"AN OVERVIEW OF CLIMATE CHANGE ACTIVITIES IN THE UNITED STATES"

Presentation to the
Changing Land Use to Mitigate Climate Change
Conference
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by

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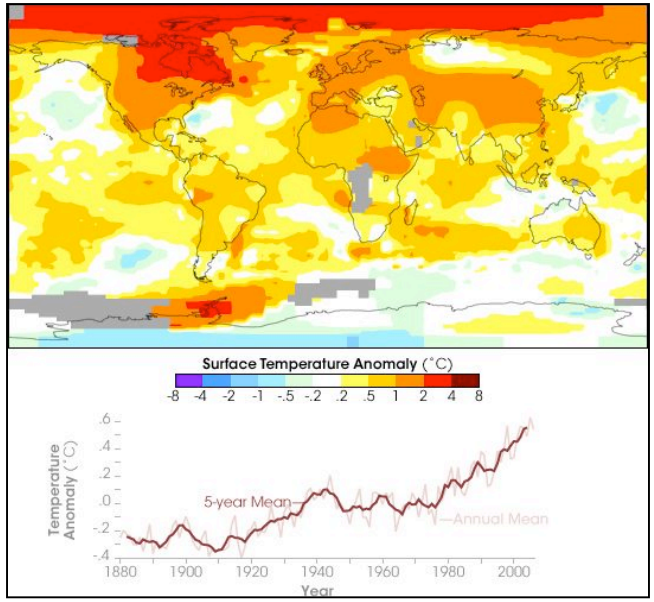
Outline of Presentation

In my remarks I am going to try to respond directly to the topics raised by the organizers:

1. Why planners should care about climate change
2. What is being done
3. What needs to be done
4. How that might be accomplished
5. What might be gained through an international exchange of ideas.

1. Why planners should care about climate change

- Climate change may well be the biggest challenge facing humanity in the 21st century
- It's our profession to help society plan for the future & deal with challenges
- With each passing year the need for action becomes more urgent
- Climate change has implications for almost all areas of planning, including land use, urban design, transportation, housing, environmental planning, energy planning, economic development, international development, etc.



2006 temperature deviation from 100 year average

Climate change is also related to many other potential sustainability crises….

-- Peak oil may have already occurred (December 16, 2005?)

-- Water shortages are appearing in many parts of the world (falling water tables in parts of China, India, the U.S.; diminishing river flows; drying lakes)

-- Global food shortages are likely (food riots in 2008 in Haiti, Bangladesh, Egypt, Ivory Coast, Senegal)

M. King Hubbert's original 1956 projection

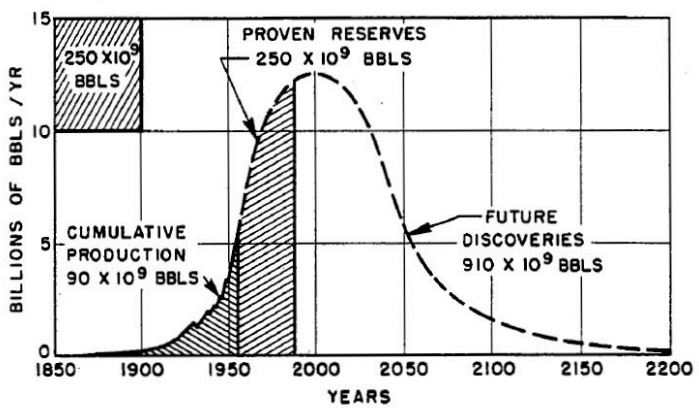
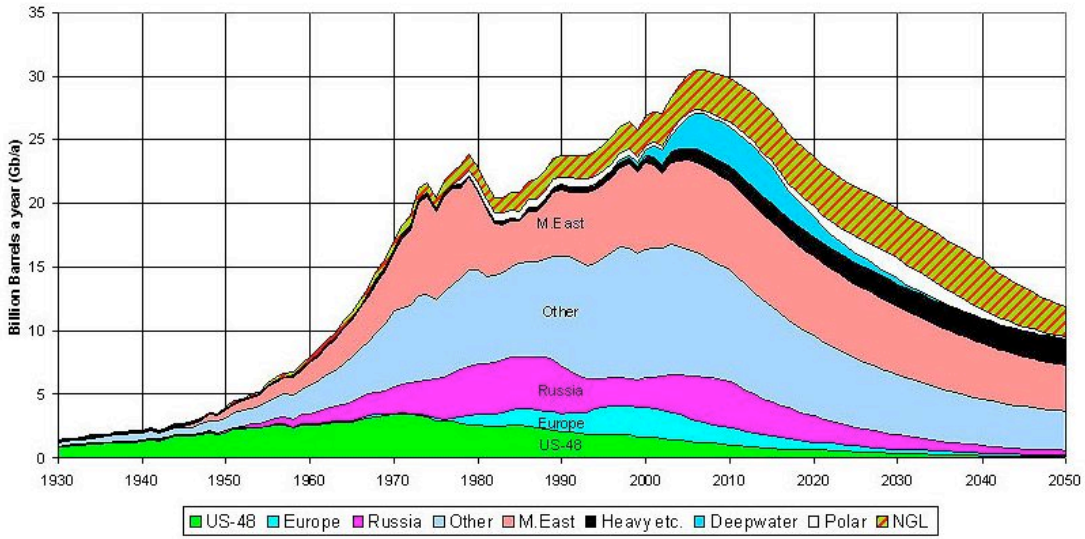


