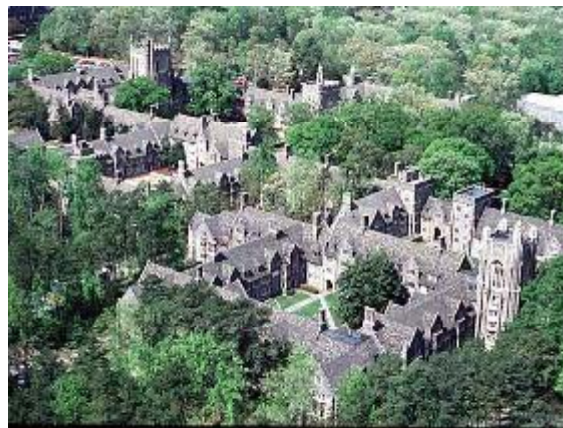


# Sustainable Duke

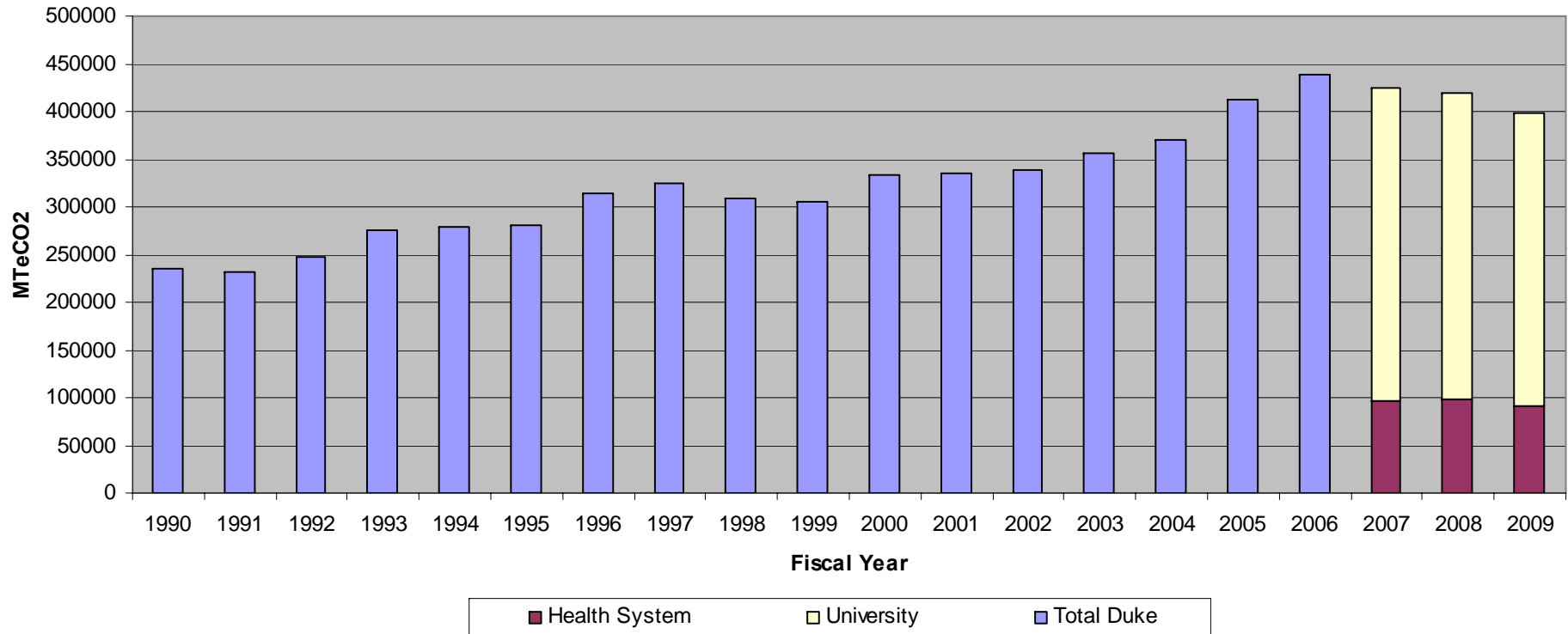
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## GHG Update/CAP Progress Report May 2010





