

Benicia Climate Action Plan



Welcome to the Community Workshop

Hosted by the City of Benicia
Planning Commission

Cal Poly Consulting Team
California Polytechnic State University

Workshop Objectives



- Provide information on climate action planning
- Share Cal Poly Consultants Progress
- Gather input on ideas and potential actions
- Discuss continuing participation

Tonight's Agenda



- Climate Change Background
- City Perspective
- Cal Poly Consultants Progress Report
- Discussion Groups
- Concluding Remarks

Climate Change Background



Scott Kaiser

Overview



Climate Change Basics

Climate Change

- Policy
- Science
- Impacts



Kyoto Protocol



- Finalized 1997
- Emission target: 5% below 1990 levels by 2012
- Inspiration to AB 32



AB 32



State Legislation

- AB 32: California Global Warming Solutions Act (2006)
 - 1990 levels by 2020
 - San Bernardino Settlement
 - Stockton Settlement



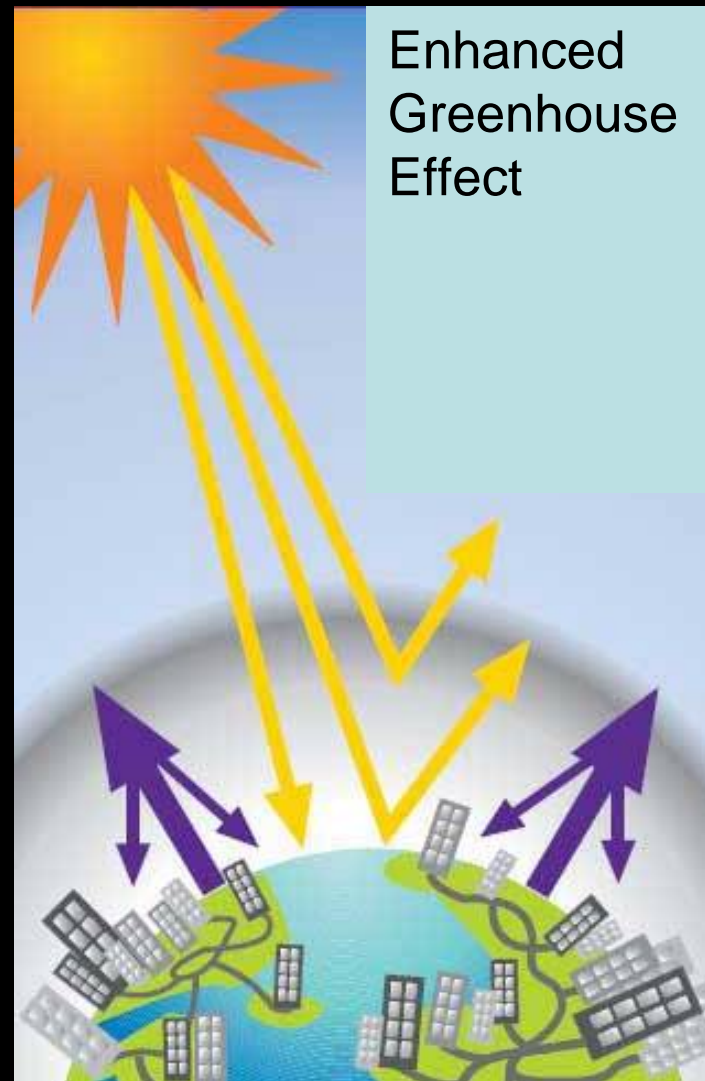
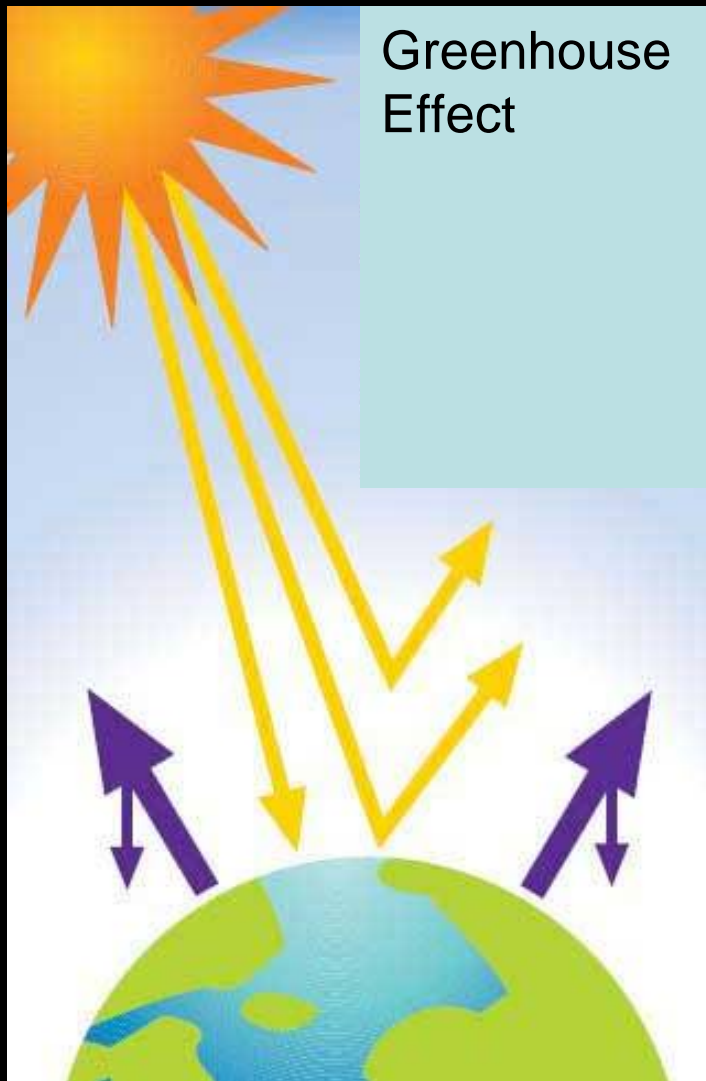
California Global Warming Solutions Act