Figure 20 – Ultimate world crude-oil production based upon initial reserves of 1250 billion barrels.

Actual production and projections as of the late 2000s



Source: Association for the Study of Peak Oil

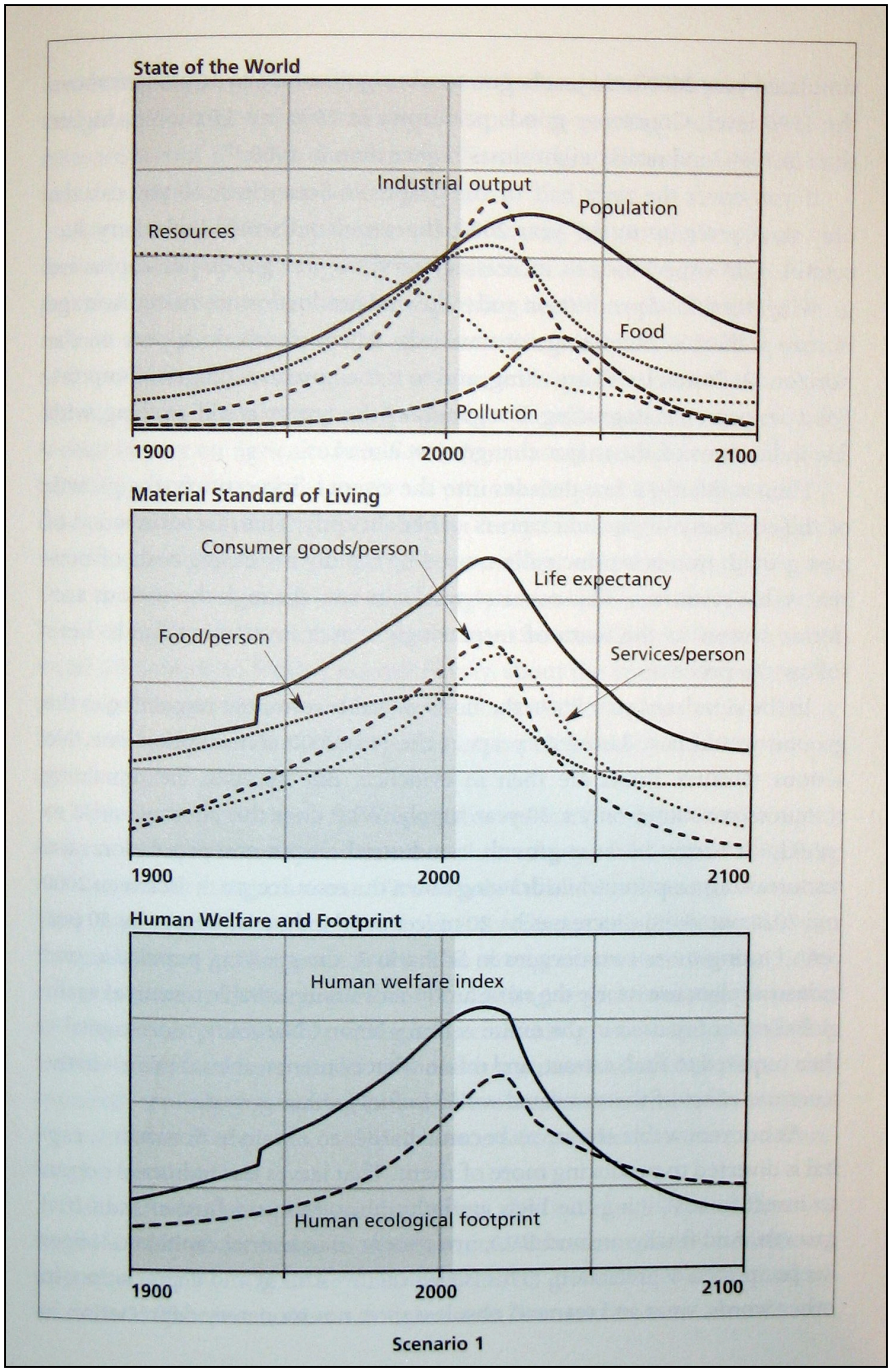
We have known for many decades that these crises were coming, but haven't done much to prepare for them…