# 2010 GHG Update



2007 levels = 425,102

↓1.3%

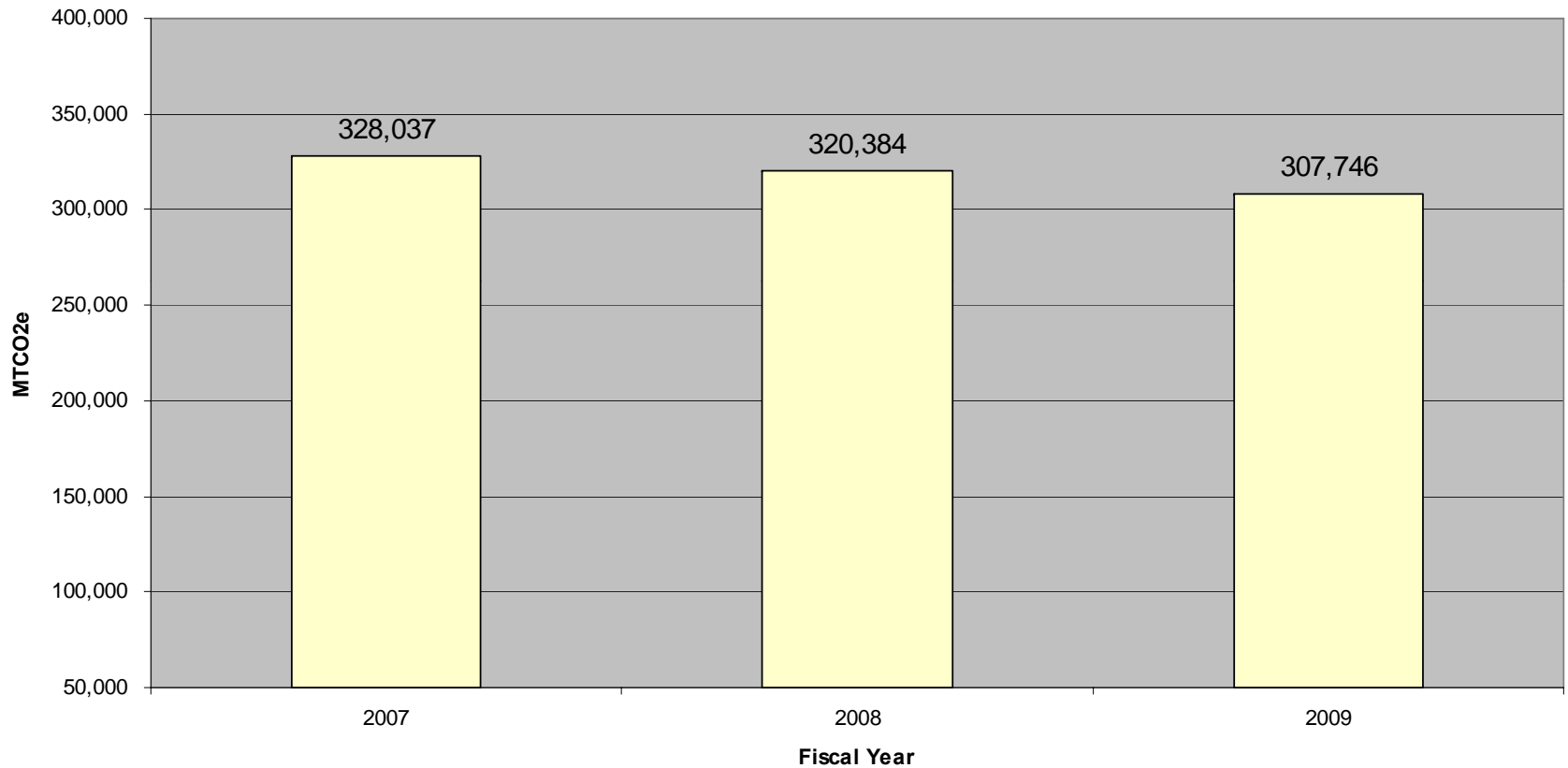
2008 levels = 419,434

2009 levels = 398,780

↓6.2%



# 2010 GHG Update - University



**2007 Baseline**

**2008 = ↓2.3%**

**2009 = ↓6.2%**

~20,000 MTeCO<sub>2</sub> reduced = 3493 cars removed from the road for year  
2.5 more Duke Forests purchased



