Mayor's Sustainability Advisory Board

Agenda

Oct 19, 2009

Hosted by the American Airlines Arena

- Welcome

  Commissioner Katy Sorenson

- American Airlines Arena's LEED certification & Green Initiatives

  Kim Stone, Executive VP and General Manager

- Demographics, Economy, Climate Change, and Energy Indicators, Challenges, Goals, & Initiatives

- Questions & Answers

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Mayor's Sustainability Advisory Board

October 19, 2009

Hosted by the American Airlines Arena

Today's Discussion

- Welcome
- American Airlines Arena's LEED certification & Green Initiatives
- Demographics, Economy, Climate Change, and Energy
- Questions and Answers

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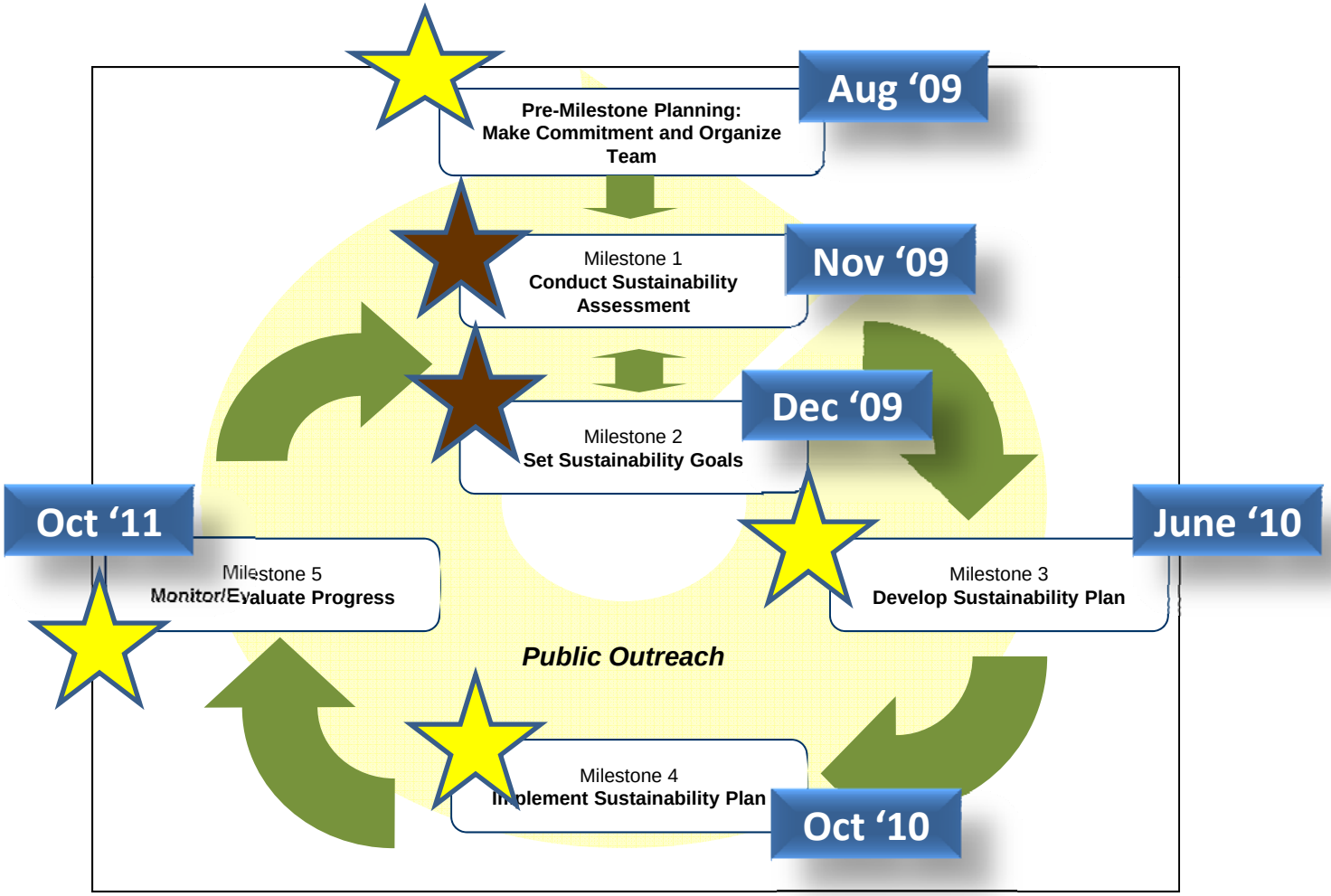
Milestones


Aug '09
Pre-Milestone Planning:
Make Commitment and Organize Team
Nov '09
Milestone 1
Conduct Sustainability Assessment
Dec '09
Milestone 2
Set Sustainability Goals
June '10
Milestone 3
Develop Sustainability Plan
Oct '10
Milestone 4
Implement Sustainability Plan
Oct '11
Milestone 5
Monitor/Evaluate Progress
Public Outreach

Milestone #1: Assessment Report

Define the scope of the Sustainability Plan

Where we are now & where we want to be as a community

- *Within the context of our environmental, economic, and societal resources*

How will population change, climate change, the state of the economy affect us?

- *As a community*
- *As a government delivering services to our community*

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Assessment Areas

1. **Demographics**
2. **Climate Change**
3. **Economy**
4. **Energy**
5. Environment
6. Government Operations
7. Health
8. Housing & Buildings
9. Land Use
10. Local Industry & Business
11. Schools
12. Solid Waste & Recycling
13. Transportation
14. Water

Assessment

Demographics & the Economy

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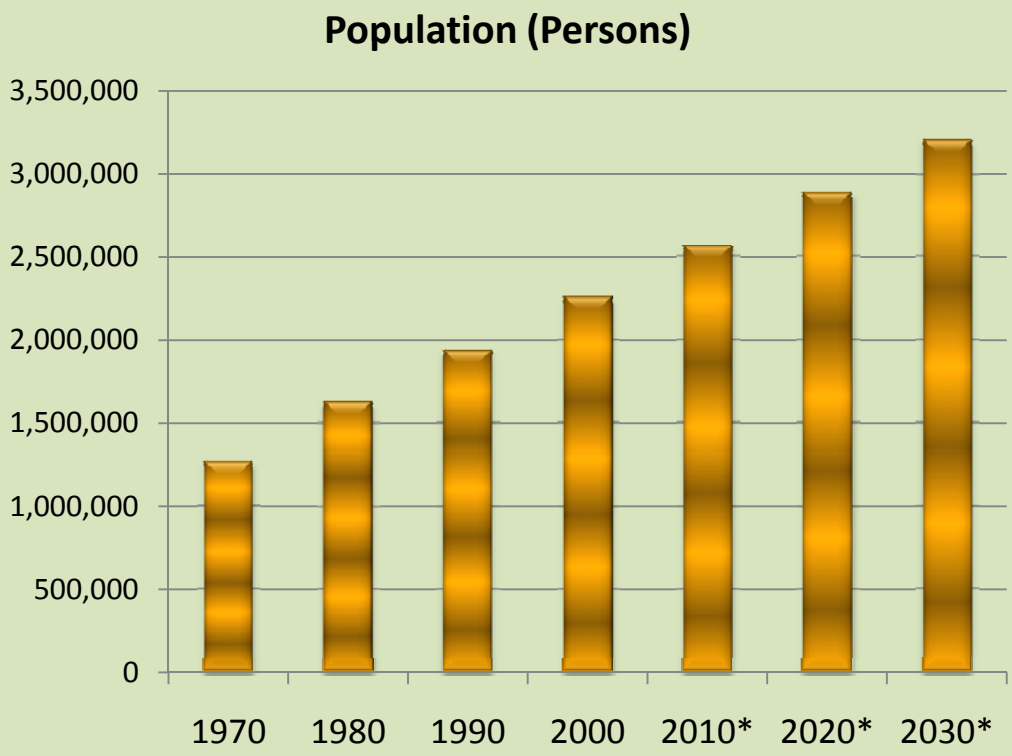
Population growth by approximately 30,000 people per year, a million every three decades.



