



Making the Commuter Benefits – Climate Connection

Prepared by
Ian Todreas, ERG
December 7, 2007

Introduction

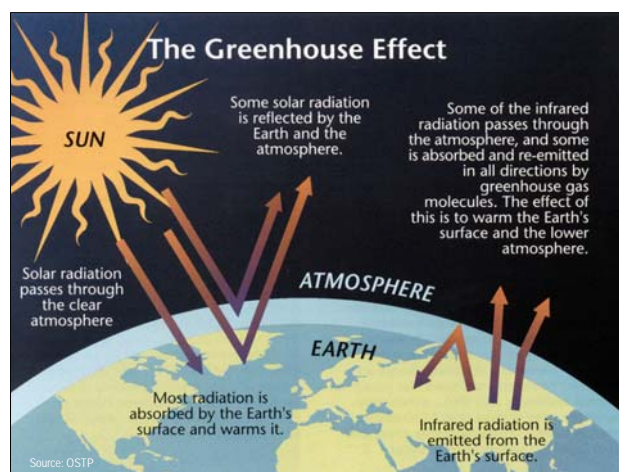
- Background on Climate Change
- Climate Change, Transportation, and Florida
- Making the Connection

Climate Change

- What?
 - Refers to changes in weather patterns and temperatures
- Where?
 - Everywhere (globally, land, oceans, atmosphere)
- When?
 - Since the Big Bang
 - Most recent trends began in 20th century

3

Climate Change – How?



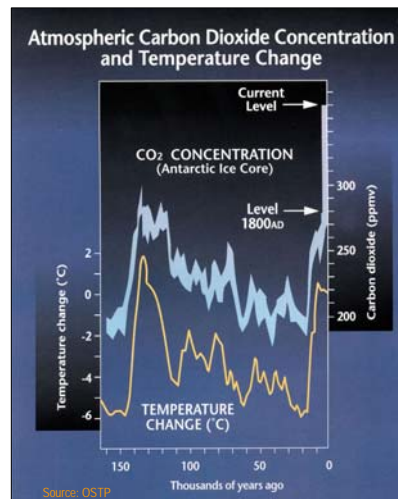
4

Climate Change – Why?

- Burning of fossil fuels (generating CO₂, other heat-trapping gases)
 - Energy (heating, electricity, industry)
 - Agriculture
 - Transportation
- Deforestation (releases CO₂)
- Waste (produces methane)
- Agriculture (livestock, rice cultivation)
- Other (e.g., melting permafrost produces methane)

5

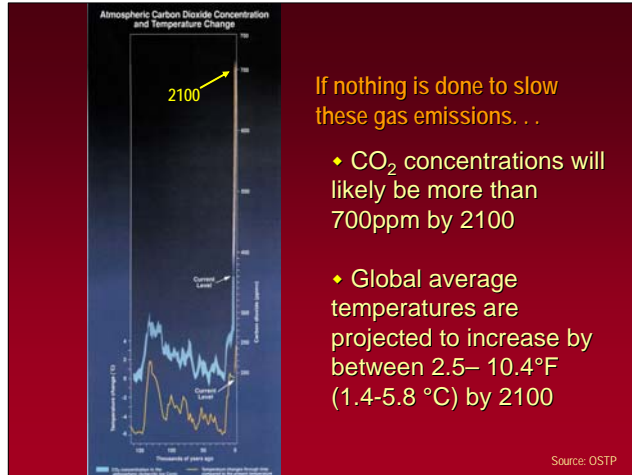
Climate Change – Why?



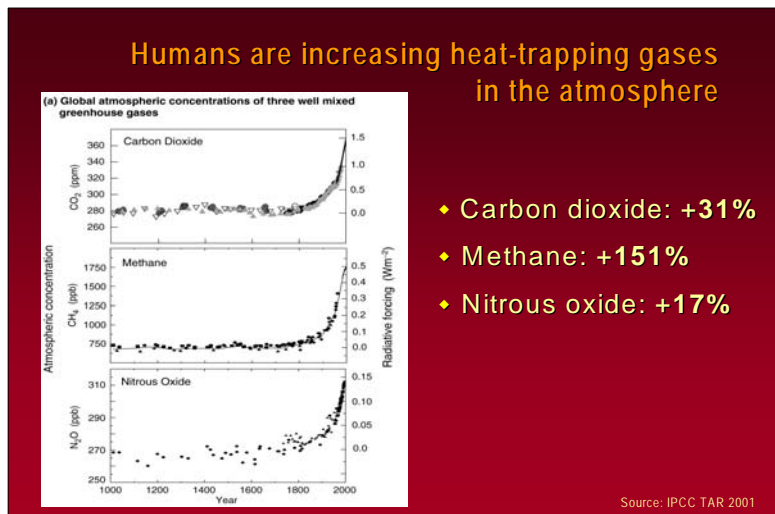
- ♦ Clear correlation between CO₂ and temperature over last 160,000 years
- ♦ Current level of CO₂ is *outside* bounds of natural variability
- ♦ Rate of change of CO₂ is also unprecedented

6

Climate Change – Why?



