Element 8 | Energy and Climate Change

The Energy and Climate Change Element provides policy direction to help Richmond respond to climate change. The Element identifies goals, policies and implementing actions to address energy conservation, renewable energy production and use, sustainable business development, responsible community revitalization and reduction of climate change impacts in Richmond.
Community Vision
Richmond, California in 2030

The City of Richmond plays a pivotal role in developing climate policy at a local level that, in turn, influences regional, state and national objectives. The City relies on clean energy sources, waste reduction practices, sustainable buildings and innovative land use planning to reduce energy and climate impacts. These progressive measures have resulted in broad community benefits including dramatic reductions in fossil fuel use, cost savings, emission reductions, water conservation and an improved quality of life. City officials and community members value and protect natural resources and continue to work together to reduce the impacts of a changing climate. A renewed focus on education and local and regional partnerships further supports sustainable practices that will nurture human health and environmental quality for future generations.
WHILE CLIMATE CHANGE IS a global issue, it is increasingly evident that there are dramatic relationships between greenhouse gas emissions and local transportation and land use patterns. Given the availability of land for new and infill development, Richmond has many opportunities to build higher-density, mixed-use projects around existing public transit infrastructure, schools, parks and neighborhoods. Energy efficiency and sustainability can be further enhanced by incorporating green materials and construction practices into buildings and streetscape improvements. Sustainable development concepts such as natural resource conservation, transit-oriented development, multimodal transportation access and green building incentives are integrated throughout this General Plan.

With this Energy and Climate Change Element, the City of Richmond is taking an innovative approach to energy policy. By identifying and quantifying local greenhouse gas emissions, effective policies to reduce these emissions and mitigate the future effects of climate change will be woven into the City’s blueprint for future development.

The following sections of the Energy and Climate Change Element will:

- Describe potential climate change impacts, energy use and greenhouse gas emissions in Richmond today (page 8.6);
- Highlight key findings and recommendations based on an analysis of existing conditions (page 8.14);
- Define goals for energy and climate change (page 8.20);
- Identify policies and implementing actions to address energy and climate change needs (page 8.22);
- Provide a summary table identifying lead responsibilities and timeframes for each implementing action (page 8.56); and
- Review the existing regulatory framework of governing bodies and other mechanisms that currently guide planning efforts (page 8.61).
8 Energy and Climate Change

Purpose of the Element
The Intergovernmental Panel on Climate Change (IPCC) findings confirm that heat emissions generated by human activity are a significant cause of climate change.\(^1\) California's Global Warming Solutions Act of 2006 (AB 32) and subsequent companion bills demonstrate California's commitment to take action and reduce greenhouse gases to 1990 levels by 2020. The Attorney General's Office, in accordance with SB 375, now requires that local governments examine local policies and large-scale planning efforts to determine how to reduce greenhouse gas emissions.

Richmond's Energy and Climate Change Element examines how the City's land use and transportation network will affect energy consumption and determines what measures can be implemented to reduce greenhouse gas emissions. The Element provides policy direction for Richmond to protect its energy resources and respond to climate change.

Broadly framed goals address energy conservation, renewable energy generation and use, sustainable business development, responsible community revitalization and reduction of climate change impacts in Richmond. More specifically, policies and implementing actions are designed to: provide leadership to manage climate change; promote clean and efficient transportation options; encourage sustainable and efficient energy systems; promote sustainable development; support community revitalization; and build climate-resilient communities.

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**Green.** Green is a term used to imply that a service, product or technology is environmentally friendly or sustainable.\(^2\)

**Ecological Footprint.** An ecological footprint is a measure of the impact that human activities have on the environment.\(^3\)

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The Safe Routes to School Program, sponsored by the State of California, encourages walking and bicycling while reducing peak commute hour traffic congestion and vehicle use.
Authority for the Element
Growing concern over environmental degradation, climate change and the stability of energy supplies provide the impetus for public policy on energy efficiency and emissions. Recently approved legislation by the State of California (AB 32 and SB 375) and new air emissions standards adopted by the California Air Resources Board lay the foundation for local policy development on energy and climate change in Richmond. As one of the first general plan elements in the country dedicated to this topic, Richmond’s Energy and Climate Change Element positions the City for sustainable, physical and economic development now and in the future.4

Relationship to Other General Plan Elements
The Energy and Climate Change Element is related to all of the other General Plan elements due to the fact that nearly all aspects of urban development have an impact on climate change. It is most distinctly tied to these elements: Land Use and Urban Design; Circulation; Conservation, Natural Resources and Open Space; Community Health and Wellness; Community Facilities and Infrastructure; Public Safety and Noise; and Economic Development. Natural resources other than energy are primarily discussed in the Conservation, Natural Resources and Open Space Element. Where appropriate, cross-references are provided to direct the reader to relevant information in other elements.

Richmond’s Adaptation
Richmond possesses many inherent advantages as it plans for and adapts to climate change:

• Moderate Climate — Richmond’s temperate climate results in lower demands for heating and cooling;
• Neighborhood Development Pattern — Core residential neighborhoods are conducive to walking with small lots connected by a grid network of streets;
• Access to Public Transportation — Residents have convenient access to a range of transportation alternatives including two BART stations, passenger rail service, bus transit agencies and a future ferry terminal;
• Proximity to Major Employment Centers — Nearby Bay Area employment centers minimize overall commute distances; and
• Infill Potential — A significant number of vacant lots and underutilized parcels provide opportunities to develop walkable, mixed-use environments to better meet residents’ daily needs.
Pedestrian and transit-oriented land use patterns can reduce private automobile use and greenhouse gas emissions.

Richmond Today

Within Richmond, as in many cities, fossil fuels are the primary source of energy consumed by residents, government, industry and commercial interests. The transportation sector is the single largest consumer of fossil fuels, followed by buildings that use large amounts of energy for lighting, heating and cooling. Studies show that greenhouse gas emissions from fossil fuels and other human activities contribute significantly to global warming. In addition to growing global, national and local concern over potential impacts of fossil fuel use and long-term environmental health, there is also widespread uncertainty about energy supply reliability and affordability.

With dramatic increases in fossil fuel costs, alternatives to private automobiles are becoming more economically viable. The market for renewable energy is growing each year. Wind power grew 30% annually between 1990 and 2002 and the solar energy industry has grown steadily 40% per year between 2002 to 2006. In 2006, the solar industry was estimated to be valued at $15 billion worldwide. Federal, state and local agencies are increasingly looking to renewable energy sources as more affordable, reliable and sustainable solutions.

The following discussion describes potential impacts of climate change, reviews energy generation and use in Richmond and presents findings from a citywide inventory of Richmond’s greenhouse gas emissions.

Potential Impacts of Climate Change

The Intergovernmental Panel on Climate Change (IPCC) findings confirm that human activities are the primary cause of climate change. Climate impacts can be difficult for the average person to observe in part because changes occur slowly over many decades. Globally, scientists expect changing temperatures to result in: the disruption of ecosystems; more frequent and damaging storms accompanied by flooding and land
A balance of naturally occurring gases dispersed in the atmosphere determines the Earth’s climate by trapping solar radiation. This phenomenon is known as the greenhouse effect. Modern human activity, most notably the burning of fossil fuels for transportation and electricity generation, introduces large amounts of carbon dioxide and other gases into the atmosphere. Reductions in the planet’s forested regions where greenhouse gases are banked is also a major contributor to the increasing greenhouse effect. Collectively, these gases intensify the natural greenhouse effect, causing global average surface temperature to rise, which in turn affects global climate patterns.

In response to the threat of climate change, communities worldwide are voluntarily reducing greenhouse gas emissions. The Kyoto Protocol, an international effort to coordinate mandated reductions went into effect in February 2005 with 161 countries participating. While there are a growing number of nations committed to the Kyoto Protocol, as of December 2008, the United States is the only major industrialized country that has not signed the Protocol.

The Intergovernmental Panel on Climate Change (IPCC) is a scientific intergovernmental body established by the World Meteorological Organization (WMO) and by the United Nations Environmental Programme (UNEP). IPCC provides decision-makers with an objective source of information about climate change. IPCC has called the evidence of the impacts of greenhouse gas emissions (GHG) on the world’s climate “unequivocal.”
slides; increases in the number and severity of heat emergencies; extended water shortages as a result of reduced snow pack; increased likelihood of wildfires; and disturbance of wildlife habitats and agricultural activities. Local impacts are not definitive, but Richmond could experience: changes to local and regional weather patterns; rising bay water level; changes in salinity and tidal patterns of San Francisco and San Pablo bays; coastal erosion; water restrictions; vegetation changes; and disrupted species migration patterns and extinctions. The San Francisco Bay Conservation and Development Commission (BCDC) has identified several portions of Richmond’s shoreline which may be affected by sea level rise (see Map 8.1: Potential Sea Level Rise) A changing climate could affect or alter natural bayland habitats, infrastructure and other structural uses located along Richmond’s shores, and human health may be affected by heat waves, diminished air quality and vector borne disease.

The City of Richmond is taking steps to reduce greenhouse gas emissions and mitigate the potential effects of climate change, both through its municipal operations and by encouraging residents, industry, businesses and developers to reduce their energy consumption. In January 2007, Richmond signed the U.S. Conference of Mayors Climate Protection Agreement, committing the City to reduce greenhouse gas emissions to meet or surpass the Kyoto Protocol targets agreed to by most of the world’s industrialized countries. By September 2007, Richmond’s City Council directed staff to develop comprehensive local policy and lead by example in altering actions that contribute to global warming. In response to this directive the City initiated a citywide greenhouse gas emissions inventory as a means of establishing a baseline for greenhouse gas emissions, identifying existing sources of energy use and providing a foundation from which to develop relevant energy and climate change policies.

**Energy Generation and Use**

Most fuels used in transportation are from non-renewable resources. In the Bay Area, buildings are most often heated by natural gas and illuminated by electricity produced by a fuel mix that includes natural gas, nuclear energy, hydroelectric power and renewable energy sources. Pacific Gas & Electric (PG&E), an investor-owned utility, is the primary supplier of energy for buildings.

The burning or combustion of these fossil fuels creates gases that are released into the atmosphere. Of these gases, carbon dioxide (CO2) is the most common and is the gas most responsible for exacerbating the greenhouse effect that is changing global climate patterns.
The California electricity and natural gas market has experienced significant changes in the past ten years. In 1997, the State of California deregulated the electric utility industry in an attempt to reduce costs and increase customer energy supply. The resulting direct access allowed customers to buy electricity directly from suppliers of their choice. However, deliberate manipulation of the energy supply caused unanticipated impacts of increased power outages and customer costs. Soon after, deregulation was suspended and the state began to develop energy policies to prioritize energy conservation and efficiency, renewable energy and distributed generation.

