

2007 King County Building Summit



King County

Doug Howell, DNRP

Overview of Presentation

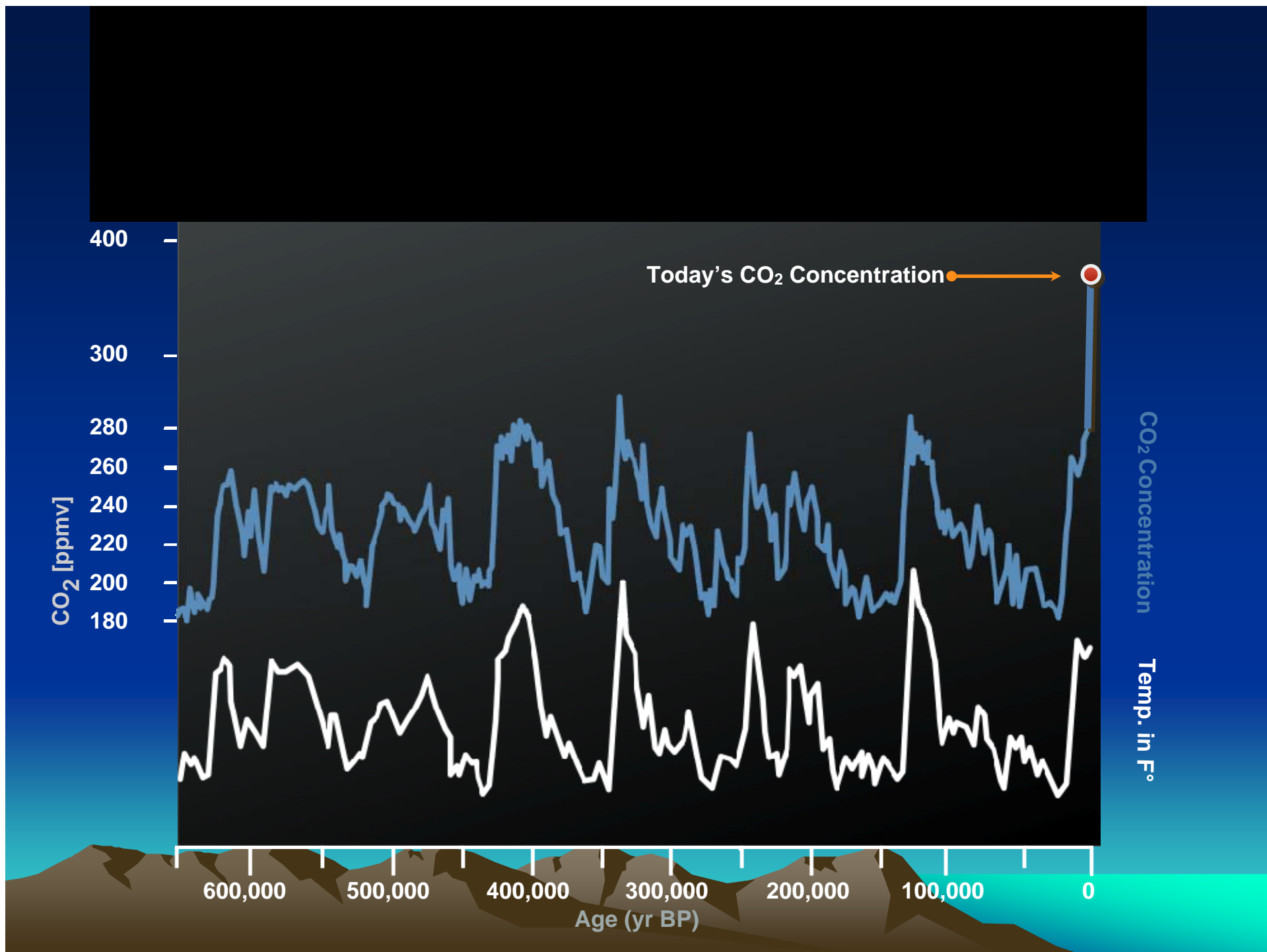
- Science, Impacts and Goals
- Relation to Green Building
- GHG intensity – Death by 1000 cuts
- Reframing issue: Social and Economic Transformation
- But first, that morning cup of coffee:
excerpt from agenda