# 2010 GHG Update - University

- **Electricity**

- Usage was going up an average of 4% annually but increased less than 1% in past two years
  - Chilled water expansion – more efficient
  - Behavior change?
- Duke Energy emission factors decreased .486 kgCO<sub>2</sub>/kWh to .405 kgCO<sub>2</sub>/kWh

- **Steam**

- Coal usage down 10% from baseline



# 2010 GHG Update - University

- **Transportation**

- Refined staff numbers
- Commuting - average commute distance changed from 9 miles to 10 miles but driving alone decreased from 77% to 69%

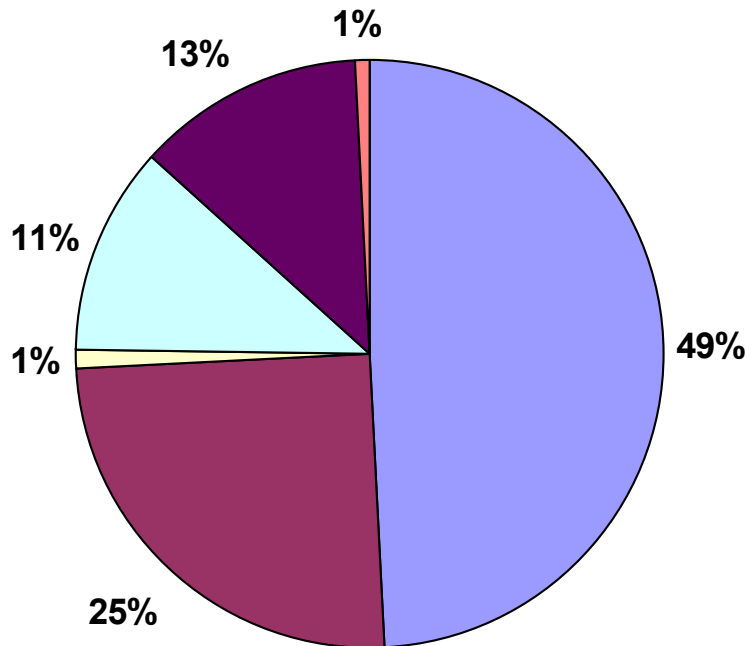
	<b>2007</b>	<b>2008</b>	<b>2009</b>
Drive Alone	77%	72%	69%
Carpool (2+)	10%	11%	10%
Bus	3%	4%	6%

- Air Travel – had been increasing over 10% annually but remained flat between 2008 and 2009 due to expense reduction efforts