Traditionally, energy generation was sourced by large, centralized generators. Today, there is a growing shift toward decentralized electricity generation, including a growing interest and investment in local resources in the form of wind, wave, biomass, hydroelectric and solar power. This distributed generation of electricity includes a larger number of smaller generators throughout the electricity network. Community Choice Aggregation (CCA) allows cities and counties to aggregate the buying power of individual customers within a defined area in order to secure renewable energy supply contracts. In California, AB 117 makes CCA an option for California municipal and county governments. CCA allows cities and counties to form a joint-power authority to buy renewable power collectively and directly while energy transmission and services continue to be provided by energy companies such as PG&E. With the adoption of supportive legislation in the last eight years, community choice aggregation is gaining momentum in California. The shift to decentralized power generation will have implications for land use and natural resource protection in communities throughout California.
Greenhouse Gas Emissions
In 2008, the International Council for Local Environmental Initiatives, (ICLEI), an organization that specializes in evaluating climate impacts in cities, was commissioned to conduct a comprehensive citywide inventory of Richmond’s existing and projected greenhouse gas emissions. The inventory quantifies the amount of energy consumption and corresponding greenhouse gas emissions for major CO2e producers. The results of this inventory are presented below and the following pages include a summary of existing emissions by major sectors (residential, commercial/industrial, transportation and waste) and an emission forecast (the comprehensive Citywide Greenhouse Gas Emissions Inventory is provided in the Appendix).

Citywide Emissions
The greenhouse gas emissions inventory shows that in 2005, Richmond’s industries, businesses and residents generated over 5.8 million metric tons of carbon dioxide equivalent (CO2e), the internationally recognized measure of greenhouse gas emissions (see Figure 8.1: Citywide Greenhouse Gas Emissions by Sector). The commercial/industrial sector was the largest source of community emissions (87.8%), with emissions stemming from electricity production and use, natural gas use and a range of industrial processes monitored by the Bay Area Air Quality Management District (BAAQMD). Transportation-related emissions also comprise nearly 10% of community emissions, due in part to Richmond’s position as a regional hub for the movement of goods and services, with its active port and miles of freeway and rail. Methane generated by the now-closed West Contra Costa Sanitary Landfill and other waste-related emissions constituted just over one percent of emissions. Residential properties are responsible for slightly more than two percent of the City’s greenhouse gas emissions.

Compared to Contra Costa County as a whole, Richmond’s residential and transportation sectors contribute a smaller proportion of overall greenhouse gas emissions (see Table 8.1: City-County Emissions Comparison). While most of Richmond’s emissions come from commercial and industrial sectors (88%), the residential sector accounts for two percent of total emissions and the transportation sector accounts for nine percent. In comparison, the County’s residential sector is responsible for 13% of total emissions, with transportation accounting for 37%. Richmond’s waste sector generates one percent of total emissions, roughly equivalent to the County’s waste sector emissions.

Several major facilities in the City are regulated directly by BAAQMD and emit nearly four million metric tons of CO2e per year. Excluding emissions from these facilities, Richmond generates only 1.9 million metric tons of CO2e per year. Efforts to curb emissions related to these major
commercial and industrial operations should be addressed at a regional level since the City of Richmond does not have the legal authority to limit or reduce their emissions. In Figure 8.1, Citywide Greenhouse Gas Emissions by Sector, emissions generated by top emitters monitored by BAAQMD are separated from emissions produced by the remaining commercial and industrial operations in Richmond. Tables 8.1 and 8.2 present combined totals for commercial/industrial emissions in Richmond for purposes of comparison and projection.

**Figure 8.1 Citywide Greenhouse Gas Emissions by Sector**

<table>
<thead>
<tr>
<th>Sector</th>
<th>City of Richmond Emissions (metric tons of CO2e)</th>
<th>Contra Costa County Emissions (metric tons of CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>126,118 (2%)</td>
<td>1,587,655 (13%)</td>
</tr>
<tr>
<td>Commercial/Industrial</td>
<td>5,141,572 (88%)</td>
<td>6,030,798 (49%)</td>
</tr>
<tr>
<td>Transportation</td>
<td>506,842 (9%)</td>
<td>4,542,073 (37%)</td>
</tr>
<tr>
<td>Waste</td>
<td>78,488 (1%)</td>
<td>175,378 (1%)</td>
</tr>
<tr>
<td>Total</td>
<td>2,399,414 (100%)</td>
<td>12,335,904 (100%)</td>
</tr>
</tbody>
</table>

Residential Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions from Richmond residences account for a small percentage of the City's total emissions. Though the percentage of GHG emissions from residences is proportionately small, this is largely due to the presence of heavy industry, which emits proportionally more GHG emissions than other cities. In 2005, Richmond residents produced approximately 126,000 metric tons of CO2e. Most of these emissions resulted from the use of natural gas, which residents rely on as a fuel for home heating, water heating and cooking. Electricity use was responsible for 30% of total 2005 residential emissions.

Commercial/Industrial Greenhouse Gas Emissions

The vast majority of Richmond's greenhouse gas emissions are generated by the City's commercial/industrial sector. In 2005, Richmond's substantial industrial base and other commercial businesses generated over 5.1 million metric tons of CO2e. Approximately two-thirds of these were point source emissions generated by the various processes monitored by BAAQMD. Approximately one-third of emissions were generated by the combustion of natural gas, most likely in large industrial processes, including on-site generation of electricity and the operation of boilers. Electricity use accounted for a very small percentage of emissions in this sector.

Transportation Greenhouse Gas Emissions

Transportation is the second largest source of greenhouse gas emissions in Richmond. Greenhouse gases emitted from vehicle use within Richmond constituted half a million metric tons of CO2e in 2005. Nearly 60% of these emissions can be attributed to trips on Interstates 80 and 580 and other regional transportation routes that pass through Richmond.

Waste Greenhouse Gas Emissions

Waste facilities continue to contribute to the City's emissions. Although the West Contra Costa County Landfill is now closed, waste will continue to decompose and emit greenhouse gases over the coming years. However, emissions can be reduced by processing waste using new technologies. Approximately one percent of Richmond’s 2005 emissions were generated by waste management, specifically by the decomposition of organic materials at the West Contra Costa Sanitary Landfill.

Methane gas is generated in the fermentation of organic matter including wastewater sludge, municipal solid waste, manure and any other biodegradable feedstock. As the major component of natural gas, methane can be captured during fermentation and used for fuel. Methane is an appealing fuel due to its relative abundance and clean burning process. Methane recapture and other innovative techniques for reducing greenhouse gas emissions.
emissions are already established at some Richmond sites. The wastewater treatment plant flares all of the methane generated from the treatment digestion process. At this General Plan writing, the City’s Engineering Department is accepting proposals to upgrade the plant to include cogeneration technology, but no upgrades have been made to-date.

Projected Greenhouse Gas Emissions
The 2020 emissions forecast completed as part of the greenhouse gas emissions inventory suggests that with no interventions, emissions will grow significantly in the commercial/industrial and transportation sectors over the next decade (see Table 8.2: Citywide Emissions Projections by Sector). Based on anticipated trends in energy use, driving habits, job growth and population growth, this increase is forecast to be approximately 30%, or an additional 1.8 million metric tons of CO2e. The bulk of this increase is projected to come from the commercial/industrial sector (32%), although transportation emissions are also expected to increase substantially. Residential and waste emissions are expected to grow at a much slower pace.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percent Change from 2005 to 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>9.1%</td>
</tr>
<tr>
<td>Commercial/Industrial</td>
<td>31.9%</td>
</tr>
<tr>
<td>Transportation</td>
<td>27.8%</td>
</tr>
<tr>
<td>West Contra Costa Sanitary Landfill</td>
<td>-52.4%*</td>
</tr>
<tr>
<td>Waste</td>
<td>9.1%</td>
</tr>
<tr>
<td>Total</td>
<td>30.4%</td>
</tr>
</tbody>
</table>

*The West Contra Costs Sanitary Landfill has closed. GHG emissions from the landfill are projected to decrease by 2020; as the amount of waste at the landfill decreases due to decomposition, the amount of released gases decreases.

Source: City of Richmond Community-wide Greenhouse Gas Emissions Analysis, June 2008
Key Findings and Recommendations

Reducing greenhouse gas emissions, sustaining healthy ecological systems and adapting to climate disruption are fundamental challenges facing communities around the world. An adequate and timely response to climate change will require collective action and sustained effort from both public and private sectors. Local and regional initiatives should be coordinated to protect both environmental and human health.

Residents, businesses and City officials are committed to environmental responsibility in planning for Richmond’s future. The City is uniquely positioned to take a leadership role in adapting to the potential impacts of climate change. Greenhouse gas emissions in the City are generated by motor vehicles and large-scale commercial and industrial operations. The City is home to a seaport, large oil refinery and railroad terminus. Richmond is also traversed by Interstates 80 and 580; both highways experience substantial congestion during commute hours. Therefore, reduction measures must involve residents, local businesses and neighboring jurisdictions.

Richmond has a number of favorable characteristics that provide substantial advantages in addressing energy and climate change, including its moderate climate, proximity to major employment centers, range of public transportation options and traditional, small-lot neighborhood development pattern that supports local schools and pedestrian connectivity. In addition, significant amounts of vacant and underutilized land in core urban areas of the City provide opportunities for higher-density, mixed-use infill development that can help curb emissions by providing convenient access to employment, transportation and essential human services.

The following key findings and recommendations are derived from the existing conditions analysis:
Finding 1: Richmond can provide leadership in the development of a coordinated response to climate change.

The City will seek opportunities to develop cross-jurisdictional solutions based upon state and federal emission reduction targets. Richmond can play an active role in these efforts. Effective leadership and management at the local level may involve:

• Collaborating and partnering with relevant agencies and organizations to advocate for substantive action on climate change;
• Raising awareness among Richmond residents and businesses about key climate change challenges and solutions; and
• Actively regulating land uses to reduce greenhouse gas emissions.

Finding 2: While Richmond is served by a range of multimodal circulation options, opportunities exist to expand climate-friendly fuel technologies and active modes of travel.

