CLIMATE CHANGE IN CONTEXT

Climate Change In Context

Introduction

Local governments worldwide are showing leadership in responding to the threat of climate change by taking actions to reduce local sources of the pollution that causes global warming, also known as greenhouse gas (GHG) emissions. By doing so, these communities are reducing their GHG emissions by millions of tons per year. In addition to mitigating the impacts of climate change, these actions have other important benefits, such as resource and cost savings, improved air quality, better public health, and more livable communities.

Since 2006, the El Cerrito City Council has consistently supported local, regional and state initiatives to cut GHG emissions. The following City Council resolutions* create the framework for developing a Climate Action Plan for the City of El Cerrito.

- **Resolution 2006-61** endorsed the U.S. Mayors Climate Protection Agreement, in which local governments agree to take measures to reduce greenhouse gas emissions, including the development of a Climate Action Plan;
- **Council Resolution 2006-93** endorsed the reduction targets of Assembly Bill 32 (AB 32), the California Global Warming Solutions Act; and
- **Council Resolution 2011-12** adopted GHG emission reduction targets of 15% below 2005 levels by the year 2020 and 30% below 2005 levels by 2035 for both municipal operations and the El Cerrito community.

The City has developed the CAP due to concerns that the global and local effects of climate change will have adverse impacts on our way of life for generations to come. In addition to providing leadership on this important issue, development of a CAP helps prepare El Cerrito for a quickly evolving legislative framework set by the State as part of its implementation of AB 32.

Fig. 1.1: Climate Action Planning Process

Purpose & Methodology

The purpose of the CAP is to provide a road map for the City in pursuing both community-wide and municipal reductions in GHG emissions. The overall objectives of the CAP are to:

- Provide guidance to the City in pursuing reductions in GHG emissions;
- Provide a policy framework for incorporation of a climate or sustainability element in the City's General Plan Update;

* See Appendix A, El Cerrito City Council Climate Action Resolutions

- Inspire residents, businesses, and employees to participate in community efforts to reduce GHG emissions; and
- Demonstrate El Cerrito's commitment to helping the State and the Bay Area reach their mandated GHG reduction goals.

The CAP is not intended to be used as a tiering[†] document for the purpose of streamlining the analysis of GHG emissions under CEQA. However, the CAP should help inform the design of new projects with respect to developing projects that are consistent with the City's GHG emissions targets.

Development of the CAP is based on a methodology advanced by ICLEI[‡] Local Governments for Sustainability and further refined by the Bay Area Air Quality Management District (BAAQMD). This methodology investigates the potential of reducing local GHG emissions from transportation, energy consumption, water use, and waste generation by:

- Establishing a baseline inventory of emissions;
- Setting a reduction target in comparison to the baseline inventory;
- Outlining the potential GHG emissions reductions of existing and proposed policies, programs, and projects that can be enacted by the City; and
- Implementing the Plan and monitoring the results through subsequent inventories and adjustments.

Public Process

El Cerrito's planning process started in 2010 and has been informed by input from the public, City Council, and City staff. The City administered a survey[§] of 450 residents (spring, summer, and fall of 2010), held three public workshops in 2010 and one in 2012 to gather community input, and provided numerous updates at publicly noticed meetings of the Environmental Quality Committee (EQC), the City's citizen advisory committee on environmental issues. Additional comments from the public were solicited during two public workshops and 32-day public comment period prior to the CAP being brought to City Council for adoption.

Climate Change Primer

Rising Concentrations of GHGs Cause Global Warming

Rising concentrations of GHG emissions in the atmosphere are trapping solar radiation and causing earth's average temperatures to increase. Through the United Nations International Panel on Climate Change (IPCC), the world's climate scientists have

† "Tiering" under CEQA typically refers to the analysis of broad environmental issues associated with development under a plan, program, or ordinance in a program EIR and the subsequent preparation of more narrowly focused individual project EIRs.

‡ ICLEI is the acronym for the International Council for Local Environmental Initiatives.

§ See Appendix L, *Climate Action Survey Results*

identified three critical factors about the reality of global warming and its direct relationship to changes in the planet's climate:

- Atmospheric concentrations of GHGs have steadily increased since 1750 and now far exceed pre-industrial levels (see *Figure 1.2, Global Temperature Changes 1860-2000)*;
- Global average temperatures have increased markedly over the last 100 years because of increased greenhouse gas concentrations; and
- Human-induced GHG emissions, primarily from the burning of fossil fuels, are the primary driver behind the global warming process.

