City of San Leandro

Climate Action Plan

A Vision for a Sustainable San Leandro

December 21, 2009

Prepared by KEMA, in collaboration with the City of San Leandro Climate Protection Task Force, the City Manager's Office, the Community Development Department, and San Leandro residents, workers and business owners.

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Funding provided by the Bay Area Air Quality Management District

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LETTER FROM THE MAYOR

Right now is a critical time for our community, our economy, and our environment. We are fortunate here in San Leandro to be surrounded by a bounty of natural resources, including rolling hills, vast views of the San Francisco Bay, and a pleasant climate. Unfortunately, these resources are at risk from the effects of climate change, which include sea level rise, hotter summers, wetter winters, and increased air pollution.

Climate change is a global problem with local solutions. That is what this Climate Action Plan is all about – things we can do as a community to protect the environment. Together, we can conserve energy and find new ways to utilize our scarce resources, thereby saving money and increasing opportunities in the new green economy. This plan is a comprehensive approach to sustainability, offering ideas such as providing City-sponsored loans to residents and businesses to retrofit their buildings with the most energy efficient technology or install rooftop solar panels; to building denser smart growth communities that promote walking, bicycling, and public transportation over driving and sprawl; to minimizing the amount of waste headed for our landfills, which are nearing capacity. And last but not least, the plan includes ideas to make our City government an example of sustainable operations.

This small step is just the beginning of an exciting time of innovation in which San Leandro is taking the lead. A sustainable San Leandro awaits.

Anthony B. Santos

Mayor

1. Introduction

Climate change presents one of the most profound challenges of our time. A broad international consensus exists among atmospheric scientists that Earth's climate system is changing in response to elevated levels of greenhouse gas emissions in the atmosphere primarily from the combustion of fossil fuels for energy use. According to the World Meteorological Organization, the year 2009 is likely to rank in the top 10 warmest on record since the beginning of instrumental climate records in 1850.[1] Furthermore, 2000 – 2009 is likely the warmest decade on record.

A recent comprehensive study of climate impacts on the U.S., written by a task force of U.S. government science agencies led by the National Oceanic and Atmospheric Administration (NOAA)[2], states the following key conclusions:

1. **Global warming is unequivocal and primarily human-induced**. **-** Global temperature has increased over the past 50 years. This observed increase is due primarily to human-induced emissions of heat-trapping gases.

2. **Climate changes are underway in the United States and are projected to grow. -** Climate-related changes are already observed in the United States and its coastal waters. These include increases in heavy downpours, rising temperature and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons, lengthening ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows.

3. **Widespread climate-related impacts are occurring now and are expected to increase. -** Climate changes are already affecting water, energy, transportation, agriculture, ecosystems, and health. These impacts are different from region to region and will grow under projected climate changes.

4. **Climate change will stress water resources. -** Water is an issue in every region, but the nature of the potential impacts varies. Drought, related to reduced precipitation, increased evaporation, and increased water loss from plants, is an important issue in many regions, especially in the West. Floods and water quality problems are likely to be

[1] http://www.wmo.int/pages/mediacentre/press_releases/pr_869_en.html

[2] U.S. Global Change Research Program (USGCRP) 2009. "Global Climate Change Impacts in the United States." Pages 12. http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts

amplified by climate change in most regions. Declines in mountain snowpack are important in the West and Alaska, where snowpack provides vital natural water storage.

5. **Crop and livestock production will be increasingly challenged.** - Agriculture is considered one of the sectors most adaptable to changes in climate. However, increased heat, pests, water stress, diseases, and weather extremes will pose adaptation challenges for crop and livestock production.

6. **Coastal areas are at increasing risk from sea-level rise and storm surge. -** Sea-level rise and storm surge place many U.S. coastal areas at increasing risk of erosion and flooding, especially along the Atlantic and Gulf Coasts, Pacific Islands, and parts of Alaska. Energy and transportation infrastructure and other property in coastal areas are very likely to be adversely affected.

7. **Threats to human health will increase. -** Health impacts of climate change are related to heat stress, waterborne diseases, poor air quality, extreme weather events, and diseases transmitted by insects and rodents. Robust public health infrastructure can reduce the potential for negative impacts.

8. **Climate change will interact with many social and environmental stresses. -** Climate change will combine with pollution, population growth, overuse of resources, urbanization, and other social, economic, and environmental stresses to create larger impacts than from any of these factors alone.

9. **Thresholds will be crossed, leading to large changes in climate and ecosystems. -** There are a variety of thresholds in the climate system and ecosystems. These thresholds determine, for example, the presence of sea ice and permafrost, and the survival of species, from fish to insect pests, with implications for society.

10. **Future climate change and its impacts depend on choices made today. -** The amount and rate of future climate change depend primarily on current and future human-caused emissions of heat-trapping gases and airborne particles. Responses involve reducing emissions to limit future warming, and adapting to the changes that are unavoidable.

According to the International Climate Change Taskforce[3], the European Union, and the 2007 Bali Declaration by Scientists,[4] current scientific understanding states that a 2°C increase in average global temperature over the next century is a safe level of global warming. To minimize average global temperature increase to 2°C, greenhouse gas concentrations need to be stabilized at a level well below 450 parts per million. Achieving this level requires global greenhouse gas emissions to be reduced by at least 50 percent below their 1990 levels by the year 2050.

1.1 The Role of Cities in Climate Change

We live in a rapidly urbanizing world. Today, half of all humans live in cities. The U.N. estimates that that number is projected to grow to two-thirds by 2030. Moreover, more than half of the world's population now lives within 40 miles of the sea, and three-quarters of all large cities are located on the coast. Coastal cities are especially vulnerable to the impacts of climate change, such as stronger storms, heat related wildfires, and rising sea level.

While cities may be vulnerable to climate impacts, they also can play a critical role in reducing the emissions which exacerbate climate impacts. With their concentrations of people and activities at high densities, cities can use resources such as energy, materials and land more efficiently. They are the places where high level, knowledge-based activities congregate, with the expertise to tackle climate change. This is especially true in the Bay Area.

Municipalities have the powers and levers to reduce carbon emissions. They control the development of land, direct the growth of housing, coordinate transportation options and direct waste management. They have varying degrees of responsibility for the collection and processing of waste and have responsibility for other environmental infrastructure such as energy and water. They own and manage buildings and vehicle fleets. They are able to form partnerships with private interests as well as mobilizing and coordinating community action. They are uniquely positioned to promote economic development that emphasizes sustainable development and local green jobs.

[3] International Climate Change Task force. "Meeting the Challenge of Climate Change". 2005. http://www.americanprogress.org/kf/climatechallenge.pdf

[4] University of New South Wales Climate Change Research Centre. http://www.ccrc.unsw.edu.au/news/2007/Bali.html[4]

1.2 San Leandro's Climate Action Plan Process

The road to a clean energy future will not be achieved overnight, but rather though incremental steps that are feasible and pragmatic while still balancing the "triple bottom line": economic stability, social equality, and environmental health. This is why the City of San Leandro has taken this important step to develop this Climate Action Plan: a Vision of a Sustainable San Leandro.