Richmond has an extensive system of local and regional transit. Yet, private automobiles remain the primary mode of travel in the City. Public transit, pedestrian and bicycle amenities can be improved to ensure that transit and active travel modes become more viable options. Climate-friendly fuel and new technologies can also make a significant contribution to emissions reduction. The City can promote climate-friendly and efficient circulation options by:

• Encouraging clean fuel and technologies to reduce energy use and carbon emissions from vehicles and other equipment;
• Supporting the availability of climate-friendly fuels within the City;
• Expanding public transit service to improve mobility and reduce reliance on the private automobile;
• Promoting walking and bicycling as a safe and convenient mode of transportation;
• Supporting safe routes to schools and improving bicycle, pedestrian and transit access;
• Encouraging efficient and clean regional and long-distance passenger rail service and public transit connections to stations;
• Reducing reliance on private automobiles as a primary mode of transportation to decrease emissions from vehicle trips; and
• Promoting a clean and green goods movement system.

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*Climate-Friendly.*

Climate-friendly refers to practices, standards and technologies that result in lower greenhouse gas emissions as compared to traditional approaches.
In an effort to create a more sustainable community, Richmond initiated environment-friendly activities in the 1980s with policies designed to reduce waste, conserve water and reduce toxic discharges into the stormwater system. More recently, the City has taken steps to improve sustainability and reduce greenhouse gas emissions throughout the City.

In 2003, Richmond completed an energy audit and retrofit of 58 City-owned buildings that improved energy efficiency. In 2007, the City adopted a municipal green building ordinance requiring all City buildings to achieve a LEED “Silver” rating and a GreenPoint Checklist score of 70 points for residential projects. That same year, Richmond jump-started efforts to attract green-collar jobs and provide green job training to local residents through RichmondWORKS. The City also collaborated with U.C. Berkeley’s Goldman School of Public Policy to enhance sustainability of City operations and hired an environmental manager to oversee implementation of policies and programs.

In 2007, Richmond joined the cities of Berkeley, Emeryville and Oakland along with U.C. Berkeley and the Lawrence Berkeley National Laboratory to create the East Bay Green Corridor Partnership, which strengthens the regional economy through support for emerging green and sustainable industries, alternative energy research and a healthy built environment. Richmond also endorses several initiatives to promote sustainability and climate protection including the U.S. Conference of Mayors Climate Protection Agreement, the Ahwahnee Principles and the Urban Environmental Accords.

Overall, Richmond has demonstrated policy entrepreneurship. The Health and Wellness and Energy and Climate Change elements included in this General Plan update are further evidence of the City’s leadership role.
Finding 3: Richmond must develop renewable, efficient and sustainable energy systems, and reduce waste to minimize its carbon footprint and achieve its climate action goals.

The cost of fossil fuel-based energy will continue to increase. Renewable energy is harnessed from naturally occurring sources such as the sun, wind, tides and geothermal heat. Maximizing use of these naturally occurring sources of energy will require substantial public and private investment and the cooperation and collaboration of multiple agencies.

Waste and wastewater processing contributes significantly to the City’s greenhouse gas emissions. The community must develop programs and strategies to reduce waste generated and reduce greenhouse gas emissions that result from the treatment of waste. Waste at the recently closed West Contra Costa County Landfill will continue to decompose and emit greenhouse gases for years into the future; efforts are underway to capture these emissions and direct them into the natural gas distribution network. Future emissions can be reduced by processing waste using new technologies. Sustainable and efficient energy systems can be realized by:

- Promoting the generation, transmission and use of energy from renewable sources;
- Promoting conservation and energy-efficient buildings and infrastructure;
- Reducing use of materials that must be processed in landfills;
- Conserving and recycling water and reducing wastewater discharge; and
- Ensuring that City facilities and related activities set a precedent for the use of green technologies, practices and standards.

Investment and expansion of public transit service is crucial for improving transportation efficiency and reducing emissions.
Finding 4: Integrating sustainable development practices and strengthening the existing urban fabric will enhance Richmond’s ability to reduce greenhouse gas emissions while accommodating future growth.

There is a close link between levels of energy consumption and land development patterns. Land use policies that encourage goods and services to be located within convenient walking distance of residential neighborhoods can decrease reliance on private automobiles. This in turn has the positive benefit of decreased daily energy use. The existing pattern of development and street network in Richmond provides an opportunity to promote sustainable development prototypes such as infill and mixed-use. Furthermore, green practices can also be applied in the areas of waste, energy infrastructure, wastewater and water treatment. Sustainable development patterns require:

- Promoting mixed-use and infill development in the Downtown and other major activity centers, along key commercial corridors and on vacant and underutilized parcels;
- Promoting walkability in neighborhoods by improving streetscape design and locating housing close to local-serving uses and public spaces;
- Prioritizing the use of green and sustainable development standards and practices in planning, design, construction and renovation of buildings and infrastructure;
- Promoting the integration of neighborhood commercial uses in residential areas; and
- Supporting urban agriculture and making locally grown food accessible to all residents.

Finding 5: Industries and businesses in Richmond should be encouraged to adopt green and sustainable practices and build capacity in the emerging green economy.

The vast majority of the City’s greenhouse gas emissions are generated by its commercial and industrial sector. The City will work with the industrial community to understand the impacts of industrial emissions, including greenhouse gases, on human and environmental health.

Building an economy based upon green industries will provide social, environmental and economic benefits to the local community. Green businesses and industries can support community revitalization and economic development by:
• Generating new jobs in the green business sector; and
• Encouraging existing businesses and industries to adopt environmentally and socially responsible practices to minimize their emissions and impact on the community.

Finding 6: Restoring and protecting the natural environment will help to mitigate impacts of climate change.

Climate change may have impacts on human and environmental health. A healthy natural environment will help enable the community to respond to future climate change-related events. Richmond can address these challenges by:

• Restoring and expanding ecological systems to support the natural functions of soil, water, tree canopies, creeks, open space and other natural resources; and
• Conserving and protecting wetlands, uplands and natural resources.

Finding 7: Preparing for potential climate change is as critical as reducing greenhouse gas impacts and planning for long-term sustainability.

Communities must reduce greenhouse gas emissions to reduce or even reverse the impacts of climate change. But they must also prepare for potential impacts to human and environmental health in the short and medium term. Action at the local level to adapt to future impacts will require:

• Planning adequately for changing weather patterns and sea level fluctuations.

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Green Economy. The green economy includes renewable energy sources, organic produce and products, green buildings, alternative fuel vehicles and more. Green-Collar Jobs. Green-collar jobs are paid positions that provide products or services directly linked to improving environmental quality. The term suggests high standards regarding fair wages, equal opportunity and healthy working conditions. U.S. economists predict robust future job growth in this category.
Goals

**GOAL EC1  Provide Leadership to Manage Climate Change**
Richmond will take steps to address climate change and to manage its effects. This entails not only pursuing groundbreaking programs and innovative strategies, but educating residents and businesses about these actions and actively monitoring results to ensure progress in critical goal areas. The City will partner with other jurisdictions and organizations to develop effective regional solutions and regulation at regional, state and federal levels. In collaboration with residents, businesses, public agencies and neighboring jurisdictions, Richmond should meet or exceed state requirements for reductions in greenhouse gas emissions.

**GOAL EC2  Promote Clean and Efficient Transportation Options**
The City seeks to expand its green transportation network by encouraging the use of climate-friendly technology, planning growth around multiple modes of travel and reduced reliance on the private automobile. In addition to promoting improved public transit, the City should plan citywide improvements to make active modes of travel, such as walking and bicycling, more comfortable and preferable options for all residents and visitors.
GOAL EC3  **Encourage Sustainable and Efficient Energy Systems**

Richmond can reduce its consumption of energy by encouraging energy conservation, and supporting the consumption of energy produced by climate-friendly technologies. The City should also reduce its overall waste stream by reducing its consumption of goods and materials, and by encouraging a zero-waste philosophy that is environmentally responsible, cost effective and efficient.

GOAL EC4  **Promote Sustainable Development**

Sustainable land uses and development patterns can reduce energy consumption. Richmond should pursue infill development opportunities and encourage the construction of higher-density, mixed-use projects around existing public transit infrastructure, schools, parks, neighborhood-serving retail and other critical services. In addition, the City can incorporate ecologically sustainable practices and materials into new development, building retrofits and streetscape improvements.

GOAL EC5  **Support Community Revitalization and Economic Development**

Richmond strives to be a healthy community where green industries and businesses can flourish. The City should support sustainable businesses and practices that will provide both community and environmental benefits while stimulating job and revenue growth.

GOAL EC6  **Build Climate-Resilient Communities**

While the impacts of climate change on local communities are uncertain, to the extent possible, Richmond will prepare to respond to and protect residents and businesses from increased risks of natural disasters such as flooding or drought.
8 Energy and Climate Change

Richmond has the potential to reduce regional emissions by promoting higher-density, mixed-use and infill development.

Policies and Implementing Actions

A range of policies and implementing actions are outlined below in relation to each of the goals. These policies mandate, encourage or allow certain actions to be pursued throughout the duration of the General Plan. Together they serve as strategic directions for City staff and partners, highlighting where time and resources should be focused.

Each policy may either be correlated with a number of actions, or simply a single key implementing action. Conversely, some actions may support a range of policies. The policies and implementing actions are organized in two parts. First, all goal-related policies are described and each policy description is followed by a list of its associated implementing actions. Then, implementing actions are described in greater detail in the following section.

Because many General Plan elements are interrelated, there is some overlap in policies and actions from element to element. Where this overlap occurs, language and titles are standardized among elements and a cross-reference is provided. When there is a need to customize one of these shared policies or actions to a particular element topic, the defining policy or action statement remains the same and the supporting text is adjusted as appropriate.
GOAL EC1
Provide Leadership to Manage Climate Change

POLICIES

Policy EC1.1 Leadership and Advocacy
Encourage a leadership role at all levels of government and private sector to advocate for local, regional and national solutions to climate change. The success of climate change initiatives depends on collaborative approaches. Richmond should take the initiative to forge new partnerships, develop innovative solutions and continue to support and promote regional, national and international efforts that support climate change protection and sustainability such as the Ahwahnee Principles for Climate Change, the United States of America Mayors for Climate Protection Agreement and the Urban Environmental Accords, among others.


Policy EC1.2 Public Awareness and Support
Raise awareness among residents and businesses about climate change and its potential impacts on the community, environment and economy. Encourage community members to reduce their carbon footprint. Build support for climate change initiatives in Richmond and the region.