State Legislation

- California Air Resources Board (CARB)
 - Determine 1990 emission levels
 - Develop and enforce emission regulations/reduction measures
 - Develop emission reporting system
 - Monitor emission levels

Climate Change



What are the primary GHGs?



- Carbon Dioxide (CO_2)
 - burning of oil, coal and gas, and deforestation
- Methane (CH_4)
 - decomposition in landfills & manure management, ruminant digestion, fossil fuel energy
- Nitrous Oxide (N_2O):
 - agricultural soil management, animal manure, sewage treatment, combustion of fossil fuel
- Fluorinated Gases
 - industrial processes



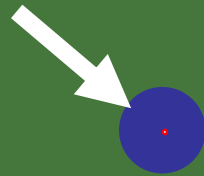
Carbon Dioxide Equivalence

Carbon Dioxide (CO₂): 1

Methane (CH₄): 21 times GW potential

Nitrous oxide (N₂O): 310 times the GW potential

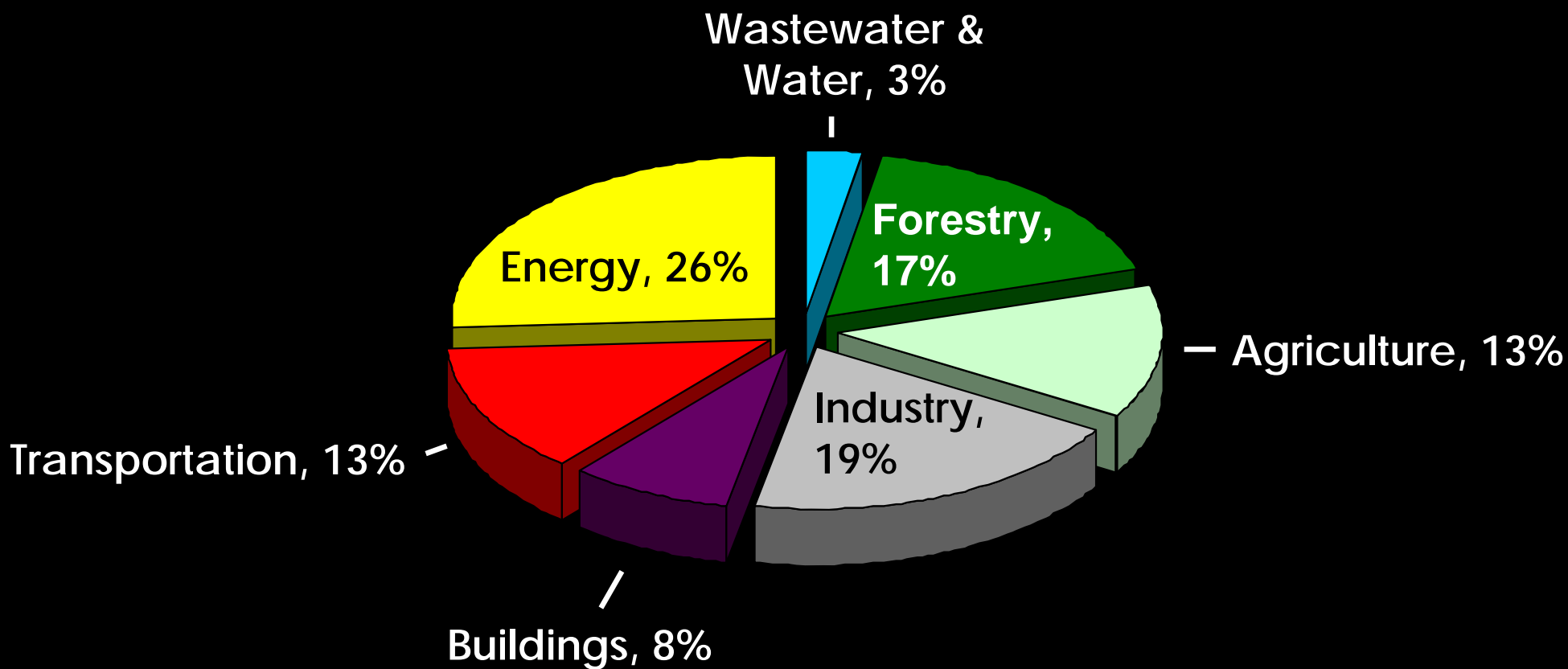
Fluorinated Gases: ~1300 times the GW potential



GHG Breakdown - Global



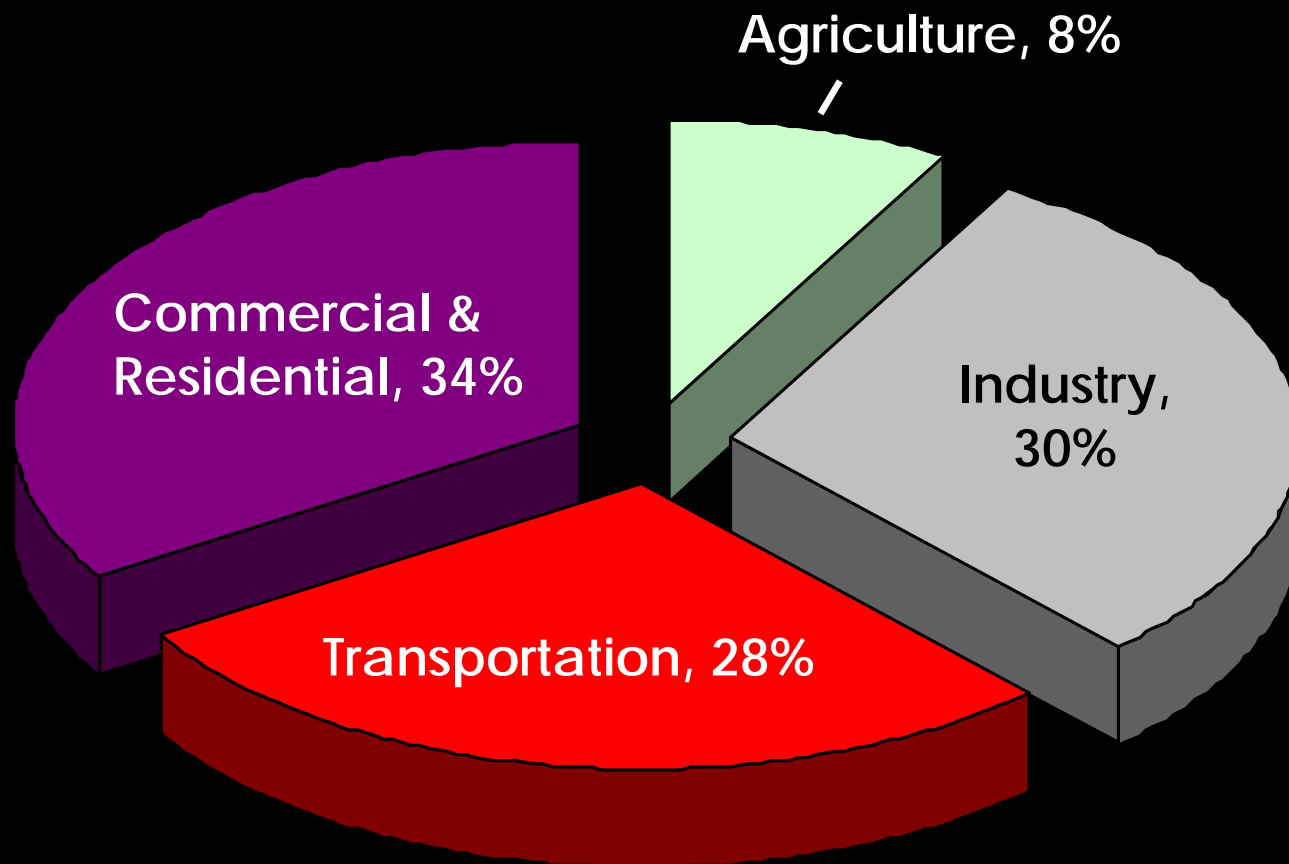
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GHG Breakdown - National



