

WHAT CITIES NEED TO KNOW ABOUT CEQA AND CLIMATE CHANGE

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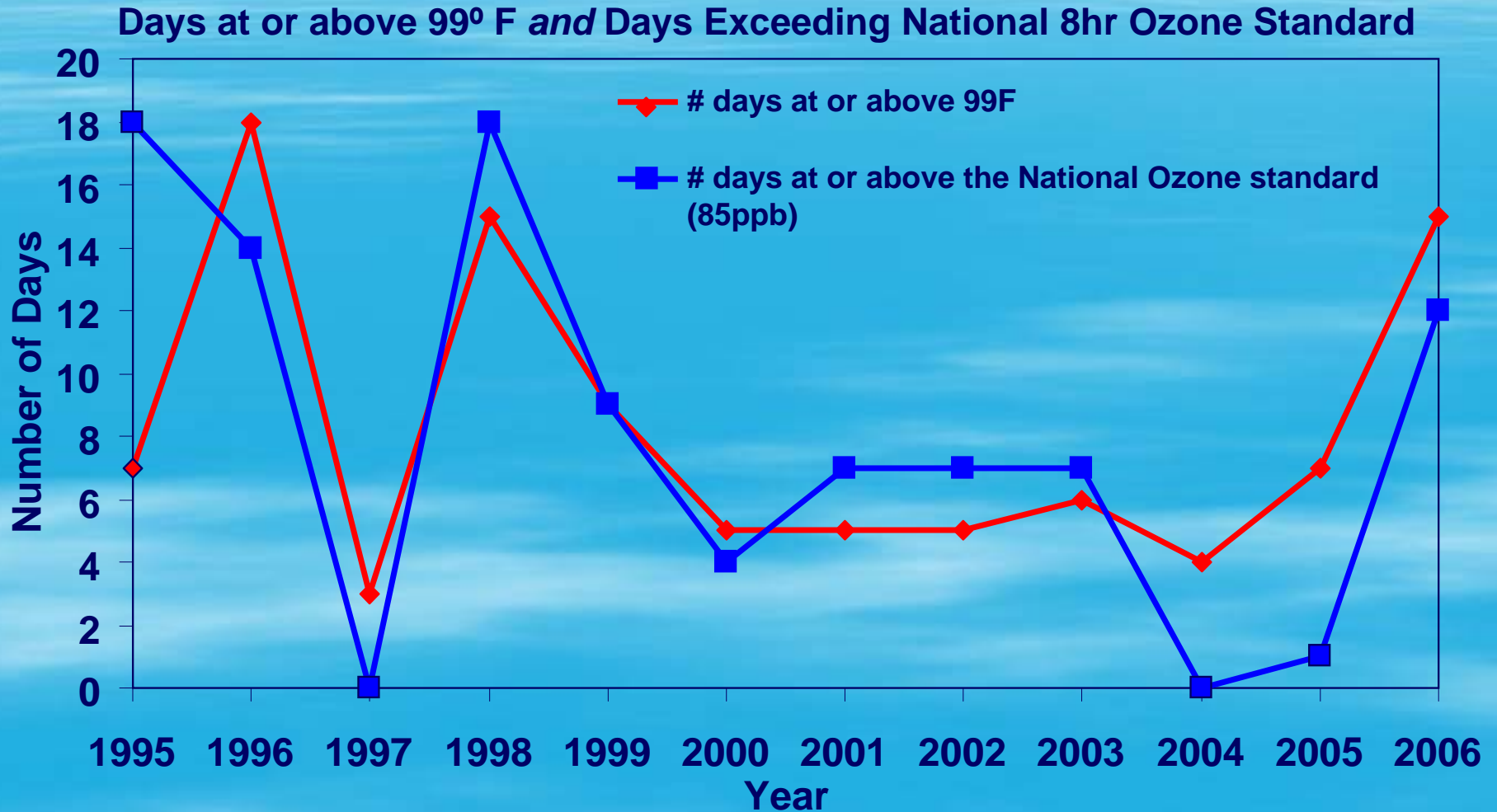
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CLIMATE CHANGE IS GLOBAL BUT IMPACTS IN CA ARE MORE SEVERE

Increasing GHG Concentrations Have
Disproportionate Impacts in CA on:

- Air Quality
- Health
- Water supply
- Agriculture

Bay Area Ozone and Maximum Temp Trends



MORE SEVERE HEALTH EFFECTS OF GLOBAL WARMING IN CA

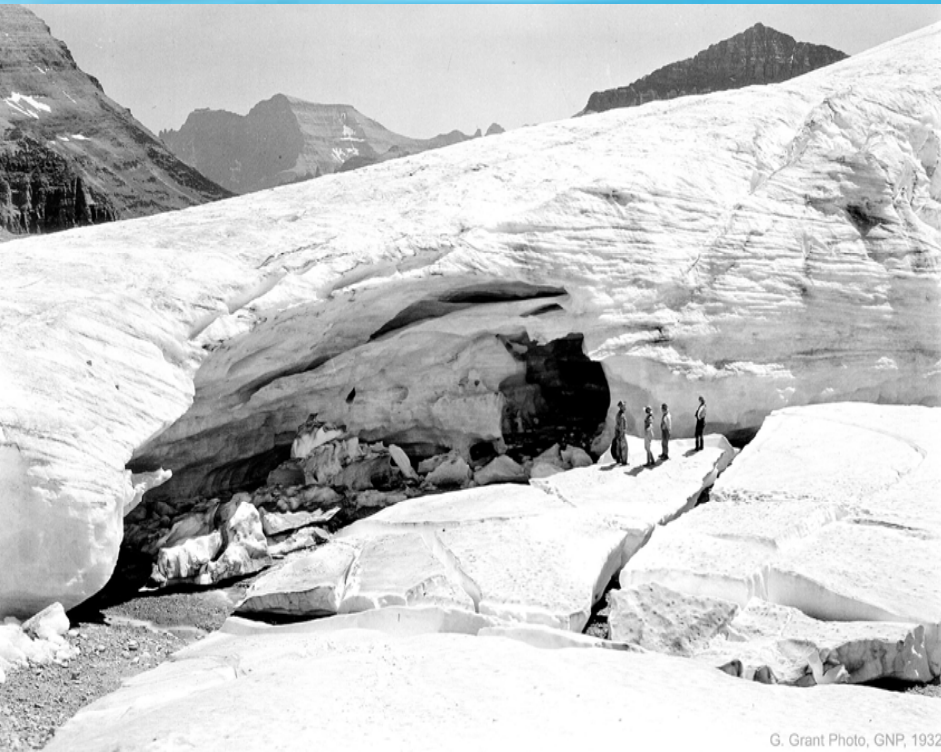
- CO2 increases temperature and water vapor, which increases ozone and particulates – the increases are the greatest where pollution is already high
- Annual US deaths from ozone and particulate pollution from CO2 are increased by ~ 1,000 and cancers by 20-30 for each 1 degree Celcius (1.8 F)
- CA experiences 30% of the increased deaths, but only has 12% of the population. Thus, CA experiences a 2.5 times greater increase in death rates from CO2, as compared to other parts of the country
- Locally-emitted CO2 stays in lower atmosphere for a time, causing higher CO2 in polluted cities than in surrounding areas; this increases local ozone pollution (Jacobson, Mark Z., On the causal link between carbon dioxide and air pollution mortality, *Geophysical Research Letters*, 35 L03809, 2008, http://www.fypower.org/pdf/stanford_CO2_Jacobson.pdf; Mark Jacobson, Testimony to Senate Committee on Energy Independence and Global Warming, April 9, 2008, <http://globalwarming.house.gov/pubs/pubs?id=0036>)
- Over 3 million people in CA have asthma
- Obesity increasing in CA: 38% in 1984 up to 57% in 2003
- More days of extreme heat increase risks of death from dehydration, heat stroke, heart attack and other heat-related illness (141 people died in CA during 2006 heat wave)

Loss of Snowpack



- Mt. Hood 1984 vs. 2002

Boulder Glacier, Glacier National Park -- 1932 vs. 1988



OTHER EFFECTS MORE SEVERE IN CA

Water Supply

- Snowpack provides half of CA's water supply
- Less snow; more winter rain
- Insufficient capacity to store winter rainwater

Agriculture

- CA is largest dairy state in US
- Dairy is largest ag business in CA (\$4.1 billion)
- Cows sensitive to higher temperatures; reduced productivity
- Death/carcass disposal

USE CEQA TO YOUR ADVANTAGE

- Strive to release full and adequate document from the start (see § 15020)
- Obtain complete and accurate data re project GHG emissions
- Use EIR, MND to highlight how project is not business as usual (BAU)
- Consider stating “green” objectives in EIR (see § 15124(b))
- For city/county general and specific plans: use integrated land use and transportation model to evaluate benefits of “smart growth” development scenarios and to compare alternatives (SACOG’s “PLACE3S” model available for other jurisdictions)
- Significance determination: CEQA and Climate Change, CAPCOA, January 2008, link at <http://www.capcoa.org>

GREEN BUILDING



- **All new residential construction will be zero net energy by 2020**
[PUC Decision 07-10-032 (10/18/07)]

TRAINING

- Certified Green Building Professional Training; Green Point Rater Training (Build It Green)
- LEED accreditation (US Green Building Council)
- Green Building Certificate Program, Sonoma State University, School of Extended Education (Available Online)
- Certified Energy Plans Examiner (CA Assoc. of Building Energy Consultants)
- Home Energy Rating System (HERS) certificate offered by:
 - CA Home Energy Efficiency Rating Services (CHEERS)
 - CA Building Performance Contractors Assoc.
 - CalCERTS (courses in northern and southern CA)