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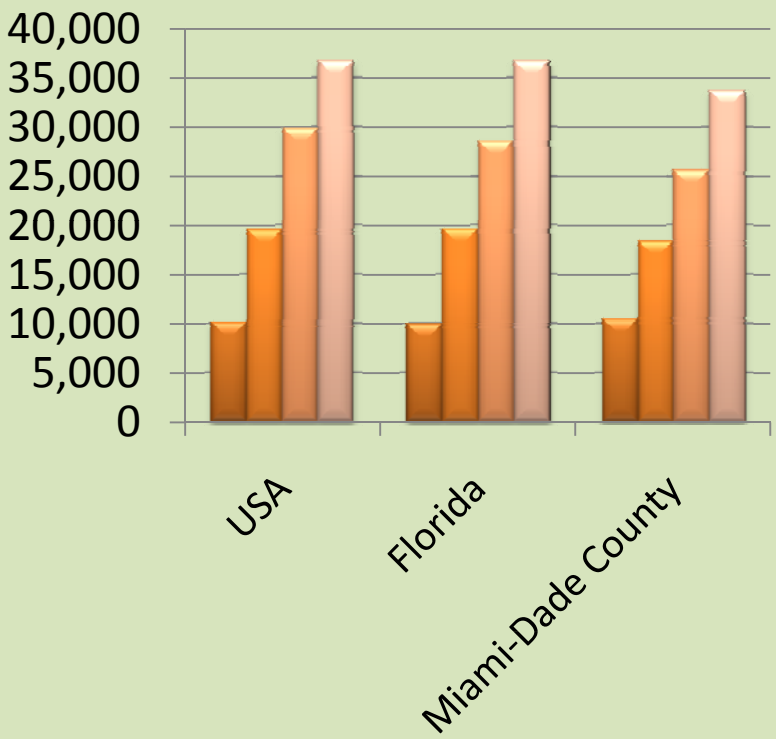
Per capita income steadily becoming less than national average.



ECONOMY

Florida Chamber says education is key

Floridians must accept that the state is evolving away from an economy centered on tourism, construction and agriculture to one driven by science and engineering, global competition and a stronger sense of place, the Florida Chamber of Commerce president said Tuesday.

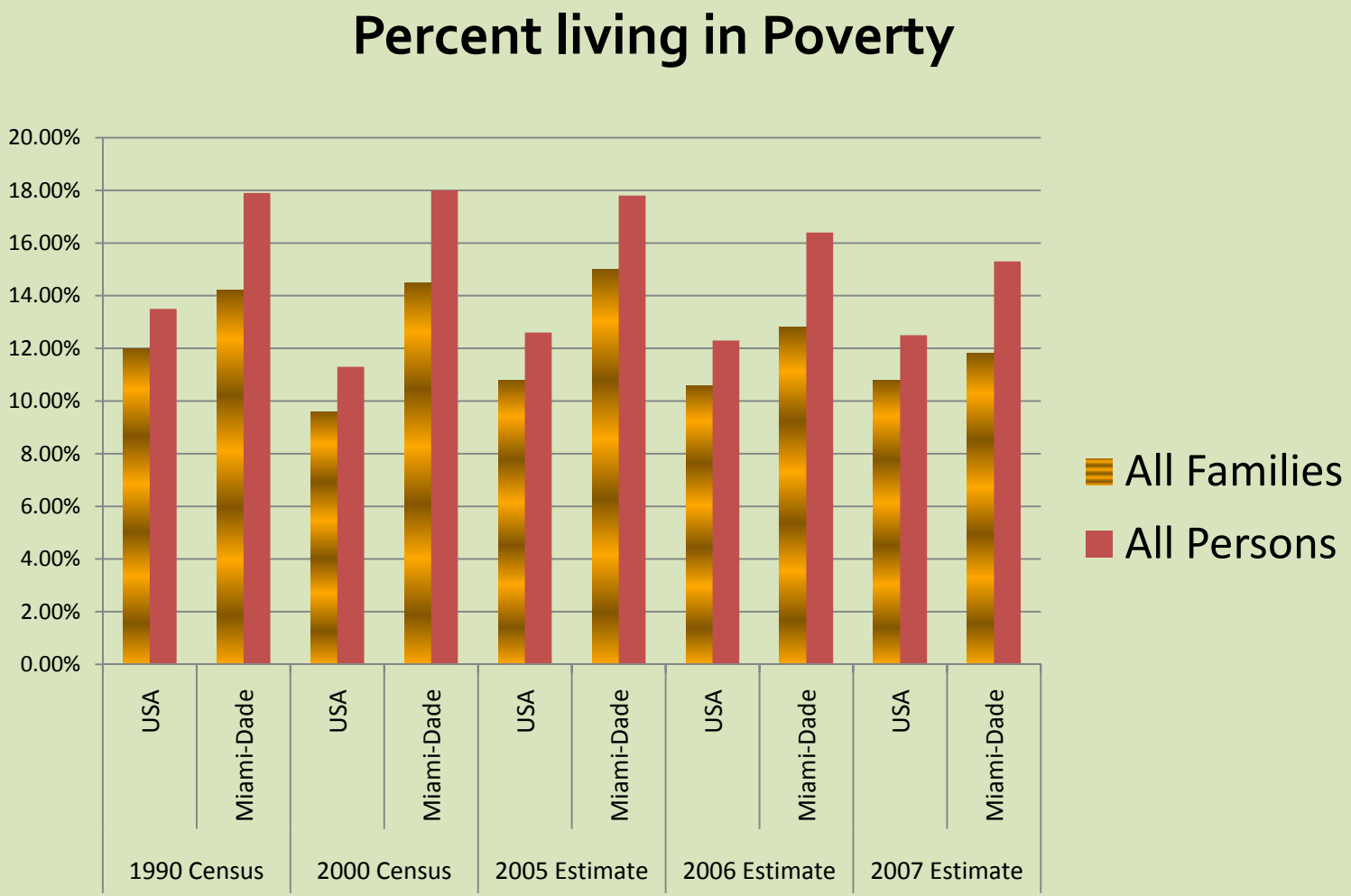
Mark Wilson, the chamber's president and CEO, told those attending the group's annual meeting in Orlando that with state unemployment at 10.7 percent, 600,000 jobs lost since October 2007 and one in five homes facing foreclosure that "the Florida that we've known is, in fact, over."

The question is how quickly Florida can get to the next economy, he said, adding education must be up to the challenge.

"Companies and jobs are going to go wherever in the world the talent is," Wilson said after the presentation.

"So Florida needs to make talent our No. 1 priority."

— ASSOCIATED PRESS



Drastically increasing unemployment rate – 11.6% for June.

