



# California's Climate Change Program

Presented to Oakland Board of Education  
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# Tonight's Presentation

- Climate Change Basics
- California's Policy Response – Assembly Bill 32 and Grid Neutral Schools
- Likely impacts for local governments and school districts
- How Oakland Unified is responding
- Recommendations for further action

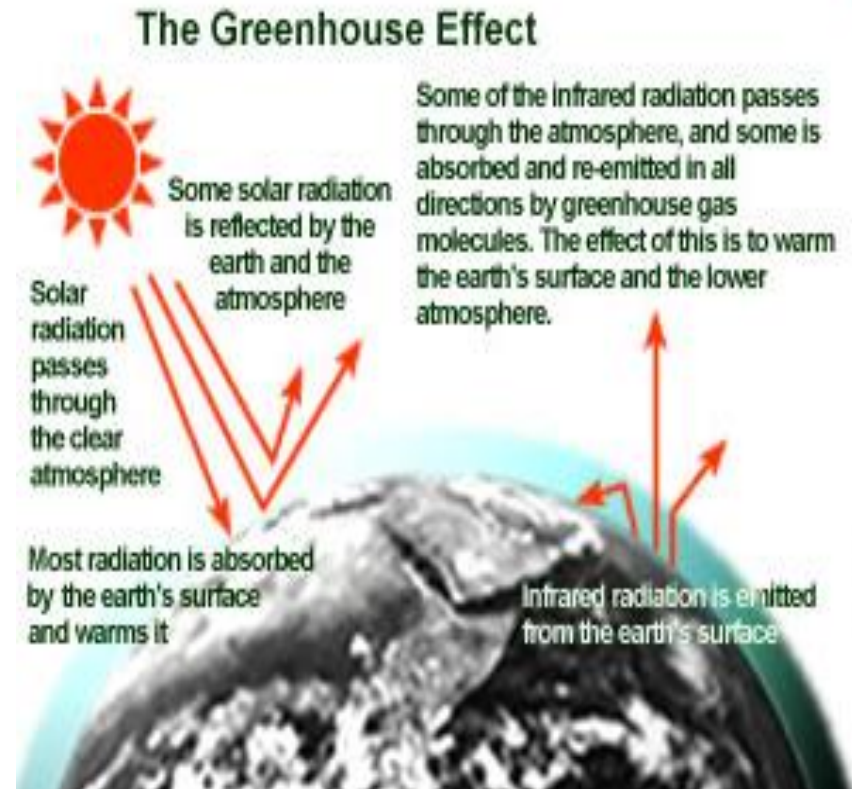
# What is Climate Change?

- Climate change is the phenomenon by which pollution is creating a “blanket,” trapping heat in our atmosphere and altering weather patterns globally and here in the U.S
- International teams of scientists have been studying climate change for over 20 years. And they have been calling for immediate action for 20 years.

High range	8 - 10.4° temperature increase statewide
Medium range	5.5 – 7.9° temperature increase
Low range	3 – 5.4° temperature increase