The City of San Leandro's climate strategy is based on the Local Governments for Sustainability (ICLEI) 5-Milestone process:

1. Conduct an inventory of city-wide greenhouse gas emissions
2. Set a reduction target/goal
3. Establish a Climate Action Plan
4. Implement a Climate Action Plan
5. Monitor and evaluate progress

The City has completed Milestone 1 in 2005, conducting an emissions inventory for both community-wide emissions and emissions from municipal operations. In June 2006, the City completed Milestone 2 by adopting a resolution to reduce community wide emissions by 25 percent below 2005 levels by 2020. This document represents the third Milestone: the Climate Action Plan.

To date, the City has already taken actions that reduce greenhouse gas emissions. The City joined 1,000 other U.S. cities, signing the U.S. Mayor's Climate Protection Commitment. The City has also joined the Alameda County Climate Protection Project sponsored by Stopwaste.Org. The City has assembled a Climate Protection Task Force that brings all city departments together to develop climate solutions. Specific climate actions taken to date include the nationally recognized *Smart Growth* land use plans such as the downtown Transit-Oriented Development Strategy; a Green Building Ordinance for municipal buildings; a Construction and Demolition Debris Recycling Ordinance; increased recycling and composting programs for residents; installation of LED traffic signals; engagement as a member of the East Bay Green Corridor; and much more. These and other actions the City has taken are described in detail in the body of this Climate Action Plan.

1.3 Climate Action Plan Report

The vision of the Climate Action Plan is to guide the City of San Leandro towards a sustainable future that reduces greenhouse gas emissions from current levels, while promoting economic prosperity for present and future generations. This report was developed in close collaboration with the San Leandro Climate Protection Task Force, which is comprised of staff representatives from a cross-section of City departments.

The public input process is an important component to ensure that community stakeholders have a voice in developing the climate action plan. The City of San Leandro has conducted significant public outreach to educate community groups on climate protection issues, as well as to gather comments from the public. Public outreach began through a public speaking tour with a presentation on the City's Climate Protection Project for the city homeowner associations and business organizations. In May and June 2009, a web-based survey was distributed to community members at these meetings, at the Cherry Festival and on the City website through December 2009. The results of these comments and feedback were incorporated into the Climate Action Plan goals and potential actions. See Appendix B for a summary of results.

The Climate Action Plan seeks to both document the various programs San Leandro has accomplished since 2005, as well as consider new programs and actions that may be implemented to meet the City's greenhouse gas reduction target of 25 percent below 2005 emissions levels by 2020. This document outlines both the City's successes to date in promoting environmental responsibility and provides a blueprint for continued sustainability.

This Climate Action Plan report is organized as follows. Results of the municipal and community-wide greenhouse gas (GHG) inventory are presented in Section 2. Sections 3, 4, 5 and 6 discuss each emissions category: Building Energy, Transportation and Land Use, Waste, and Municipal Operations. These sections describe how each category contributes to San Leandro's GHG inventory and present the City's overarching goals and potential actions for reducing emissions.

Section 7 is the "Implementation" chapter. In this section, we look at 25 actions in depth and discuss the costs and benefits of each. Guidance on near-term, mid-term and long-term implementation strategies are also included. These measures were chosen based on the "SMART" test, such that they were Specific, Measurable, Achievable, Realistic, and Trackable.

Section 8 provides an overview of available funding sources to determine appropriate potential funding opportunities and funding levels to support existing and new programs outlined in this plan.

2. Greenhouse Gas Inventory and Forecast

In 2008, a comprehensive community-wide inventory was developed by Local Governments for Sustainability (ICLEI) to establish the context within which to assess GHG emission reduction opportunities in the City of San Leandro. The inventory provides an important foundation for the Climate Action Plan, providing the 2005 baseline against which progress toward the City goal of reducing greenhouse emissions 25 percent below 2005 levels by 2020 can be measured. The inventory includes a business-as-usual forecast of greenhouse gas emissions for the year 2020, which enables the City to estimate the amount of emissions reductions needed to meet their goal.

ICLEI's Cities for Climate Protection methodology for emissions inventories enables local governments to systematically estimate and track greenhouse gas emissions at the community-wide scale and those resulting directly from municipal operations. The greenhouse gas inventory results outlined in this chapter are adapted from ICLEI's "City of San Leandro Baseline Greenhouse Gas Emissions Inventory Report" from June 2008.

2.1 Inventory Sources and Data Collection Process

An inventory of greenhouse gas emissions requires the collection of information from a variety of sectors and sources. As outlined in the ICLEI report, the community electricity and natural gas data was collected from Pacific Gas & Electric (PG&E) company. The transportation related emissions were estimated from data sourced from The Metropolitan Transportation Commission (MTC), CalTrans, Bay Area Air Quality Management District (BAAQMD), and Bay Area Rapid Transit (BART). Solid waste data was gathered from the California Integrated Waste Management Board Disposal Reporting System[5].

The community inventory represents all the energy used and waste produced within the City of San Leandro and its contribution to greenhouse gas emissions. The municipal inventory is a subset of the community inventory, and includes emission derived from internal government operations.

There are two main reasons for completing separate emissions inventories for community and municipal operations. First, the City is committed to action on climate change, and has a higher degree of control to achieve reductions in its own municipal emissions than those created by the community at large. Second, by proactively reducing emissions generated by its own activities,

[5] http://www.ciwmb.ca.gov/lgcentral/DRS/Reports/default.asp

the San Leandro government takes a visible leadership role in the effort to address climate change. This is important for inspiring local action in San Leandro as well as for inspiring other communities.

The City of San Leandro's inventory is based on the year 2005. When calculating San Leandro's emissions inventory, all energy consumed within the city limits was included with the exception of electricity and natural gas consumption in County-owned facilities. This means that, even though the electricity used by San Leandro's residents is produced elsewhere, the energy and emissions associated with it appear in San Leandro's inventory. The decision to calculate emissions in this manner reflects the general philosophy that a community should take full ownership of the impacts associated with its energy consumption, regardless of whether the generation occurs within the geographical limits of the community.

2.2 San Leandro Greenhouse Gas Emissions Inventory

In the base year 2005, the City of San Leandro emitted approximately 957,169 metric tons of carbon dioxide equivalent (CO_2e) from the residential, commercial, industrial, transportation, waste and municipal sectors.[6] Burning fossil fuels in vehicles and for energy use in buildings and facilities is the largest contributor to San Leandro's greenhouse gas emissions. Table 1 provides a summary of total city-wide (i.e. community and municipal) GHG emissions.

