

SECTION 2: INTRODUCTION AND PURPOSE

The Climate Action Plan is the City's primary strategy for ensuring that the buildout of the General Plan 2030 will not conflict with the implementation of Assembly Bill 32 – the Global Warming Solutions Act of 2006 and its goal of reducing California's greenhouse gas emissions to 1990 levels by the year 2020. The Climate Action Plan (CAP) provides strategies and implementation actions that will reduce community related and City operations-related greenhouse gas emissions by amounts that are consistent with AB 32 goals. The CAP is a companion document to the General Plan 2030 and implements the General Plan's greenhouse gas reduction policies.

This section provides a discussion of the environmental and regulatory context and the intended purpose and function of the CAP.

2.1 - City of San Ramon

The City of San Ramon ("City") is located in Contra Costa County within the Bay Area Air Basin and is bordered by the Town of Danville, the City of Dublin, and unincorporated lands in Contra Costa and Alameda counties, as shown in Figure 1 and Figure 2.

The population of the City of San Ramon has grown significantly since incorporation in 1983. The City's population more than doubled in the 25 years between 1984 and 2009, growing at a compound annual growth rate of 4.1 percent. In 2008, the planning area population was estimated at approximately 66,413 and is projected to increase to approximately 92,000 in 2030. The Dougherty Valley is expected to absorb the largest amount of growth. The City also expects significant growth in infill and redevelopment areas.

Bay Area Air Quality Management District

The City of San Ramon is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The BAAQMD's jurisdiction includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, and the southern portions of Solano and Sonoma counties. The BAAQMD's responsibilities in improving air quality in the region include preparing plans for attaining and maintaining air quality standards, adopting and enforcing rules and regulations, issuing permits for stationary sources of air pollutants, inspecting stationary sources and responding to citizen complaints, monitoring air quality and meteorological conditions, awarding grants to reduce mobile emissions, implementing public outreach campaigns, and assisting local governments in addressing climate change.

The City's Role in Reducing Emissions

The City's focus is on emission sources within its regulatory authority, which are mainly related to land use and the local transportation system. To some extent, the City can influence activities that provide greenhouse gas reductions such as water conservation and solid waste diversion and recycling. The City can require feasible mitigation measures for new projects as a Lead Agency under the California Environmental Quality Act (CEQA).

2.2 - Purpose

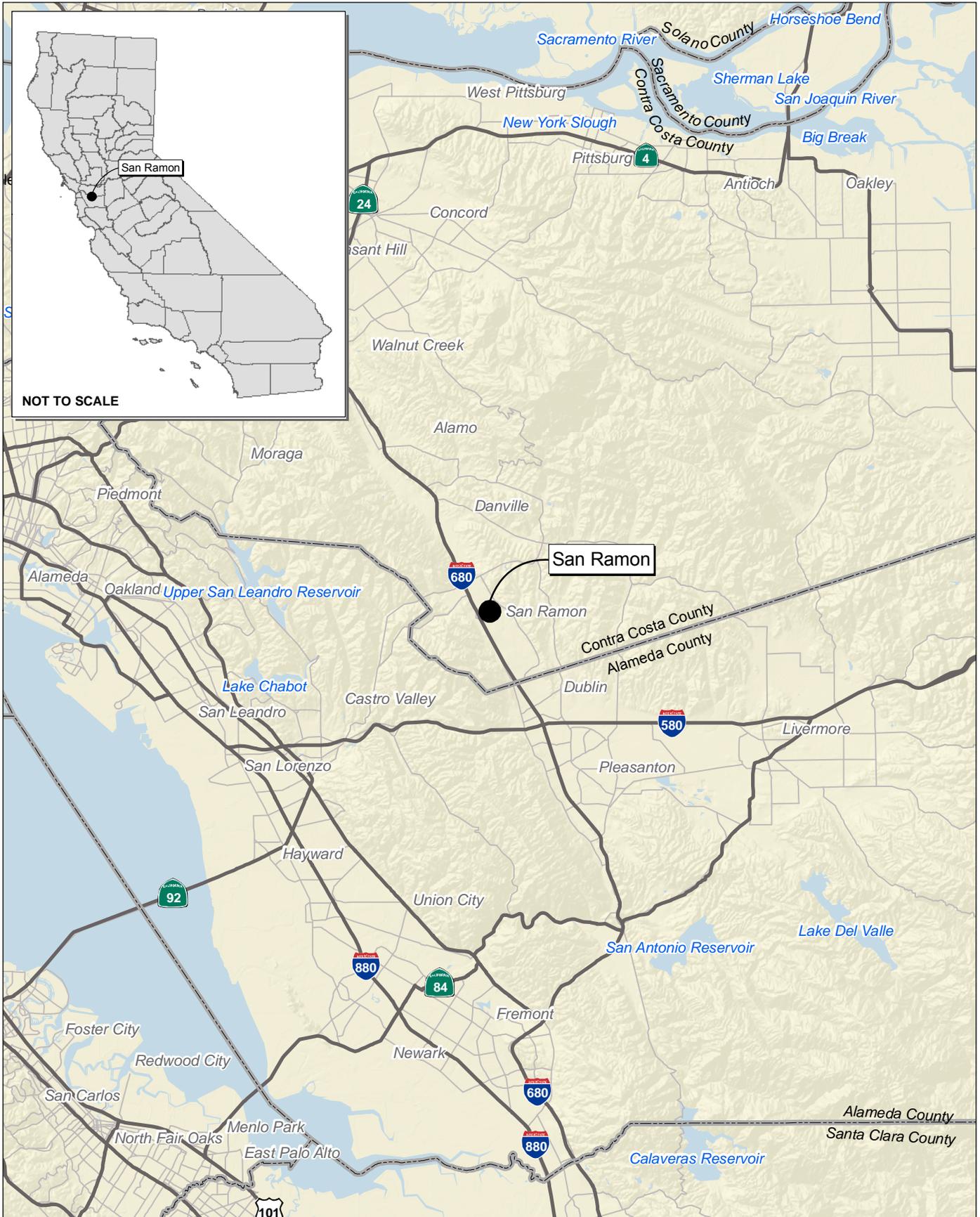
This Climate Action Plan (CAP) has been designed to support these primary functions:

- Outline a course of action for the City government and the community of San Ramon to reduce greenhouse gas emissions 15 percent below 2008 levels by the year 2020 and adapt to effects of climate change
- Provide clear guidance to City staff regarding when and how to implement key provisions of the CAP.

The CAP addresses both City emissions (such as emissions from City vehicles) and community emissions (such as emissions from the electricity generated to power residences within the City). The CAP is a companion to the General Plan 2030 that builds on the General Plan's framework with more specific actions that will be applied to achieve emission reduction targets consistent with California legislation. The terms Climate Action Plan and Greenhouse Gas Reduction Plan are often used interchangeably. Climate Action Plan (abbreviated as CAP) is used for this document.

The CAP follows a series of guiding principles to ensure that it is consistent with the City's values, objectives, and economy.

- The CAP will focus on strategies that meet multiple City objectives and enhance the quality of life and well-being of City residents.
- CAP strategies that provide an economic return will receive a higher priority than strategies that increase costs for the City, businesses, or residents.
- The CAP will not duplicate strategies and programs that are better handled by other agencies.
- The CAP recognizes that federal, state, and other agency requirements set for local government regarding greenhouse gas reductions and climate change are evolving, so strategies and targets must be adaptable to changing conditions.
- CAP implementation and monitoring will use existing data collection and reporting systems to achieve the maximum technologically feasible and cost-effective reduction to greenhouse gases.



Source: Census 2000 Data, The CaSIL, MBA GIS 2010.

