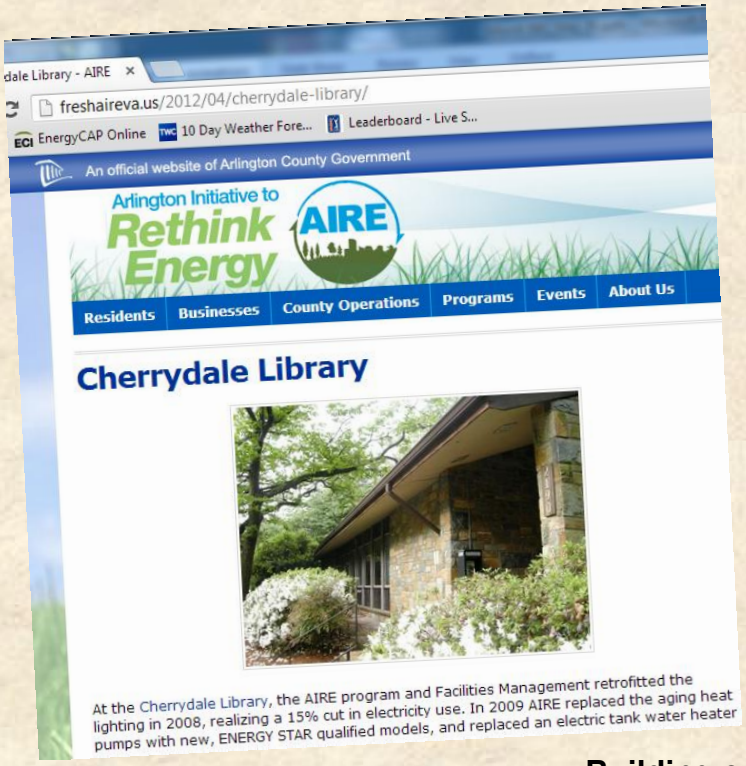
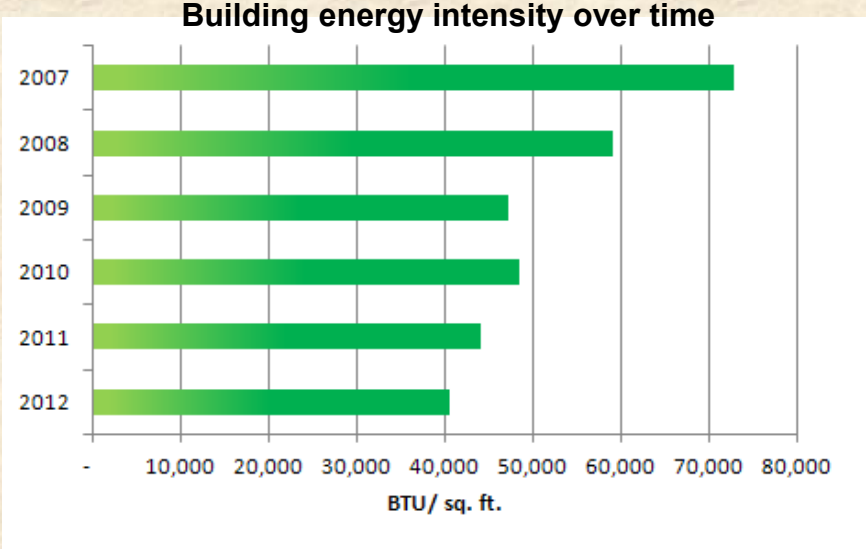
Under the AIRE program, Arlington County made a commitment to reduce emissions from its own operations by 10% by 2012. As a county government, buildings are just a part of the total energy use but offer substantial opportunities to reduce energy consumption, and therefore emissions, without compromising essential services.
Thanks to continued investments in energy efficiency and employee engagement, the County is successfully reducing its buildings carbon footprint. The County is tracking progress in each building using report cards. The report card shows information including:
Basic building characteristics
Annual electric and natural gas use
Site and source energy use intensity
Carbon footprint
EPA ENERGY STAR Ratings
The Arlington County building portfolio includes 67 buildings, most of them owned and operated by the County. Our inventory totals over 2.3 million square feet of floor area. These buildings have a variety of uses that fall into primary space types listed below. Click on a space type to see information on the buildings in that category.
Community Centers
Healthcare Facilities
Libraries
Offices
Public Safety
Residential Programs
Warehouses &
Specialty Facilities
Related Resources
AIRE 2012 Goal Report
Greenhouse Gas Emissions Inventory 2012
Building Energy Report Cards
Greenhouse Gas Emissions Inventory 2000 & 2007
Commuter Services
Arlington Transportation Partners
Electric Vehicle Charging Stations



Old heat pumps

New heat pumps

Building energy intensity over time



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ARLINGTON COMMUNITY ENERGY PLAN

- 76% reduction in GHG emissions/capita 2007-2050
- Improved energy security, reliability, resilience
- Economic competitiveness and development

- Indicators and metrics?