Table 1. San Leandro City-wide Emissions Summary (2005)

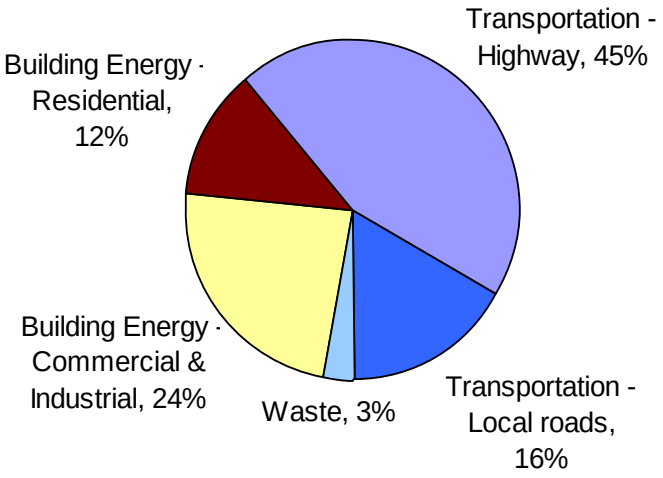
Emissions Sources	Equiv CO2e (tons)
Buildings - Residential	114,339
Buildings - Commercial/Industrial	228,386
Transportation – Highway	421,665
Transportation – Local roads	155,958
Waste	28,956
Municipal Operations	7,866
TOTAL	**957,169**

Source: ICLEI CACP Model output

[6] Carbon dioxide equivalent is a unit of measure that normalizes the varying climate warming potencies of all six greenhouse gas emissions, which are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). For example, one metric ton of methane is equivalent to 21 metric tons of CO_2e. 1 metric ton of nitrous oxide is 210 metric tons of CO_2e.

The residential, commercial, and industrial sectors represent emissions that result from electricity and natural gas used in both private and public sector buildings and facilities. The transportation sector includes emissions from private, commercial and fleet vehicles driven within the City's geographical boundaries as well as the emissions from transit vehicles and the City-owned fleet. Figure 1 shows the proportion of San Leandro's total greenhouse gas emissions from all major sources for the year 2005.

Figure 1. City-wide Emissions by Sector (2005)



As shown above, the two largest categories of emissions are related to building energy use (both residential and commercial & industrial) and transportation (highway travel and local travel).

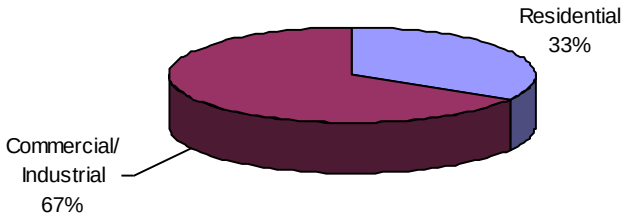
2.2.1 Building Energy Emissions

In 2005, San Leandro's total stationary energy consumption was about 608,822,401 kilowatt-hours (kWh) of electricity and 31,495,523 therms of natural gas, excluding municipal facilities. Stationary energy use by all community sectors (residential, commercial and industrial activities), primarily the combustion of natural gas, accounts for 36 percent of total greenhouse gas emissions in San Leandro. San Leandro's stationary energy use resulted in a total of approximately 342,725 metric tons of CO_2e emissions in 2005.

Figure 2 shows the breakdown of greenhouse gas emissions by sector for both electricity and natural gas combined. Of the total 342,725 metric tons of CO_2e emitted due to building energy use, 33 percent was from residential buildings and 67 percent was from commercial and

industrial (C&I) buildings, which also includes industrial process emissions (e.g. related to boilers, metalworking machinery, food processing equipment, etc).

Figure 2. Building Energy Use – Residential v. Non-residential (C&I)



Source: CACP Model output

In 2005, San Leandro's 82,400 residents consumed 154,884,113 kWh of electricity, or about 4,942 kWh per household, and 12,617,590 therms of natural gas, or about 403 therms per household. This consumption resulted in a release of 114,339 metric tons of CO_2e. Major residential energy uses include refrigeration, lighting and water heating.

Similarly, the commercial and industrial sector buildings consumed 453,938,288 kWh of electricity and 18,877,933 therms of natural gas. This consumption resulted in a release of 228,386 metric tons of CO_2e into the atmosphere.

The City of San Leandro receives its electricity from Pacific Gas & Electric Company (PG&E). The 2005 emissions coefficient for electricity provided by PG&E was approximately 0.493 lbs/kWh,[7] and is subject to change annually due to fluctuations in hydroelectric output.

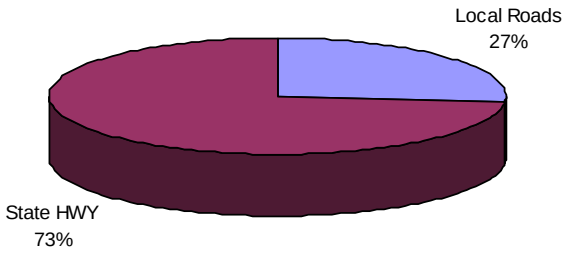
2.2.2 Transportation Emissions

When including vehicles on state highways and local roads, the transportation sector is responsible for about 60 percent of San Leandro's greenhouse gas emissions. Motor vehicles driven within the City's geographical boundaries on both local and state roads emitted approximately 577,623 tons of CO_2 e in 2005.

[7] Note that the types of power sources that make up a utility's electricity generation mix have a significant impact on a city's greenhouse gas emissions. According to the ICLEI Greenhouse Gas Report for San Leandro, the average coal fired power plant releases 1.3 metric tons of CO_2e per megawatt-hour of electricity generated compared with 0.7 metric tons for gas turbines and 0 metric tons for nuclear and renewable sources such as solar, wind, or hydroelectric power. PG&E's power mix is comprised of approximately 39 percent natural gas, 22 percent nuclear, 16 percent large hydro, 14 percent renewable energy and 8 percent coal. (Source: www.pge.com)

Figure 3 shows the breakdown of greenhouse gas emissions by vehicle miles traveled (VMT) from local roads and VMT from state highways. Of the total 577,623 metric tons of CO_2e emitted, 27 percent was from local roads and 73 percent was from state highways.

Figure 3. Transportation Emissions – Highways v. local road travel



Source: ICLEI CACP Model output

Calculations for transportation emissions are based on figures for total vehicle miles traveled (VMT) in the City of San Leandro. MTC supplied the necessary VMT data, while BAAQMD provided data to break down total VMT by percentage driven by a given vehicle type.

2.2.3 Solid Waste Emissions

In 2005, San Leandro sent approximately 160,050 metric tons of solid waste to landfills resulting in 28,956 metric tons of CO_2e emissions. San Leandro has recycling measures in place to reduce the amount of waste sent to landfills.