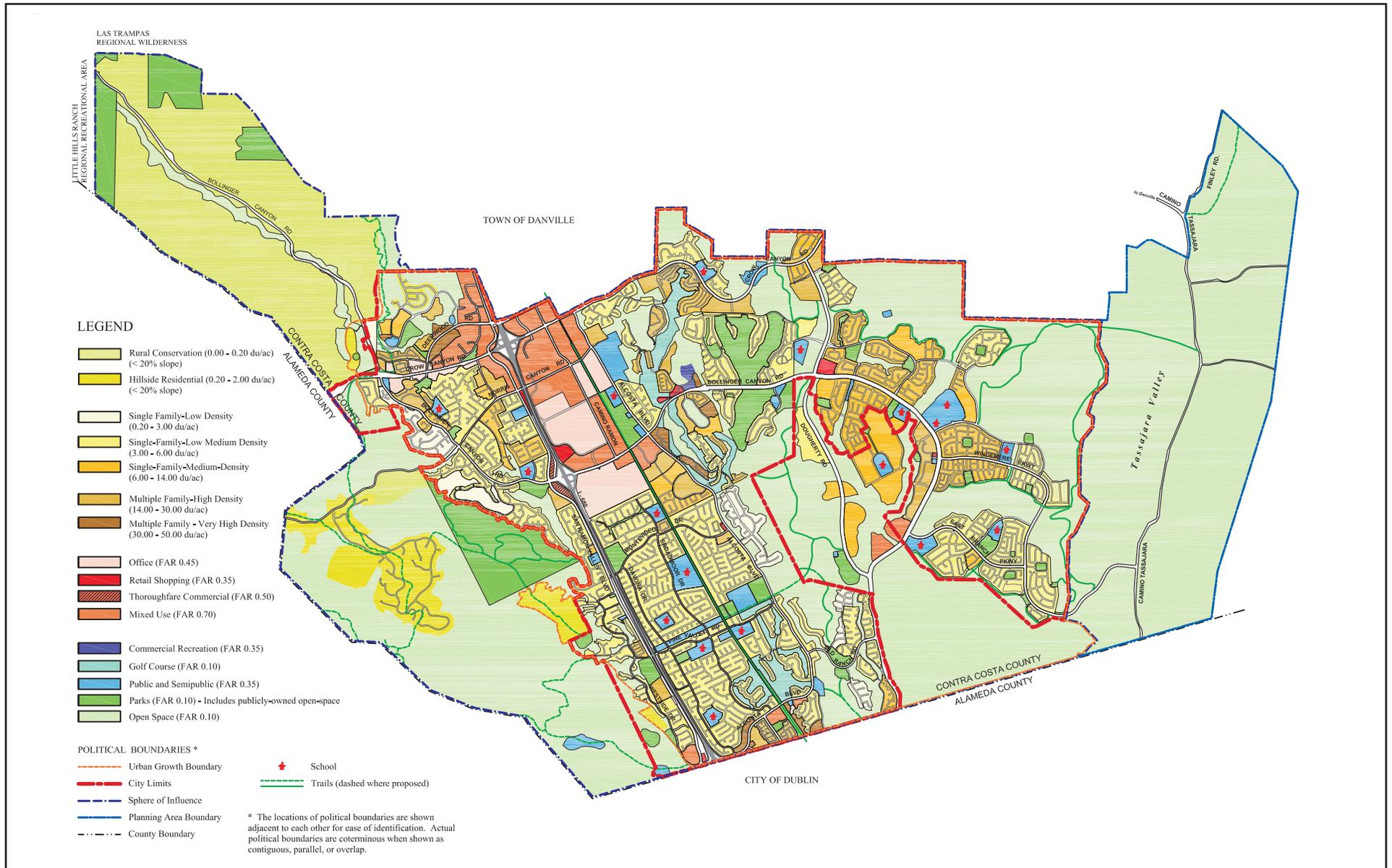


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Figure 1
Regional Location Map



Source: San Ramon General Plan 2030, January 2011.



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Figure 2
Proposed General Plan Land Use Map

Qualified Greenhouse Gas Reduction Strategy

This CAP meets the requirements of a “qualified” Greenhouse Gas Reduction Strategy, according to the guidance in the BAAQMD Air Quality Guidelines adopted in June 2010 and comments received on the CAP in a BAAQMD letter dated July 6, 2011. The BAAQMD Air Quality Guidelines indicate that a project under CEQA would result in a less than significant impact regarding greenhouse gases if it complies with a qualified Greenhouse Gas Reduction Strategy, emits less than 1,100 metric tons of carbon dioxide equivalents (MTCO₂e) per year, or emits less than 4.6 MTCO₂e per service population per year (includes residents and employees).