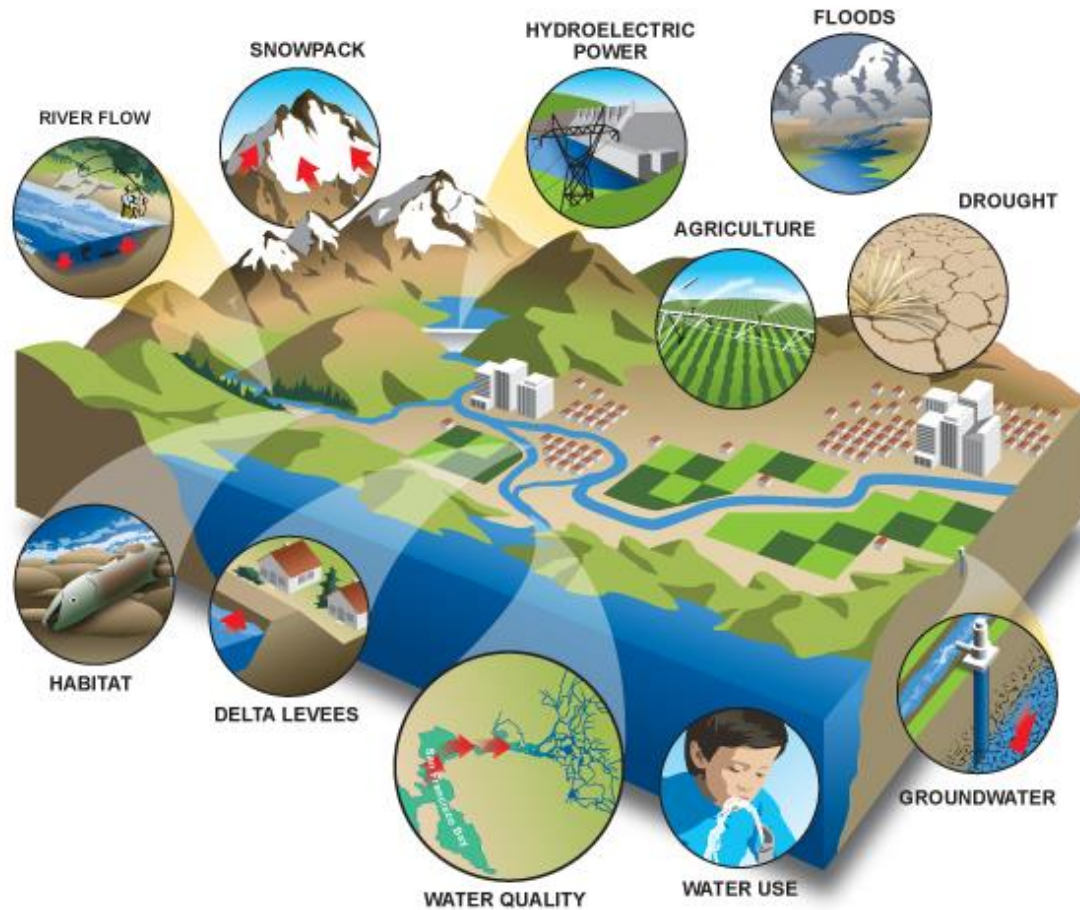
# The Science of Climate Change

- Greenhouse gases:
  - Water vapor
  - carbon dioxide (CO<sub>2</sub>),
  - methane (CH<sub>4</sub>),
  - nitrous oxide (N<sub>2</sub>O),
  - halogenated fluorocarbons (HCFCs) ,
  - ozone (O<sub>3</sub>),
  - perfluorinated carbons (PFCs), and
  - hydrofluorocarbons (HFCs).



# Impacts of Climate Change on California

Source: California Department of Water Resources



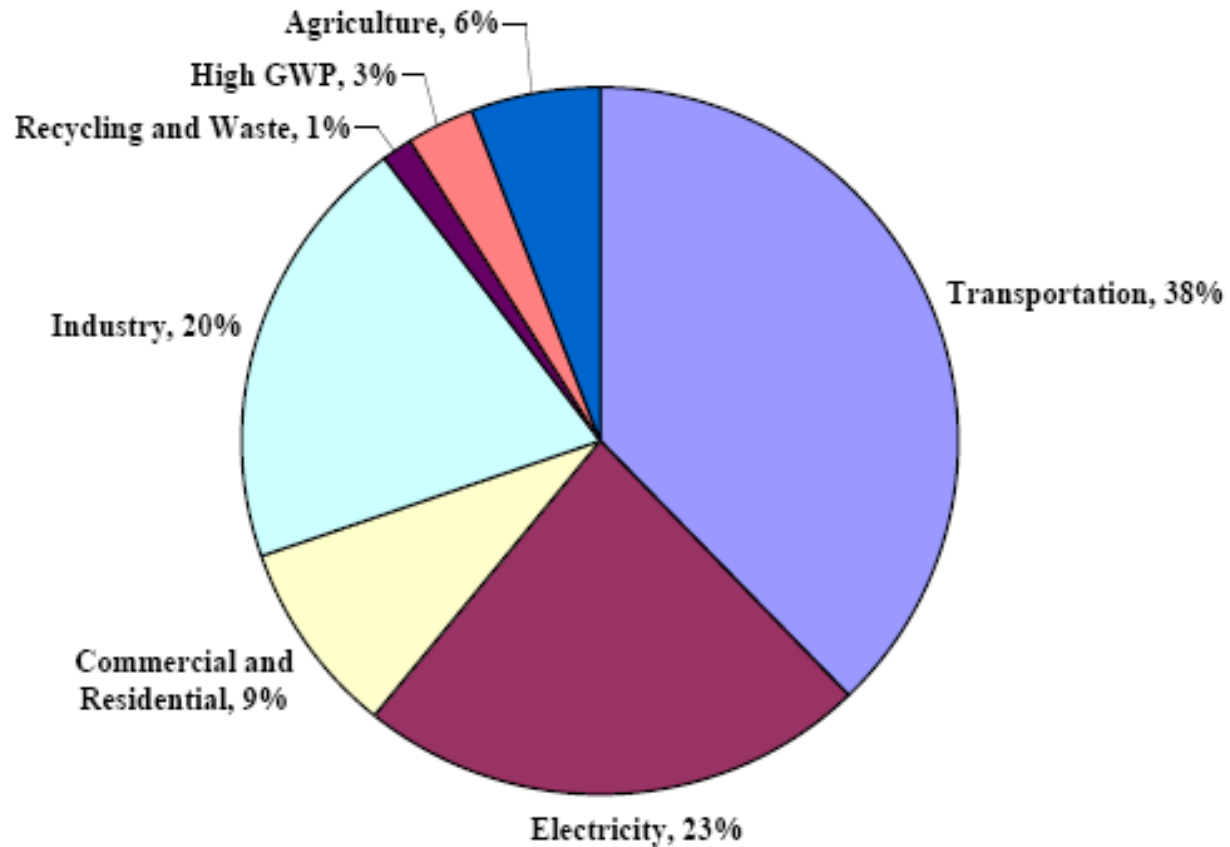
# Oakland Airport – 1.25 meter sea-level rise