-- Basic mechanisms of global warming were understood in the 1890s; the danger was known more specifically by the late 1950s

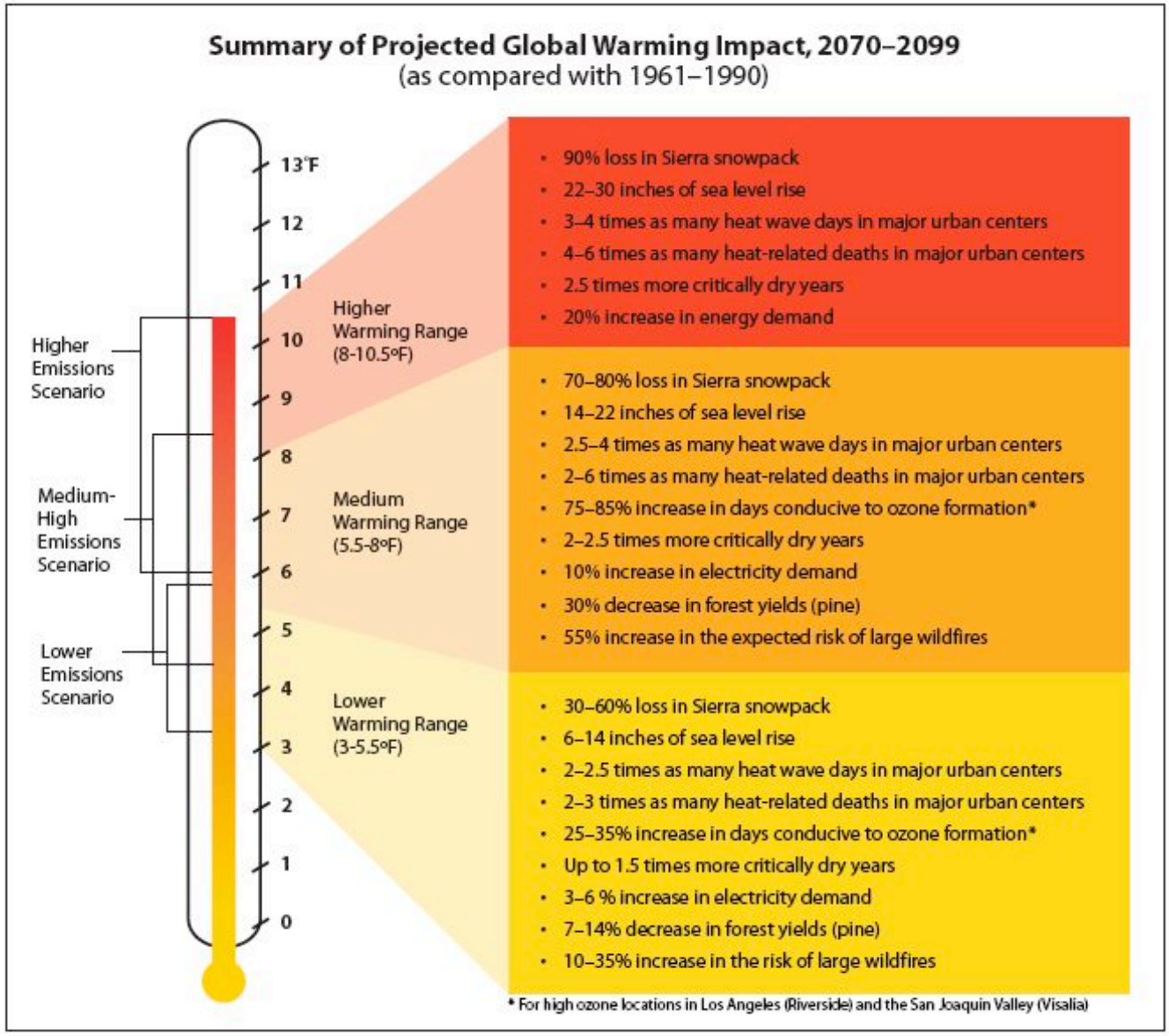
-- The basic unsustainability of global population, resource, and pollution trends was known by the early 1970s