Emissions from waste result from organic materials decomposing in the anaerobic environment of a landfill which produces methane—a greenhouse gas 21 times more potent than carbon dioxide. Table 2 shows the approximate breakdown of the materials San Leandro sent to landfills in 2005. Materials that do not release greenhouse gases as they decompose are included in the “All Other Waste” category.

Table 2. San Leandro Waste Composition

Waste Type	Waste Share
Paper Products	20.6 %
Food Waste	11.3 %
Plant Debris	5.5 %
Wood/Textiles	18.4 %
All Other Waste	44.3 %
Total	**100 %**

Source: StopWaste.Org

Some landfills recover this methane either for energy generation or flaring, converting it back into carbon dioxide. The EPA estimates that 60 to 80 percent of methane is recovered at the landfills to which San Leandro sends its waste. According to ICLEI, "recent studies have begun to question the U.S. EPA's estimates for the amount of methane that is actually captured by methane recovery systems at landfills. Many hypothesize that the efficiency with which methane recovery systems capture methane is currently overestimated, and that much more of the potent greenhouse gas is actually escaping from landfills into the atmosphere. In the absence of exact data, the Inter-governmental Panel on Climate Change recommends using the conservative end of that range to estimate the percentage of methane recovery at landfills."[8] ICLEI chose to follow the recommendation and used a 60 percent methane recovery factor for San Leandro's inventory.

Recycling and composting programs were taken into account as reduced total tonnage of waste going to the landfills. The ICLEI methodology does not accurately capture the associated emissions reductions in "upstream" energy use from recycling. Despite this limitation, recycling and composting programs can have a significant impact on GHG emissions. Manufacturing products with recycled materials avoids emissions from the energy that would have been used during extraction, transporting and processing of virgin raw materials. Recycling paper also conserves forests, which contribute to carbon sequestration – a process that removes carbon from the atmosphere and stores it for long periods of time.

[8] City of San Leandro. Baseline Greenhouse Gas Emissions Inventory Report. June 2008. Prepared by ICLEI.

2.2.4 Municipal Operations

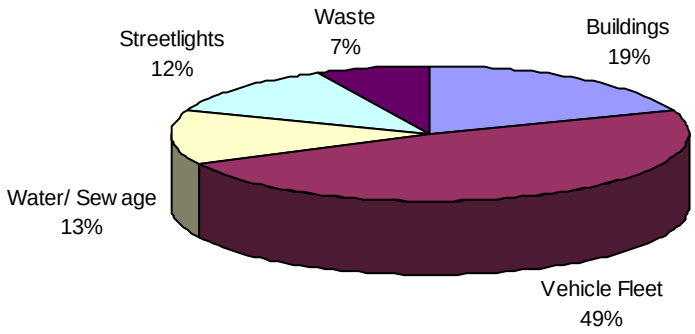
In the base year of 2005, San Leandro's municipal operations generated 7,866 metric tons of CO_2e. As Table 3 and Figure 4 show, the City's vehicle fleet accounted for the majority of emissions at 49 percent of total emissions.

Table 3. Municipal Operations - Emissions Summary

Emissions Sources	Equiv CO_2e (metric tons)
Municipal Buildings	1,534
Vehicle Fleet	3,773
Streetlights	954
Water/Sewage	1,030
Municipal Waste	577
TOTAL	**7,866**

Source: CACP Model output

Figure 4. Municipal Operations – Greenhouse Gas Emissions



Source: CACP Model output

Municipal emissions in San Leandro constitute less than one percent of San Leandro's total emissions. This is on the low end of the typical range, as local government emissions generally fall between one and five percent of overall community emissions. Although actions to reduce municipal energy use may have a limited impact on San Leandro's overall community emissions levels, municipal action can help reduce operation costs and has symbolic value demonstrating leadership that extends beyond the magnitude of emissions actually reduced.

In 2005, San Leandro municipal buildings and facilities consumed 3,769,866 kWh of electricity and 95,174 therms of natural gas, which resulted in a release of 1,534 metric tons of CO_2e

emissions into the atmosphere. Municipal streetlights and traffic lights consumed 3,697,040 kWh of electricity, which resulted in a release of 954 metric tons of CO_2e emissions into the atmosphere. The water and sewage sector consumed 3,632,746 kWh of electricity and 15,687 therms of natural gas which released approximately 1,030 metric tons of CO_2e.[9]

The City's vehicle fleet consumed approximately 280,161 gallons of fuel and emitted about 3,773 metric tons of CO_2e. The municipal fleet includes all vehicles owned and operated by the City of San Leandro, plus some contractor vehicles performing City functions.

The City of San Leandro government operations reported sending 3,033 tons of waste to the landfill resulting in 577 metric tons of CO2e according to method described above. The City does have recycling programs in place to reduce the waste stream.

2.3 Emissions Forecast and GHG Reduction Target

Based on the community and municipal operations emissions inventories developed for San Leandro for the base year 2005, ICLEI also provided a forecast of future emissions for the year 2020. The emission forecast represents a business-as-usual prediction of how greenhouse gas (GHG) emissions may change in the City of San Leandro over time. Table 4 below provides an emissions summary for San Leandro's base year and forecast year.

Table 4. San Leandro Emissions Forecast for 2020

	Community Emissions	Municipal Operations
Indicators used to generate forecast	0.67 % (Annual population growth rate based on ABAG data)	No growth anticipated
Quantity of CO2e emissions in 2005 base year (tons)	949,303	7,866
Business-as-usual projection of CO2e emissions in 2020 (tons): 10.4 % increase over baseline	1,048,117	7,866
San Leandro's 2020 goal of 25% below 2005 levels	711,977 tons	5,900 tons
Total emissions reductions necessary for reaching goal	336,140 tons	1,966 tons