This CAP incorporates all required components and elements identified for a “qualified Greenhouse Gas Reduction Strategy” as described in the BAAQMD Air Quality Guidelines, which include:

- A greenhouse gas inventory for current year and forecast for 2020 (and for 1990 if the reduction goal is based on 1990 emission levels).
- An adopted Greenhouse Gas Reduction Goal for 2020 for the jurisdiction from all sources (existing and future) which is at least one of the following: 1990 emission levels, 15 percent below 2008 emission levels, or a plan efficiency of 6.6 metric tons of carbon dioxide equivalents per service population per year. The service population approach is based on the community emissions divided by the sum of the population and employment in the City, resulting in no greater than 6.6 MTCO₂e per service population per year. For San Ramon, a reduction target based on 15 percent below 2008 is more stringent, so the CAP demonstrates compliance with both approaches. Another target approach that uses a 26.2-percent reduction below 2020 business as usual forecasts to demonstrate consistency with CARB Scoping Plan targets was not included in the final BAAQMD Guidelines, but is included here for comparison purposes.
- Identification of feasible reduction measures to reduce emissions for 2020 to the identified target.
- Application of relevant reduction measures included in the AB 32/CARB Climate Change Scoping Plan that are within the jurisdiction of the local land use authority (such as building energy efficiency, etc.).
- Quantification of the reduction effectiveness of each of the feasible measures identified including disclosure of calculation method and assumptions.
- Identification of implementation steps and financing mechanisms to achieve the identified goal by 2020.
- Procedures for monitoring and updating the greenhouse gas inventory and reduction measures at least twice before 2020 or at least every five years.

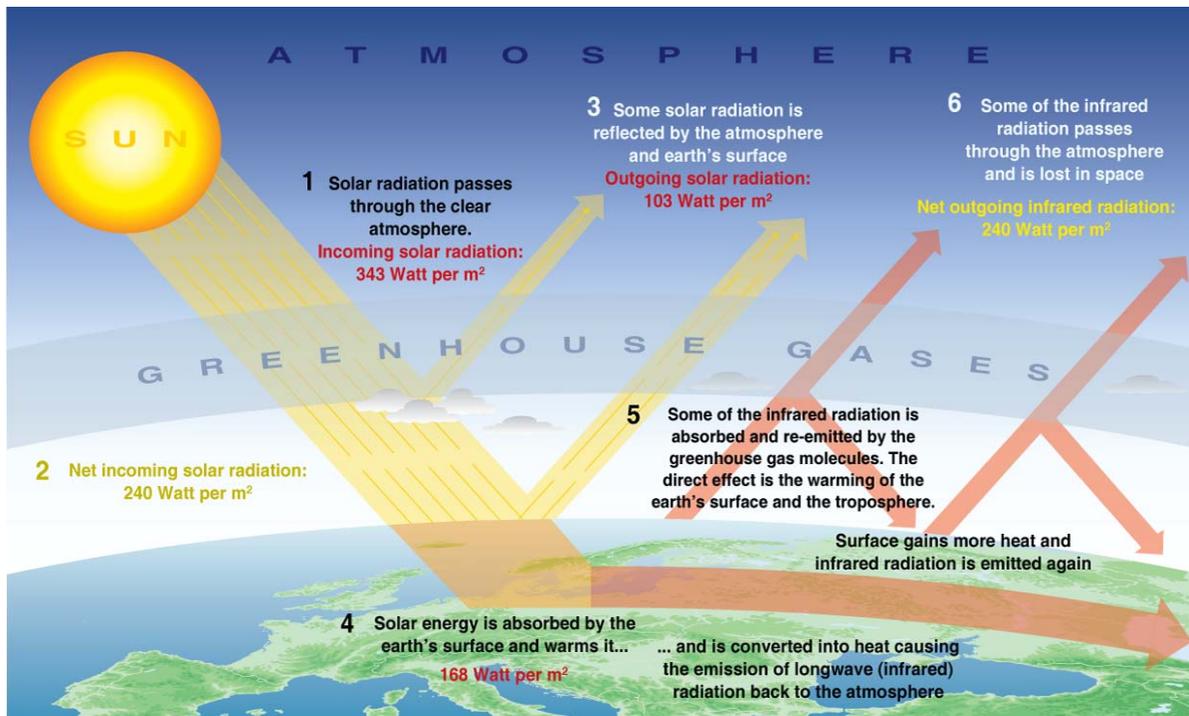
- Identification of responsible parties for implementation.
- Schedule of implementation.
- Certified California Environmental Quality Act (CEQA) document, or equivalent process.

2.3 - Climate Change Science

Gases that trap heat in the atmosphere are referred to as greenhouse gases. The effect is analogous to the way a greenhouse retains heat, as shown in Figure 3.