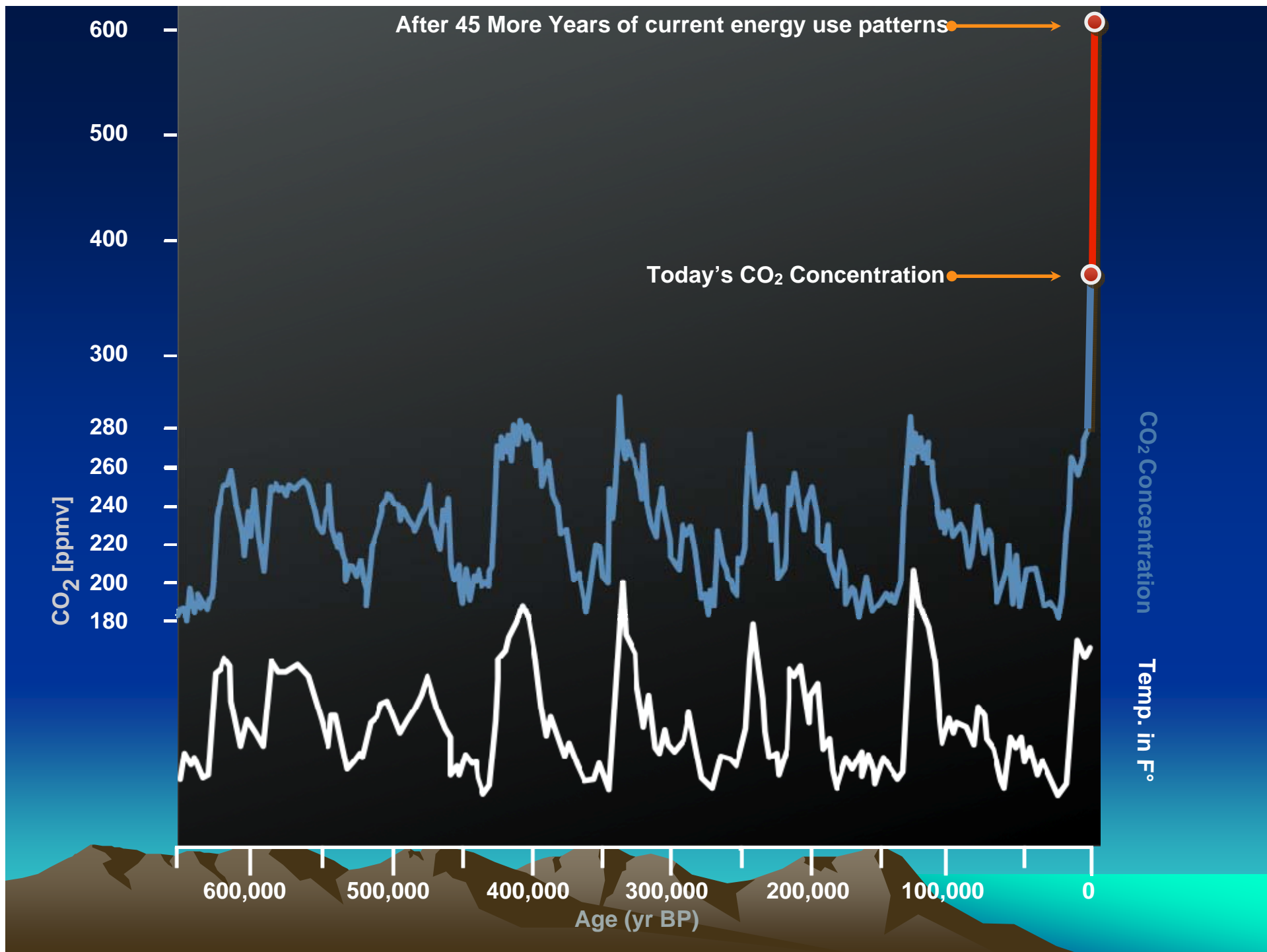


Global Warming is Everywhere

- “Brazil coffee at risk from global warming – study” Feb 05, 2007, Source: Reuters
- “A 3-degree Celsius (5.4 Fahrenheit) rise in temperature would result in a 60 percent reduction in the arabica coffee area in Brazil, the world's biggest producer of the beverage.”
- “Award-winning French roast yields insights into emissions from coffee roasting” Source: Puget Sound Clean Air Agency