ARLINGTON COMMUNITY ENERGY PLAN

Energy use and GHG emissions metrics are *easy* for localities –

Energy/sf, $/energy, $/sf

Energy/capita, GHG emissions/capita

Vehicle-miles traveled (VMT), VMT/household, VMT/capita

Better Buildings Challenge programming a resource

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ARLINGTON COMMUNITY ENERGY PLAN

Energy security & economic advantage metrics *tricky* at local level

- Data sources are less well-known, less-accessible

Grid uptime/downtime – "System Average Interruption Duration Index" (SAIDI)

Demand response capacity, participation

Jobs in energy, locally

Peak Demand (MW) across the community

What is the cost to the community when there is a power outage?

- Health risks – heat, cold, food spoilage
- Business – no retail sales, computers, bank transactions…

What is the cost to the community when there is a power outage?

- Health risks – heat, cold, food spoilage
- Business – no retail sales, computers, bank transactions…
- **People get *cranky***

- OMG this energy stuff is dry
- Engage people, what can they relate to?

http://www.youtube.com/watch?v=tZxYhzBLvZU

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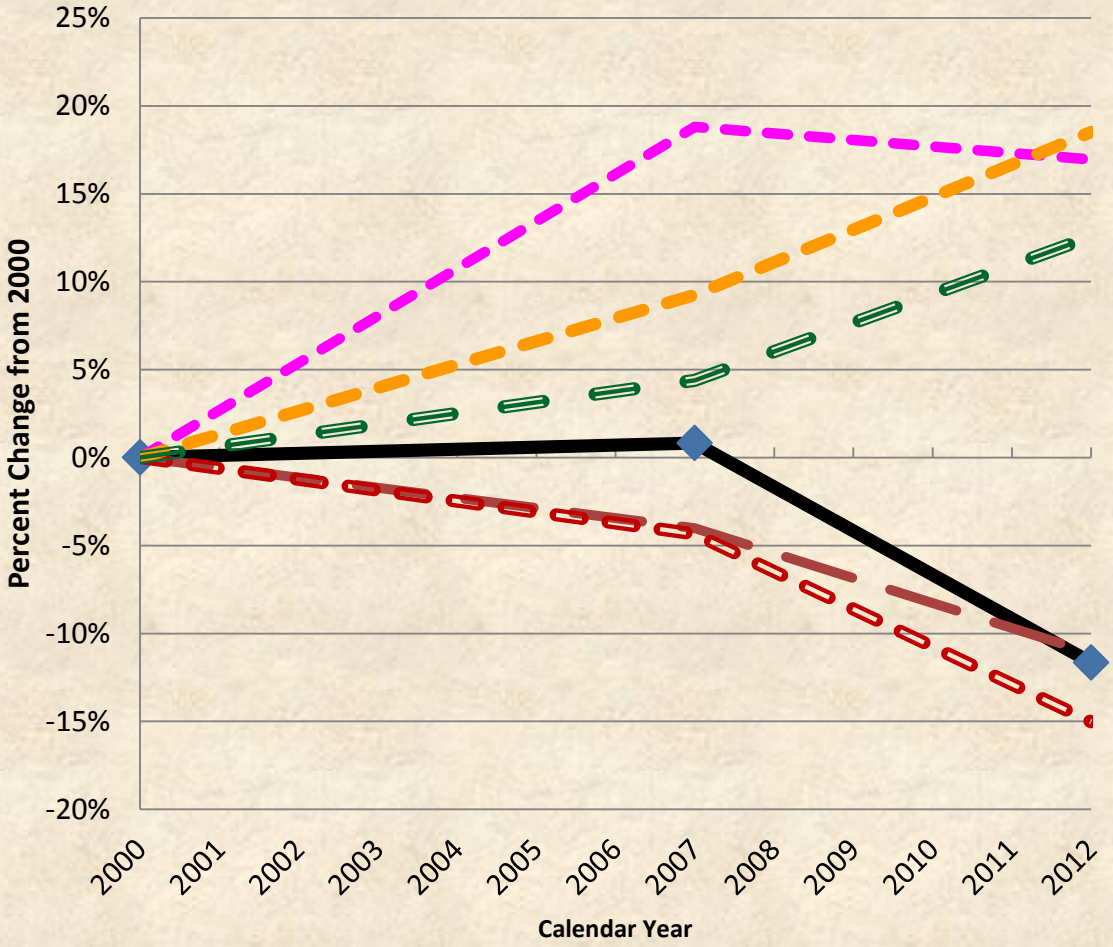
Achieving the 2012 AIRE GHG goal

Changes in Key Factors affecting GHG Emissions from Arlington County Government Operations, 2000 - 2012



Note: ART bus ridership in 2012: + 1,462% compared to 2000

- Net County Gov't Emissions
- Electricity Emission Factor
- Total Building Area (sq ft)
- Building Energy Use Intensity
- Number of Streetlights
- % of Electricity as Green Power