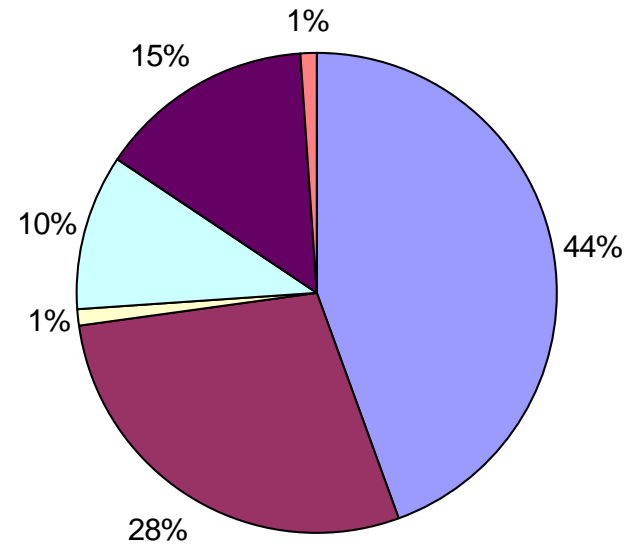


# 2010 GHG Update - University

2007 GHG Emission Percentages  
(~328,000 MTeCO<sub>2</sub>)



2009 GHG Emission Percentages  
(~307,000 MTeCO<sub>2</sub>)



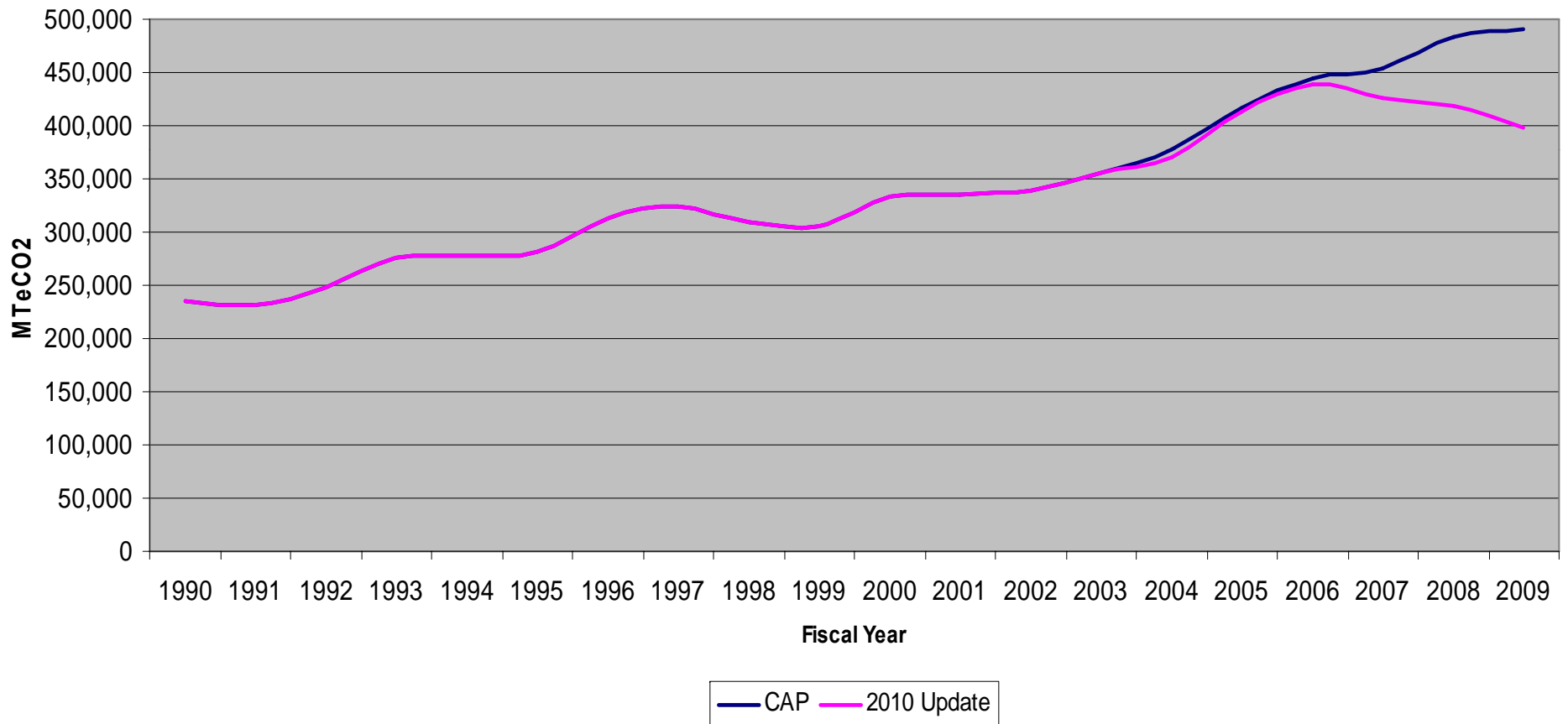
■ Electricity ■ Steam ■ Fleet ■ Commuting ■ Air Travel ■ Other