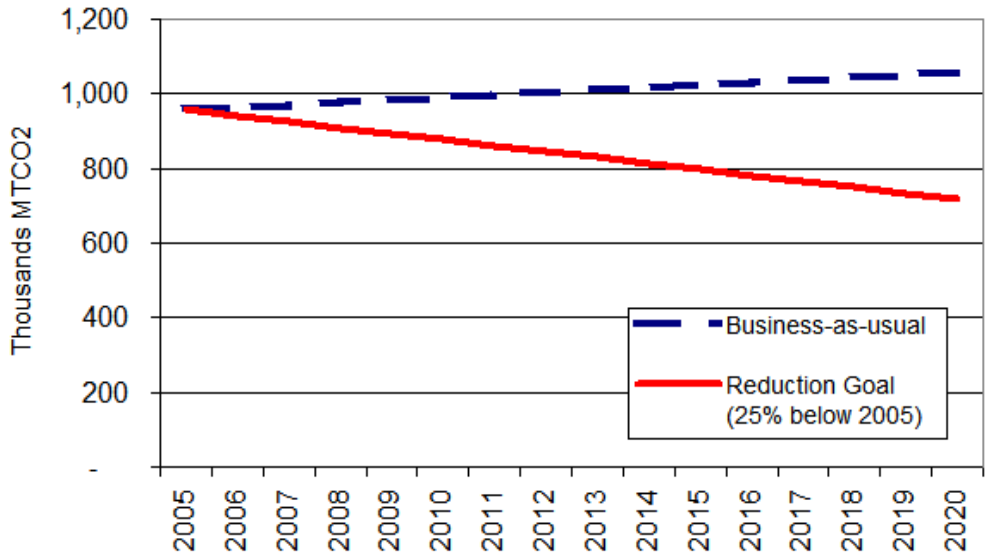
[9] The average activated sludge wastewater treatment plant consumes 6,000 kWh per million gallons of wastewater treated per day. The San Leandro plant treats 5 million gallons a day (MGD) and only consumes about 12,000 kWh/day. The reasons San Leandro consumes less energy than the average is partially related to not having tertiary treatment, and that the effluent pumping is the responsibility of a third-party.

The forecast projects the growth (or reduction) in greenhouse gas emissions that will occur in a given future year. Projections are based on the assumption that energy consumption will grow as population increases. The Association of Bay Area Governments (ABAG) forecasts a 0.67% annual population growth rate from 2005 through 2020, translating to a 10.4 percent total increase from 2005 to 2020. For the community analysis, the business-as-usual emissions forecast was estimated by applying this population growth rate to San Leandro's 2005 base year residential, commercial/industrial, and transportation emissions.

For the municipal government analysis, no growth was anticipated in the municipal government operations. Additional building area for a new senior center and the potential expanded police administrative building is accounted for in this assumption. Furthermore, given the economic conditions in the 2007 – 2009 timeframe and recent City budget reductions, the forecast includes the assumption of no employee growth.

Conducting an emissions forecast is essential for developing the Climate Action Plan, since GHG emissions typically increase in future years without a concerted effort to implement emissions reduction projects. One must compare future reductions with future emissions levels, not current levels. Therefore, in developing the Climate Action Plan, the City of San Leandro needs to take into account projected growth in emissions. Figure 5 below illustrates how the business-as-usual emissions are estimated to increase, thus widening the emissions reductions needed by 2020.

Figure 5. San Leandro GHG Reduction Target (25% below 2005 levels by 2020)



The observations above related to growth in the City should be considered in the context of regional growth. Although residential development within the City contributes to some increase in emissions for the San Leandro community, the relative impact is likely significantly lower compared to low density development in the distant suburbs. Given the large proportion of emissions related to highway vehicle miles traveled through San Leandro, local jurisdictions around the San Francisco Bay Area and beyond must work together to develop regional solutions.

2.4 Development of the Climate Action Plan

The Climate Action Plan and GHG reduction measures and actions are structured around the four general categories of GHG emissions, as identified by the greenhouse gas inventory. They are as follows:

1. Energy use in buildings (Commercial/industrial, and residential)
2. Transportation and land use
3. Waste
4. Municipal operations

The first three categories focus on programs and actions to influence the behavior of households and businesses in the community. Municipal operations is included as a separate category which encompasses City facilities, fleet and waste operations, as the City has unique opportunities to directly control these emissions.

In the following chapters, the City of San Leandro Climate Action Plan is organized by the four emissions categories. In close collaboration with the San Leandro Climate Protection Task Force, KEMA developed a number of goals and implementing actions for each category of emissions. The goals are broad overarching objectives, while individual actions are meant to be concrete policies or programs that will help achieve the goal. The overarching goals form the framework for developing individual actions. Since a large number of implementing actions are included for consideration, the Climate Action Plan includes an Implementation chapter to highlight the prioritization of near-term activities to enable the City of San Leandro to meet its greenhouse gas reduction goals.

3. Building Energy Use

The State of California has long been a leader in implementing policies aimed at improving energy efficiency of its building stock. The State is committed to first meet its energy needs "through all available energy efficiency and demand reduction resources that are cost effective, reliable and feasible."[10] Since the 1970s, California has led the nation in developing and implementing successful energy efficiency efforts.

A number of recent policies, such as AB 1109, which requires defined reductions in energy usage for lighting and the Federal Energy Independence and Security Act of 2007, which contains many provisions for new minimum efficiency standards and research, have dramatically altered the landscape for energy efficiency activities in California.

While building energy comprises 36 percent of the City of San Leandro's greenhouse gas emissions, it is also the sector with the most immediately achievable and affordable reduction opportunities. Energy efficiency is the most cost-effective measure for greenhouse gas reductions and also has numerous co-benefits such as cost savings over time and promotion of green collar jobs. Along with energy efficiency, California has an abundance of natural resources and a long history of supporting renewable energy generation. With the idea of "Reduce, then Produce" a sensible energy policy seeks to first maximize energy efficiency and then look to generate electricity with low carbon fuels and renewable resources.

In this chapter we examine existing and proposed City programs and initiatives that will promote energy efficiency and renewable energy in both existing and new buildings, and in residential and non-residential sectors. In identifying components of the plan, we assess a broad array of energy-related authorities and opportunities available to the City.

3.1 Goal: Improve energy efficiency and reduce costs of energy upgrades for existing residential properties

Although the State of California is committed to taking action to increase investment in cost-effective energy efficiency, the vast majority of San Leandro's residential structures were built before State-mandated energy standards for new construction were put in place in 1978. Achieving significant reductions in energy consumption in the residential sector will require both

[10] "Energy Action Plan I", California Energy Commission, California Public Utilities Commission and Consumer Power and Conservation Financing Authority. May 8, 2003. Available at: http://docs.cpuc.ca.gov/word_pdf/REPORT/28715.pdf

public and private investment, but will also result in cost savings and local job opportunities over time.

Encouraging or mandating retrofits of existing buildings has proven challenging for many cities due to significant market barriers. Often, building owners lack the incentives to upgrade inefficient equipment, especially in the case of a rental property where the benefit of the upgrade accrues to the renter who pays the utility bills. Nearby jurisdictions – San Francisco and Berkeley – have claimed considerable success implementing residential and commercial energy conservation ordinances (RECO and CECO) to continually improve energy efficiency in the existing residential building stock.

These policies mandate energy efficiency measures when a residential property changes hands. The average energy savings associated with RECO measures currently ranges from about 10 to 20 percent per building.[11] Other opportunities such as in home energy services and low income weatherization can also achieve significant savings.

The actions that the City of San Leandro can take to promote energy efficiency span mandatory requirements to improve properties at time of sale, to programs that offer financial support and incentives for upgrades, to specific activities to educate homeowners in order to overcome informational barriers to energy efficiency. A number of specific ideas and actionable measures are presented below for consideration.