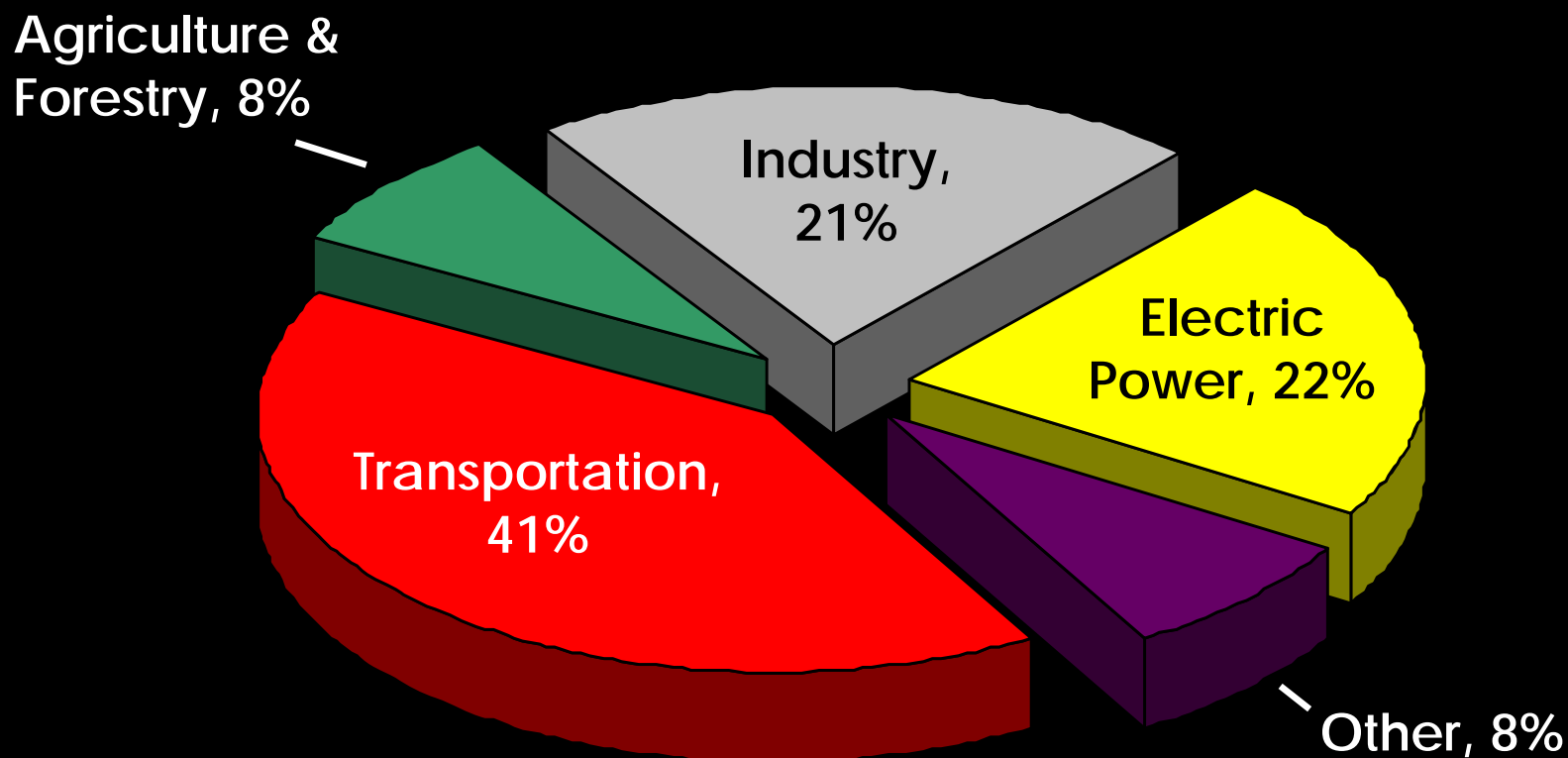
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GHG Breakdown - State