Discussion

- *Additional indicators?*
- *Impacts to your industry?*
- *Challenges for our community?*
- *What are we doing to address this (initiatives)?*
- *Ideas going forward?*

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Assessment

Climate Change Mitigation and Adaptation

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Climate Change Mitigation Indicators

✓ Regional Greenhouse Gas Emissions

- County-wide Fuel Consumption (Unleaded, Diesel(B5), Natural Gas)
- Energy usage (KWh) Community-wide (residential, commercial, industrial)
- Vehicle Miles Traveled (VMTs) community-wide
- Use of Public Transportation

✓ County (Internal) Greenhouse Gas Emissions

- Fuel usage in County operations (fleet, services, operations)
- Fleet MPG
- Energy usage (KWh) in County buildings (existing and new)
- # of Green Buildings

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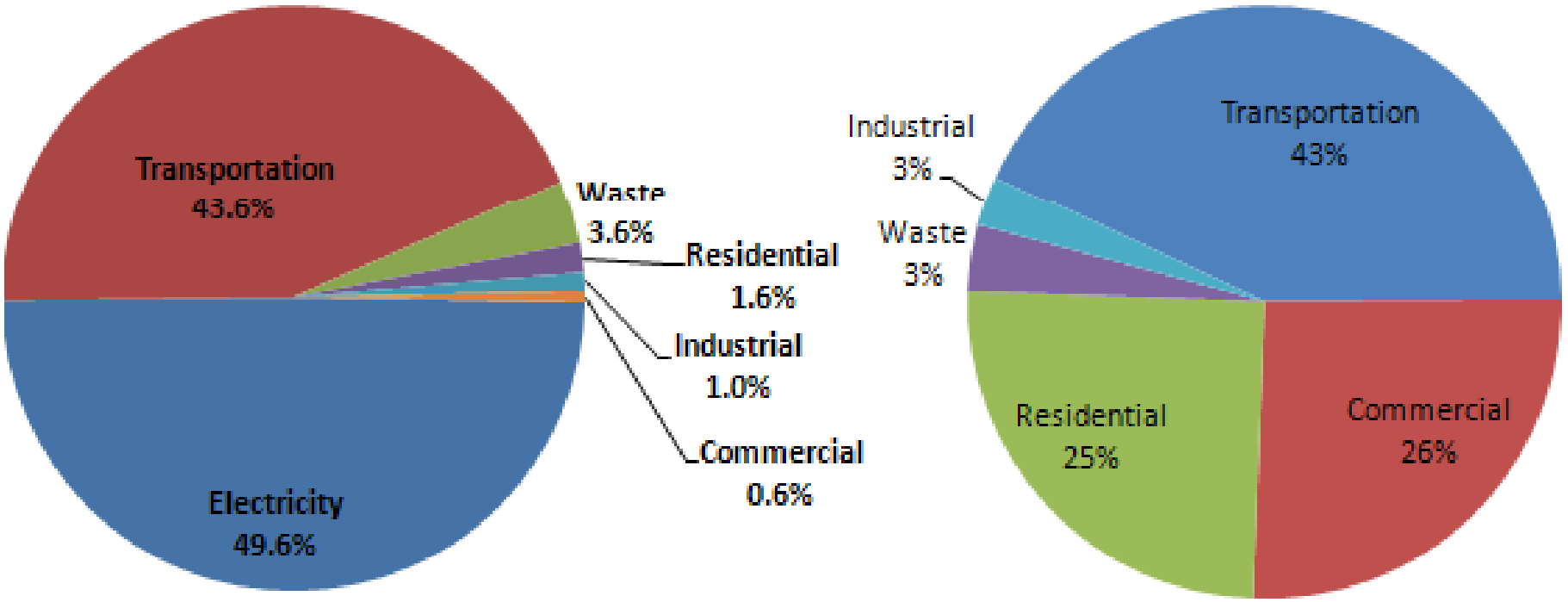
Climate Change Mitigation Indicators

CY05 CO2 Emissions Breakdown



2005 Regional GHG Emissions
~ 3.5 million tons CO2e

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Climate Change Mitigation Gaps

- ✓ Seaport Operations (Maritime Traffic)
- ✓ Data Time Lags
- ✓ More Accurate Population Data
- ✓ Thorough Evaluation/Comparison of Alternative Fuels' Sustainability
- ✓ More accurate way to calculate contribution of land use/development practices

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Climate Change Mitigation Goals

- ✓ **Community-Wide**
  - ✓ **U.S. Conference of Mayors' Climate Protection Agreement** Mayor Alvarez signed on June 6,2007 –> 7% GHG emissions Reduction below 1990 levels by 2012
  - ✓ **NACo Cool Counties Program** (R# 1431-08 December '08) MDC partners & commits to reduce community-wide GHG emissions by 80% by 2050
- ✓ **County Operations**
  - ✓ **Chicago Climate Exchange** – (Resolution #324-07 March '07) Reduce carbon emissions from fuel by 6% from 2000 levels by 2010
  - ✓ **Energy Reduction Resolution #228-09** (March '09) – Reduce County energy usage by 20% from 2007 levels by 2014

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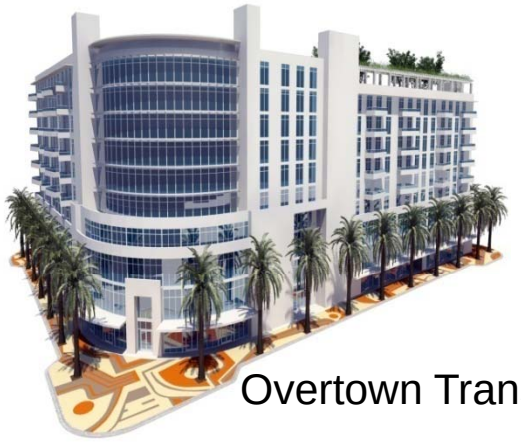
Climate Change Mitigation Initiatives

Fuel Use Reduction

County Internal Initiatives

- Resolution #969-03 - *Reduce County's total gasoline consumption by 20% from 2003 to 2008*
- Alternative fuel vehicles (light fleet and buses)
- Purchase & Use of Biodiesel (B5 -> B20)

Community Initiatives



Overtown Transit Village

- Transportation Oriented Developments along Metro-Rail (Douglas, MLK, OTV)
- Miami Intermodal Center (Increased Public Transit Use)

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Climate Change Mitigation Initiatives

Energy Use Reduction

County Internal Initiatives

- Energy Performance Contracting
- Resolution #07-65 (May '07) - *Sustainable Buildings Ordinance*
- Resolution #228-09 (March '09) – *Reduce County energy usage by 20% from 2007 levels by 2014*

Community Initiatives

- Resolution #05-115 (June '05) – *Expedite permit review & approval for Green Buildings.*