Given the continued annual increase in global emissions, scientists agree that the planet is now committed to some degree of climate change.¶ IPCC scientists agree that in order to avoid dangerous increases in global temperatures, atmospheric concentrations of CO2 need to be stabilized somewhere between 350 to 400 parts per million (ppm). These concentrations are now at 389 ppm and continue to rise about one-half percent each year.

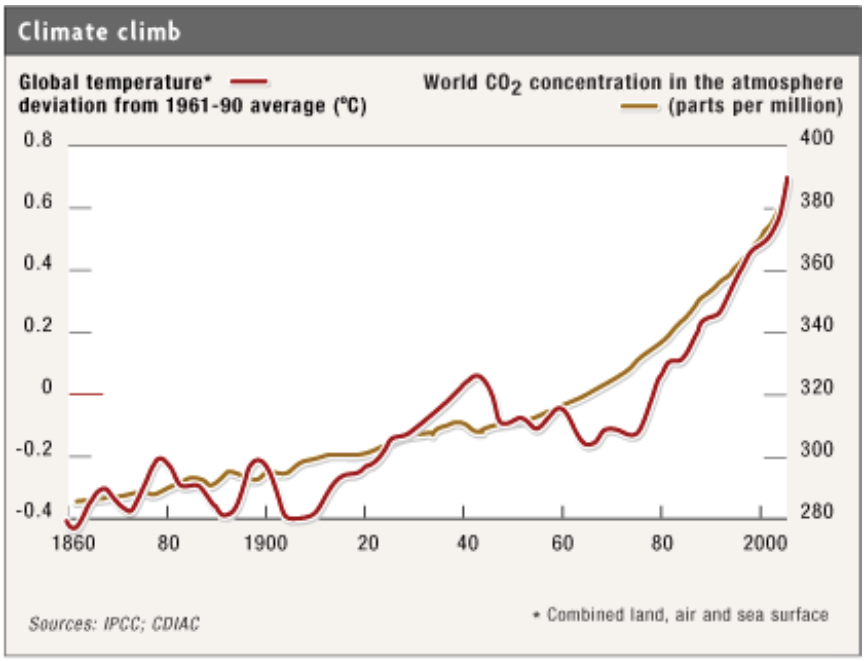
Rising Global Temperatures Cause Climate Change

Rising global temperatures drive large shifts in the climatic patterns upon which ecological systems and human settlement patterns are based. These changes in the

Humble Oil Ad, *Life Magazine*, Feb. 2, 1962

¶ According to the Global Carbon Project, global GHG emissions increased 3% in 2012, emitting the largest amount CO2e on record. These figures put global emissions higher than the worst case scenario outlined in the 2007 Intergovernmental Panel on Climate Change report on global warming that found that rate of warming was directly connected to rate of emissions. Accessed January 2013. *globalcarbonproject.org*.

Fig. 1.2: Global Temperature Changes 1860-2000



climate threaten to severely impact the world's social, agricultural, economic and ecological systems. Potential disruptions include:

- Sea-level rise and coastal storm surges;
- More frequent and extreme weather events such as longer and more intense droughts and more damaging storms; Accessed
- Increase stress on water resources due to droughts, decreased snowpack, and salt-water intrusion into ground water supplies;
- Ecosystem degradation and loss of biodiversity;
- Reduced food security due to droughts, heat waves, oceanic acidification and other stresses on the ecosystems that support food production; and
- Economic and geopolitical disruption due to relocations from extreme weather events, dwindling water supplies and food system failures.

Effects of Climate Change On El Cerrito

Closer to home, new studies and planning efforts have focused on the effects of climate change on Bay Area communities. In particular, these studies have found that extreme storm events in the winter, more severe and unseasonable heat waves in the spring, summer and fall, wildfires, water shortages, and sea-level rise will threaten public health and highly developed local and regional resources. As these impacts change our water supplies, storm water management systems, shorelines, and food systems, California will need to rethink its infrastructure. This CAP is a road map for action that will help mitigate these worse case scenarios. Future updates of the CAP should also include a plan for resiliency in the face of these impacts. See the "Adaptation" section in *Chapter 3, Community Climate Action Strategies*, for more information.