**Action EC1.A  Climate Action Plan**

Develop a plan for reducing greenhouse gas emissions to meet state requirements. Components of the plan should include: a comprehensive greenhouse gas emissions inventory and forecast; emissions reduction target(s); assessment of the City’s vulnerability to climate change; climate change resiliency goals; broader sustainability assessment; sustainability targets; strategies and measures to address climate change mitigation, sustainability and adaptation; financing and implementation approaches; a public education and information program; and a program for monitoring and reporting results.

Richmond’s baseline greenhouse gas emissions inventory and forecast will provide a benchmark for planning and monitoring progress in achieving mandated targets. The sustainability plan should incorporate public education programs to raise community awareness.

The climate action plan should include mitigation strategies for addressing the sources of greenhouse gas emissions in the community and within government operations. Adaptation strategies will focus on potential local impacts of climate change such as sea level rise, increased risk of flooding, diminished water supplies and public health. Broader sustainability measures may include the preservation of local water quality, air quality, open space and biodiversity.

The climate action plan should also include information on the financing and implementation of each strategy or measure to ensure timely and well-informed action.

The plan will be subject to the monitoring and reporting program to ensure the City achieves its greenhouse gas reduction, protection and adaptation targets.

Update the plan periodically in accordance with evolving state and federal policy and regulatory frameworks, as well as advancements in scientific research and data on climate change (see also elements: Community Health and Wellness, Action HW10.A; Conservation, Natural Resources and Open Space, Action CN5.E).
**Action EC1.B Monitoring and Reporting Program**

Develop a program for tracking, monitoring and periodically reporting outcomes of the City’s climate change and energy initiatives. The monitoring and reporting program may be part of the climate action plan (Action EC1.A).

**Action EC1.C Public Awareness and Education Program**

Develop a program to educate and inform residents and businesses about key climate change challenges and potential solutions. The City may develop and disseminate information on topics such as waste reduction, recycling, green buildings and landscaping, and renewable energy generation. The City may utilize a range of tools including factsheets, website newsletters, advertising and workshops to reach potential audiences. This program should be reviewed and evaluated periodically for effectiveness. The public awareness and education program should be incorporated into the climate action plan (Action EC1.A).
**Policy EC2.1 Climate-Friendly Vehicles**

Encourage the use of available climate-friendly vehicles to reduce energy use and carbon emissions. The City should support the use of low-emission or renewable fuel vehicles by residents and businesses, public agencies and City government. Vehicles should be evaluated and designated climate-friendly based not only on tailpipe emissions and energy efficiency, but also on lifecycle greenhouse gas emissions of the vehicle and its components. The City can establish a precedent for climate-friendly vehicle use by ensuring that all City-owned or operated vehicles and equipment are climate-friendly (see also Community Health and Wellness Element, Policy HW10.8).


**Policy EC2.2 Climate-Friendly Fuel**

Support the availability of climate-friendly fuels and related infrastructure. The City should encourage production and distribution of climate-friendly fuels in industrial areas and identify appropriate locations for fuel stations. The City should consider fuel to be climate-friendly based on emissions associated with the fuel's production, transportation and use, and consider any associated social and environmental impacts of fuel production.

**Policy EC2.3**  
**Expanded and Affordable Public Transit**  
Support an enhanced and expanded public transit system to improve mobility options for all residents and visitors. Public transit provides an environmentally-friendly, cost-effective and equitable mode of travel for residents and visitors. Encouraging transit-supportive development patterns can further maximize the efficiency of these systems and help reduce air pollution and greenhouse gas emissions within Richmond.

Public transit service should connect major destinations in Richmond including educational institutions, community facilities, regional open space areas and major commercial corridors to serve a greater number of riders and reduce commuter vehicle miles. All housing units and employment centers in Richmond should have access to local and regional transit. The City should also ensure that all transit stations and routes to and from these stations are safe. As many residents and visitors rely on regional passenger rail and air travel, the City should also support efforts to create efficient public transit connections to train stations and regional airports.

The City should support efforts to expand service at night and on weekends and to make transit affordable and accessible to people with disabilities, seniors, youth and low-income households (see also elements: Circulation, Policy CR1.5; Community Health and Wellness, Policy HW4.1).


**Policy EC2.4**  
**Safe and Convenient Walking and Bicycling**  
Promote walking and bicycling as a safe and convenient mode of transportation. The City should improve pedestrian and bicycle amenities to serve the recreation and travel needs of residents and visitors in all parts of Richmond. Where feasible, the City should: connect major destinations such as parks, open spaces, civic facilities, employment centers, retail and recreation areas with pedestrian and bicycle infrastructure; promote shared roadways in residential streets; encourage new development and redevelopment projects to provide pedestrian and bicycle amenities, streetscape improvements and linkages to planned and completed City and regional multi-use trails; and develop safe routes to schools and out-of-school programs that allow access by bicycle and pedestrian paths or reliable and safe transit.
GOAL EC2
Promote Clean And Efficient Transportation Options

POLICIES

The City should provide enhanced bicycle and pedestrian facilities, explore innovative solutions such as bicycle-sharing programs, and encourage businesses, schools and residential developments to provide secure bicycle parking to ensure that these ecologically-friendly, low-impact transportation modes are available to all community members, thereby reducing emissions from vehicles within the City, improving environmental quality and enhancing mobility and connectivity (see also elements: Circulation, Policy CR1.6; Community Health and Wellness Element, Policy HW4.3).


Policy EC2.5 Regional Passenger Rail

Support regional and long-distance passenger rail service. Supporting the regional passenger rail services that serve Richmond residents and businesses will improve connections to other cities, regions and states while reducing vehicle emissions. The City should support Amtrak and the State of California’s Capitol Corridor service for short-distance travel between Richmond and nearby destinations such as Fairfield, Martinez, Berkeley, Emeryville and Oakland.

Implementing Actions – Action EC2.C: Public Transit and Paratransit Service Improvements; Action EC2.D: Transit Incentives Program (pages 8.30 - 8.31)

Policy EC2.6 Private Automobile Use

Reduce reliance on private automobiles as the primary mode of transportation to decrease emissions from vehicle trips. Provide amenities and infrastructure that encourage safe and convenient use of public transit, walking and bicycling. In addition to relieving peak commute traffic congestion, reduced reliance on the private automobile will also lower emissions and improve air quality.

Policy EC2.7  Climate-Friendly Goods Movement
Promote the safe and efficient movement of goods by truck, rail and ship to support port operations and industrial uses. Develop strategies and programs to provide adequate infrastructure improvements and maintenance to support industrial operations in Richmond while minimizing impacts on neighborhoods and sensitive uses. Encourage the use of climate-friendly fuel and vehicles in the movement of goods, and encourage carriers to upgrade fleets.

GOAL EC2
Promote Clean And Efficient Transportation Options

IMPLEMENTING ACTIONS

Action EC2.A Climate-Friendly Fuel Guidelines

Action EC2.B City Vehicles Transition Program
Develop a program to increase the share of climate-friendly vehicles and use of climate-friendly fuels in City-owned and operated vehicles. Evaluate existing City fleet and vehicle needs to determine fleet right-sizing and develop a phased plan to acquire climate-friendly vehicles. Consider including bicycles in the City fleet where feasible (see also elements: Circulation, Action CR5.D; Community Health and Wellness, Action HW10.J).

Action EC2.C Public Transit and Paratransit Service Improvements
Collaborate with AC Transit, BART, West Contra Costa Transit Agency, Amtrak and major employers in Richmond that provide shuttle service to explore the potential to expand bus service to all neighborhoods in the evenings and late nights, and for people with special needs. Explore the potential to enhance Richmond's paratransit service. Collaborate with major employers to provide employer-based "open-door" shuttles to BART, the future ferry terminal and other transit hubs. Collaborate with regional and Contra Costa County transportation agencies to maintain and enhance service within the City and region.

Explore strategies to address affordability, access and safety. Expand outreach and information programs to promote transit use (see also elements: Circulation, Action CR1.B; Community Health and Wellness, Action HW4.C).
**GOAL EC2**
Promote Clean And Efficient Transportation Options

**IMPLEMENTING ACTIONS**

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**Action EC2.D Transit Incentives Program**
Develop an incentives program to expand transit use among residents and employees in Richmond. Target potential new riders as well as high-need population groups such as families, youth, seniors and people with disabilities. Explore the potential for supporting fare-free transit zones in major commercial areas, free or very low-cost bus passes for target groups, a streetcar system connecting the Downtown with the planned ferry terminal in the Southern Shoreline Area and online tools for providing real time information.

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**Action EC2.E Bicycle and Pedestrian Plans**
Develop citywide bicycle and pedestrian plans to make Richmond a more pedestrian and bicycle-friendly City. Identify gaps in the network, major travel routes and priority safety improvements. Designate a network of multi-use trails and off-street paths. Include connections to open space amenities such as Stege Marsh, Point San Pablo, Point Pinole and the Richmond Greenway.

Update design guidelines and standards for bicycle and pedestrian facilities and amenities that meet local, state and federal standards. Include a uniform citywide signage plan and comply with all Americans with Disabilities Act (ADA) requirements.

Explore the potential to designate pedestrian priority areas or districts. Include strong connections to the Downtown, recreation destinations, commercial and mixed-use streets, transit stations and schools. Address pedestrian and bicycle connections in parking lots.

Collaborate with Contra Costa County and other jurisdictions to ensure links to the regional trail network including the San Francisco Bay Trail, and coordination with the County Bicycle and Pedestrian Plan. Coordinate efforts with ongoing bicycle and pedestrian community initiatives such as the Safe Communities Project, Contra Costa Health Services Injury Prevention Project and the Richmond Pedestrian Project.

Collaborate with ABAG, Caltrans and bicycle advocacy groups to develop a safe and convenient bicycle trail across the Richmond-San Rafael Bridge (see also elements: Circulation, Action CR1.C; Community Health and Wellness, Action HW4.D).
**GOAL EC2**
Promote Clean And Efficient Transportation Options

**IMPLEMENTING ACTIONS**

**Action EC2.F**  
**Bicycle Use Program**
Develop a program to encourage safe and convenient bicycle use by residents, employees and visitors. Consider strategies that expand bicycling as a viable mode of transportation for people of all ages and abilities. Explore the feasibility of requiring businesses to provide bicycle amenities such as secured bicycle parking, showers and lockers to encourage employees to bicycle to work.

**Action EC2.G**  
**Safe Routes to School Program**
Develop a Safe Routes to School Program in collaboration with the National Center for Safe Routes to School, West Contra Costa Unified School District and other educational institutions and service providers. Improve walking and bicycling access and safety to schools and after-school programs. Align this program with the bicycle and pedestrian plan (see also elements: Circulation, Action CR2.B; Education and Human Services, ED1.F; Community Health and Wellness, Action HW4.F).