-- So we've had a failure of planning on these topics, which is an argument for….stronger planning? different planning?

From Meadows et al., *Limits to Growth: The 30-Year Update*, 2005



Planning can still make a difference….

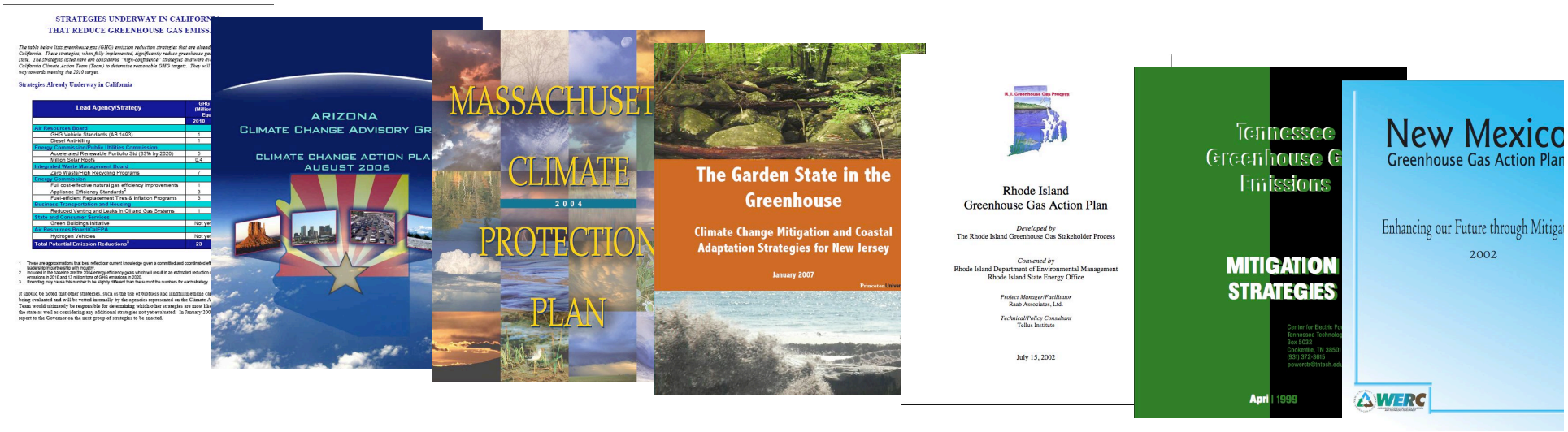


From California Climate Change Center, *Our Changing Climate* (2006)

2. What is being done (in the U.S.)

- Little movement at the national level until recently
- Multi-state regional compacts organized since the early 2000s
- Between the mid-1990s and 2008 29 states adopted plans to mitigate greenhouse gas emissions.
- As of 2008, some 170 U.S. local governments had joined ICLEI's Cities for Climate Protection Campaign