Source



Climate Risks to California



- Water scarcity: less snow and less summer rain
- Increased fire and pests
- More intense and frequent heat waves
- Agriculture: particularly for crops near upper range of their temperature tolerance or heavily water reliant



City Perspective



Mike Marcus
Assistant Planner, City of Benicia

Cal Poly Consultants Progress Report



Nancy Cole

Planning Process



Phase 1
BACKGROUND
September - December, 2008

Phase 2
DRAFT CLIMATE ACTION
PLAN
January - April, 2009

Planning Process



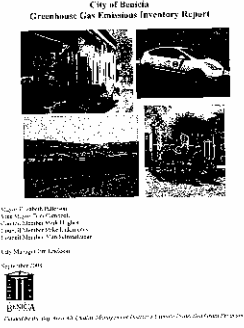
Phase 1
BACKGROUND
September - December, 2008

Phase 2
DRAFT CLIMATE ACTION
PLAN
January - April, 2009

PHASE 1 – Background



Groundwork



Kickoff Meeting


October 9, 2008



Research



High School Outreach



Public Workshop



Background Report



Work Progress



Research

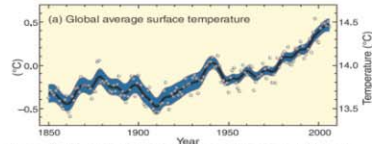
- Background on Climate Change
- Review of Climate Plans
- Selected Climate Policy Areas
- Benicia High School Workshop

Background on Climate Change

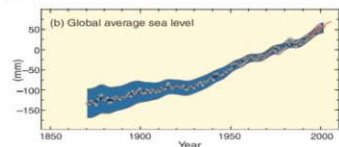


Climate Change Science, Impacts, and Policy

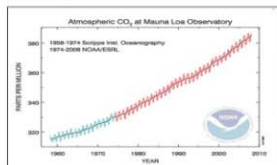
Climate Change Facts



Since 1900, the global average temperature has risen 0.74° C (IPCC 2007).



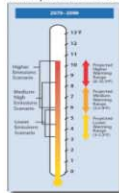
During the 20th Century, the global average sea level rose 1.7mm per year (IPCC 2007).



Since 1960, the levels of Carbon Dioxide in the atmosphere at Mauna Loa Observatory rose approximately 60ppm (Dr. Pieter Tans, NOAA/ESRL (www.esrl.noaa.gov/gmd/ccgg/trends/)).