**Action EC2.H**  
**Carshare Program**
Encourage employers to develop programs to promote carsharing and reduce reliance on private automobiles. Define the City’s role in supporting carshare among residents, businesses and visitors. Collaborate with service providers to identify potential sites for locating carshares. The carshare program may be part of the citywide transportation demand management program.

**Action EC2.I**  
**Carpool, Rideshare and Shuttle Program**
Develop a program to coordinate alternative commuting modes including carpooling, ridesharing, van services and shuttle bus programs for large employers or retail destinations. Partner with neighboring jurisdictions to address regional traffic congestion along major thoroughfares in the City. The program may be part of the citywide transportation demand management program.
**Action EC2.J**  **Port Emissions Reduction Plan**
Collaborate with the Port, Council of Industries and regulatory agencies to develop a comprehensive emissions reduction plan for the Port of Richmond. Include strategies to reduce emissions from trucks, ships, locomotives and equipment. Work with regional, state and federal agencies to regulate emissions and enforce existing laws; strengthen regulations to protect human and environmental health; and identify and access available funds for clean air projects. Explore use of low-emission vehicles, short-sea shipping service to reduce truck and rail impacts, “cold ironing” and other strategies to reduce emissions from ships. Consider the San Pedro Bay Ports Clean Air Action Plan, developed by the ports of Los Angeles and Long Beach as a model (see also Community Health and Wellness Element, Action HW9.D).

**Action EC2.K**  **Engine Replacement and Retrofitting Program**
Develop a program to fund diesel engine retrofitting or replacement in existing automobiles, trucks, rail, ships and equipment. Identify feasible technologies that can be applied for retrofitting polluting vehicles. Collaborate with the Council of Industries, the Environmental Protection Agency’s West Coast Collaborative, regional agencies and key stakeholders to develop and implement the program (see also Community Health and Wellness Element, Action HW9.C).
Policy EC3.1 Renewable Energy
Promote the generation, transmission and use of renewable energy to meet current and future demand. The City should partner with public agencies, utilities, businesses and residents to expand the generation and availability of clean technologies and renewable energy. Support a range of renewable energy sources such as solar, wind power, waste and others. The City should encourage new development and redevelopment projects to generate a portion of their energy needs through renewable sources (see also Community Health and Wellness Element, Policy HW10.4).


Policy EC3.2 Energy Efficiency and Conservation
Promote efficient use of energy and conservation of available resources in the design, construction, maintenance and operation of public and private facilities, infrastructure and equipment. The City should collaborate with partner agencies, utilities and businesses to support a range of energy efficiency, conservation and waste reduction measures including: development and retrofitting of green buildings and infrastructure; installation of energy-efficient appliances and equipment in homes and offices; and heightened awareness of energy and conservation issues (see also Community Health and Wellness Element, Policy HW10.5).

GOAL EC3
Encourage Sustainable And Efficient Energy Systems

**Policy EC3.3**  
**Waste Reduction and Recycling**  
Promote waste reduction and recycling to minimize materials that are processed in landfills. Encourage residents and businesses to reduce waste and minimize consumption of goods that require higher energy use for shipping and packaging. The City should encourage composting to reduce food and yard waste and provide mulch for gardening. Reducing waste and selecting minimum-impact products will conserve land and energy resources (see also elements: Community Health and Wellness, Policy HW10.6; Conservation, Natural Resources and Open Space, Policy CN5.3).


**Policy EC3.4**  
**Water Conservation and Reuse**  
Promote water conservation and recycled water use. The City can reduce energy consumed for treatment and transportation of water and discharge of wastewater by: encouraging installation of low-flow fixtures; using native planting for landscaping in all City-owned and operated facilities; promoting best practices and technologies for water conservation; considering water use in evaluating and approving development projects; supporting the use of graywater systems in residential, commercial and industrial uses; and encouraging new development and redevelopment projects to meet a portion of their water needs through the use of recycled water (see also Community Health and Wellness Element, Policy HW10.7).


**Policy EC3.5**  
**City Government Operation**  
Promote climate-friendly standards, practices, technologies and products in all City facilities and operations. The City should lead by example and set a precedent in the community to reduce greenhouse gas emissions by incorporating best practices and available technologies. The City should also create favorable conditions for community-wide implementation of climate-friendly practices by supporting innovations and creative solutions.

Action EC3.A  
**Community Choice Aggregation Feasibility Assessment**
Conduct an assessment to determine the fiscal and operational feasibility of partnering in community choice aggregation. Collaborate with neighboring jurisdictions to support local efforts to expand the generation and use of energy from renewable sources while increasing revenue for the City. The municipally owned utility should explore purchasing surplus electricity generated by private sources to encourage large warehouse and retail operators to add solar panels to the roofs of their buildings and maximize generation of renewable energy.

Action EC3.B  
**Renewable Energy Program**
Create a program to encourage and support the generation, transmission and use of renewable energy. Include incentives and financing programs to support implementation. Advocate at the regional and state level to fund upgrades to the existing power grid so that it can support renewable energy production and transmission. Consider requiring City-owned and operated facilities to generate at least 10 percent of their energy use from renewable sources (see also elements: Conservation, Natural Resources and Open Space, Action CN5.A; Community Health and Wellness, Action HW10.D).

Action EC3.C  
**Energy Demand Reduction Program**
Collaborate with utility and partner agencies to develop a program to reduce energy demand and promote energy conservation. Include incentives to encourage residents and businesses to meet these goals. Consider mandating energy audits in City-owned or operated facilities. Collaborate with neighboring jurisdictions to share best practices and implement regional programs to help residents and businesses meet regional targets.

Action EC3.D  
**Waste Reduction and Recycling Program**
Develop improved waste reduction and expanded recycling programs. Potential measures could include: providing recycling containers in parks and public spaces; establishing computer reuse and recycling programs; enhancing recycling and green waste services for all residents; and providing locations for household hazardous wastes to be recycled. The City should work with the solid waste franchise holder to expand the types of materials recycled and reused. The City should work in coordination with the Joint Powers Authority and the waste franchise holder to implement outreach efforts to educate residents and businesses on waste reduction,
reuse and recycling (see also elements: Conservation, Natural Resources and Open Space, Action CN5.D; Community Health and Wellness, Action HW10.E).

**Action EC3.E Construction and Demolition Ordinance**
Develop an ordinance that requires all construction and demolition activities to evaluate energy use and waste and to reduce or mitigate impacts where possible. Work with contractors to share best practices on building recycling and reuse and demolition techniques to minimize waste, dust generation, water and energy use and other impacts of construction and demolition work (see also elements: Conservation, Natural Resources and Open Space, Action CN5.H; Health and Wellness, Action HW10.F).

**Action EC3.F Water Conservation Program**
Create a program for implementing water conservation efforts for households, businesses, industries and public infrastructure. This program should include the following measures:

- Restrict water usage through metering or establishing designated watering days for the City’s residences and businesses;
- Implement standards that require low-flow appliances and fixtures in all new development;
- Work with water providers and water conservation agencies to create an incentives program that encourages retrofitting existing development with low-flow water fixtures;
- Require new development and landscaped public areas to utilize state-of-the-art irrigation systems that reduce water consumption including graywater systems and rainwater catchment; and
- Encourage use of drought-tolerant and native vegetation.

The City should incorporate improved standards into building code review and require development project approvals to include a finding that all feasible and cost-effective options for conservation and water reuse are incorporated into project design including graywater systems (see also elements: Conservation, Natural Resources and Open Space, Action CN3.H; Community Health and Wellness, Action HW10.G).
GOAL EC3
Encourage Sustainable and Efficient Energy Systems

IMPLEMENTING ACTIONS

**Action EC3.G  Water Recycling Program**
Establish a water recycling program for residents, businesses and developers to install localized water recycling systems. The City may also research the feasibility of a large-scale recycled water system including distribution for the recycled water. Coordinate with developers and the East Bay Municipal Utility District to establish a connected pipe system for recycled water. Evaluate the use of recycled water in new and existing buildings and landscapes. Based on the evaluation, consider developing strategies for reusing water in City-operated buildings or facilities, encouraging the construction of graywater systems and providing education opportunities regarding the benefit of water and energy conservation and waste reduction (see also elements: Conservation, Natural Resources and Open Space, Action CN3.C; Community Health and Wellness, Action HW10.H).

**Action EC3.H  Municipal Sewer System Master Plan**
Complete the municipal sewer system master plan, compatible with the wastewater treatment plant master plan, to ensure that wastewater treatment facilities have capacity to avoid overflows of untreated sewage. The plan should also identify strategies to recover methane to cogenerate electricity and reuse wastewater and biosolids generated at the treatment plants (see also elements: Conservation, Natural Resources and Open Space, Action CN3.B; Community Facilities and Infrastructure, Action CF1.D).
**Policy EC4.1 Mixed-Use and Infill Development**
Promote mixed-use and infill development on vacant and underutilized parcels in residential, commercial and industrial areas. Encourage efficient use of land and existing circulation infrastructure by promoting higher-density, transit-oriented and pedestrian-friendly development along key commercial corridors, in the Downtown area, at the planned ferry terminal and in the Hilltop Area. Support local-serving mixed-use in residential areas to provide needed services and amenities close to where people live and work.


**Policy EC4.2 Walkable Neighborhoods and Livable Streets**
Promote safe and walkable neighborhoods and interconnected streets through the design of streetscapes, public gathering places and physical development. Provide pedestrian amenities such as sidewalks and street trees, transit and bike improvements, lighting and landscaping and appropriate traffic calming measures to ensure a safe pedestrian environment for all.

Support uses and public space improvements that generate street-level activity, create eyes-on-the-street, provide opportunities for community interaction and encourage a sense of collective ownership of common areas. Encourage mixed-use development that attracts people and facilitates activity throughout the day. Strongly discourage isolated or gated communities in order to improve physical connectivity throughout the City, and create incentives to remove barriers in existing gated areas. The City should maintain the streets to ensure that neighborhoods and streets are safe and well used.

Walkable communities with neighborhood nodes and local amenities and services provide opportunities for residents and workers to comfortably travel to and from school, work, shopping and other destinations by foot, bicycle and public transit rather than relying solely on vehicles (see also Land Use and Urban Design Element, Policy LU2.2).