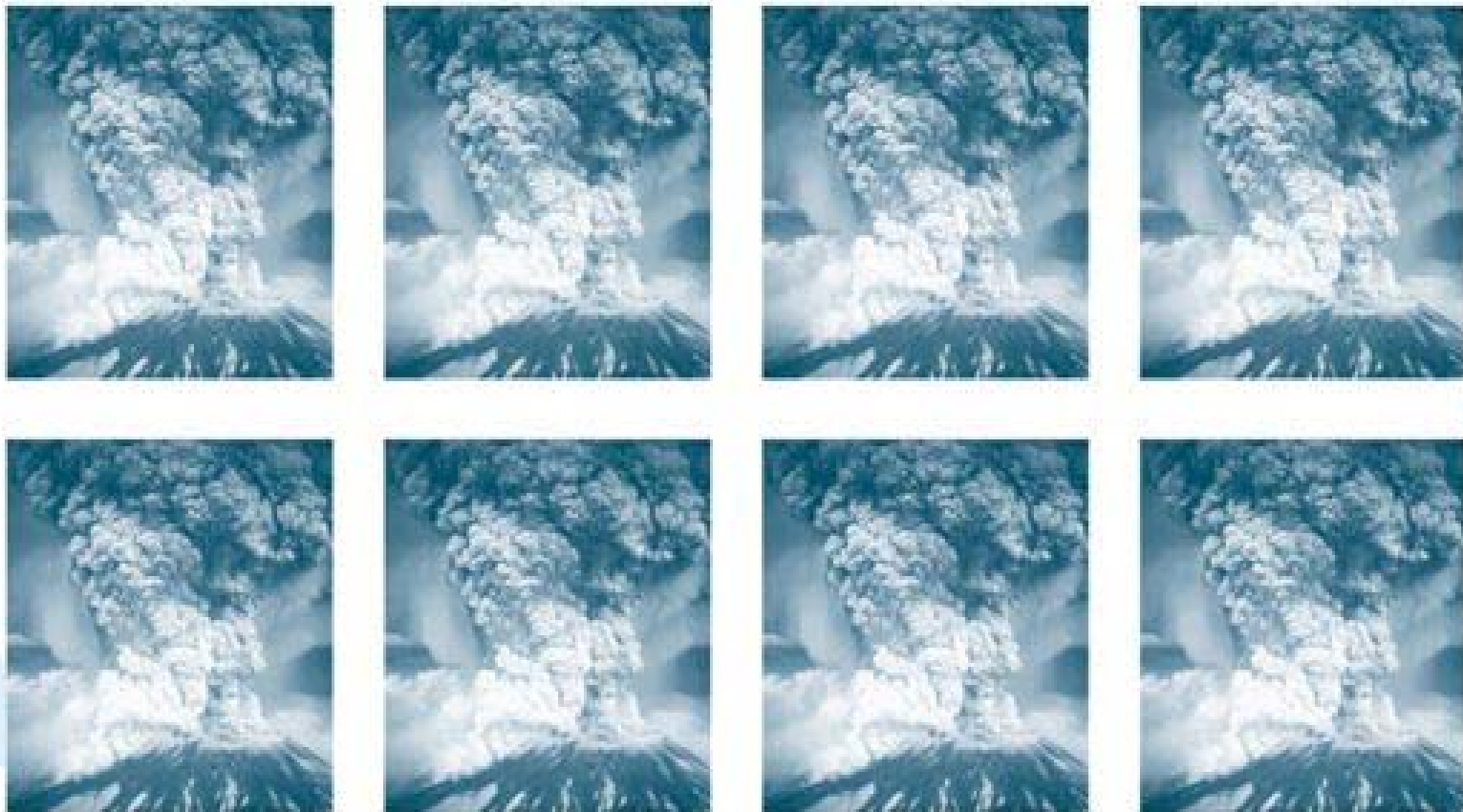




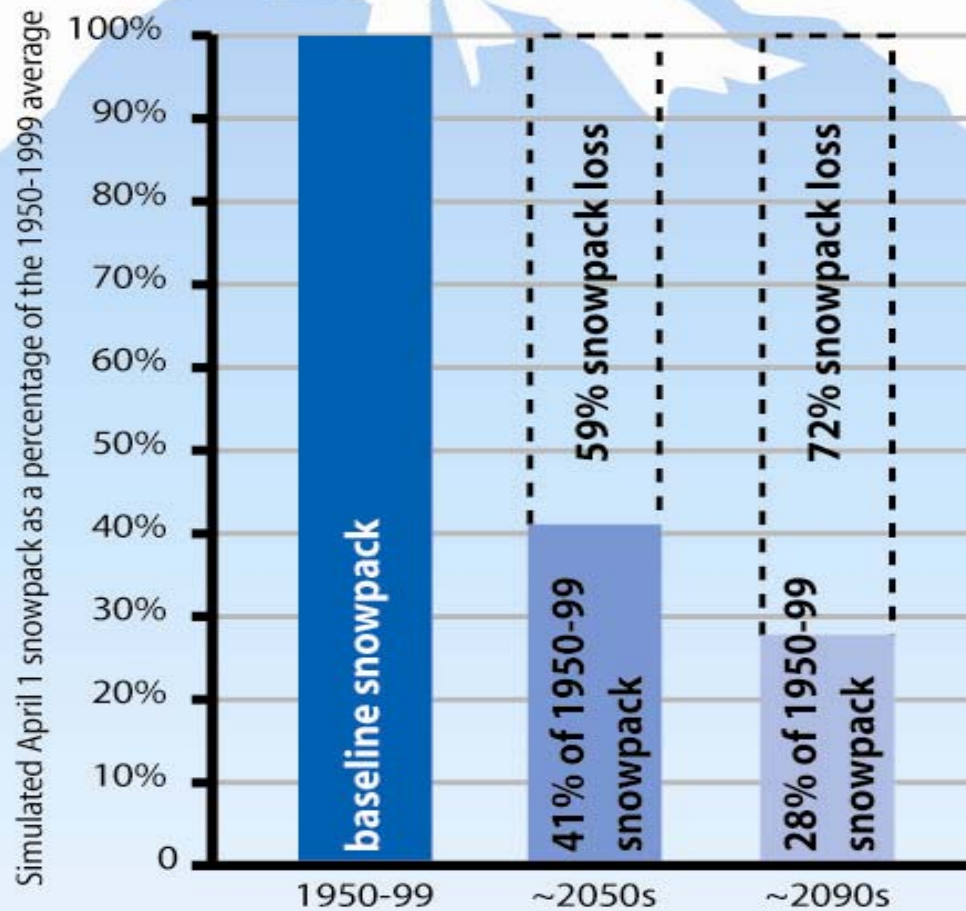


World-wide global warming emissions are equal to **EIGHT Mount St. Helen eruptions of carbon dioxide...EVERYDAY!**

In the Puget Sound region, transportation emissions are the number one culprit!



Projected Loss of Snowpack in the Cascade and Olympic Mountains from Global Warming



King County
Department of
Natural Resources and Parks

These estimates of projected snowpack loss are based on the results of the study by the Washington State Department of Ecology, "Projected Snowpack Losses in the Cascade and Olympic Mountains from Global Warming." The study estimates that by the year 2050, snowpack in the Cascade and Olympic Mountains will be reduced by 59% on average. By the year 2090, snowpack will be reduced by 72% on average. The study also estimates that snowpack loss will be greater in the Cascade Mountains than in the Olympic Mountains.

Although projections of snowpack loss are based on the results of the study by the Washington State Department of Ecology, "Projected Snowpack Losses in the Cascade and Olympic Mountains from Global Warming," the study also estimates that snowpack loss will be greater in the Cascade Mountains than in the Olympic Mountains.

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Some impacts are inevitable.

- Water Supply
- Salmon
- Forest
- Agriculture
- Stormwater, Flooding, Wastewater
- Public Health
- Hydropower
- Coastal



Types and %, GHGs in U.S.

Carbon Dioxide	84%
Methane	9%
Nitrous Oxide	5%
Other	2%



Global to Local GHG Emissions

Locations	(MTCO ₂ e)	Percent
World	27,000,000,000	100.0000%
United States	7,100,000,000	26.3000%
Washington	84,000,000	0.3100%
King County	23,000,000	0.0800%
KC Govt Ops	420,000	0.0015%



Climate Stabilization

- 80 percent reduction below current levels by 2050
- Some other targets
 - National enviro groups: 80% below 1990
 - Gov. Gregoire: 50% below 1990 (~= 70% below current)
 - Need to commit to binding near-term targets