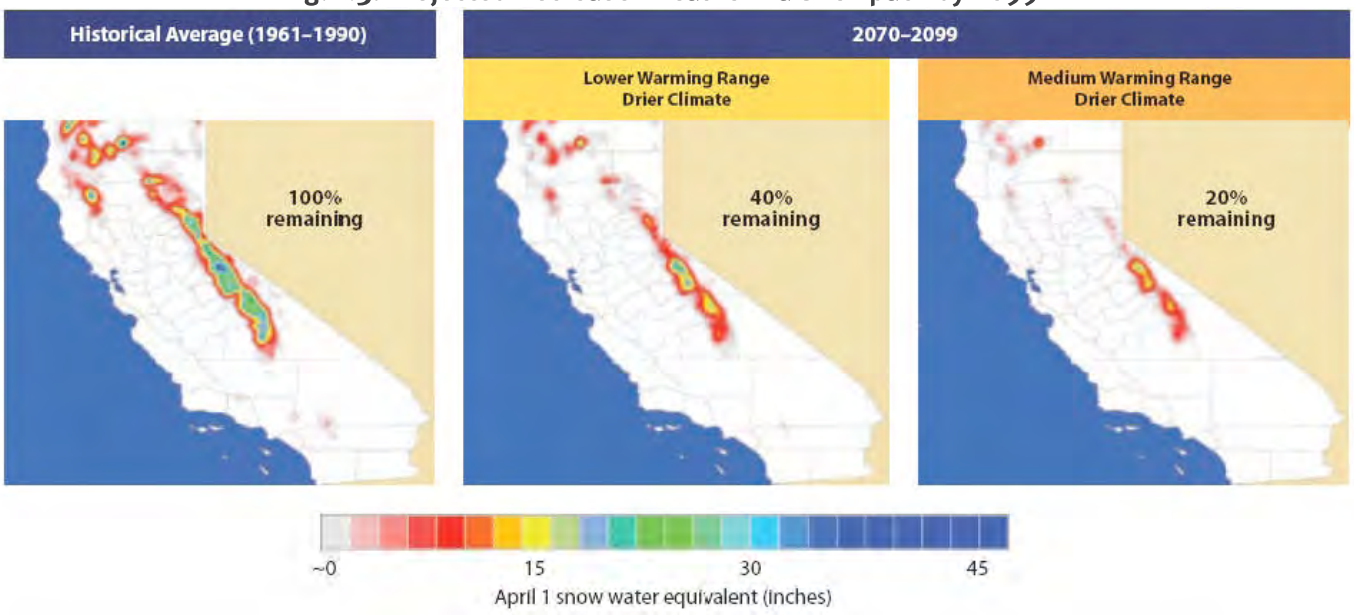
Water Shortages

The East Bay Municipal Utility District (EBMUD) in its *Water Supply Management Program 2040* examined the potential effects of climate change on both water supply and on the utility's storage and distribution systems.** The study indicates that the Sierra snowpack, EBMUD's primary source of water, has shrunk 10% in the last century. By 2050, the snowpack is expected to decrease by 25% and up to 80% by the end of the century under a medium warming scenario (see Figure 1.3, *Projected Decrease in California Snowpack*). In addition to decreases in the annual springtime run-off from the snowpack, EBMUD's water supplies are particularly vulnerable to a projected shift in the run-off from late spring to the winter months.

Sea Level Rise

Sea level rise is caused by the increase in average ocean temperatures and the resulting thermal expansion of ocean waters and the melting of the polar ice sheets. In 2009, the San Francisco Bay Conservation and Development Commission (BCDC) conducted a detailed study of the potential impacts of sea-level rise to the Bay Area's shorelines.†† The study projects increases in sea-level in the Bay Area by 16 inches by 2050 and 55 inches by the end of the century. While El Cerrito does not have any shoreline within its jurisdiction, it has a border that is half a mile from the San Francisco Bay, with all local waterways draining into the Bay. Several low-lying neighborhoods within the City may be inundated under a scenario of 40 inches of sea level rise. Interstate 580 and the surrounding communities of Albany and Richmond could lose more than 200 acres

Fig. 1.3: Projected Decrease in California Snowpack by 2099



** East Bay Municipal Utility District, *The Water Supply Management Program 2040*. April, 2012.

†† San Francisco Bay Conservation and Development Commission. "Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline." April, 2009.

Fig. 1.4: Possible Areas of Inundation due to Sea Level Rise. View over Central Avenue I-80 exit.

of land. The combination of storm surges, sea level rise, and upstream flooding would overwhelm storm water, waste water, and transportation infrastructure and could put the local economy at risk.