**Policy EC4.3**  Green Buildings and Landscaping
Promote green buildings and landscaping in all public and private development projects. The City should: encourage the use of green and sustainable development standards and practices in planning, design, construction and renovation of facilities; promote the use of green streets that incorporate extensive landscaping, pervious surfaces and native planting; encourage new development and redevelopment projects to be LEED-certified green buildings; and promote ecologically-sensitive approaches to landscaping. Adopting green standards and practices will improve the quality of the built environment, reduce environmental impacts and support economic development goals for creating a green economy (see also Community Health and Wellness Element, Policy HW10.2).


**Policy EC4.4**  Green Infrastructure
Promote green infrastructure that relies on natural processes for stormwater drainage, groundwater recharge and flood management. Green approaches for infrastructure development are environmentally and fiscally efficient and provide long-term benefits to the community by reducing energy consumption and maintenance and capital improvement costs (see also Community Health and Wellness Element, Policy HW10.3).

Implementing Action – Action EC4.F: Green Streets Program (pages 8.42)

**Policy EC4.5**  Local Urban Agriculture and Food
Support urban agriculture and encourage local farmers to provide fresh food locally. The City should support urban and local agriculture on publicly owned vacant land that is suitable for growing food. Production and processing of food locally can reduce overall energy consumption, improve access to fresh fruits and vegetables in the community and support the local economy by keeping jobs and revenue in Richmond. The City should also support farmers’ markets, regulated food stands and community gardens to supplement the availability of healthy food in the City (see also Community Health and Wellness Element, Policy HW2.2).

GOAL EC4
Promote Sustainable Development

IMPLEMENTING ACTIONS

Action EC4.A Downtown Specific Plan
Develop a specific plan to guide capital investment, redevelopment and revitalization of the Downtown as the heart of Richmond. Incorporate key concepts from existing plans, such as the City Center Specific Plan and the Macdonald Avenue Economic Revitalization Plan, into the specific plan. Include Macdonald Avenue, the Civic Center and the BART station in the planning area. Incorporate development standards and urban design guidelines in the Specific Plan (see also Land Use and Urban Design Element, Action LU1.D).

Action EC4.B Corridor Improvement Plans
Develop plans for key commercial corridors in the City to guide redevelopment of these areas into mixed-use, pedestrian and transit-oriented corridors and nodes. Collaborate with regional agencies, neighboring jurisdictions and the County to develop the plans. Include development standards and urban design guidelines (see also elements: Land Use and Urban Design, Action LU1.B; Community Health and Wellness, Action HW7.A).

Action EC4.C Neighborhood Revitalization Plans
Develop revitalization plans for all neighborhoods. Collaborate with community leaders and organizations, neighborhood councils and neighboring jurisdictions to develop the plans. Identify needed improvements, funding mechanisms and a phasing plan. Actively work to reduce blight throughout the City and promote the upkeep of vacant lots (see also elements: Land Use and Urban Design, Action LU2.A; Community Health and Wellness, Action HW7.B; Community Facilities and Infrastructure, Action CF4.A).

Action EC4.D Infill Development Incentives Program
Develop an incentives program for targeted redevelopment areas in the urban core to encourage infill development. Include incentives to encourage new development and redevelopment projects to provide community amenities and uses that serve priority community needs (see also Land Use and Urban Design Element, Action LU1.A).
GOAL EC4
Promote Sustainable Development

IMPLEMENTING ACTIONS

Action EC4.E  Street Design Guidelines
Update the street design guidelines that support public transit, bicycles and walking on all streets. Develop standards that are consistent with and tailored to street or trail function and adjacent land use type.

Pedestrian-friendly designs should address maximum lane widths, maximum curb radii, sidewalk width, curb ramps and Americans with Disabilities Act (ADA) requirements. Bicycle-friendly design should address lane widths, street and intersection crossings and parking areas. Include guidelines for transit access.

Identify priority thoroughfares for developing green streets in the City to implement a natural systems approach for stormwater management and to expand urban greenery. Evaluate the feasibility of reducing the number or width of travel lanes on key mixed-use streets that have excess capacity such as Cutting Boulevard, and using the capacity and/or regained width for wider sidewalks and bicycle lanes (see also elements: Circulation Element, Action CR2.D, Community Health and Wellness, Action HW4.O).

Action EC4.F  Green Streets Program
Expand the green streets program to support a sustainable approach to stormwater drainage, groundwater recharge and landscaping. Incorporate green streets standards and guidelines in all streetscape improvement projects in the City (see also elements: Circulation, Action CR5.F; Community Health and Wellness, Action HW4.I; Community Facilities and Infrastructure, Action CF3.B).

Action EC4.G  Green Building Technologies and Standards
Adopt the Leadership in Energy and Environmental Design (LEED) standards as a model for public and private development in the City. Solar power, energy-efficient heating and cooling systems and green building materials where properly implemented can also contribute to a healthier and more productive workplace.

Establish green building standards within the City’s zoning and development regulations that require new development throughout the City to use environmentally-sound building technologies and to achieve LEED standards to the extent possible (see also elements: Economic Development, Action ED1.I; Community Health and Wellness, Action HW10.C).
**Action EC4.H**  
**Landscape Design Guidelines**
Update the City's landscape design and development guidelines to promote sustainable landscaping design and maintenance. Include standards and incentives for commercial and residential uses that encourage the use of locally propagated native, low water-use, drought-tolerant plantings and integrated pest management practices. Create a checklist of landscaping guidelines to be used as part of the development application process. Require appropriate tree species and densities in buffer areas. Ensure that medians are sufficiently wide to support the long-term health of plantings (see also Conservation, Natural Resources and Open Space Element, Action CN1.H).

**Action EC4.I**  
**Green Building Ordinance**
Develop a green building ordinance that requires the use of efficient buildings and site design in the construction and renovation of both City-owned and private buildings and structures. Work with public agencies such as PG&E to encourage the inclusion of energy-efficient systems in remodels and retrofits of existing buildings. Provide incentives for improving energy efficiency in existing buildings (see also elements: Conservation, Natural Resources and Open Space, Action CN5.C; Community Facilities and Infrastructure, Action CF3.A; Community Health and Wellness, HW10.B).
Action EC4.J  Sustainable Urban Agriculture Assessment

Explore the potential for creating and sustaining local urban agriculture, including community gardens, orchards and farmers’ markets. Urban agriculture has the potential to supplement the availability of fresh fruit and vegetables in the community, provide economic opportunities to Richmond residents, lower food costs, reduce overall energy consumption and building social cohesion (see also elements: Community Health and Wellness, Action HW2.B; Conservation, Natural Resources and Open Space, Action CN2.L).

The assessment should explore the feasibility of implementing the following strategies:

• Developing a site inventory and a management plan to administer the use of potential urban agricultural sites;
• Promoting urban agriculture as a desirable civic activity that improves the quality of urban life, food security, neighborhood safety and environmental stewardship;
• Supporting the development of appropriate agriculture in residential, industrial, business and open space zones;
• Establishing a community-based support system for urban growers such as tool banks, agricultural businesses, shared processing facilities, farmers’ markets, community-supported agriculture ventures, funding streams and technical service providers;
• Offering locally grown food to schools, hospitals, nursing homes, day care centers, correction facilities and businesses, while creating economic opportunities for urban growers and related industries;
• Supporting WIC Farmers’ Market Nutrition Program and the Senior Farmers’ Market Nutrition Program that provide support for buying fresh produce at farmers’ markets;
• Creating training programs for unemployed people to work in urban food-related businesses as a source of living wage jobs;
• Working with representatives of community gardening and urban farming organizations to meet needs unique to urban farm enterprises;
• Ensuring long-term land commitment for community gardens, entrepreneurial farms and other urban agriculture ventures;
• Updating building codes to encourage rooftop gardening;
GOAL EC4
Promote Sustainable Development

IMPLEMENTING ACTIONS

- Maximizing use of public lands in parks, around municipal buildings, schools, public housing and hospitals for food production with fruit trees, edible landscapes and production areas;
- Supporting programs for composting organic material at all City-owned facilities and large developments; and
- Developing school-based programs that integrate nutrition and gardening in order to raise awareness about the connection between healthy food choices and locally grown fresh produce.
**Policy EC5.1  Green Businesses and Jobs**

Promote a green economy that can provide new jobs in the emerging green industry. A cluster of green businesses can provide goods and services to support the growing need for clean and sustainable technologies, fuels, vehicles and equipment, while providing jobs and training to Richmond residents. The green economy can support Richmond’s economic development and environmental protection goals.


**Policy EC5.2  Environmentally Responsible Businesses and Industries**

Encourage environmentally responsible businesses that make positive contributions to the Richmond community. The City should encourage local businesses to operate in an environmentally sound manner, hire locally when possible and participate in civic life and play a positive role in the community. The City should actively work with local industries to ensure their compliance with all applicable environmental regulations to limit pollution and protect the community from environmental hazards.

Richmond should promote and encourage clean and green industries that provide well-paying jobs, revenue and other community and environmental benefits; support existing industries to become clean and adopt green practices; and promote a mix of uses and a range of activities on industrial land to create jobs and revenue while avoiding conflict between industrial and non-industrial uses (see also elements: Economic Development, Policy ED2.6; Community Health and Wellness, Policy HW6.4; Land Use and Urban Design, Policy LU3.1).

**Policy EC5.3 Air Quality**

Improve air quality to protect human and environmental health and minimize impacts on sensitive population groups. The City should work with businesses and industry, residents and partner agencies to reduce the impact of direct, indirect and cumulative impacts of stationary and non-stationary sources of pollution such as heavy industry, the port, railroads, diesel trucks and busy roadways. The City should also ensure that sensitive uses such as schools, childcare centers, parks and playgrounds, housing and community gathering places are protected from adverse impacts of emissions.

The City should support mitigations to reduce impacts associated with air quality on disadvantaged neighborhoods; continue to participate in regional planning efforts with nearby jurisdictions and the Bay Area Air Quality Management District (BAAQMD) to meet air quality standards; and support regional, state and federal efforts to enforce existing pollution control laws and strengthen regulations (see also elements: Conservation, Natural Resources and Open Space, Policy CN4.1; Community Health and Wellness, Policy HW9.1; Economic Development, Policy ED1.4).

Implementing Action – Action EC5.D: Air Quality Monitoring and Reporting Program (pages 8.49)
Action EC5.A  Green Business Strategic Plan
Collaborate with the Chamber of Commerce and Council of Industries to develop a strategic plan to attract green technology firms to Richmond. This strategic plan would build on the momentum generated by the City Council Resolution 45-07, which declared Richmond a Green Economic Development Area, inviting green businesses and manufacturing to locate in Richmond. The plan will examine green industry trends and look at particular locations within the City as nodes for clustering of green businesses.