Source\_ Architecture 2030



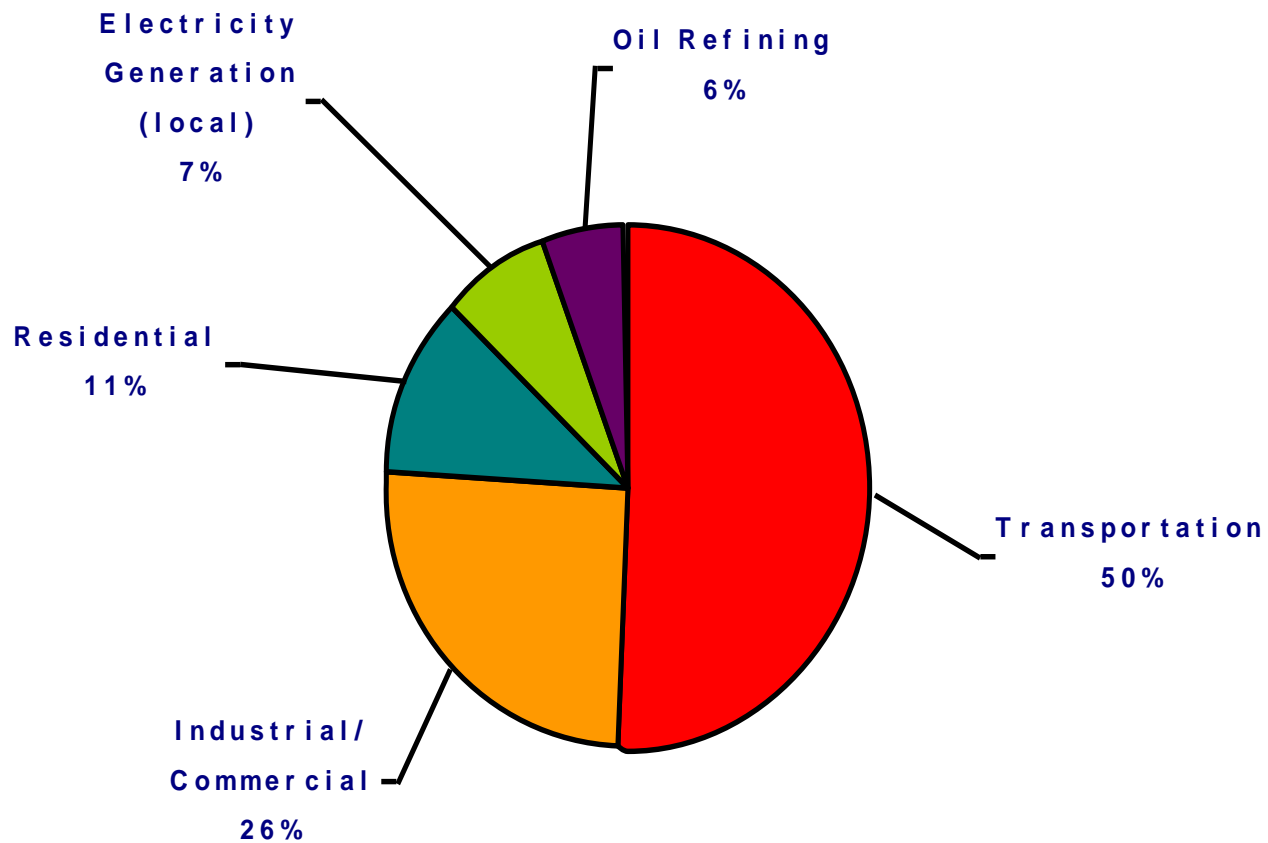
# California's Greenhouse Gas Emissions (2002 – 2004 average)