Increase Risk of Wildfires

Many factors combine to create a fire hazard. Several critical weather conditions that contribute to heightened risk for wildfires include precipitation, winds, temperature, and vegetation growth – all of which are effected by climate change. Wildfires throughout the American West are predicted to grow in number and size as a result of climate change. The State of California's Climate Change Center predicts that wildfire risk will increase by 55% in California. El Cerrito maintains an active fire prevention program along its interface with the wild lands of Wildcat Canyon Park and the East Bay Hills. However, responding to more wildfires both at home and throughout California, will put strain on the resources of the City's emergency response systems.

Public Health Risks

Climate change is expected to have a major impact on public health. First, more high-heat days will increase the risk of people experiencing heat exhaustion. Second, as the climate gets drier, particulate matter in Contra Costa County is projected to increase 23% by 2035,[‡‡] presenting an increased risk for related diseases such as asthma and lung cancer. Many parts of El Cerrito's commercial corridor are already considered by BAAQMD to be a Priority Area for toxic air contaminants due to particulate matter from road dust and diesel exhaust from the I-80 corridor. Hotter days will only exacerbate these air quality problems. Finally, hotter conditions increase mosquito-breeding and the potential of mosquito born diseases. With the introduction of West Nile Disease in

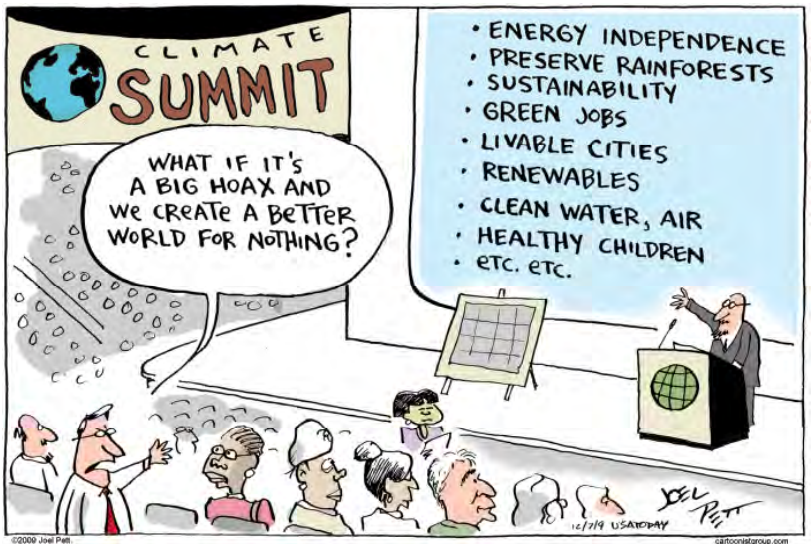
‡‡ ABAG. *Building Momentum: Projections and Priorities*. 2009. p. 52

California, vector control districts throughout the state are already evaluating how they can respond to these increased threats.

Multiple Benefits of Climate Action

While the cost of inaction in the face of these serious risks is potentially very high, taking action to reduce greenhouse gas emissions provide many positive benefits for the community. Indeed, these are the same actions that create livable, resilient, and healthy communities and are consistent with many current El Cerrito policies. As will be discussed in future chapters, reducing GHG emissions affect a broad spectrum of activities and provide other tangible benefits, such as:

- Walkable, compact neighborhoods close to transit, jobs, homes, shops, and community;
- Increased local economic activity;
- Greater equity through improved access to jobs, housing, and everyday needs;
- Less time lost commuting in cars to work;
- Healthier citizens that are breathing in less air pollution, biking and walking more, and staying in better shape;
- Greater energy independence, making the community more resilient in the face of energy price hikes; and
- Lower fuel and energy costs for consumers.



"What if..." Joel Pett. The Cartoonist Group.

For instance, in 2005, El Cerritans spent approximately $48.6 million on energy, fuel, water, and waste disposal. If each household reduced their use of these commodities just 15%, they would have another $700 per year of disposable income.

State and Regional Regulatory Context

The State has enacted a wide variety of legislation aimed at reducing statewide GHG emissions. From these key pieces of legislation, a regulatory framework that has implications for local governments is beginning to emerge. As such, the relationship between State legislation and local government Climate Action Plans is still in flux, pointing to the need for the City's CAP to be updated as new legislation and regulation takes shape.