- Relative impact of electricity is decreasing

\*Other includes fertilizer, waste, and refrigerants

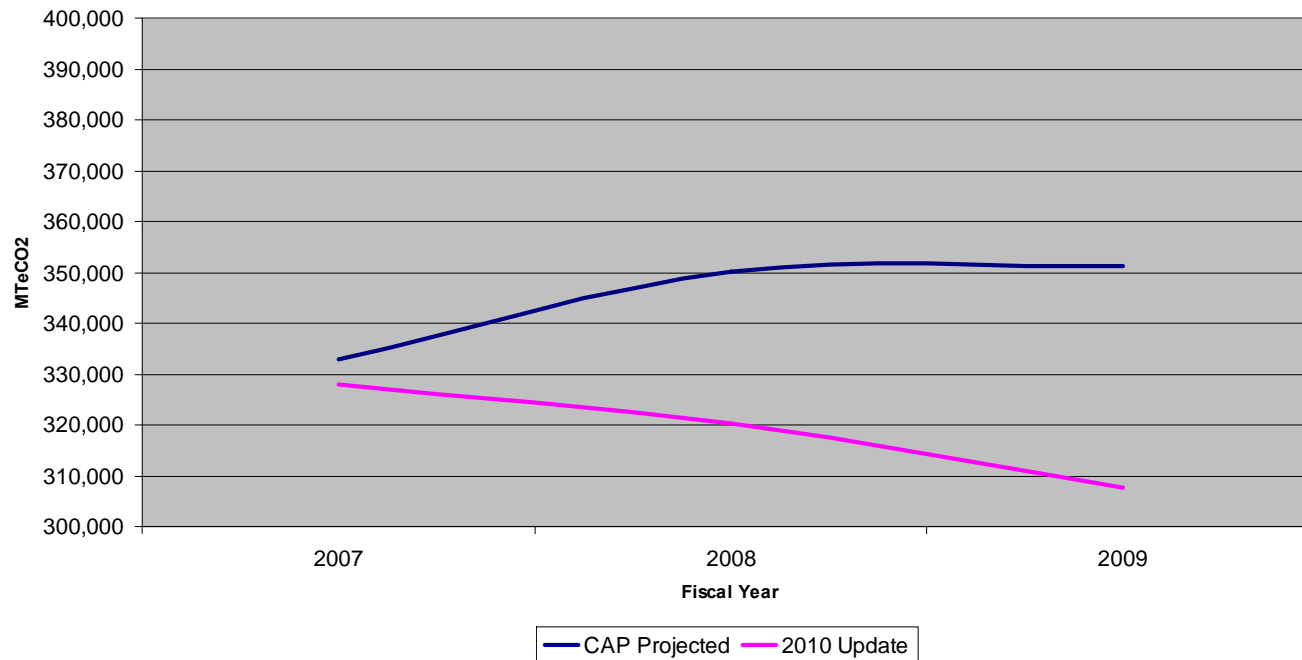


# Compared to Climate Action Plan projections - Totals





# Compared to Climate Action Plan projections - University



- Reflects adjusted 2007 baseline – refined data
- University emissions are going down since 2007
- Growth projections in CAP were not realized – this could just be a delay in timing of capital projects





# GHG Update Summary

- Moving in the right direction - emissions trend has turned downward
- Economic conditions have helped this trend – Duke’s emissions mirror national trends of the economic downturn’s impact on GHG emissions
- Awareness and communication efforts are paying off
- 2009 data does not reflect implementation of initial CAP recommendations
  - East campus steam plant
  - LEED + policy
  - Energy conservation
  - Transportation demand management efforts
  - Grassroots communication efforts - Green Devil Challenges
- Increased on-campus reductions could lead to decreased need for carbon offsets in 2024



# CAP Progress Report

- Energy
  - East Campus Steam Plant
  - Draft LEED+ policy
  - Retro-commissioning and energy conservation projects
- Transportation
  - Transportation demand management (TDM) programs; \$100K grant
  - Reduce student parking and increase alternatives offered to first-year students





# CAP Progress Report

- Education
  - Faculty survey; exploring course “label” for sustainability
  - Hosting a faculty sustainability training workshop
- Communication
  - Duke-specific GHG calculator – 2000+ participants
  - Green Devil challenges – over 5000 people have taken sustainability pledge



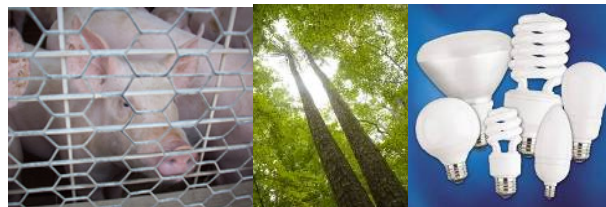


# CAP Progress Report

## Carbon Offsets Initiative

### Phased Implementation

- Initial Phase: Pilot projects (2010-2014)
  - Build pilot projects in swine, forestry, energy efficiency
  - First swine project expected to be completed by fall 2010
  - Explore new project types – group MEM project
  - Meet demand from internal departments and DukeEngage
  - Gain ability to project cost of implementation in second phase
- Second phase: Project development to meet 2024 goal
  - Working on financial models for “ramp-up”



# Sustainable Duke

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Blue.  
Live  
Green.**

I SUPPORT **Sustainable Duke**

[www.duke.edu/sustainability](http://www.duke.edu/sustainability)