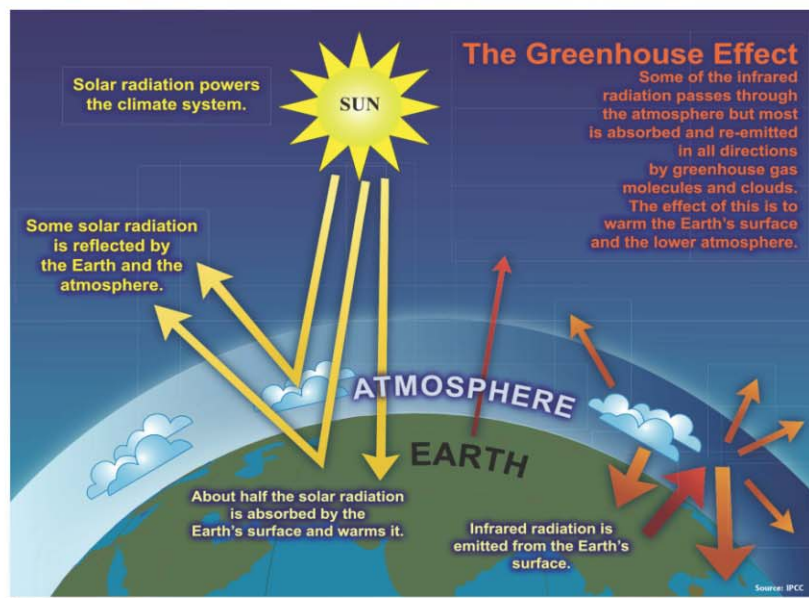
Potential Impacts to California

A temperature increase could potentially lead to the following impacts to California



- Loss of snowpack & water scarcity
- More intense and frequent heat waves
- Increase in number of wildfires larger than 500 acres
- Particular crops will no longer survive

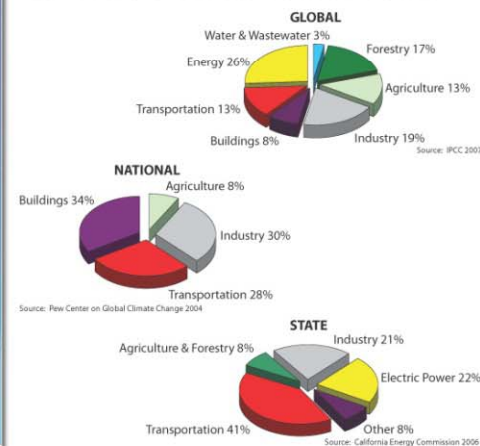
Source: California Climate Change Center 2006



Primary Greenhouse Gases (GHGs)

Carbon Dioxide (CO₂) Nitrous Oxide (N₂O)
Methane (CH₄) Flourinated Gases

Where do GHGs Come From?



Two Challenges for California



- Reduce GHG emissions
- Adapt to unavoidable climatic changes

Key Climate Change Policies

Kyoto Protocol

Kyoto Protocol is an international agreement adopted in 1997 to reduce global GHG emissions. The agreement sets a reduction target of 5% below 1990 emissions by 2012. Thirty-seven industrialized countries, including the European Union, have ratified the agreement.

California Global Warming Solutions Act (AB 32)

Passed in 2006, the California Global Warming Solutions Act requires the State of California to reduce its GHG emissions. AB 32 sets a reduction target of 1990 emissions levels by 2020. AB 32 applies to large stationary emitters of GHGs. However, the County of San Bernardino and City of Stockton settlements extended the reach of AB 32 to include California cities. California Air Resources Board (CARB) is the state agency responsible for implementation of AB 32.



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Review of Climate Plans



CLIMATE ACTION PLAN REVIEW: CHARACTERISTICS & THEMES

WORK PROGRAM

GROUNDWORK

- Review City of Benicia Greenhouse Gas Emissions Inventory Report
- Conduct climate action planning literature review
- Launch interactive website

KICKOFF MEETING

- Present work program to Planning Commission
- Set up public outreach booth at Farmer's Market
- Tour Benicia

ASSESS

- Audit City of Benicia policy documents
- Conduct emission sector policy audit
- Research 24 Climate Action Plans/Climate Policy Documents

HIGH SCHOOL OUTREACH

- Facilitate high school visioning workshop
- Present basic climate science and city perspectives to students