In a recent study, I assessed this first generation of state and local plans



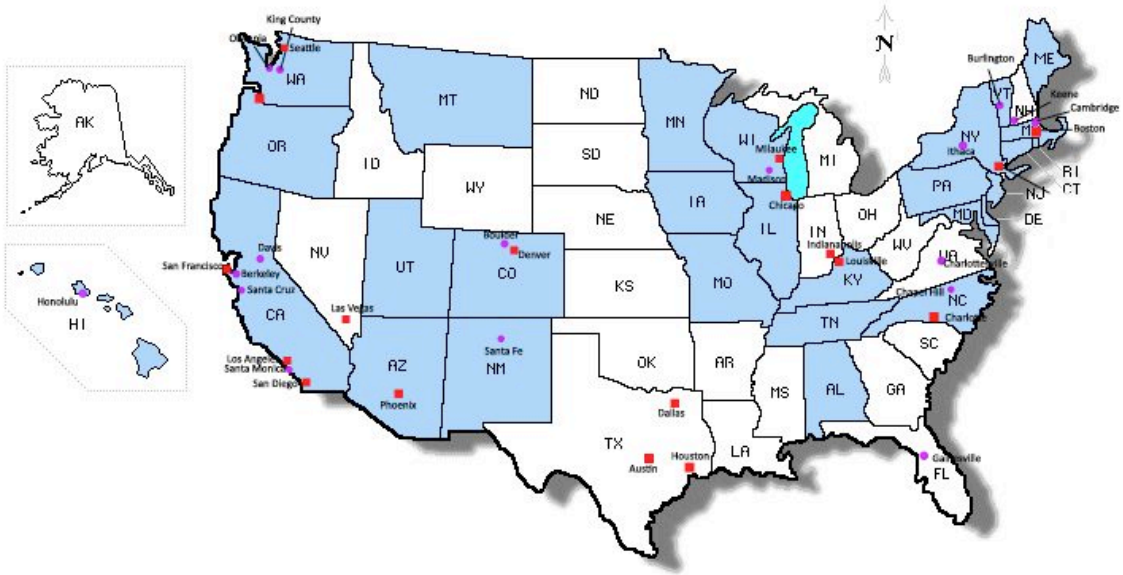
Method

The study analyzed

- 1) all 29 states with plans of some sort,
- 2) all 18 Cities for Climate Protection members with more than 500,000 residents, and
- 3) 17 selected smaller trend-setter local jurisdictions

We systematically obtained and analyzed documents from each jurisdiction and prepared profiles

We conducted phone interviews with officials in most jurisdictions



Content of Plans

Popular state actions:

Green government buildings (LEED)

Alternative fuels for public fleets

Adopt CA vehicle emissions standards

Utility portfolio requirements

Incentives for renewable energy

Join regional alliances to coordinate investments, develop cap-and-trade

Popular city actions:

Green government buildings (LEED)

Alternative fuels for public fleets and buses

Municipal power from renewable sources

Methane recovery at landfills

Urban forestry programs

Expand recycling programs

Land use was rarely mentioned in either state or municipal plans

Particularly Innovative Policies

- California has mandatory reporting for large emitters and 44 early action items to be implemented by 2010
- New York has invested $750 million over 5 years in energy efficiency
- Illinois has directed its EPA to help municipalities prepare climate change plans
- Connecticut is developing its own appliance efficiency standards
- Maine plans to buy 100% renewable power by 2010

- Austin's building codes will require homes to be 65% more efficient by 2015
- New York is requiring a hybrid taxi fleet and has earmarked $80 million in 2008 to improve energy efficiency of city buildings
- Los Angeles and Boston will require LEED certification for large private buildings
- Los Angeles is initiating a "cool roof" program
- Houston has contracted for 30% of municipal power from wind
- San Francisco is planning for all municipal electricity from renewables by 2010
- Denver plans to add one million new trees by 2025
- Berkeley has banned polystyrene foam and provides up-front financing for residential solar
- Santa Monica has achieved a 67% recycling rate
- Olympia, WA is moving wells and a new city hall site inland

Rate of Progress:

Overall U.S. emissions were up 16% in 2005 over 1990, and rising at 1% per year

No state appears to be meeting its goals

Most cities have rising emissions: for example NYC had an 8.5% rise 1990-2005, and Denver 24%

Portland saw only a slight rise 1990-2004; per capita emissions dropped 12.5%

LA claims a 4% reduction in CO2 output 1990-2006, despite population growth

Seattle claims an 8% reduction 1990-2005

Big caveat: systematic emissions reporting is simply not available for most jurisdictions

Good Plans (i.e. more likely to meet the climate change challenge):