Source: California Air Resources Board, June 2008 Draft Scoping Plan



# Bay Area Greenhouse Gas Emissions

Source: Metropolitan Transportation Commission





# State Policy Response to Climate Change

- Legislature
  - Assembly Bill 32, Global Warming Solutions Act of 2006
    - **By 2010**, Reduce to 2000 Emission Levels
    - **By 2020**, Reduce to 1990 Emission Levels
    - **By 2050**, Reduce to 80% Below 1990 Levels
  - Many other accompanying bills
- Governor
  - Executive Orders on green buildings, biofuels and bioenergy, low carbon fuels, among others
  - Bilateral agreements with other states and provinces, regional leadership
  - Adoption of *NEW* CA State Green Building Code (mandatory in 2010)

# California Air Resources Board

- Lead agency for implementation
- AB 32 Draft Scoping Plan (June 2008) touches every sector of the economy. For example:
  - Starting 2010, all New & School Modernization Projects will be **REQUIRED** to meet CHPS standards in order to receive state (matching) funding
  - Starting 2010, all New Schools will be required to be “Zero Net Energy”
- Regional greenhouse gas reduction targets
- Ongoing coordination with other state and local agencies

# California Public Utilities Commission and California Energy Commission

- Energy Action Plan (2/2008)
  1. Energy Efficiency
  2. Renewables
  3. Clean fossil fuels
- Strategic Plan for Energy Efficiency (9/2008)
  - Zero net energy homes and commercial buildings
  - Codes and standards
- Utility energy efficiency programs
  - \$4 billion requested statewide for energy efficiency programs in 2009-2011
  - PG&E request for 2009-2011 is nearly \$2 billion

# Public Outreach and Education

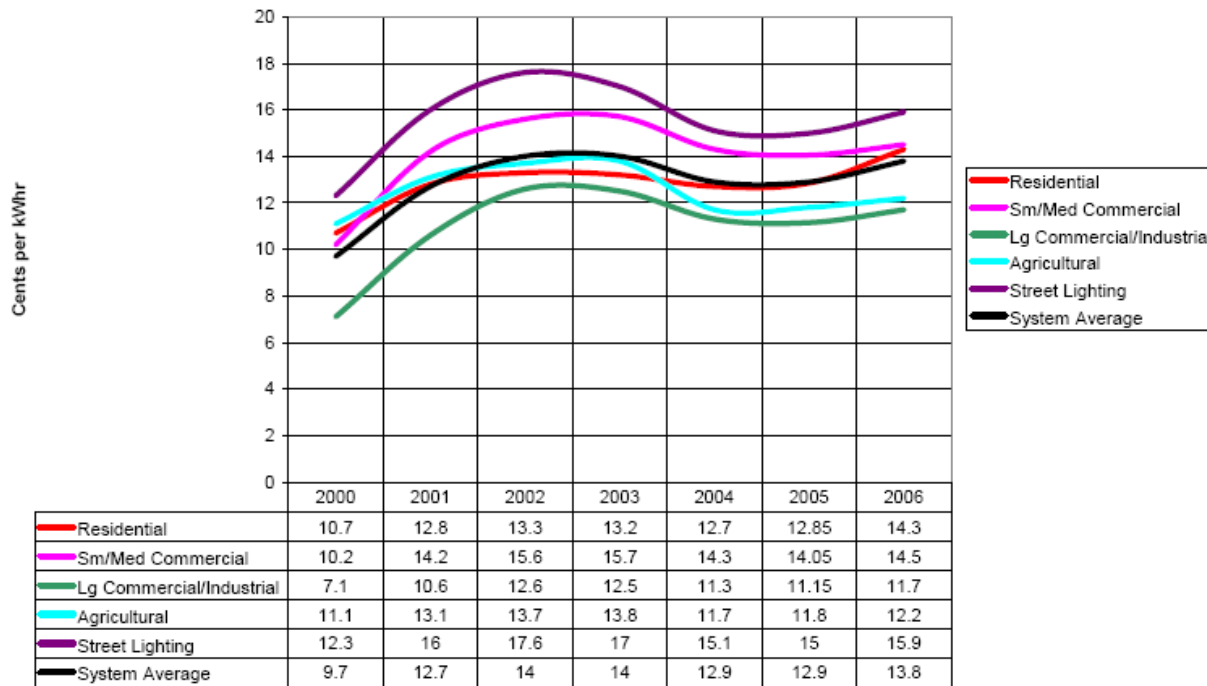
Reaching children through schools:

- By 2010, California will develop new climate change education components to the new K-12 model school curriculum.
- See [www.coolcalifornia.org](http://www.coolcalifornia.org) for additional public outreach programs
- School districts will have multiple opportunities for curriculum integration in all academic areas, particularly with DSA's Grid Neutral Schools Program, currently in development to help address AB 32, to be released Dec. 2008

# Energy Price Outlook: Electricity

Source: California Public Utilities Commission

Attachment 1, Chart 1  
Pacific Gas and Electric Company  
Annual Avg. Bundled Customer Rates (Cents/kWhr)

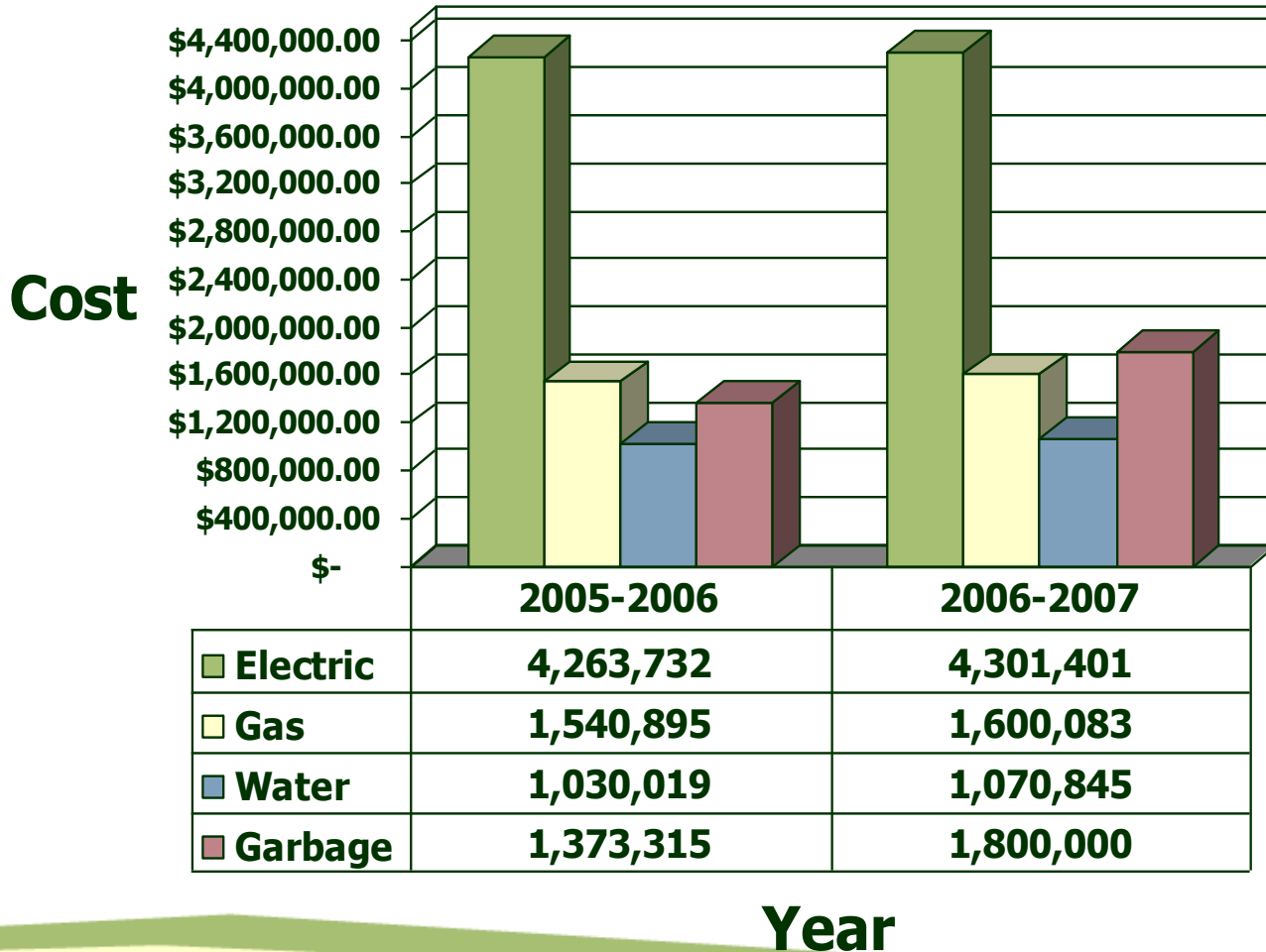


# Energy Price Outlook: Natural Gas

Source: California Public Utilities Commission

PACIFIC GAS AND ELECTRIC COMPANY						
AVERAGE ANNUAL NATURAL GAS RATES						
cents per therm						
	2000	2001	2002	2003	2004	2005
<b>TOTAL CORE END-USE RATES</b>						
Residential Non-CARE	81.98	101.27	68.39	95.28	94.59	126.89
Small Commercial	79.35	100.73	71.14	95.28	94.23	122.17
Large Commercial	59.16	80.53	53.53	76.95	75.32	98.80

# OUSD Utility Costs



# What OUSD is Doing

- Energy and water policy (May 2007)
  - Goal to reduce pollution by implementing the practices, measures, and procedures outlined in the Energy Plan.
  - The District will also be able to reduce its overall energy costs.
- Steps the District is taking
  - Integrated energy audits through PG&E
  - Energy Efficiency Building Retrofits
  - Energy Efficiency Trainings
  - Preventing and minimizing energy-related pollution and waste
  - Encouraging energy conservation, energy efficiency, and load management



# What OUSD is Doing

- Sustainability and the Design and Construction of High Performance Schools Resolution (May 2007) will:
  - Increase academic performance
  - Save \$750k to \$1m in utility costs annually w/retrofits
  - Foster better health and human productivity
  - Best practices in adoption of sustainable design
- First two High Performance Schools submissions made to DSA, incentive grants pending
- Four other Measure B projects on track for High Performance Schools ratings
- Draft Power Purchase Agreement RFP planning in anticipation of State Grid Neutral Schools Program