PUBLIC WORKSHOP

- Organize community-wide workshop to gather community input

DRAFT BACKGROUND REPORT

- Draft CAP built on community input and research efforts

CLIMATE POLICY DOCUMENTS

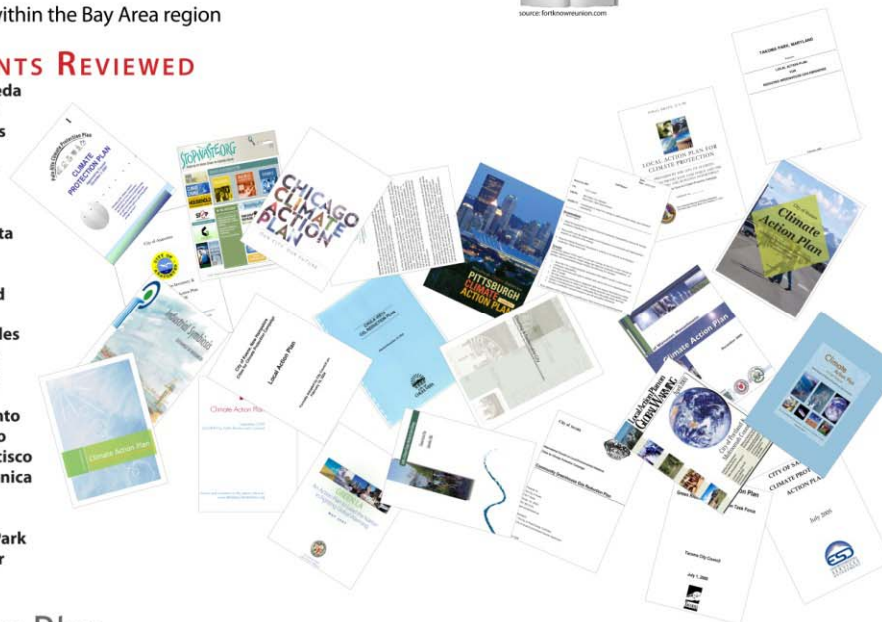
SELECTION CRITERIA

Each document met one or more of the following:

- 1 Similar population to Benicia (15,000 - 50,000)
- 2 A disproportionately large industrial sector (particularly a refinery or a port)
- 3 Innovative in climate strategy development (e.g. format, implementation, indicators, organization, strategies, etc.)
- 4 Located within the Bay Area region

DOCUMENTS REVIEWED

County of Alameda
 City of Alameda
 City of Anacortes
 City of Arcata
 City of Berkeley
 City of Boulder
 City of Chicago
 City of Chula Vista
 City of Davis
 City of Homer
 Kalundborg Stad
 City of Keene
 City of Los Angeles
 City of Palo Alto
 City of Pittsburg
 City of Portland
 City of Sacramento
 City of San Diego
 City of San Francisco
 City of Santa Monica
 City of Seattle
 City of Tacoma
 City of Takoma Park
 City of Worcester



MAJOR THEMES



Involve the public at the local and regional level in all phases of the climate action process.



Climate policy documents incorporate, reference, and build upon agency documents and plans.

CHARACTERISTICS OF STRATEGIES



Associate each emission reduction strategy with specific emission sectors, identified through the **emissions inventory**.



Identify **funding sources** for implementation and monitoring for each strategy. **Funding sources** include grants, rebates and tax incentives.



Designate a **responsible agency** or organization to oversee implementation.



Link action strategies to specific implementation **timetables** including progress indicators and monitoring strategies over time.



Identify **cost and cost recovery** of implementing strategies.



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Selected Climate Policy Areas



EXAMPLE POLICY SUMMARIES

Many cities have enacted policies that reduce greenhouse gas emissions to supplement or replace climate action plans. Because many emission reduction strategies are not housed within a climate action plan, an inventory of applicable policies was conducted focusing on common emission sectors. A selection of these policy areas are included below.

ALTERNATIVE ENERGY

Alternative energy refers to power derived from sources other than fossil fuels. Two sources of alternative energy that have become increasingly common are solar and wind power. Below are strategies that promote development of these alternatives.

1. Organize rebates for photovoltaic panels on a city-wide basis to provide incentives for solar system installation.

2. Provide property owners with the means to acquire financing through the City for the photovoltaic panels.

3. Establish wind districts through implementation of an ordinance that adds wind power to the list of conditional uses through the delegated district application. Conditional use permits simplify the acquisition of wind power as compared to instances where a variance must be used.

Berkeley FIRST is a photovoltaic panel financing program offered by the City of Berkeley. The program provides property owners with the means to acquire financing through the City's Sustainability Energy Financing District for the photovoltaic panels.