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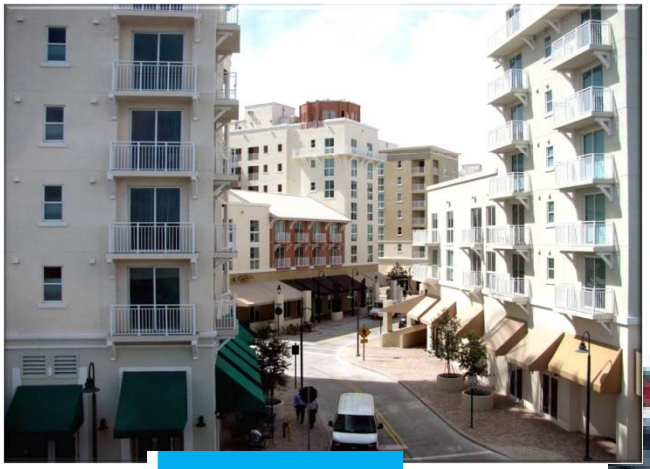
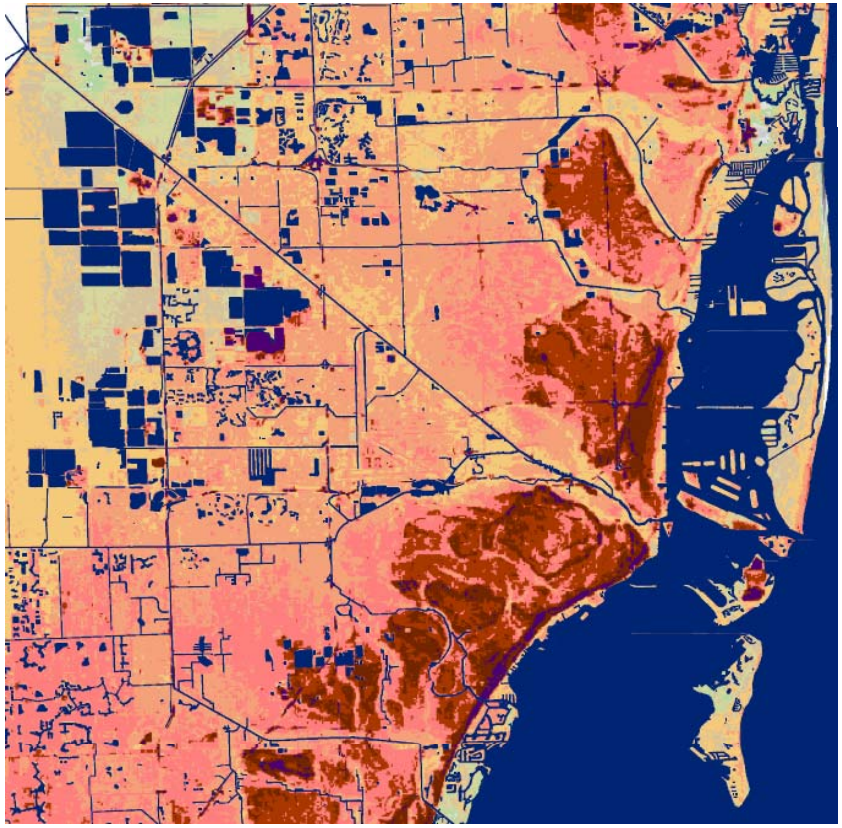
Climate Change Mitigation Challenges

- ✓Expanding use of Renewable Energy
- ✓Reducing fuel/energy use for community services (Transit buses, Metrorail)
- ✓Getting people out of their cars
- ✓Getting residents & businesses to <u>seriously</u> conserve energy



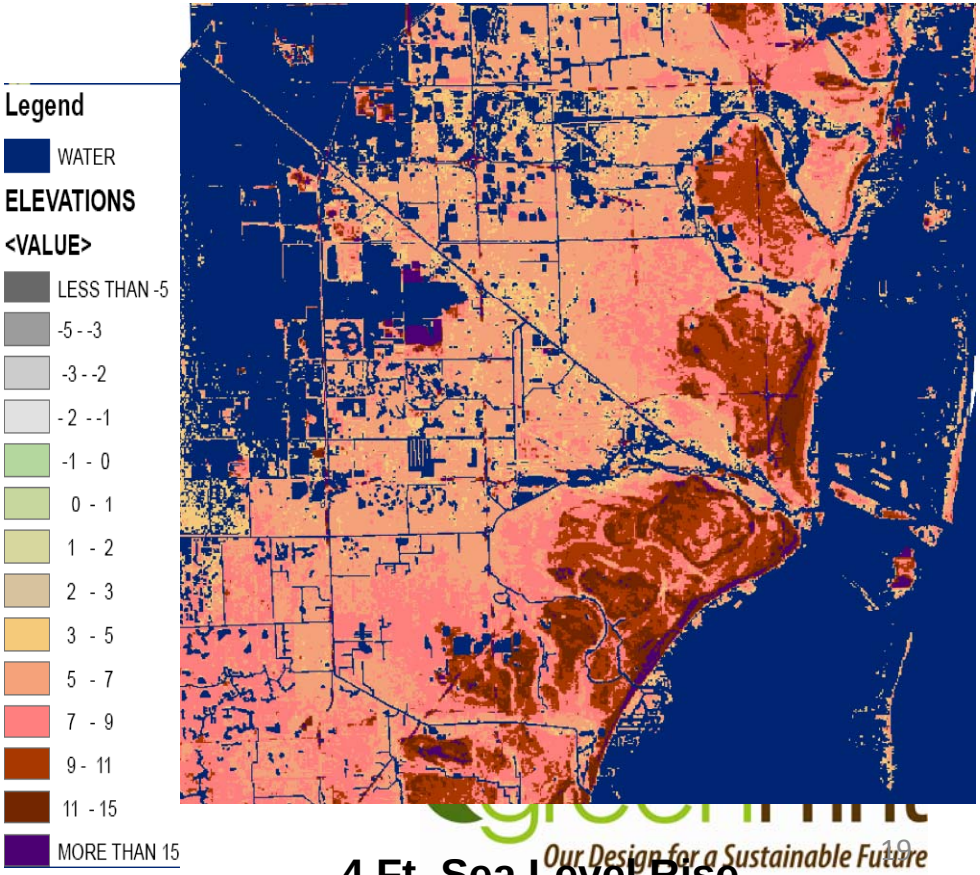
Climate Change Adaptation Indicators



Current Sea Level (2009)

NOTE: These are preliminary maps and are not to be used for planning

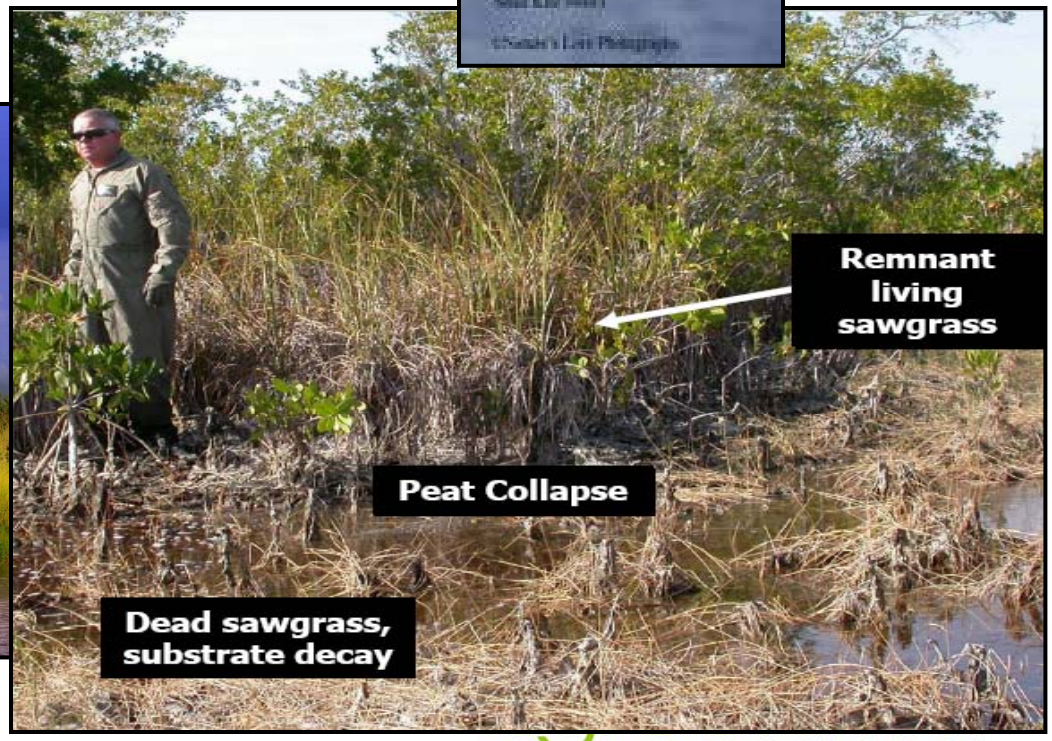
- ✓ **Sea Level Rise**
  - Salt Water Intrusion
  - Flooding Frequency & Patterns