Greenhouse gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFC) and perfluorocarbons (PFC). Natural processes and human activities emit greenhouse gases. The presence of greenhouse gases in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of greenhouse gas, the earth's surface would be about 34 degrees Centigrade cooler. Carbon dioxide concentrations in the atmosphere have steadily increased over time. As shown in Figure 4, global atmospheric concentration of CO₂ (carbon dioxide) data prior to 1958 are from ice core measurements, and post-1958 data are from the Mauna Loa measurement site in Hawaii. A growing number of scientific analyses indicate that rising levels of greenhouse gases in the atmosphere are contributing to climate change. Important scientific questions remain about how much warming will occur, how fast it will occur, and how the warming will affect the rest of the climate system, including precipitation patterns and storms (EPA 2009).

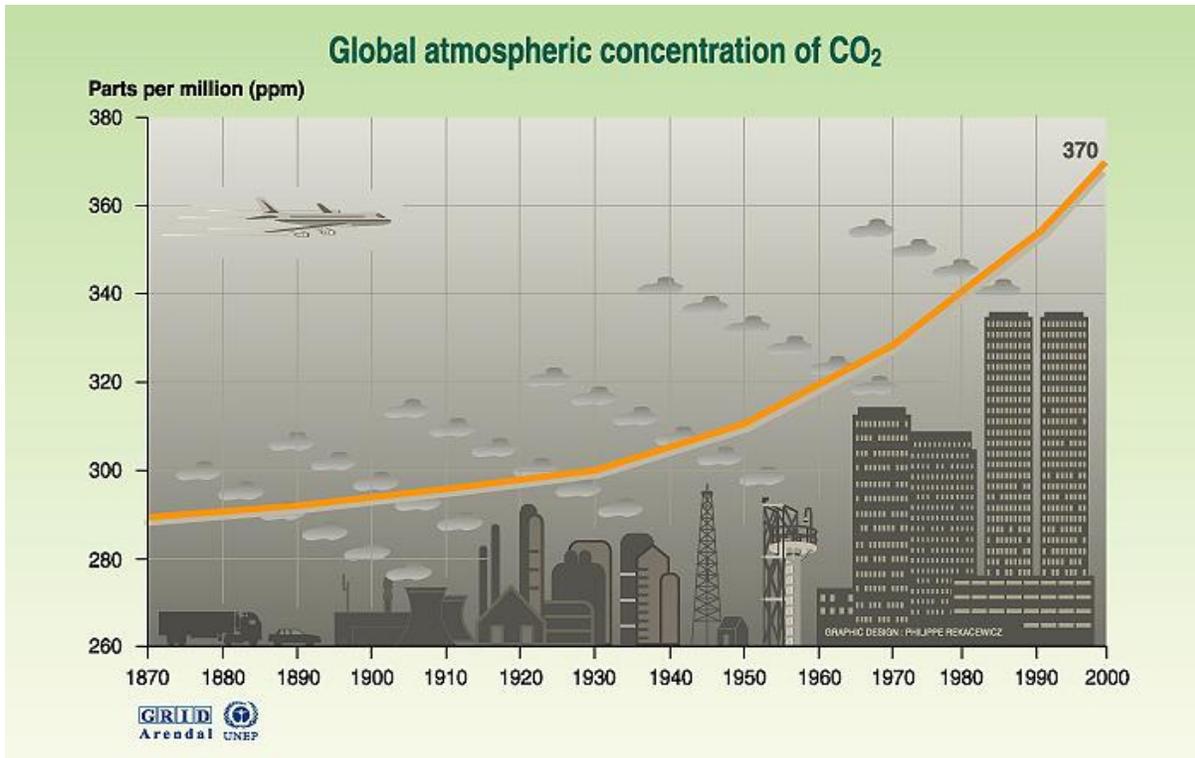
Figure 3: The Greenhouse Effect



Greenhouse gases have varying global warming potential and atmospheric lifetimes. Carbon dioxide, the reference gas for global warming potential, has a global warming potential of one. The calculation of the carbon dioxide equivalent (CO₂e) is a consistent methodology for comparing greenhouse gas emissions, since it normalizes various greenhouse gas emissions to a consistent metric. Methane's warming potential of 21 indicates that methane has a 21 times greater warming affect than carbon dioxide on a molecule per molecule basis. A carbon dioxide equivalent is the mass emissions of an individual greenhouse gas multiplied by its global warming potential. Emissions are typically shown in metric tons of carbon dioxide equivalents (MTCO₂e) or a million times that, million metric tons of carbon dioxide equivalents (MMTCO₂e).