- **Establish a standard for energy improvements in existing residential properties.** In collaboration with local realtors, energy service providers and other community stakeholders, develop and phase in a local energy standard for existing residential buildings that is designed to facilitate deep cost-effective reductions in energy use. Compliance with energy standards may be required to take advantage of certain incentives and financing, and at certain major events such as major renovations, point of sale and condo conversions.

- **Adopt a third-party or municipal financing program for residential energy efficiency projects**. This action would establish a program in which property owners can finance energy efficiency projects. Property owners can take out a loan to pay for the cost of energy efficiency improvements over 20 years through an annual special tax on their property tax bills. The participating city or county provides funding (potentially through a third-party) for the project from a bond or loan fund that is repaid through the owner's property tax bills.

[11] San Francisco Planning + Urban Research Association (SPUR). http://www.spur.org/publications/library/report/critical_cooling/option1

- **Develop a revolving loan fund for home performance audits.** A revolving loan fund is paid back by residents through energy savings realized from implementing energy efficiency upgrades in their homes.

- **Leverage existing residential utility rebate programs through education and outreach.** PG&E offers various incentives for purchasing energy efficient appliances such as air conditioners, dishwashers, and washing machines. Information is available on PG&E's website, however many residents do not know that they can receive money back for qualifying purchases. The City can partner with PG&E to make their customers aware of these programs. Leverage the PG&E low income energy efficiency (LIEE) program to expand the list of eligible households.

- **Collaborate with grass roots organizations such as the CA Youth Energy Services (CYES).** The California Youth Energy Services is a summer program which employs young people ages 15-22 years old to conduct in home energy audits and provide CFLs and other hardware to promote energy efficiency.

- **Initiate a "Turn off your electronics" campaign.** Initiate an education program to inform residents about energy savings accrued from reducing phantom power, energy used by electronics while they are off or in standby mode. This can include doing simple things at home such as using power strips and turning off electronics when they are not in use.

- **Offer home performance classes by building staff**. Leverage American Recovery and Reinvestment Act (ARRA) funds to put on home performance classes educating city residents on simple cost-effective measures that can be taken to save energy in their home. Example measures may include weather stripping, proper maintenance of HVAC and water heater equipment in the home, added insulation or duct sealing.

3.2 Goal: Improve energy efficiency and reduce costs of energy upgrades for existing commercial and industrial properties

The City is already implementing a number of initiatives and programs to promote energy efficiency in the commercial and industrial sectors. The City has initiated an Industrial Competitiveness program targeting industrial businesses in the West San Leandro/MacArthur Redevelopment Project Area. The goal of the program is to promote energy efficiency improvements by offering funding for technical assistance and capital investment for business facilities and operations. There is $150,000 in the FY 2009-10 budget and this program will

likely be recommended for continued funding. Funding is made available through the Redevelopment Agency as a business development and retention strategy.

The Redevelopment Agency held an Industrial Energy Efficiency Resources Fair in October 2009 to connect businesses with vendors and consultants of energy saving technologies such as lighting, solar, boiler/heater/chiller, HVAC, and compressed air. By year end, program grant parameters will be forwarded to the City Council for approval. To date, one grant has been awarded to Ghirardelli Chocolate for phase II of a lighting upgrade project. Funding recommendations for the Industrial Competitiveness program will be based upon supporting projects which result in energy savings that reduce emissions while ultimately yielding cost savings for local businesses. The estimated reduction in carbon emissions from this program could be significant as the City's industrial businesses spend tens of millions annually on natural gas and electricity purchases.

In June 2009, the City joined the East Bay Green Corridor Partnership. This partnership is a previously established effort between the cities of Richmond, Berkeley, Oakland, Emeryville, the University of California at Berkeley, and the Lawrence Berkeley National Laboratory to create a thriving region of green technology innovation, commercialization and local economic development in a manner that creates high quality jobs and addresses environmental and social concerns. The partnership now also includes the cities of Albany, Alameda, El Cerrito and San Leandro and the academic institutions California State University East Bay, Peralta Community College District and the Contra Costa Community College District. This partnership allows cities to work together to obtain grants and leverage funds to support the development of green industry within their cities. Another focus of the partnership is to assist emerging research and newly patented companies connected with U.C. Berkeley and Lawrence Berkeley Lab in staying local. The partnership will also create related job training programs to develop the local "green" workforce. The net impact on emissions from this endeavor is unknown and although it may not be measurable, the attraction and support of green businesses ultimately benefits the greater community.

Similar to the Residential Energy Conservation Ordinance, a Commercial Energy Conservation Ordinance (CECO) is a mandatory requirement to implement prescriptive energy efficiency measures when a commercial property changes hands. According to the San Francisco Planning and Urban Research Association (SPUR), a CECO can potentially result in an average energy savings of about 10 to 15 percent per commercial building.[12] Time-of-sale ordinances

[12] http://www.spur.org/publications/library/report/critical_cooling/option4

are one of the few identified actions within a City's purview to mandate efficiency actions in existing privately owned buildings.

With regards to new construction, cities can adopt building codes that go beyond Title 24's energy requirements to support high levels of energy efficiency.

A number of existing efficiency incentive programs exist, including PG&E programs funded by ratepayers such as the residents and businesses in San Leandro. This Climate Action Plan seeks to leverage such existing programs and coordinate efforts to promote energy efficiency in the community. Measures and actions are presented below for consideration. Once again, potential actions span mandatory requirements to financial incentives public education and outreach.

- **Establish a standard for energy improvements in existing commercial and industrial properties.** In collaboration with local realtors, businesses, energy service providers and other community stakeholders, develop and phase in a local energy standard for existing non-residential buildings that is designed to facilitate deep cost-effective reductions in energy use. Compliance with energy standards may be required to take advantage of certain incentives and financing, and at certain major events such as major renovations, point of sale and/or new leases. The standard may include thresholds for eligibility to minimize adverse economic impacts.

- **Require "beyond compliance" as a condition for approving new construction.** "Beyond compliance" refers to going beyond Title 24 Energy Efficiency standards for new construction. Other jurisdictions have required that new construction be a certain percentage "above code."

- **Leverage existing energy efficiency incentive programs for non-residential utility customers.** PG&E offers businesses various incentives for custom retrofitting existing facilities such as the Non-Residential Retrofit program, and prescriptive rebates for equipment such as lighting, refrigeration, HVAC, etc. The City can partner with PG&E and local business associations such as the Chamber of Commerce to educate their customers about these programs.

- **Promote use of Green Leases Toolkit**. Voluntary integration of sustainability efforts into the entire commercial leasing process. Green leasing states that building performance be transparent to all parties involved in the lease transaction.