Climate Change – Who?



Ian's Thoughts on Climate Change

- Certain amount of warming is “locked in”
- Warming begets warming (neg feedback loops)
- Thousands of individual, daily decisions (some seemingly minor) contribute – no 1 silver bullet!
- We (Americans) are disproportionately and irrevocably affecting all species, future generations, the world's poor
- Makes every societal problem worse
- **Our parents didn't know...we do**

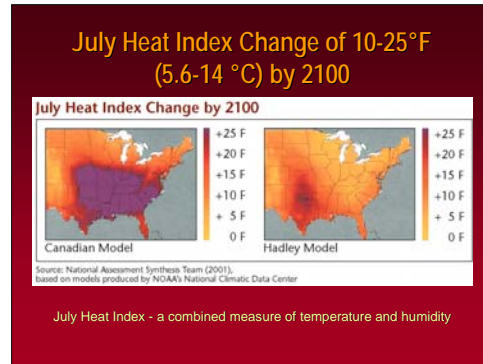
9

What could happen in Florida

- 3-10°F rise in winter lows, 3-7°F rise in summer highs
- More frequent intense rainfall events, longer dry periods in between
- More intense hurricanes, changes in frequency uncertain
- Even with current storm patterns, more damage from coastal flooding and erosion as sea level rises
- Dramatic sea level rises by 2100
- Source: UCS, http://www.ucsusa.org/gulf/gcstateflo_cli.html

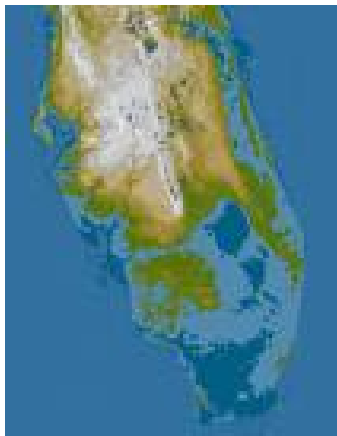
10

“Real feel” index in the Southeast



11

Impact on Florida



- Dark blue areas are less than 5 meters (16 feet) above sea level.
- Melting, not warming, has the biggest potential to raise sea level.
- Source of image: <http://www.nasa.gov/centers/jpl/news/gracef-20060602.html>

12

Status of Greenland and Antarctica

- Doubling and tripling of melt from Greenland's tidewater glaciers... "a sea-level rise of 1-2 feet in the coming *decades* is entirely possible,"
 - New York Times, Jan 2007
 - <http://www.nytimes.com/2007/01/16/science/earth/16gree.html?pagewanted=all>
- "Greenland Melting Faster Than Ever, NASA Satellite Shows"
 - Fox News, May 2007
 - <http://www.foxnews.com/story/0,2933,276446,00.html>

13

This just in...

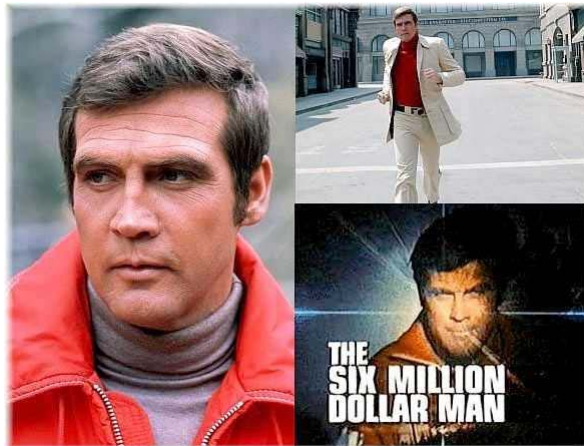
- Miami ranked 9th internationally
 - Exposed future population to 1 in 100 coastal flooding "event" in 2070s
 - Right behind Rangoon, Myanmar!
- Miami ranked 1st internationally
 - Exposed current assets and exposed future assets
 - Beat out Guangzhou, China, and New York City!
- Source: OCED's report "Ranking of the World's Cities Most Exposed to Coastal Flooding Today and in the Future"
- <http://www.oecd.org/dataoecd/16/10/39721444.pdf>

14

What now?