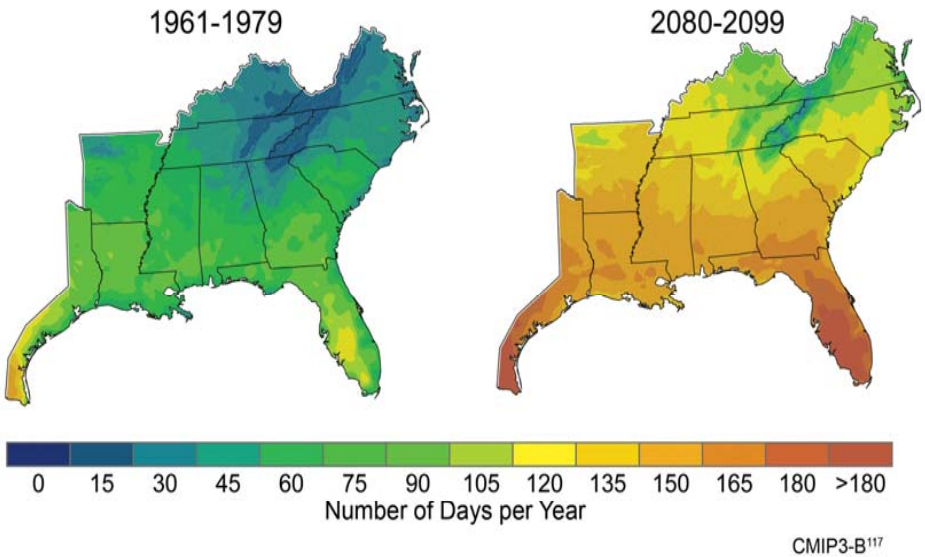
4 Ft. Sea Level Rise

Climate Change Adaptation Indicators

- ✓ **Changes in Flora & Fauna**
  - Listed Species (plant & animal)
  - Everglades
  - Coastal Habitats



Climate Change Adaptation Indicators



The number of days per year with peak temperature over 90ºF is expected to rise significantly, especially under a higher emissions scenario[91] as shown in the map above. By the end of the century, projections indicate that North Florida will have more than 165 days (nearly six months) per year over 90ºF, up from roughly 60 days in the 1960s and 1970s. The increase in very hot days will have consequences for human health, drought, and wildfires.

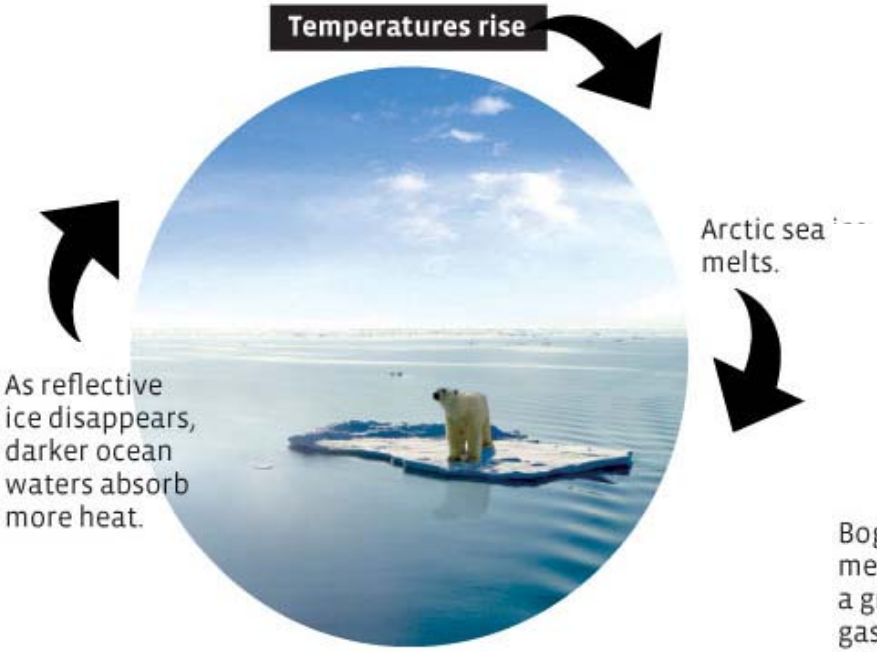
Source: Global Climate Change Impacts in the United States, Thomas R. Karl, Jerry M. Mellilo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009, p. 112.

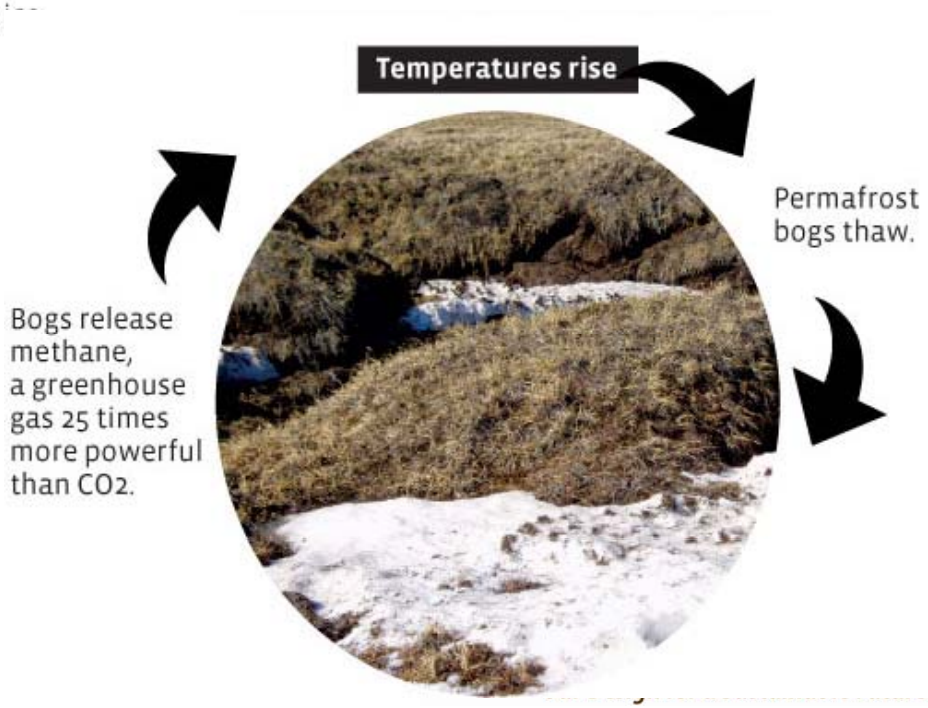
✓ **Changes in Weather Patterns**

- Temperature Patterns
- Drought Patterns
- Rainfall Patterns
- Severe Storm Events

Adaptation Gaps

✓Future climate change impacts and timing very uncertain





Adaptation Goals

- ✓ Improve regional collaboration in adaptation planning
- ✓ Create regional climate change scenarios for planning
- ✓ Educate & engage community & elected officials to obtain buy-in in planning process

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Adaptation Initiatives

- ✓Climate Change Advisory Task Force
- ✓Climate Change Resiliency Study
- ✓Sea Level Rise Maps currently being created
- ✓WASD partnering with U.S. Geological Survey on groundwater modeling