Developed baseline **emissions inventories** for multiple years

Estimated greenhouse gas reductions from recommended measures

Estimated cost of measures

Identified funding & regulatory changes

Had regular **follow-up reporting**

Included recommendations for **adaptation** to climate change as well as mitigating emissions

Were prepared through **stakeholder processes**

Conclusions of the State and Local Study

Most GHG reduction goals are not strong enough (many had no specific goals at all; others embraced the Kyoto target for the U.S. of 7% below 1990)

Jurisdictions are just beginning implementation

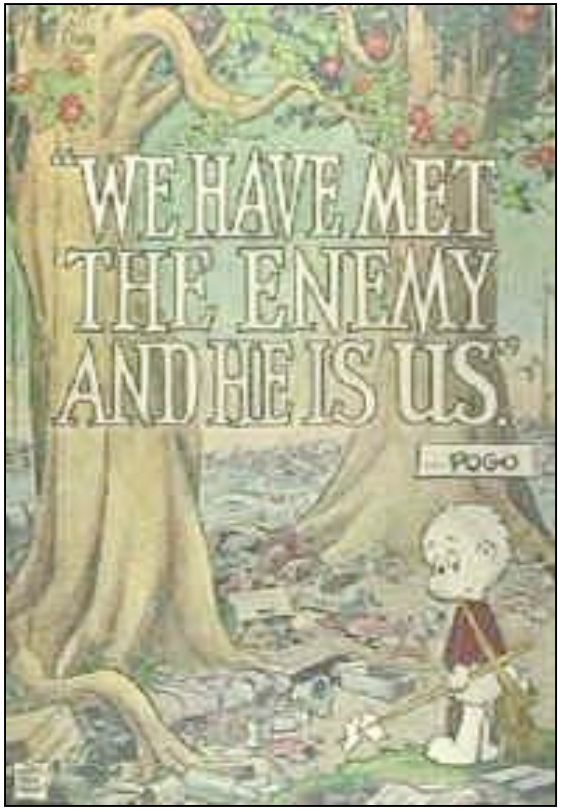
Few jurisdictions have allocated substantial resources or changed codes

Land use and urban design measures are generally missing from plans

There is little systematic evaluation of progress

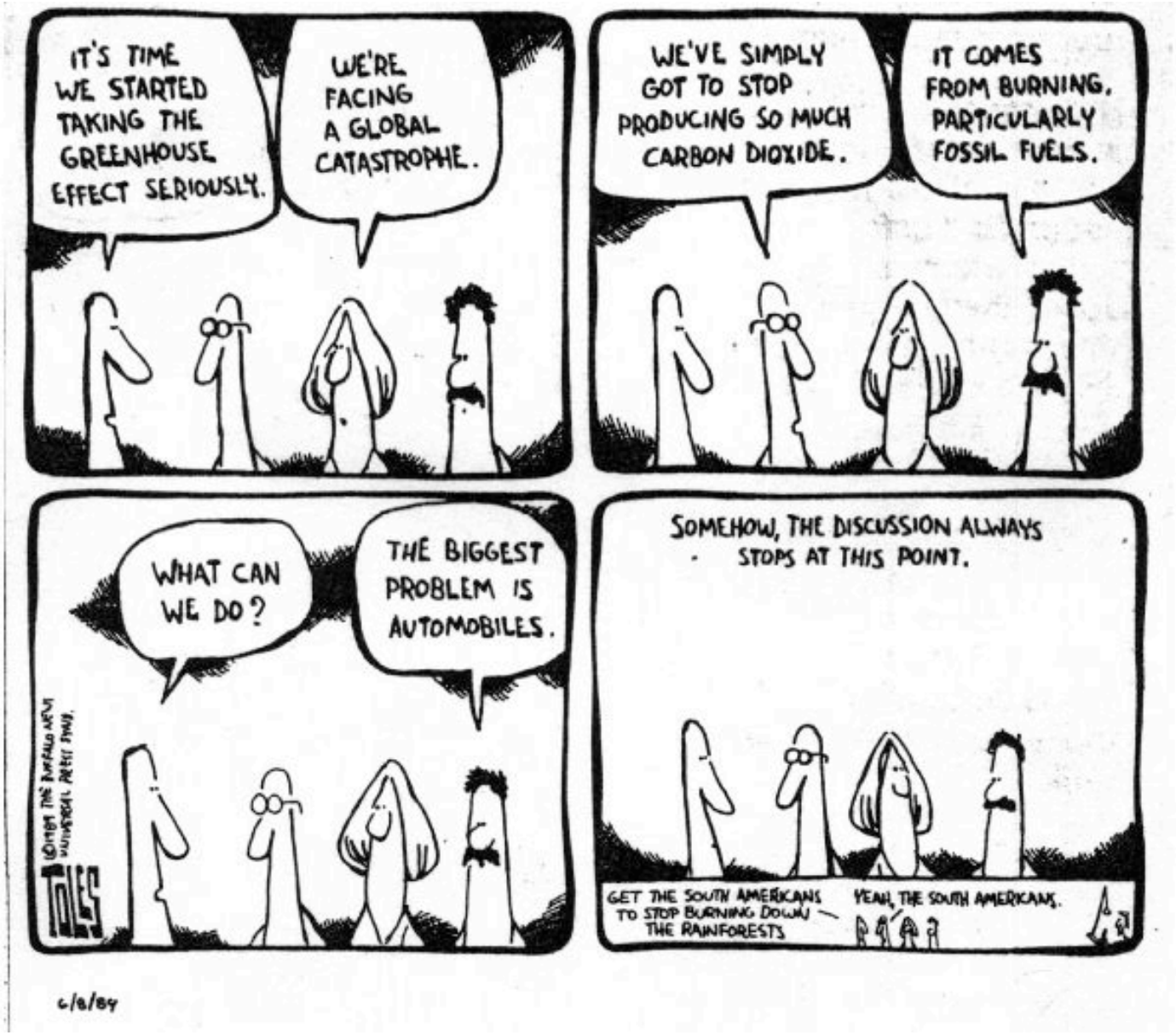
Few places are thinking about adaptation