- **Provide incentives for businesses that achieve "green business" accreditation with organizations such as the Bay Area Green Business Program.** The Bay Area Green Business Program is a cooperative effort that assists businesses and public agencies to come into compliance with all environmental regulations, and take steps to prevent pollution and conserve resources. Certified green businesses and public agencies may display the Green Business logo on their premises and in their advertising. Incentives may include preferential processing of business license applications.

- **Include and promote additional literature on energy efficiency at the City permit center and planning services website.** The permit center is located in the first floor at City Hall, and is a key location where development proposals for the community are reviewed. The Planning Services Division website currently includes a link to green building programs and a Green Building kiosk is at the entrance to the permit center. The website may include additional links to PG&E energy efficiency rebate programs and fact sheets.

3.3 Goal: Increase residential, commercial and industrial renewable energy use

On-site renewable energy systems offer another important lever for reducing emissions. Renewable energy systems should be installed only after all cost-effective efficiency measures have been implemented. Generally, the best options for Bay Area residents are solar hot water heating and roof-top photovoltaic (PV) systems. The largest barrier to on-site renewable energy is high up-front financing costs and long cost recovery periods. PG&E and the State of California offer incentive programs that help defray the initial investment of energy systems. A recently passed California bill which implements a feed-in tariff that will pay small renewable energy generators for the electricity they generate.

To encourage on-site renewable energy, one common strategy employed by other local governments is to offer expedited permitting procedures for renewable generation and green buildings. In the City of San Leandro, however, permits are already processed in a relatively short timeframe. Therefore, recommended actions towards meeting the goal of increased renewable energy use centers around financial assistance to interested property owners.

The actions for consideration listed below are related to supplementing existing incentive programs with additional rebates and launching an education campaign to inform the community about available funding for renewable energy systems.

Funding for the installation of solar PV systems on low income single family and multi-family housing is available through the California Solar Initiative's Multifamily Affordable Solar Housing (MASH) and Single-Family Affordable Housing (SASH) Programs.

Measures and actions for consideration:

- **Establish a third-party or municipal financing program for solar (PV and solar hot water) and other renewable technology projects.** Property owners can take out a loan to pay for the cost of energy efficiency improvements and solar system installations over 20 years through a property based assessment on their property tax bills.[13]
- **Marketing campaign for solar financing, tax and rebate opportunities to San Leandro residents.** Develop a website for San Leandro residents and/or educational pamphlets. For example, the California Solar Initiative provides rebates to residential and commercial facilities interested in solar PV installations. The California Energy Commission's New Solar Homes Partnership also provides financial support to home builders.
- **Increase the number of solar facilities on low income housing**. Work with residents and owners of low-income residential units to secure funding from the California Solar Initiative to install solar PV.

3.4 Goal: Promote green building practices in both the new construction and remodel market

Since half of the buildings that will exist in 2050 have already been built today, a significant emphasis must be placed on promoting retrofits of existing buildings. The new buildings that are being constructed are also likely to remain in the built environment for another 100 years or so with significant long term impacts. Reducing consumption of electricity, natural gas and water as well as promotion of environmentally sustainable material use will require aggressive implementation of green building practices in the City.

[13] On October 19, 2009, Vice President Biden and the Middle Class Task Force released the Recovery Through Retrofit Report, which included provisions for a federal program to support municipal energy financing programs. Federal departments and agencies will assist with establishing underwriting criteria and model financing programs to provide upfront capital utilizing Recovery Act funding. The federal government will also facilitate the collection of data to evaluate the performance of municipal financing programs and speed the adoption of detailed, uniform "best practices" that include robust and effective homeowner and lender protections.

In May 2008, the City Council adopted an ordinance requiring a minimum certification rating by the US Green Building Council (USGBC) in their Leadership in Energy and Environmental Design (LEED) rating system. The ordinance sets a level of LEED Silver for all municipal buildings and renovation projects that equal or exceed $3 million in construction costs. Any project under the $3 million threshold is still encouraged by the City to be built embodying green building principles. Savings increase with LEED achievement levels; LEED Certified is generally 25% more efficient than non-LEED buildings, Silver 35%, and Gold/Platinum 45%. Energy efficiency is the fastest, cheapest, and easiest way to cut greenhouse emissions. Energy efficiency has a much greater impact, or multiplier effect on the local economy than money spent on energy bill payments.

Since 2006, the City has been formally promoting national and regional green building guidelines for development. City staff have been active participants of the California Building Officials Green Building Committee, which seeks to provide useful information to building officials and others to promote the understanding and proper application of green building technologies. The City also targets education for residents and developers as well as exploring grant opportunities for green building assistance and incentives for projects achieving green building certification.

Since January 2009, San Leandro's Building & Safety Division requires contractors and builders to complete a Green Building checklist for all building permits that include:

- Any new construction
- Residential additions over 500 square feet
- Commercial/industrial projects over $100,000 in value

The goal of this initiative is to teach local builders about green building and the related certification programs, and potentially achieve long term market transformation of increasing awareness and understanding of green building practices.

Currently, the City has seven certified GreenPoint Raters (constituting all of the Building Division inspector staff and the majority of the plan check staff) and two LEED Accredited Professionals to provide technical assistance and support to applicants in achieving green building certification for both commercial and residential projects. The City has also teamed up with sister cities in southern Alameda County to create consistency among the cities in the development of green building policy. In 2009, San Leandro co-hosted a developer's forum for residential green building programs and policies in the south Alameda County area and coordinated a training session with StopWaste.Org on the Small Commercial Checklist protocol in December 2009.

In addition to the municipal green building policy adopted for City-owned buildings, a private sector residential, commercial new construction green building ordinance may also be considered. A summary of measures and actions to promote green building practices include the following:

- **Establish mandatory green building ordinance for private new construction.** Require new building projects to achieve a minimum point level on an appropriate green building checklist, such as GreenPoint Rated, LEED or California's Green Building Code. There may be a minimum threshold for eligibility, such as 10,000 square feet for new commercial/industrial buildings.

- **Identify and promote funding sources and other incentives to subsidize green buildings.** Some PG&E incentive programs, such as the California Statewide Savings by Design program, may provide incentives for new construction that meet energy efficiency thresholds.

- **Encourage voluntary compliance with green building standards for existing buildings, including LEED for Existing Buildings Operations and Management[14] for the commercial/industrial sector as well as GreenPoint Rated for Existing Homes for the residential sector.** Since fifty percent of the building stock that will operate in 2050 is already in existence today[15] , meeting San Leandro's GHG reduction goals will require widespread upgrading and retrofitting of existing building stock towards energy efficiency. Therefore, one strategy is to provide financial incentives (such as reduced fees) for buildings that achieve LEED accreditation or GreenPoint Rated for Existing Homes.