Following is a list of Executive Orders (EO), Senate Bills (SB), and Assembly Bills (AB) and other regulation that informs the development of El Cerrito's CAP:

EO-S-03-05

Issued by Governor Schwarzenegger in 2005, this Executive Order established targets for reducing GHG emissions to 1990 levels by 2020 and to 80% below 1990 levels by 2050. These targets were established based on the scientific consensus of the scale of reductions needed to achieve climate stabilization.

AB 32, Nunez & Pavley, 2006

Assembly Bill 32, the California Global Warming Solutions Act of 2006, requires California to reduce statewide GHG emissions to 1990 levels by 2020. It directs the California Air Resources Board (CARB) to develop a scoping plan and compliance and enforcement mechanisms that would meet this goal. Since State agencies, such as CARB, the California Resources Agency, and the California Building Standards Commission, set the regulatory framework in which many regional and local governmental agencies must operate, new policies, regulatory and incentive programs affecting local development are taking shape.

California Climate Change Scoping Plan

Required by AB 32, this plan was approved by CARB in late 2008. It quantifies the levels of emissions reductions that are required under AB 32 and outlines the State's plan and primary strategies for reaching that 2020 goal. Strategies include direct regulations, market-based mechanisms such as cap-and-trade, monetary and non-monetary incentives, and voluntary actions.

While the *Scoping Plan* initially targets regulated industries and vehicle technology, CARB "encourages local governments to adopt a reduction goal for municipal operations emissions and move toward establishing similar goals for community emissions that parallel the State commitment to reduce greenhouse gas emissions by approximately 15 percent from current levels by 2020."[§§] Other *Scoping Plan* recommendations that flow down to regional and local governments include:

- Expanding and strengthening commercial and multi-family recycling;
- Expanding and enforcing green building and energy efficiency code standards; and
- Establishing emissions reduction targets for the transportation sector.

SB 97, Dutton, 2007

SB 97 acknowledges that climate change is a prominent environmental issue that requires analysis under the California Environmental Quality Act (CEQA). It charged the California Resources Agency (CRA) with adopting and certifying CEQA guidelines for mitigating GHG emissions from development projects. Developing guidelines for establishing "thresholds of significance" for evaluating the impacts of GHGs have been delegated to the Regional Air Quality Districts.

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§§ California Air Resources Board. *Climate Change Scoping Plan.* December 2008, p. 27.

BAAQMD CEQA Guidelines

As required by SB 97, the Bay Area Air Quality Management District (BAAQMD) developed and adopted new CEQA guidelines for air quality and GHG emissions in June 2010. In addition to criteria air pollutants, toxic air contaminants and odor emissions, the Guidelines provide guidance and a "threshold of significance" for evaluating the GHG emissions impacts of all development projects going through the environmental review process.[¶¶]

SB 375, Steinberg, 2008

The intent of SB 375, also known as the Sustainable Communities and Climate Protection Act, is to reduce GHG emissions by cutting vehicle miles traveled through compact land use patterns, infill and transit-oriented development. In our region, SB 375 requires the Metropolitan Transportation Commission (MTC) to establish a transportation-related GHG reduction target for the Bay Area and to develop a regional "Sustainable Community Strategy." Entitled *Plan Bay Area*, this effort seeks to align regional transportation planning efforts and funding, regional GHG reduction targets, land use and regional housing allocations.[***]

State Actions That Reduce Local Emissions

While the following legislation does not directly affect local governments, it will help all communities reach their reduction targets by decreasing the amount of GHGs emitted from power plants and vehicles statewide.

- **Renewable Power Standard (RPS):** Several pieces of legislation[†††] require retailers of electricity in California to source at least 20% of their supply from renewable resources (not including power from large hydro-electric dams) by 2010. Executive Order S-14-08 expanded the RPS to be 33% renewable by 2020. This legislation will help all communities reach their building energy goals by decreasing the amount of GHG emissions per kilowatt hour consumed.
- **AB 1493, Pavley, 2002:** This legislation directed CARB to adopt vehicle standards that lowered greenhouse gas emissions to the maximum extent technologically feasible, beginning with the 2009 model year. By increasing the fuel efficiency of light trucks and passenger vehicles, this legislation helps local governments with their reduction goals by decreasing the amount of GHG emissions per vehicle mile driven.
- **EO-S-1-07:** This Executive Order establishes a Low-Carbon Fuel Standard to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10% by 2020.

¶¶ BAAQMD. *California Environmental Quality Act Air Quality Guidance*. June 2010.

*** For more information, visit the Plan Bay Area website at www.onebayarea.org.

††† SB 1078 (2002) and SB 107 (2006) and Executive Order S-14-08