Solutions? We have the technology...



We have “the technology?”

- CO₂ Vacuum
- Deflecting sunlight in space
- Intentional Polluting
- The “Geritol” Solution

Source: Plenty Magazine, Dec 2007

17

Florida’s Climate Policies, 2007

- **E.O. 07-126, 127, and 128: Establishing Immediate Actions to Reduce FL’s GHGs**
 - by 2017 reduce GHG emissions to 2000 levels
 - by 2025 reduce GHG emissions to 1990 levels
 - by 2050 reduce GHG emissions by 80% of 1990 levels
- **How?**
 - setting emission standards for electric utilities
 - implementing energy efficient building codes
 - facilitating purchases of renewable energy
 - adopting CA’s motor vehicle emission standards
 - reducing diesel vehicle idling
- Establish an Action Team

18

E.O. 07-126, 127, and 128

- Proposed Actions
 - <http://www.sustainableflorida.org/documents/07-126-actions.pdf>
- Action Team Contact Information
 - <http://www.sustainableflorida.org/documents/07-128-actionteam.pdf>
- Emissions
 - <http://www.sustainableflorida.org/documents/07-127-emissions.pdf>

19

Other policies

- Florida's 2025 Transportation Plan
- Partnerships with UK, Germany
- Mayors of 63 FL cities signing onto US Conference of Mayors climate challenge

20

“Swamp” is doing its part!

- UF is the first university in the nation to attempt to counteract the greenhouse gases created by a college football game.
- Nov 2007 game between Univ FI and SFU was CO₂ neutral



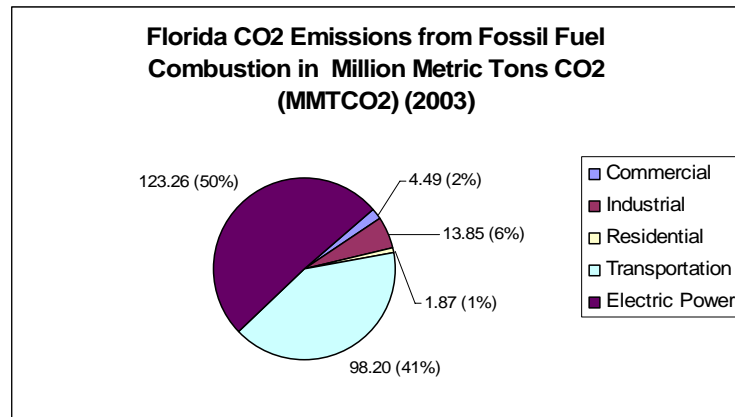
21

Do FL's policies address the problem?

- Burning of fossil fuels is big piece of the pie
 - 347% more CO₂ emissions than in 1960s, 2nd largest increase in nation
 - 52.8 MMTCO₂ in 1960
 - 235.6 MMTCO₂ in 2001
- Specifically, to power Florida's cars and trucks
 - 53% increases in CO₂ came from cars, light trucks
 - Miles driven in FL increased 138%
 - 21,360 million in 1960
 - 170,587 million in 2001
- Source: <http://www.tampabays10.com/news/local/article.aspx?storyid=33867>

22

Florida Facts



Source: http://www.epa.gov/climatechange/emissions/state_energyco2inv.html

23

Same story, different states

- 33% U.S. emissions comes from transportation
 - Highway vehicles account for 72% of total GHG emissions from transportation sector.
 - Source: Pew Center on Global Climate Change, 5/03
- Commute trips, most of which are conducted by people driving alone, account for 27% of U.S. vehicle travel, and this percentage is increasing.
 - Source: US DOT Highway Statistics, 2005
- More people are making longer drive-alone commutes more often every year.
 - Source: US DOT Highway Statistics 2005

24

So much for progress...

- Vehicles are cleaner
- Vehicles are getting more fuel efficient

BUT

- More people are driving more vehicles, more often, and farther

SO

- Improvements are outpaced, and we are emitting more and more emissions than ever

25

Something *can* be done.