Officials cite a public unwillingness to consider personal lifestyle changes



Poster created by Walt Kelly for Earth Day 1970

In the U.S., motor vehicle use and related lifestyles and urban design patterns are very difficult to change….



3. What Needs to Be Done

Stronger goals: 3-4% reductions per year, 80+% below 1990 by 2050

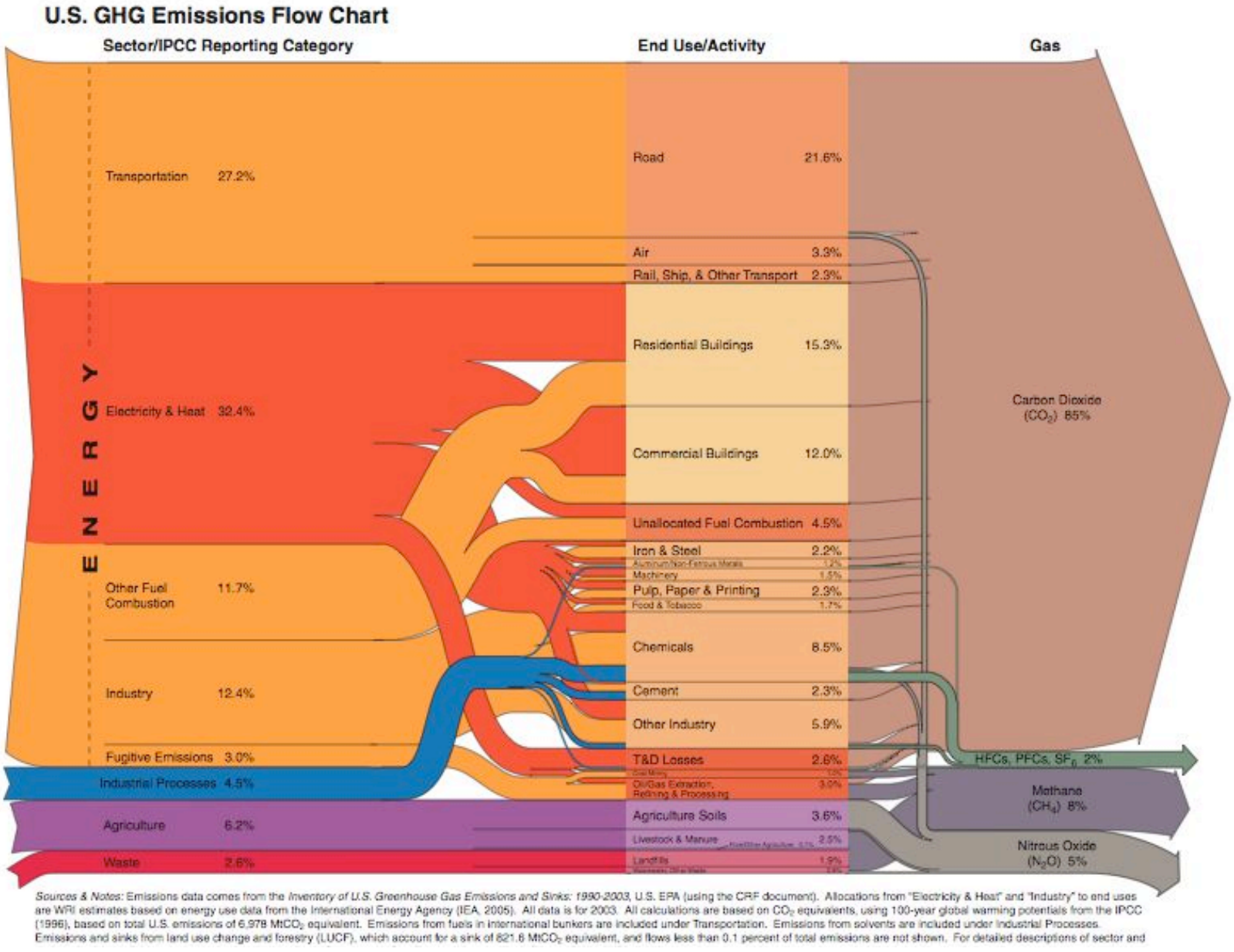
Additional actions in many areas: Tougher building codes, better public transit, expanded bike/ped facilities, incentives for home energy retrofits, tougher efficiency standards for appliances and vehicles, TDM programs, etc.