ORDINANCES

- Local Ordinances Exceeding Title 24 Energy Efficiency Standards
 - Public Resources Code 25402.1(h)(2) – CEC approves based on showing that local standards are cost-effective
 - Ten ordinances approved:
www.energy.ca.gov/title24/2005standards/ordinances_exceeding_2005_building_standards.html
- Other Green Building Ordinances (including Green Building “Checklist”)
 - Health and Safety Code 17958.7: city/county finding that modifications to building code are reasonably necessary because of local climatic, geological, or topographical conditions; local governments can and should make these findings
- Ordinance can streamline CEQA review of building energy use impacts

CONDITIONS OF APPROVAL TO REDUCE ENERGY USE

SMUD “Advantage” Home :

20–30% improvement over Title 24 standards for hot water heating, home heating & cooling

Typical Features:

- HVAC engineered to AC Contractors of America standards
- High efficiency AC Units [13.0 SEER (Seasonal Energy Efficiency Rating)]
- Thermostatic Expansion Valve on AC units
- Tight-sealed Air Distribution Duct System
- HVAC zone controls

SMUD SOLAR SMART HOME

23-42% improvement over Title 24, plus solar

<u>Measure</u>	<u>Base</u>	<u>SolarSmart New Homes</u>
Attic Insulation	R-38	R-38
Radiant Barrier	No	Yes
Wall Insulation	R-13	R-13 + 1" R-4.2 Foam
Quality Installation*	No	Yes
Low Air Infiltration*	No	Yes
Windows	Energy Star	Energy Star
FURN AFUE	0.80	0.90+
A/C SEER	13 (3.7 ton)	14 SEER/12 EER (3.1 ton)
ACCA Design*	No	Yes
Duct Testing*	No	Yes
Fluorescent Lighting	T-24	Yes
Solar PV	NA	2kW AC Solar System



*HERS verified upgrades

REDUCE HEAT ISLAND EFFECT



- More reflective surfaces (roofs and pavement) can significantly reduce air temperature (and also reduce energy use)
- (Lawrence Berkeley National Lab, Heat Island Group, <http://eetd.lbl.gov/HeatIsland/>)

REDUCE WATER USE

- Water-related energy use consumes 19% of state's electricity and 30% of its natural gas
- Largest single new supply available to meet growth in demand is water use efficiency
- (See, California's Water-Energy Relationship, CEC, Nov. 2005, CEC-700-2005-011-SF; CA Urban Water Conservation Council MOU Re Best Management Practices, www.cuwcc.com/memorandum.lasso; *From Watts to Water*, Santa Clara Valley Water District, 2007, link at www.valleywater.org/conservation/)

OFFSITE MITIGATION TO REDUCE EXISTING BUILDING ENERGY USE

- Most cost-effective opportunity to reduce GHG; absolutely necessary to reach required GHG levels
- New development: additional GHG emissions, even with all feasible measures to reduce energy use and driving
- Mitigate impact by retrofitting existing buildings – to increase energy efficiency and/or reduce water use
- Lompoc Ordinance [City Code 3306.1, amended by Resolution 4988(02)] – new development must provide water conservation retrofits to enough existing buildings to offset the new development's expected water consumption

ONSITE MITIGATION TO REDUCE DRIVING

- Shuttles to nearest transit stop
- Well-designed bicycle and pedestrian networks
- Adequate bicycle parking at retail and commercial uses
- Mix of uses (local shopping, restaurants, services)
- Maximize density of infill and residential development near transit stops
- Reduce parking requirements
- Resources:
 - U.S. EPA,,Nov. 2007, Measuring the Air Quality and Transportation Impacts of Infill Development, http://www.epa.gov/smartgrowth/impacts_infill.htm;
 - Victoria Transport Policy Institute, Energy Conservation and Emission Reduction Strategies, TDM Encyclopedia, <http://www.vtpi.org/tdm59.htm>;
 - FHWA, Multi-Pollutant Emissions Benefits of Transportation Strategies – Appendix A: List of Transportation Strategies, http://www.fhwa.dot.gov/environment/conformity/mpe_benefits/appenda.htm

OFFSITE MITIGATION TO REDUCE DRIVING

- Expand/improve the public transit system
- Safe Routes to School: implement programs to increase walking, biking and carpooling
- Expand school bus service
- Expand/improve bicycle and pedestrian networks

SET AN EXAMPLE

- Solar PV systems on government buildings, parking lots, wastewater treatment plants
- Retrocommissioning existing buildings; upgrades to save energy/money (LA County Internal Services Dept., for 13 buildings, achieved average savings of 40% natural gas and 20% electricity use)



SOME EMERGING CEQA ISSUES

- Aggressive mitigation of impacts on traffic potentially conflicts with GHG reduction goals
- Lower project density reduces GHG emissions and other impacts; but accommodating the additional development elsewhere may increase cumulative impacts