- Environmentally preferable purchasing

# What OUSD is Doing

## Energy Efficiency Audits

- We have completed energy efficiency audits on the schools identified as the highest energy users
- We have implemented the PG&E recommendations making these schools more energy efficient
- 13 new audits scheduled to begin in October of 2008 for sites with high energy usage

# What OUSD is Doing

## Recycling Program Improvements

- New Waste Management contract August 2008
- 50% diversion of waste to be recycled
- Organics, paper, bottles, and cans
- Up to \$500k annual savings
- Equals reduction of 20,000 tons of GHG annually

# Recommendations

- Revise coherent governance policy on facilities to reflect energy, green building policies
- Establish baseline greenhouse gas inventory
- Establish OUSD Sustainability Team:
  - Create strategic sustainability plan that:
    1. Sets Goals to address reduction from Baseline Inventory
    2. Develops strategies and Implementation Plan to meet Goals (include internal education/training & curriculum integration)
    3. Allows for implementation to be tracked and measured over time
    4. Includes reporting mechanism to monitor Success

# Recommendations

- Explore 4 Day, 10 hour work week for trade services
- Curriculum opportunities
  - Energy patrols, solar demonstration projects at school sites
  - Recycling quantification and math
  - Gardens and organic composting at school sites
  - Experiential education, for example Save the Bay's Canoes in Sloughs program
- Find voluntary ways now to further reduce carbon footprint
  - Transit passes/commuter checks for employees
  - Voluntary informal carpooling
  - Promotion of Safe Routes—biking and walking buses to schools
  - Food service

# Online Resources for Further Information

- [www.green.ca.gov](http://www.green.ca.gov)
- [www.climatechange.ca.gov/](http://www.climatechange.ca.gov/)
- [www.arb.ca.gov](http://www.arb.ca.gov) – Click 'climatechange'
- [www.architecture2030.org](http://www.architecture2030.org)
- [www.epa.gov/climatechange/kids](http://www.epa.gov/climatechange/kids)
- [www.stopwaste.org](http://www.stopwaste.org)
- [www.chps.net](http://www.chps.net)
- [www.coolcalifornia.org](http://www.coolcalifornia.org)