Include a strategic marketing campaign that highlights Richmond’s strengths and strategies to prepare the local workforce for emerging green industries (see also elements: Economic Development, Action ED2.D; Land Use and Urban Design, Action LU3.A; Community Health and Wellness, Action HW6.A).

Action EC5.B  Workforce Development Strategy
Expand opportunities for residents including vocational training, mentorship and apprenticeship programs. Maintain and enhance partnerships with local workforce development programs such as RichmondWORKS, RichmondBUILD, YouthWORKS and YouthBUILD. These programs are the City’s main workforce training initiatives and provide a valuable service to Richmond residents and businesses. They also serve as the primary gateway for employers looking to hire local residents. RichmondWORKS is currently working with Solar Richmond to train local youth in solar panel installations. This partnership exemplifies the creation of green-collar jobs, leveraging the expansion of the green technology sector to benefit local workers. Similar opportunities should be explored by the City and its workforce training partners.

Encourage community colleges, the School District and adult education programs to offer more coursework and training oriented toward emerging green industries in addition to traditional trades. Partnerships with the University of California system and the Contra Costa Community College District may be explored to strengthen the environmental and technical aspects of these programs.

Collaborate with the Workforce Investment Board (WIB) to ensure that new and existing industries have easy access to a local, work-ready and talented workforce. This collaboration should identify where additional investment in workforce education can make a difference for both employ-
ers and workers. The City’s role can be to offer knowledge of strategic industries and labor market trends and facilitate partnerships among industry employers, education and training providers, community organizations and other stakeholders.

Nonprofit organizations, notably Rubicon Programs, Inc., also play a crucial role in workforce training in Richmond and West Contra Costa County. All these programs should work cooperatively with educational institutions and other organizations involved in education, workforce preparation and social services to improve their capacity individually and collectively to respond to the needs of local residents and employers (see also elements: Education and Human Services, Action EH2.A; Economic Development, Action ED3.A; Community Health and Wellness, Action HW6.B).

**Action EC5.C Green Business Certification Program**

Develop criteria for green business certification and create a program to allow new and existing businesses to work towards this certification. Collaborate with the County and other jurisdictions to develop consistent criteria. Create incentives for existing businesses to participate in the certification program.

**Action EC5.D Air Quality Monitoring and Reporting Program**

Establish a citywide monitoring and reporting program to assess the cumulative impact of air pollution and toxins on human and environmental health, and monitor exposure of sensitive uses such as homes, parks, schools and childcare facilities to pollutants.

Identify funding mechanisms for implementing the monitoring program. Funding sources may include impact fees or voluntary contributions from major polluters. Fees may be charged through conditions of permit approval or through the environmental review process.

Collaborate with the County Health Department, the Bay Area Air Quality Management District and state agencies to establish baseline exposures and to the extent feasible, document health effects associated with monitored baseline exposures. Include provisions to hold businesses and operations financially accountable for their impacts on the environment or community due to air pollution exceeding legal thresholds (see also elements: Economic Development, Action ED1.H; Community Health and Wellness, Action HW9.A; Conservation, Natural Resources and Open Space, Action CN4.D).
Policy EC6.1  

**Habitat and Biological Resource Protection and Restoration**  
Protect natural habitat and biodiversity and preserve biological resources. Natural habitat is essential to ensuring biodiversity and protecting sensitive biological resources. The City should protect these areas and work with the California Department of Fish and Game, the San Francisco Bay Regional Water Quality Control Board, the East Bay Regional Park District and other regional agencies to identify areas for special protection and establish appropriate protection measures for these areas.

The City should protect resources to maximize the efficacy of natural systems and encourage sustainable development practices and conservation measures to ensure a healthy natural environment.

Wetlands should be protected from direct and indirect impacts of new and existing development and infrastructure. The City should ensure that direct and indirect impacts to wetland habitats are minimized by environmentally-sensitive project siting and design.

Marshes and baylands should be protected to ensure they are not polluted or damaged from bay filling and dredging. Creek corridors and riparian areas should be protected and restored to ensure they function as healthy wildlife habitat and biological areas. The City should protect and restore creek corridors and riparian areas by restoring riparian habitat with appropriate vegetation and channel design; removing culverts and hardened channels where appropriate; improving creek access; avoiding future culverting or channelization of creeks; and ensuring appropriate and ongoing maintenance.

At a minimum the City shall require mitigation of impacts to sensitive species ensuring that a project does not contribute to the decline of the affected species populations in the region. Mitigation will be identified by the City in coordination with the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG) and other regulatory agencies (see also elements: Conservation, Natural Resources and Open Space, Policy CN1.1; Land Use and Urban Design, Policy LU4.3; Community Health and Wellness, HW9.7).

Policy EC6.2 **Low-Lying Areas in Richmond**
Protect and manage low-lying areas that are likely to be affected by sea level rise and storm surges. The City should encourage development patterns, infrastructure and flood management practices that can adapt to potential climate change impacts in these low-lying areas.


Policy EC6.3 **Adapting to Climate Change**
Prepare for and adapt to future impacts of changing weather patterns and sea level fluctuations. Protect neighborhoods, infrastructure and facilities, the shoreline and natural resources from the impacts of climate change. Require new developments to include an evaluation of climate change impacts in the project review process.

Action EC6.A  Open Space Plan
Update the open space plan to enhance public open space in the City. Include strategies for open space in the hills, along creeks and the shoreline, and in the urban core. Collaborate with the East Bay Regional Park District and the National Park Service to manage and maintain facilities and programs at regional and national parks (see also elements: Conservation, Natural Resources and Open Space, Action CN2.E; Community Health and Wellness, Action HW9.O; Land Use and Urban Design, Action LU4.B).

Action EC6.B  Habitat Restoration Plan
Create a work plan for restoring sensitive habitat that has been degraded and has potential for rehabilitation. This includes brownfield and contaminated sites. Seek funding opportunities from state and federal agencies and from nonprofit foundations for restoration and remediation work (see also elements: Conservation, Natural Resources and Open Space, Action CN1.E; Community Health and Wellness, Action HW9.Q).

Action EC6.C  Urban Creek Restoration Program
Create a program to restore creek corridors in urban areas. Creeks currently diverted in culverts or hardened channels should be restored to their natural state where feasible. Coordinate with regional agencies and local nonprofits in this effort. Adopt regional guidelines for channel creation or modification to ensure that channels meander, have a naturalized side slope and a varied channel bottom elevation. Include improvement standards for soft bottom channels (see also elements: Conservation, Natural Resources and Open Space, Action CN1.T; Parks and Recreation, Action PR3.C; Community Health and Wellness, Action HW9.N).

Action EC6.D  Shoreline Protection
Develop strategies to restore shoreline areas and prepare for potential sea level rise. Address a range of issues including: impacts on development adjacent to low-lying areas; soil erosion along the shoreline; inundation of public and private property; disruption of infrastructure such as streets, sewer lines and stormwater drainage lines; and impacts to marshes, wetlands and floodplains.
GOAL EC6
Build Climate-Resilient Communities

IMPLEMENTING ACTIONS

Action EC6.E  NPDES Compliance and Permit

Continue to comply with the City’s National Pollutant Discharge Elimination System (NPDES) permit by implementing the following action steps:

- Maintain municipal infrastructure (sewer systems, roads, corporation yards, buildings) to reduce pollutants that flow into water courses;
- Require development to comply with the Contra Costa Clean Water Program Stormwater Guidebook;
- Work with developers to ensure compliance with the City’s minimum standards and NPDES requirements;
- Encourage all projects to use pervious pavements, cluster structures, disconnect downspouts, minimize land disturbance and utilize micro detention such as low-impact development (LID);
- Require adequate source control measures to limit pollution generation in businesses including draining non-stormwater discharges such as swimming pools, trash and food compactor racks, vehicle outdoor storage, fire sprinkler test water and equipment washing;
- Require businesses that may be susceptible to polluting stormwater to implement best management practices (BMPs) including covering drains and storage precautions for outdoor material storage, loading docks, repair and maintenance bays and fueling areas;
- Inspect construction sites to prevent illicit discharges;
- Inspect municipal storm drains to eliminate illicit discharges and prevent illegal dumping;
- Educate the public about stormwater pollution prevention methods and provide incentives for public participation;
- Adopt an integrated pest management (IPM) policy or ordinance and advocate IPM through public education;
- Manage waste generated from cleaning and treating of copper architectural features including copper roofs;
- Adopt a local ordinance for installing a sanitary sewer connection and prohibiting discharges of copper-based chemicals or other fungicides from pools, spas and fountains; and
- Update the Richmond Municipal Code (section 12.22) to comply with NPDES requirements.
GOAL EC6
Build Climate-Resilient Communities

IMPLEMENTING ACTIONS

Continue to implement the NPDES Stormwater Permit in coordination with surrounding jurisdictions. Ensure compatibility with the Joint Watershed Goals Statement (1995), signed by Richmond, El Cerrito, Albany, Berkeley, UC Berkeley and the East Bay Regional Park District (see also elements: Conservation, Natural Resources and Open Space, Action CN3.A; Community Health and Wellness, Action HW9.L).

Action EC6.F Storm Water Drainage Master Plan
Work with relevant agencies and departments to complete the storm drainage master plan. Assess the system’s ability to accommodate current and future users, recommend improvements and identify funding mechanisms and partners in implementation.

Include a program to eliminate or reduce the conditions of direct discharges of polluted stormwater to protect water quality of the San Francisco Bay and fulfill the water quality requirements of the Clean Water Act. Pursue Capital Improvement Program (CIP) improvements proposed for the eight Drainage Zones identified as having a Potential for Severe Street Flooding (PSSF).

Update and adopt guidelines to address stormwater drainage and groundwater recharge. Guidelines should be incorporated into the planning review process based on those found in the Contra Costa County Clear Water Program (see also Community Facilities and Infrastructure Element, Action CF1.E).

Continue to implement the urban forest management plan to guide landscaping practices in urban areas of the City, reduce the heat island effect and contribute to carbon mitigation. Continue the adopt-a-tree program. Coordinate the plan with the “City of Richmond Urban Forest Management/Master Plan Reforestation Supplement (1997)” and related documents for this purpose (see also elements: Conservation, Natural Resources and Open Space, Action CN6.E; Community Health and Wellness, HW9.M; Community Facilities and Infrastructure, Action CF3.C; Parks and Recreation, Action PR4.B).