Kern County has established wind districts through implementation of an ordinance, positively contributing to the affordability and lessened time that it takes to build a small scale wind turbine in Kern County.



PORTS

Ports are some of the largest emissions producers of any industry. Below are strategies concerning emission reductions implemented by cities in California.

1. Alternative Marine Power (AMP) can also be used to reduce the emissions of berthing vessels. This method utilizes on-shore electricity produced from power plants, preferably alternative, rather than burning diesel.



2. Upgrading vessels and yard equipment engines to those which run more efficiently and conversion to alternative fuels such as biodiesel, compressed natural gas, or liquid natural gas.

3. Many ports are also beginning to require that harbor craft be powered by engines meeting EPA tier II or III emission standards. Newer engines with electronic fuel management systems can reduce fuel consumption by 20%.



WATER

Water conservation will be a major component of emissions reduction because of the energy involved for the production, treatment, and transportation.

1. Convert park and parkway sites to native vegetation, which uses as little as 20% of the water, no chemicals and requires few other resources for maintenance



2. Require a retrofitting process for indoor fixtures to meet current efficiency standards and leak repair for all existing single family and multifamily homes at the time of purchase.

3. Encourage harvesting, collection, and use of rainwater from residential and commercial roof surfaces for on-site landscape irrigation and domestic uses. Rainwater collection should not reduce runoff that would occur naturally before development occurred on the site.



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Benicia High School Workshop



Benicia High School Workshop, November 3, 2008

DESCRIPTION :

Four members of the Cal Poly Consulting Team, led by Prof. Dr. Adrienne Greve, and Mike Marcus, Assistant Planner for the City of Benicia, conducted a workshop for students at Benicia High School. Dr. Greve presented background climate change science and policies. Mike Marcus explained the Benicia Emissions Inventory Report and the steps of developing a Climate Action Plan for the City of Benicia. The Consulting Team facilitated the workshop to start students thinking about what they can do and how climate change could affect their lives. The students were presented with a series of scenarios and asked to brainstorm ways in which they would handle them.

SCENARIO 1 :

Describe how you see yourself living in 20-30 years?

Ideas included:

- Energy efficient homes
- Live in a location that allows walking to work
- Sustainability and multicultural education available to kids

SCENARIO 2 :

What if the cost of electricity skyrocketed?

Ideas included:

- Energy efficient light bulbs
- Rechargeable batteries
- Solar panels
- Updated insulation on older homes

SCENARIO 3 :

What if there was no longer trash service available?

Ideas included:

- Composting
- Improved recycling program
- Reduced packaging for food
- Business incentives for reducing waste

SCENARIO 4 :

What if you no longer had a personal vehicle?

Ideas included:

- Carpool
- Improved public transportation
- Ferry and/or water taxi
- Walkable neighborhoods



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Workshop Discussion Groups



Rob Hananouchi

Discussion Groups



- Introduction
- Transportation
- Buildings
- Water & Waste
- Summary

Transportation



- 17.6% of Community Emissions¹
- Emissions directly related to:
 - Mode (Car, Bus, Bike, Walk)
 - Distance (How far?)
 - Efficiency
 - Prius or Hummer, alone or carpool
 - Frequency (How often?)
- How can Benicia address these issues?

¹- Does not include Valero Refinery and AMCO Port

Buildings



- 81.0% of Community Emissions¹
- Major sources for emissions:
 - Energy Efficiency
 - Appliances
 - Heating and Cooling
 - Construction
 - Type
 - House vs. Apartment
- How can Benicia address these issues?

¹- Does not include Valero Refinery and AMCO Port

Water & Waste



- 2.4% of Community Emissions¹
- Major sources for emissions:
 - Landscaping
 - In-house water use
 - Waste transport and disposal
- How can Benicia reduce water use and waste production?

¹- Does not include Valero Refinery and AMCO Port

Additional Topics



- Any additional topic you want to discuss that has not been addressed
- Summary of Group Discussions

Concluding Remarks



- Final Thoughts or Comments
- Comment Boards and Cards
- Preference Activity
 - Green dots - ideas you are most likely to support
 - Red dots - ideas you least likely to support
- Questions
- www.BeniciaClimateActionPlan.com

Thank You & Good Night!



*Benicia Climate Action Plan
Community Workshop*

City of Benicia
Planning Commission

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