Implement actions approved thus far: Allocate resources, adopt regulations, engage in social marketing, consider ways to fast-track alternative energy projects

Integrate climate change into General/Comprehensive/Master Plans: Make sure all planning documents and codes consider both mitigation and adaptation

Bring in land use: Figure out ways to implement strategies that many land use planners have been advocating for years: compact development, higher densities, better land use mixes, transit-oriented development, etc.

Land use affects many potential GHG sources, especially transportation, buildings, and agriculture



Sources & Notes: Emissions data comes from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2003*, U.S. EPA (using the CRF document). Allocations from "Electricity & Heat" and "Industry" to end uses are WRI estimates based on energy use data from the International Energy Agency (IEA, 2005). All data is for 2003. All calculations are based on CO_2 equivalents, using 100-year global warming potentials from the IPCC (1996), based on total U.S. emissions of 6,978 $MtCO_2$ equivalent. Emissions from fuels in international bunkers are included under Transportation. Emissions from solvents are included under Industrial Processes. Emissions and sinks from land use change and forestry (LUCF), which account for a sink of 821.6 $MtCO_2$ equivalent, and flows less than 0.1 percent of total emissions are not shown. For detailed descriptions of sector and

What is the potential for land use-related GHG reduction?

Very difficult to pin down precisely because of so many interrelated variables involving land use, urban design, transportation alternatives, economic incentives, lifestyles, social norms, information, etc.

-- Ewing et al., 2007: "with more compact development, people drive 20 to 40 percent less, at minimal or reduced cost, while reaping other fiscal and health benefits."

-- Holtzclaw et al., 2002: motor vehicle ownership and use "a strong function of density, income, household size and public transit, and a weaker function of the pedestrian and bicycle friendliness of the community."

-- Kenworthy, 2007: urban density explains 84% of the variation in car use across 58 wealthy cities

Due to the slow pace of development, land use strategies are a long-term approach; they matter much more for 2050 emissions reductions than 2020

Land use strategies will be most effective when combined with demand management strategies and an improved range of mode choices

4. How better climate change planning might be accomplished

Damn good question!

Some possible answers:

- Leadership in helping to expand the debate and develop alternatives
- Advocacy planning: going out of our way to help individuals and organizations take constructive action
- Regulation: maybe it's necessary after all?
- Rethinking participation: do we have the luxury?

5. What might be gained through an international exchange of ideas

Learning from one another's experience

Identifying best practices

Developing solidarity

Looking over the horizon together for creative new strategies