Update the plan to establish the following measures:

• Create guidelines to establish minimum planting standards and require appropriate tree species and planting densities within newly landscaped areas;
Update the list of trees to be used as a guideline for all tree plantings and focus on local native species;

Identify maintenance and planting standards for street trees, ensuring that the best practices in urban forestry are being utilized including best practices for pruning around above-ground utility lines to ensure the best health and form of street trees;

Establish requirements for street trees in new developments and in parking lots;

Outline coordination efforts with EBMUD to offer programs or other resources to provide property owners with information on proper tree selection, proper location to reduce heat transfer effects, planting and maintenance; and

Establish guidelines that require all native tree habitats to be protected and when avoidance is not possible, require mitigation efforts as required by the Public and Private Tree Preservation Ordinance.

Action EC6.H Disaster Preparedness and Recovery Plan

Regularly update the disaster preparedness and recovery plan as required by state and federal laws (see also elements: Public Safety and Noise, Action SN3.A; Community Health and Wellness, Action HW3.D; Community Facilities and Infrastructure, Action CF2.E).
Summary of Implementing Actions

The table presented on the following pages is a tool for guiding implementation of the City’s Energy and Climate Change Element. Organized by the community’s broad goals, the table format provides an overview of policies and implementing actions detailed in the previous section. Each action is linked to a designated lead responsible party and an estimated time frame for completion. Related policies are identified in the final column.

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### Goal EC6: Build Climate-Resilient Communities

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Regulatory Framework

The Energy and Climate Change Element relates to local, state and federal departments and agencies, laws, policies and programs that contribute to planning for climate change and energy use.

Departments and Agencies
In addition to local city planning and public works departments, there are several state and regional departments and agencies that play a role in climate change and energy policy.

California Air Resources Board
Established by California’s Legislature in 1967, the California Air Resources Board (CARB) strives to attain and maintain healthy air quality, conduct research related to air pollution and address air quality impacts of motor vehicles in the state. CARB’s 11-member board is appointed by the Governor (http://www.arb.ca.gov).

California Public Utilities Commission
The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, water, railroad, rail transit and passenger transportation companies. The Commission is comprised of five Governor-appointed members and staff (http://www.cpuc.ca.gov).

Bay Area Air Quality Management District
The Bay Area Air Quality Management District (BAAQMD) is committed to achieving clean air to protect the public’s health and the environment in the San Francisco Bay Region. The Air District endeavors to attain and maintain air quality standards, increase public awareness and positive air quality choices, and develop and implement protocol and policies for environmental justice. BAAQMD was created by the California Legislature in 1955, making the District the first of its kind in the state. The District’s jurisdiction encompasses seven Bay Area counties (Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa) as well as portions of Solano and Sonoma counties (http://www.baaqmd.gov).
**East Bay Municipal Utility District**
The East Bay Municipal Utility District (EBMUD) is a publicly owned utility that supplies water and provides wastewater treatment for parts of Alameda and Contra Costa counties on the eastern side of San Francisco Bay in northern California. EBMUD has jurisdiction over the water service lines in Richmond (http://www.ebmud.com).

**Veolia Water North America**
Veolia Water North America operates and maintains Richmond Municipal Sewer District’s sewer treatment and collection facilities as well as storm drainage facilities (http://www.veoliawaterna.com).

**Related Plans, Programs, Regulations and Acts**
The City of Richmond relies on several federal, state and local regulatory tools and programs to address climate change. These tools range from legislative acts to strategic plans and initiatives.

**Federal**

**U.S. Conference of Mayors Climate Protection Agreement**
The U.S. Conference of Mayors Climate Protection Agreement, signed in June 2005, is a locally based initiative of mayors from across the country. Under the agreement, participating cities commit to the Kyoto Protocol, strive to reduce greenhouse gas emissions and advocate for legislation and policies and programs to reduce greenhouse gas emissions. As of October 2008, the Agreement has been signed by 884 mayors including the Mayor of Richmond.

**State**

**Assembly Bill 32**
California passed Assembly Bill 32 (AB 32), also known as the Global Warming Solutions Act, in 2006. The Bill charged the California Air Resources Board (CARB) with implementing a comprehensive statewide program to reduce greenhouse gas emissions.

In December 2008, the California Air Resources Board adopted a scoping plan that provides a framework to lower the state’s greenhouse gas emissions to meet the 2020 limit. Measures in the Scoping Plan will be developed over the next three years and include several vehicle efficiency initiatives such as the low-carbon fuel standard set out in Executive Order S-1-07, which would reduce the carbon intensity of California’s transportation fuels by at least 10% by 2020.
**Senate Bill 1368**

Senate Bill 1368 (SB 1368) is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 required the California Public Utilities Commission (PUC) to establish a greenhouse gas emission performance standard for baseload generation from investor owned utilities by February 1, 2007. It also required the California Energy Commission (CEC) to establish a standard for publicly owned utilities by June 30, 2007. The standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC and CEC.

**Senate Bill 375**

Signed in September 2008, Senate Bill 375 (SB 375) requires regional governing bodies in each of the state’s major metropolitan areas to adopt a “sustainable community strategy” as part of their regional transportation plan that will meet the region’s target for reducing greenhouse gas emissions. The Bill provides incentives for implementing the sustainable community strategies by allocating federal transportation funds to projects that reduce greenhouse gas emissions, such as housing developments in proximity to schools and employment centers that allow people to reduce automobile use. Projects that conform to the sustainable community strategy and contribute to greenhouse gas emission reduction will be given a more streamlined environmental review process.

**Executive Order S-3-05**

On June 1, 2005, Governor Schwarzenegger signed Executive Order S-3-05, establishing the following greenhouse gas emissions reductions targets for the state of California:

- 2000 levels by 2010
- 1990 levels by 2020
- 80% below 1990 levels by 2050

**California Environmental Quality Act**

Passed in 1970, the California Environmental Quality Act (CEQA) requires that public agencies abstain from approving projects with significant adverse environmental impacts if there are feasible alternatives or mitigation measures that can substantially reduce or avoid those impacts. In light of recent climate change research and findings, public agencies are facing increasing pressure to identify and address potential significant impacts due to greenhouse gas emissions.
In August 2007, California Attorney General Jerry Brown announced a settlement with San Bernardino County that requires a California agency to inventory historical (as of 1990), current and projected greenhouse gas emissions, to set a target for reducing greenhouse gas emissions and to develop measures to reduce such emissions. The case provides guidance on how to address climate change in CEQA documents.

Pursuant to Senate Bill 97 (Chapter 185, 2007) the Governor’s Office of Planning and Research (OPR) is in the process of developing CEQA guidelines for the mitigation of greenhouse gas emissions. The Resources Agency must certify and adopt the guidelines on or before January 1, 2010.

**Assembly Bill 117**
Passed in 2002, Assembly Bill 117 (AB 117) allows local governments to aggregate the retail electric customers in their jurisdictions for the purpose of purchasing power. The Bill allows communities to choose their electrical power suppliers and what type of power to buy, and allows them to negotiate how much they pay.

**Senate Bill 1078 and 107**
Established in 2002 under Senate Bill 1078 (SB1078) and amended by Senate Bill 107 (SB 107), the California Renewables Portfolio Standard (RPS) is one of the most ambitious renewable energy standards in the country. The program requires electric corporations to increase procurement from eligible renewable energy resources by at least one percent of their retail sales annually, until they reach 20% by 2010. Eligible energy includes hydroelectric facilities that are 30 megawatts or less, geothermal, biomass, solar, wind, biogas, biodiesel, fuel cells, ocean wave, ocean thermal, tidal current and selected municipal solid waste facilities.

**The California Solar Initiative**
The California Solar Initiative is part of the statewide effort to install 3,000 megawatts of new, grid-connected solar systems by 2016. The program is directed by the CPUC and provides $1.167 billion in rebates and cash incentives on solar systems to customers of PG&E, Southern California Edison and San Diego Gas and Electric Company.

**California Long-Term Energy Efficiency Strategic Plan**
On September 18, 2008, the CPUC adopted the California Long-Term Energy Efficiency Strategic Plan. The Plan for 2009 to 2020 includes goals and strategies for saving energy and covers government, utility and private sector actions as they relate to energy use and efficiency.
Energy Action Plan (Status Update 2008)

Western Climate Initiative
Launched in February 2007, the Western Climate Initiative (WCI) is a collaboration of the governors of Arizona, California, New Mexico, Oregon and Washington to develop regional strategies to address climate change. In August 2007, the partnership developed a goal to reduce greenhouse gas emissions of 15% below 2005 levels by 2020. WCI partners developed a work plan to guide the process and will complete the design of a market-based mechanism to help achieve that reduction goal. WCI partners include 11 states and provinces in the western region of North America.

Local / Regional
ICLEI’s Cities for Climate Protection Campaign
ICLEI, Local Governments for Sustainability, is an international association of local governments and national and regional local government organizations that have made a commitment to sustainable development. ICLEI’s Cities for Climate Protection (CCP) Campaign assists cities to adopt policies and implement quantifiable measures to reduce local greenhouse gas emissions, improve air quality and enhance urban livability and sustainability. More than 1,000 local governments, including over 350 in the United States, have joined ICLEI’s CCP campaign. By committing the City to locally advancing climate protection, Richmond has joined an international movement of local governments. In addition to Richmond there are approximately 60 jurisdictions (municipal and county) throughout the Bay Area that are CCP participants.

The CCP campaign provides a framework for local communities to identify and reduce greenhouse gas emissions, organized along five milestones:

- Conduct an inventory of local greenhouse gas emissions;
- Establish a greenhouse gas emissions reduction target;
- Develop an action plan for achieving the emissions reduction target;
- Implement the action plan; and
- Monitor and report on progress.

The Greenhouse Gas Emissions Inventory and Analysis Report for the City of Richmond was completed as part of the CCP Campaign.
8 Energy and Climate Change

**Ahwahnee Principles**
The Ahwahnee Principles for Resource-Efficient Communities were written in 1991 by the Local Government Commission and were adopted by Richmond’s City Council in 2001 as a means of promoting responsible community planning. The principles provide a blueprint for elected officials to create compact, mixed-use, walkable, transit-oriented developments in their communities.

**Urban Environmental Accords**
The Urban Environmental Accords was signed on the occasion of United Nations Environment Programme World Environment Day, June 5, 2008 in San Francisco. The Accords is a set of common rules for cities committed to equality and sustainability within and across their borders. The Accords include seven major themes for actions that lead to sustainable urban centers including: energy, waste reduction, urban design, urban nature, transportation, environmental health and water. The City of Richmond is a signatory of the Accords.
Notes