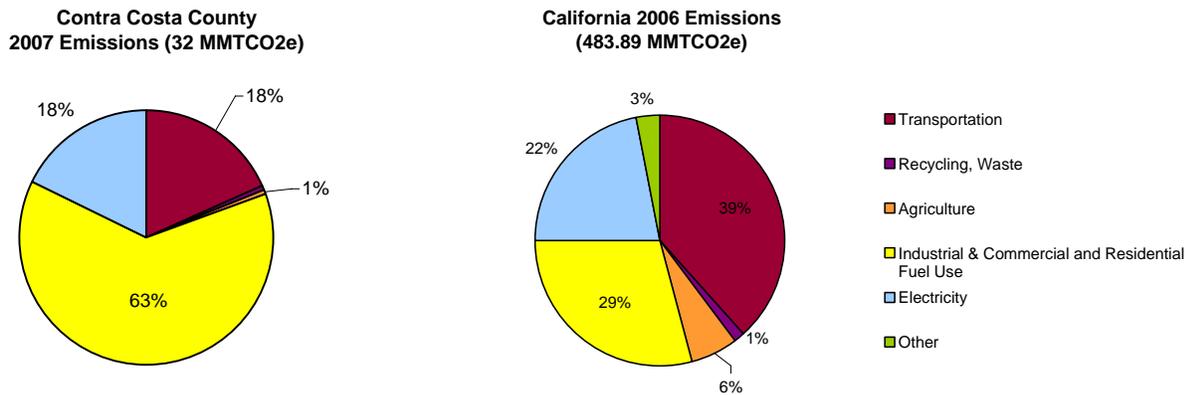
Greenhouse gas emissions in California in 2006 were approximately 483.89 MMTCO₂e. The major source of emissions in California in 2006 was from transportation, as shown in the pie charts. In 2007, Contra Costa County had emissions of 32 MMTCO₂e in 2007, with industrial and commercial (oil refineries and natural gas combustion) and residential fuel use (from natural gas combustion) being the main source.

Figure 4: Global Atmospheric Concentration of CO₂



Sources: TP Whorf Scripps, Mauna Loa Observatory, Hawaii, institution of oceanography (SIO), university of California La Jolla, California, United States, 1999

Figure 5: California and Contra Costa County Greenhouse Gas Emissions



2.4 - California Regulatory Context

California has adopted a wide variety of regulations aimed at reducing the State’s greenhouse emissions. While state actions alone cannot stop climate change, the adoption and implementation of this legislation demonstrates California’s leadership in addressing this critical challenge. Key legislation pertaining to the State’s reduction targets are described below.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. “Greenhouse gases” as defined under AB 32 include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFC), and perfluorocarbons (PFC). The California Air Resources Board (CARB) is the state agency charged with monitoring and regulating sources of greenhouse gases.

The CARB approved the Climate Change Scoping Plan in December 2008. The CARB Climate Change Scoping Plan contains measures designed to reduce the State’s emissions to 1990 levels by the year 2020. Local governments must achieve reductions through land use measures that will be substantially dependent on the General Plan for success. Statewide, the CARB expects to target local governments with reducing greenhouse gas emissions by 5 MMTCO₂e by 2020.

Executive Order S-3-05. California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S 3-05, the following reduction targets for greenhouse gas emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels;
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

Executive Order S-13-08 directs the Governor’s Office of Planning and Research, in cooperation with the California Resources Agency, to provide land use planning guidance related to sea level rise and other climate change impacts. The order also directs the California Resources Agency to develop a State Climate Adaptation Strategy by June 30, 2009 and to convene an independent panel to complete the first California Sea Level Rise Assessment Report.

Senate Bill (SB) 375. SB 375 aligns regional transportation planning efforts, regional greenhouse gas reduction targets, and affordable housing allocations. Metropolitan Planning Organizations are required to adopt a Sustainable Communities Strategy, which allocates land uses in the Metropolitan Planning Organization’s Regional Transportation Plan. Qualified projects consistent with an approved SCS or Alternative Planning Strategy and categorized as “transit priority projects” would receive incentives under new provisions of the California Environmental Quality Act (CEQA).

For additional information regarding greenhouse gases, climate change, and the current regulatory context for climate change, please refer to the City of San Ramon General Plan 2030 Air Quality and Greenhouse Gas Emissions Element Background Report.