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Adaptation Initiatives

- ✓ Initiating partnership with NOAA for adaptation planning
- ✓ Regional Climate Change Meeting in Broward
- ✓ Beach Re-nourishment

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Adaptation Challenges

- ✓Long time-frame of planning process (exacerbated by challenges above)
- ✓Lack of more accurate regional projections
- ✓Shifting population from “Prepare & Recover” mode, to long-term adaptation mode

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Discussion

- *Additional indicators?*
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Assessment

Energy

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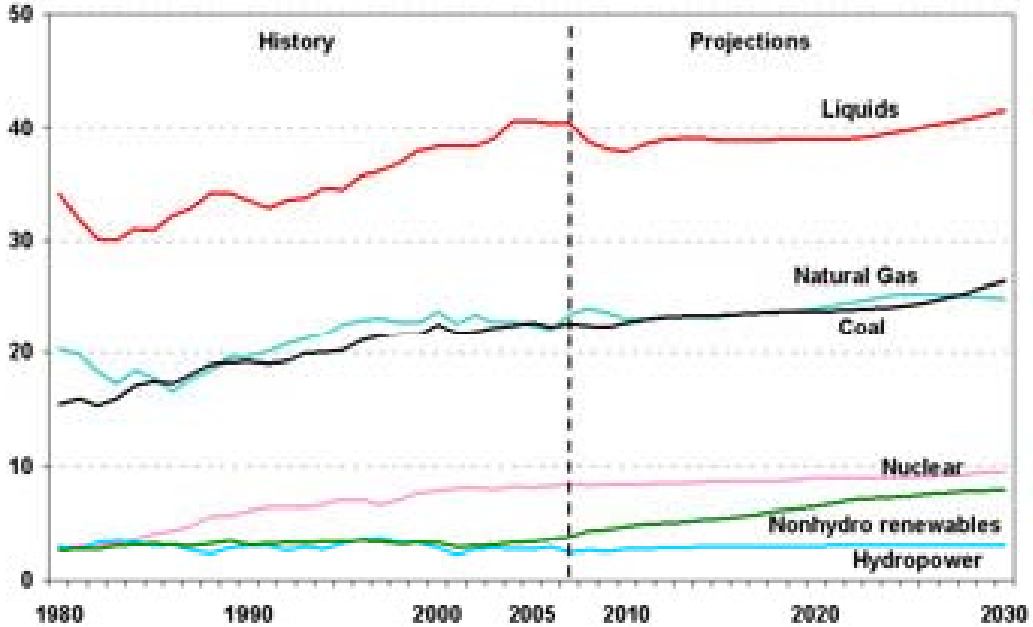
Energy: Sustainability Implications



- Availability: demand and supply
- Cost
- Climate Change
- Economy
- Geo-politics
- Fossil Fuels vs. Renewables
- Land Use
- Environment / Health

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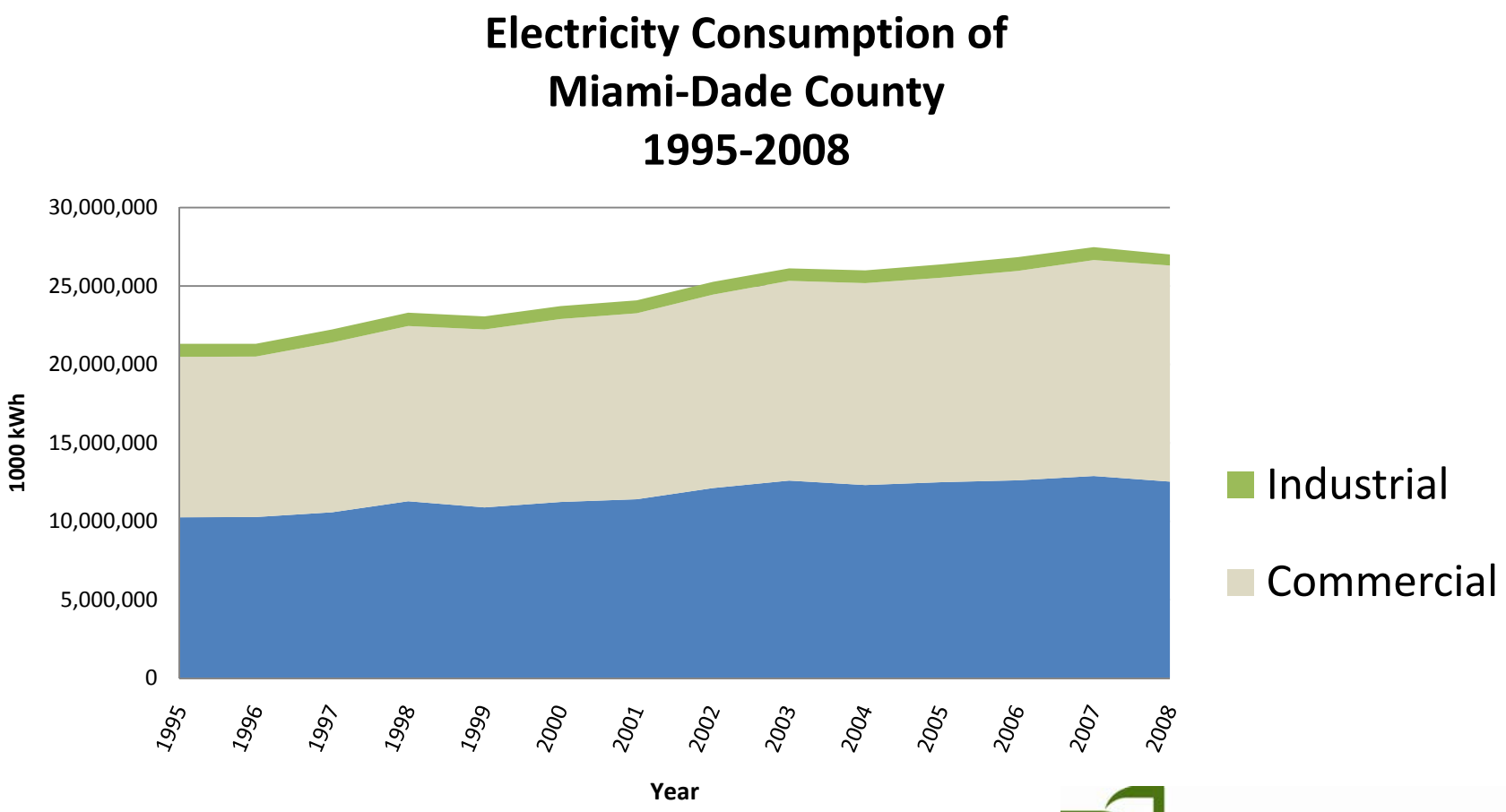
Energy: Electricity



