



Greening George Mason University

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Greening Virginia Universities and
Colleges Conference

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Agenda

About George Mason University

Conceptual and Tangible Advantages to Greening –
Why Go Green?

Sustainability-Related Activities at Mason

Q&A

About George Mason University

- Second-largest state university in Virginia
- >30,000 students: 17,500 undergrad, 11,500 grad
- Students represent 150 countries and all 50 states
- About 5.3 million square feet of building space, 160 buildings, 807 acres
- Over 4000 residents on campus and growing



Why Go Green?

- Cost savings from efficiency improvements
- Unification of the campus community
- Increased investment in education resulting from cost savings
- Better equip students to capitalize on solving the world's toughest problems
- Increased grant funding and research
- Attract higher caliber of student and faculty
- Endowment growth
- Leadership in the “next industrial revolution”



Why Go Green?

Study recently performed by Dr Nicole Darnall of Environmental Science Department

- While there is a cost associated with environmental regulations, companies that perform better are proactively managing their environmental impacts
- Firms driven by internal capabilities while seeking cost savings and strategic advantages prevail
- *Facilities and planning managers who take risks, accept the need for change, and integrate sustainability into core business decisions will benefit greatly*



Administrative Commitments

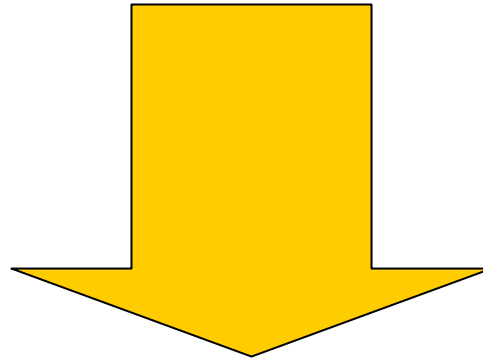
The American College and University Presidents Climate Commitment

- Acknowledgement of concern about global warming
- Acknowledgement of leadership role in global warming through education
- Pledges a commitment to climate neutrality through specific actions and timelines



Performance Contract

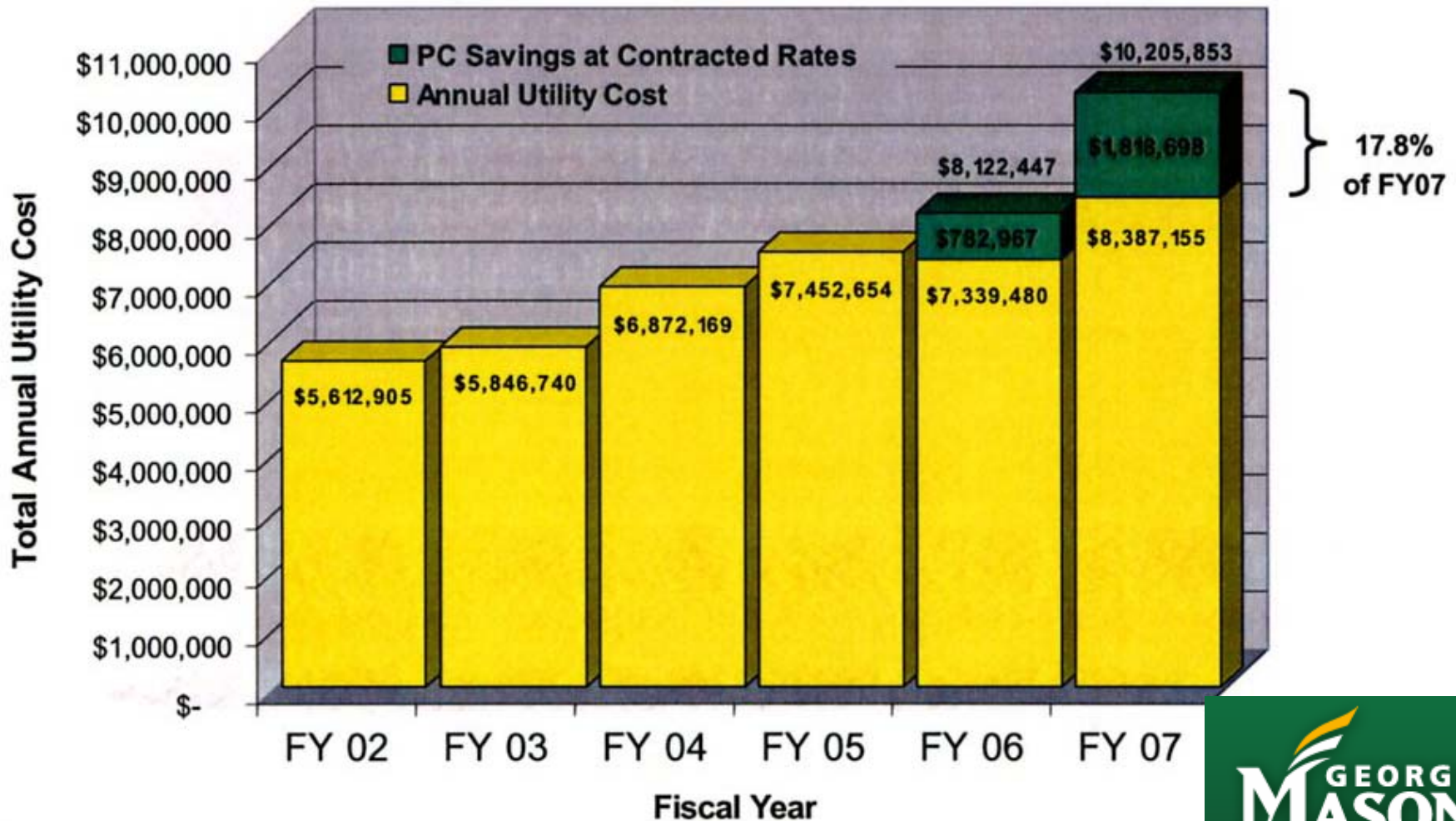
In 2007, Mason avoided the use of...
15,343,249 in kWh
697,943 in CCF or Therms
64,495,000 in gallons of water usage