- **We don't need "the technology" for some immediate, cost-effective CO₂ reductions**
- *By assisting and motivating commuters to leave their cars at home, BWC employers and other TDM programs are reducing CO₂ emissions from the transportation sector.*

26

Offering commuter benefits helps

- 1443 BWC employers nationwide (2.8 million workers) reduced CO₂ emissions by 3.4 MMTCO₂ in 5 years (2001-05)
- Also
 - saved fuel, VOCs, NOx, \$\$
 - reduced congestion
 - earned national/local recognition
- If 25% of US workers received benefits, they would reduce CO₂ emissions by 15 MMTCO₂
- Source: EPA

27

Commuter Benefits = A Climate Solution

- **Significant impact on drive-alone commuting**
 - With employer-provided benefits, employees reduce commute-related emissions by 15% compared to peers without benefits, working in same zip
- **Immediate or near-term reductions**
 - Mode shift occurs quickly, in days, weeks, months
- **“Spillover,” which further reduces emissions**
 - Employees sans benefits (e.g., contractors, temporary employees, etc.) at BWC work sites drive alone 7% less than peers without benefits working in same zip

28

Commuter Benefits = A Climate Solution

- **Relatively affordable: does not require costly or long-term infrastructural investments**
- **No strain on the public sector**
- **Flexible**
- **Adjustable**
- **Proven**
- **Actionable**
- **Widely accepted and popular**

29

Other transportation solutions

- **Adopt Biofuels**
 - Requires huge subsidies (\$90B from 06-12)
 - Needs infrastructure
 - Impact on CO2 emissions debatable
- **Improve fuel economy of fleets**
 - Takes time and money to retool factories
 - Historic resistance from Big Three
 - Doesn't always deliver
- **Change land use patterns**
 - Takes at least a decade
 - Local opposition

30

What can we do?

- Offer outstanding commuter benefits at your place of employment
- Promote Best Workplaces regionally or statewide – build on S. FL’s list release!
- Support employer-provided commuter benefits in state climate action plan, regional strategies, municipal plans
 - Contact the Gov’s Action Team on Energy and Climate Change!
 - Make sure TDM and commuter benefits are considered as an important solution in the mix

31

FL’s Action Team appointed Aug 13, 2007

<http://www.dep.state.fl.us/ClimateChange/team/members.htm>

- **Sec of the Dept of Environmental Protection:**
 - Secretary Michael W. Sole, Chairman
- **Chair of the Florida Public Service Commission:**
 - Chairperson Lisa Edgar
- **Four Members of the Florida Legislature:**
 - Senator Jeff Atwater
 - Senator Al Lawson
 - Representative Stan Mayfield
 - Representative Dan Gelber
- **Consumer Advocate:**
 - Jack Shreve, Senior Counsel to the Governor
- **Five Reps of the Environmental Community:**
 - Manley Fuller, Florida Wildlife Federation
 - David Guest, Earthjustice
 - Debbie Harrison, World Wildlife Fund
 - Gerald Karnas, Environmental Defense
 - Charles Pattison, 1000 Friends of Florida
- **Three Reps of the Business Community:**
 - Jerry Montgomery, Senior Vice President, Conservation & Environmental Sustainability, Disney
 - Mark Kaplan, Vice President, Mosaic Fertilizer LLC
 - Kathleen Shanahan, Chief Executive Officer, WRS Infrastructure & Environment Inc.
- **Chair of the Energy Commission:**
 - Chairman Tommy Boroughs
- **Three Members of the Academic Community:**
 - Dr. Lonnie Ingram, Professor of Microbiology, Institute of Food and Agricultural Sciences, University of Florida
 - Camille Coley, Executive Assistant Vice President for Research, Florida Atlantic University
 - Dr. James Fenton, Florida Solar Energy Center, University of Central Florida
- **One Representative of the Utilities Industry:**
 - Armando Olivera, President, FPL Group
- **One Local Government Representative:**
 - Mayor Rick Baker, Vice-Chairman

32

Connect with allies, stakeholders

- Century Commission for a Sustainable FL
 - Policies affecting long term vision
 - www.centurycommision.org
- Council for Sustainable FL & FL Climate Change
 - Hosting series of workshops on affects and opportunities
 - www.sustainableflorida.org
- South FL Climate Change
 - Clearinghouse for climate info in S. FL
 - www.sfclimatechange.com
- Miami Green Commission
 - Aiming to get 1000 city vehicles operating on alt fuels or hybrids by 2012
 - www.miamigov.com/cms

33

Many thanks!

Ian Todreas, Senior Manager
ERG

35 India Street, 4th Fl

Boston, MA 02110

617-357-4623

Ian.Todreas@erg.com

www.erg.com

34