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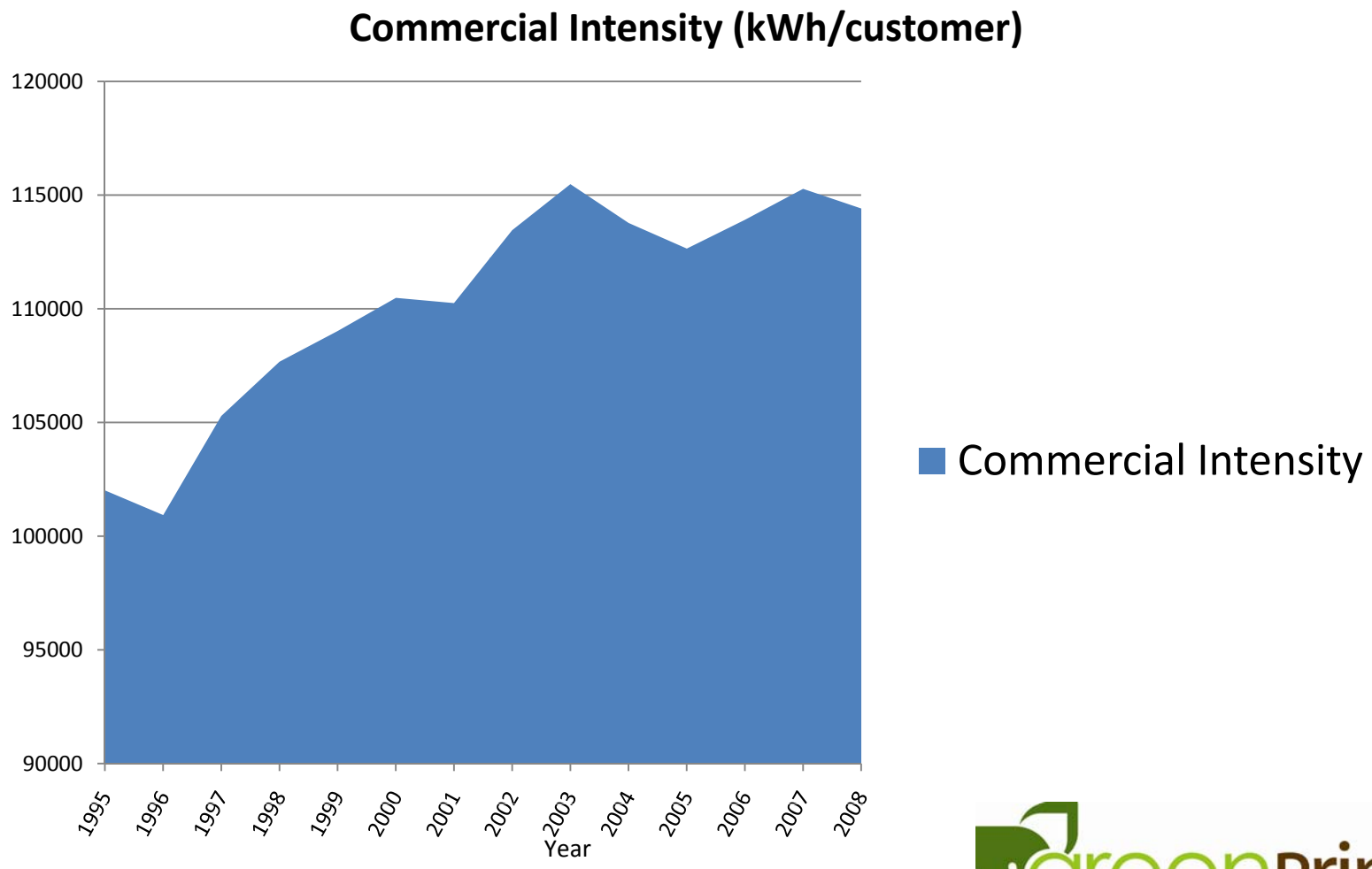
Energy: Commercial Electricity



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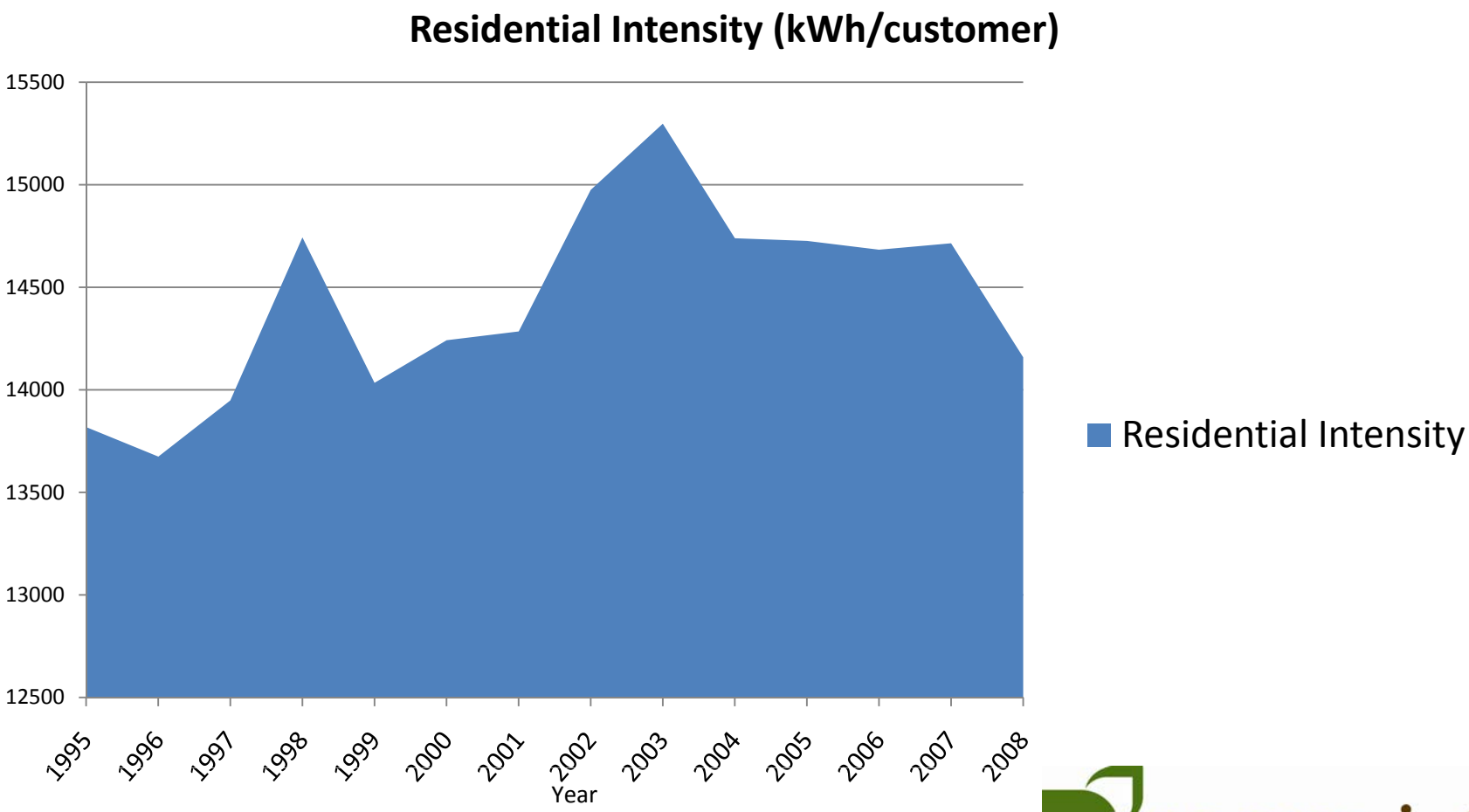
Energy: Residential Electricity