\$1.8 million in avoided cost

Performance Contract

Figure 1: Energy Performance Contract Contribution to GMU Utility Cost Reduction



Performance Contract

Positive impact on climate “balance sheet”

Table 4: Energy Performance Contract Environmental Benefits

	Annual	15 yr Term	Equivalent
CO ₂	29,152,173 lbs	437,282,591 lbs	2,522 Cars off the Road or 3,976 Acres of Forest
SO ₂	133,333 lbs	1,999,992 lbs	
NO _x	76,716 lbs	1,150,744 lbs	

Performance Contract Actions

- Lighting retrofits
- Occupancy sensors
- Faucet aerators
- Low-flush valves on toilets
- Coil cleaning of all air handlers
- Building occupancy schedules
- Replaced some hot water heaters
- Replaced motors with high-efficiency motors

Additional Commitments

- USGBC LEED Silver standard for all new buildings
- Design manual incorporating high-efficiency standards for *all* contracted projects
- 2007 Sustainability Baseline Assessment
- First Sustainability Coordinator hired this year
- Decision making structure (Sustainability Council, Executive Steering Committee, and Working Groups) being formed
- First Transportation Coordinator hired: focus on promotion of alternative transportation



Sustainability-Related Research

- GMU Climate Dynamics Program Chair is a member of the 2007 Nobel Peace Prize-winning Intergovernmental Panel on Climate Change (IPCC)
- New Center of Excellence in Climate Change Communication Research
- Arsenic removal from drinking water: \$1 million 2007 Grainger Challenge Prize for Sustainability from the National Academy of Engineering
- Re-vegetation of Chesapeake Bay
- Coral reef research in Florida
- Indigenous peoples in Siberia and the impact of extreme climate change



Sustainability-Related Curricula

- *Environmental* focus of sustainability in the Environmental Science and Policy, Civil and Infrastructure Engineering, Climate Dynamics, and Earth Systems and Geoinformation Sciences depts
- Sustainability “modules” in non-science courses
- Annual Sustainability Across the Curriculum workshops
- Development of Sustainability Minor
- Working Group on Curriculum Greening

Recent Student Initiatives

- Recycling awareness campaigns
- Tree planting and native plant gardens
- Energy referendum planned by Student Government
- Service Learning projects
- Trash audit and education

Final Thoughts

- Save money
- Strengthen your campus community
- Enhance your reputation
- Have a positive impact on your world

Why *not* go green???

Questions?

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Questions?