King County GHG Emissions

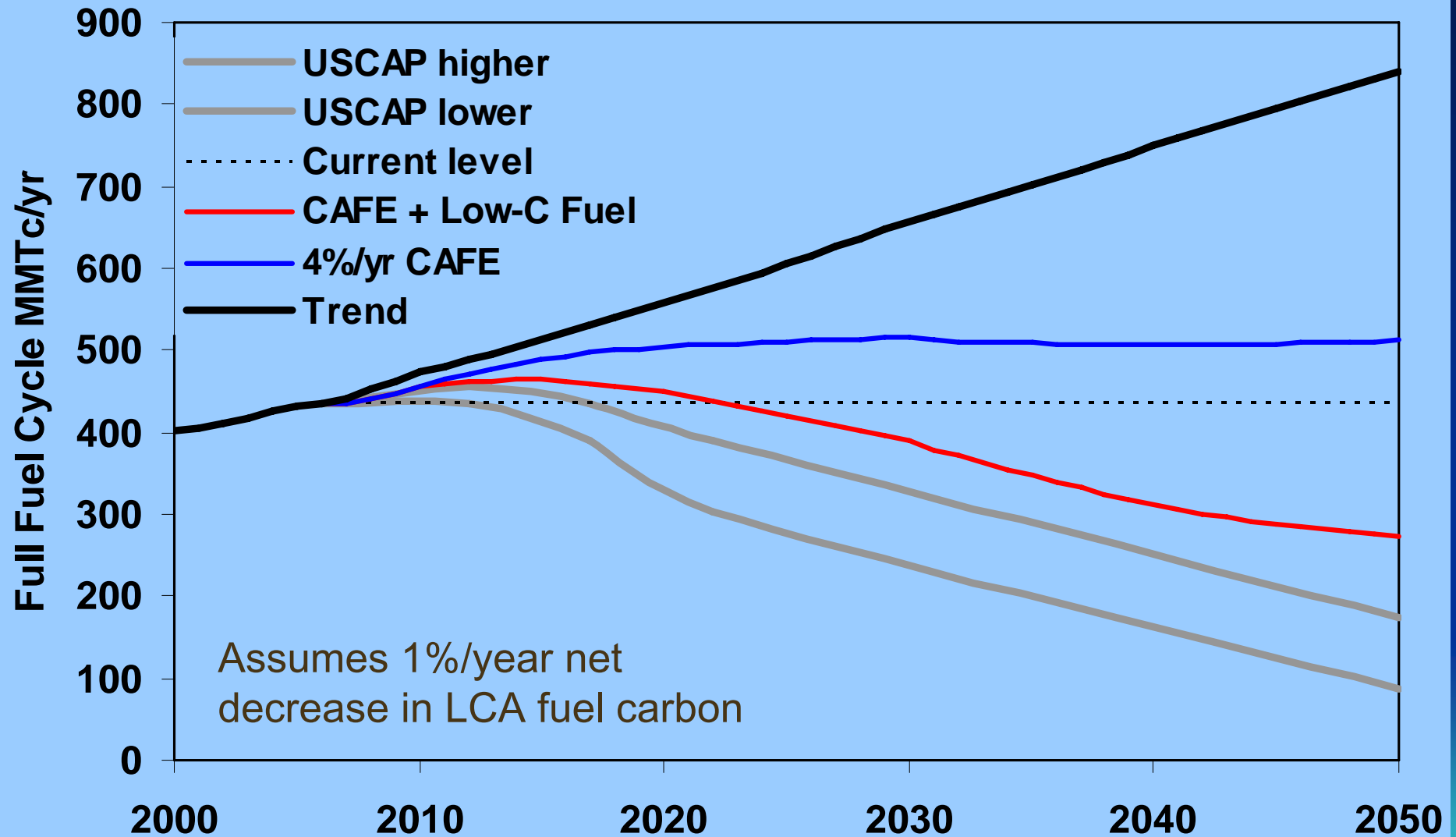
	Metric Tons	
• On-Road Transportation	11,500,000	50%
• Off-Road Transportation	2,300,000	10%
• Commercial / Residential	4,600,000	20%
• Industry or "Point Source"	2,300,000	10%
• Electricity	2,300,000	10%

2003 Total = 23,000,000

Stabilization = Zero Growth – 18,400,000 by 2050



Impacts of CAFE and other policies on auto sector GHG emissions



Lifecycle (cost) assessment

- **Upstream:** manufacturing and transport energy = GHG emissions = “Medium”
- **On-site:** construction energy = “Small”
- **Downstream:** Energy use for life of building = “Large”
- Comparison of an automobile (Upstream is $1/10^{\text{th}}$ of downstream)



Materials, energy in Lifecycle

- Upstream: cement, steel, recycled materials
- On-site: mostly diesel equipment so efficiency and biodiesel
- Downstream:
 - Electricity = 1.2 pounds / kWh
 - Natural gas = 120 pounds / 1000 cf
 - Water, waste, landscape, compost
- Location, location, location



Next Steps

- Death by 1000 cuts
- Must aggressively pursue local efforts:
 - Individual action matters, but only if
 - Tied to understanding of system change
 - Laying groundwork for future
- Stop making problem worse
- Binding commitment to near-term targets
- Vision for Stabilization