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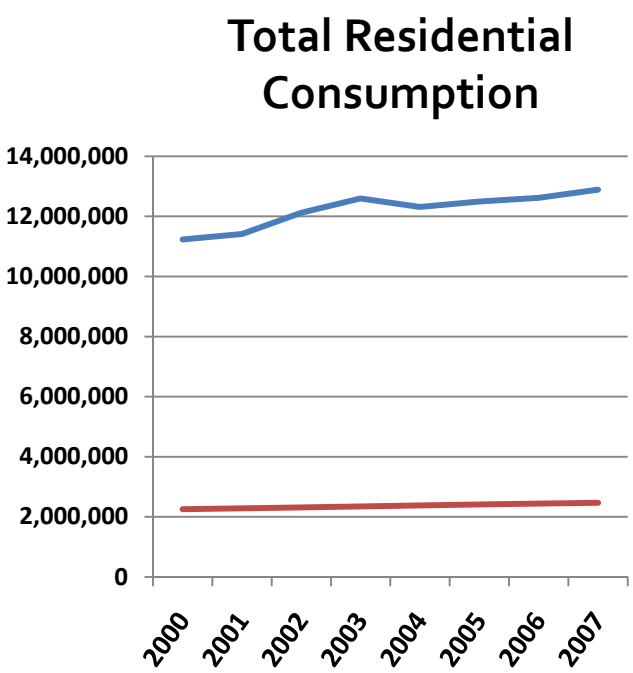
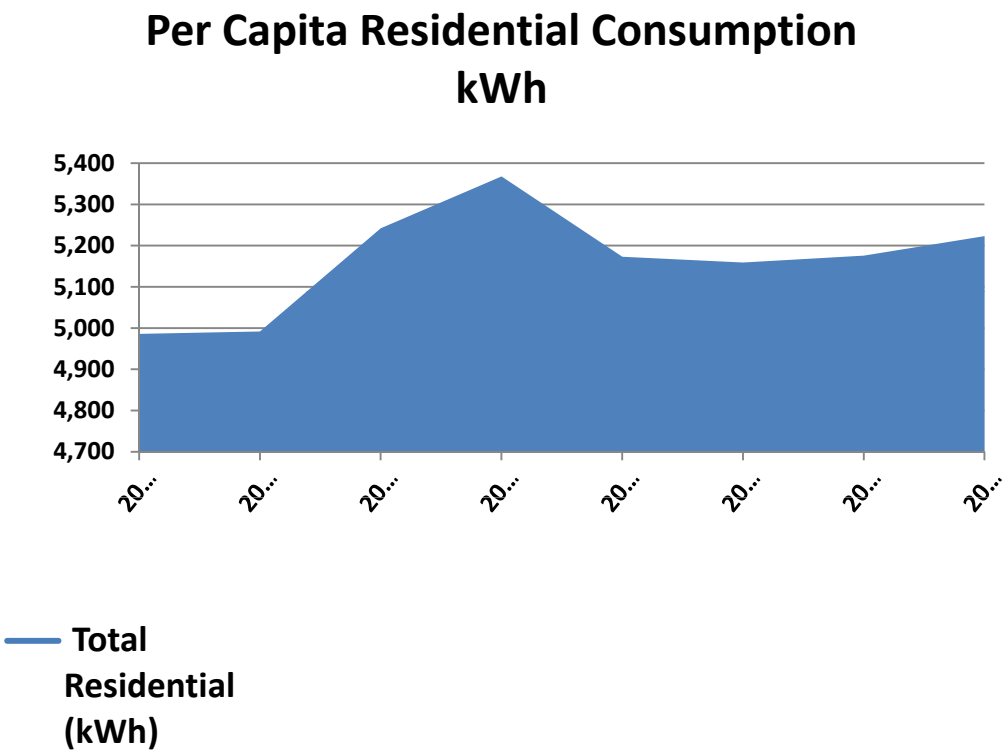
Energy : Residential Electricity





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Energy: Policies & Initiatives

POLICY / PROGRAM / INITIATIVE	LEAD	PARTNERS/BENEFICIARIES
Energy Star PM Energy Perf Benchmarking	USEPA	Commerce, Govts, Industry
Cool Counties Declaration: 80% Reduction in GHG Emissions by 2050; 2%/yr beginning 2010	MDC	Entire Community
Florida Building Energy Code	State	MUNIs, Building Owners
State Energy Performance Contract	State	Municipalities
Energy Efficiency Rebates/Incentives + Smart Grid	FPL	Commerce, Residents
DOE Industrial Assessment Centers	UM	Industry
EECBG Energy Efficiency Campaign	MDC	Residents, Commerce
EECBG Targeted Industry Revolving Loan Program	MDC-RPC	Commerce
7 Point Challenge: 30% Reduction in Energy Consumption (2007-2012)	BOMA	Commerce, Municipalities
Targeted Jobs Incentive Fund: Solar Thermal, PV Manufacturing, Retail (Beacon Council)	MDC	Commerce
Energy-Efficiency Financing: on-bill, tax, ESCOs	GOVT	Community, Utilities
Fuel Conservation: Strategic Route Planning-FedEx	Industry	Commerce, Govts

LEARN MORE AT energystar.gov

Top 25 Cities With the Most ENERGY STAR Qualified Buildings in 2008

Metropolitan Area*	Number of ENERGY STAR Qualified Buildings in 2008	Amount of Floorspace (Million square feet)	Cost Savings (Millions)	Emissions Savings Equivalent to How Many Households' Electricity Use?
1. Los Angeles, CA	262	73.9	$87.2	35,800
2. San Francisco, CA	194	60.0	$83.8	32,100
3. Houston, TX	145	58.3	$70.6	56,500
4. Washington, DC	136	42.3	$42.2	30,700
5. Dallas-Fort Worth, TX	126	32.4	$31.9	26,200
6. Chicago, IL	125	51.0	$42.2	50,700
7. Denver, CO	109	30.5	$32.9	44,600
8. Minneapolis-St. Paul, MN	102	33.2	$36.3	49,000
9. Atlanta, GA	97	24.0	$16.4	19,700
10. Seattle, WA	83	22.0	$16.3	14,400
11. Boston, MA	79	25.0	$34.5	13,600
12. New York, NY	78	41.9	$55.9	26,900
13. Austin, TX	77	10.9	$13.6	11,900
14. Detroit, MI	65	10.2	$52.7	8,400
15. Milwaukee, WI	62	7.6	$3.0	3,200
16. San Antonio, TX	56	9.8	$14.6	14,400
17. Philadelphia, PA	50	11.9	$12.4	7,900
18. Charlotte, NC	45	5.8	$4.6	5,200
18. Portland, OR	45	14.0	$8.0	6,600
20. Grand Rapids, MI	42	4.1	$1.8	1,700
21. Sacramento, CA	41	6.5	$7.9	3,600
22. Phoenix, AZ	39	7.3	$7.0	6,900
23. Miami, FL	38	8.4	$8.8	6,800
24. Riverside, CA	34	3.6	$3.2	1,200
25. Madison, WI	33	3.0	$1.1	1,300

EPA United States Environmental Protection Agency

*Metropolitan areas defined by U.S. Census • January 1, 2008 - December 31, 2008 • Numbers have been rounded

Energy Star Building Types

BUILDINGS

- Bank/Financial Institution
- Courthouse
- Hospital (acute care and children's)
- Hotel
- House of Worship
- K–12 School
- Medical Office
- Municipal Wastewater Treatment Plant
- Office
- Residence Hall/Dormitory
- Retail Store
- Supermarket
- Warehouse (refrigerated and non-refrigerated)

INDUSTRIAL PLANTS

- Auto manufacturing plants
- Cement plants
- Container glass manufacturing plants
- Flat glass manufacturing plants
- Frozen fried potato processing plants
- Juice processing plants
- Petroleum refineries
- Pharmaceutical manufacturing plants
- Wet corn milling plants

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How do we reduce?

- Clear Baselines
- Clear Goals and Targets
- Engaging management, employees, residents for long-term behavior change and innovation
- Initiatives: Unprecedented Collaboration

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Discussion

- *Additional indicators?*
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Next Meeting

November 4th 3pm

Thank you!

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