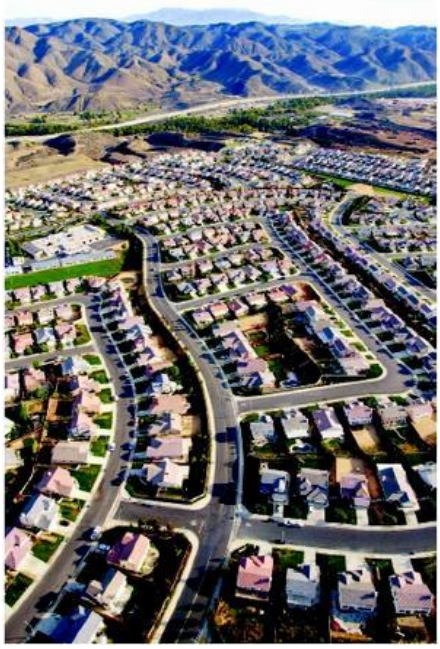
- **Educate community members and local contractors on green building practices.** For example, increase the number of green building events at the library, including hosting events at neighborhood library branches. Continue to participate in state-wide and national green building initiatives to promote green building practices.

[14] LEED for Existing Buildings Operations and Maintenance (EBOM) is a set of performance standards for certifying the operations and maintenance of existing commercial or institutional buildings and high-rise residential buildings.
[15] "Mitigating Climate Change: What America's Building Industry Must Do" Mahadev Raman http://www.di.net/articles/archive/3097/

4. Transportation and Land Use

Land-use planning and transportation planning are now being more commonly integrated due to a rising concern about how land use decisions affect transportation systems and provide people with access to jobs, goods, services, and other means to improve quality of life. Together these concepts take on the values of S*mart Growth,* a community planning concept that encourages dense development, promotes walkable neighborhoods, preserves open space and provides a variety of transportation choices. Dense developments tend to have lower transportation related emissions because public transportation, walking and bicycling are favorable options compared to personal automobiles.

To achieve deep reductions in greenhouse gas emissions, land use and transportation in the coming decades must be very different than today. In California, increasing vehicle miles traveled (VMT) has been influenced by the following factors:



Source: pollutionissues.com

- Lack of affordability in urban core housing causes people to live far away from where they work
- Lack of viable public transportation options
- Low cost of gasoline
- Sprawl development patterns that do not emphasize density, mixed-use zoning, or transit oriented development (TOD).
- Streetscapes that do not promote pedestrian or bicycle access.

In order to reduce greenhouse emissions related to community development, the State of California signed Senate Bill 375 in 2008. The bill will enable a shift from "Suburban Sprawl," which is a type of development that spreads into neighboring rural areas where property is usually cheaper and population density is low. These types of neighborhoods rely heavily on personal automobiles and usually do not have reliable alternative methods of transportation such as public transit. In California, passenger vehicles are the single-largest source of GHG emissions (approximately 27 percent)[16] and many of them can be attributed to commuters who drive from suburban areas into cities. The senate bill seeks to provide

[16] California Energy Commission. Greenhouse Gas Emissions Inventory (1990 – 2004). http://www.climatechange.ca.gov/inventory/index.html

incentives in order to create communities that are more walkable, with better access to transit and increase quality of life, while also maintaining land for agriculture and wilderness.[17]

In the City of San Leandro, the transportation sector accounts for 61% or 577,623 tons of CO_2e of the city's greenhouse gas emissions. Of this amount, 73% is related to VMTs on state highways with the remaining amount associated with travel on local roads. Although the City has limited control over highway emissions, transportation as a category is a significant emissions source and highlights the importance of regional planning. The city already benefits from an extensive bus system and two BART stations.

The San Leandro General Plan, adopted in 2002, includes wide-ranging policies and actions that guide long-range development decisions in the City to promote environmental sustainability for current and future generations. In particular, the Land Use and Transportation Elements of the plan outline numerous goals, policies and actions that will reduce emissions from the transportation sector and encourage walking, bicycling, and public transportation.

As a completely built-out city, San Leandro is fully committed to providing diverse transportation options that are convenient, safe and affordable. Although most San Leandro neighborhoods are not likely to change significantly during the next ten to fifteen years, they will not remain entirely static either. Policies in the General Plan strive to maintain a quality environment that is environmentally, fiscally and economically sustainable. These priorities and commitments are reflected and incorporated in this chapter on transportation and land use.

4.1 Goal: Encourage development which promotes walkable communities

Policies to make San Leandro more attractive and inviting to pedestrian, bicyclists and public transit users are already articulated in the San Leandro General Plan, Transportation Element. Additionally, the City spent two years developing a Downtown Transit Oriented Development (TOD) Strategy that has received State recognition. The first project included in the TOD Strategy, which is in the process of being implemented is San Leandro Crossings.

Transit ridership has been shown to be higher in areas where people live within a half-mile radius of a stop or station. The TOD Strategy involved rezoning the area around downtown, which includes the Downtown San Leandro BART Station and East 14th Street, a major bus

[17] Source: http://gov.ca.gov/fact-sheet/10707/ - Office of the Governor. US Smart Growth Network, US EPA, BAAQMD

corridor route, to allow up to 3,431 new living units (residential and mixed use.) The City estimates that 15% of the 3,431 units may be built by 2015 and 90% will be completed by 2030. San Leandro has also secured $24.46 million in Prop 1C funding for this project from the State of California.[18]

Phase I of San Leandro Crossings includes:

- **The Alameda:** This 1.25 acre development will feature 100 affordable homes in a 4-story residential apartment building over a single-story parking structure.
- **Cornerstone:** Luxury, multi-family rental community will be built in BART's East Parking Lot. 200 units are planned here, which will utilize similar architectural features as "The Alameda."
- **Replacement Parking Garage:** A three-level, 329 space parking garage will be constructed replacing existing parking spaces in BART's East Parking Lot.
- **Master Plan infrastructure upgrades**

The City is also pursuing development of two additional priority sites identified in the TOD Strategy - 1550 East 14th Street (the former Albertsons) and Town Hall Square (the Davis/Hays/East 14th Street block). In July 2009, the Redevelopment Agency purchased the 1.7 acre former Albertsons site, following demolition of the 26,000 square-foot building, and plans to enter into an exclusive agreement for development of the site consistent with the TOD Strategy which requires greater density including retail along East 14th Street and residential units above.

The developer will also be exploring the possibilities of developing the Town Hall Square consistent with the TOD Strategy which requires greater density, including residential, at the site as well.

The TOD Strategy also identified the need for additional parking downtown to allow greater development density. The two-story downtown parking garage, which currently has approximately 250 spaces, is being replaced by a four-to-five story parking garage. Construction is scheduled to start in 2010.

[18] Source: http://www.ci.san-leandro.ca.us/slcrossings.html - City of San Leandro, San Leandro Crossings

The General Plan Transportation Element promotes development that is designed to meet the needs of pedestrians as well as automobiles. The City is committed to site planning and architectural design that makes walking a more pleasurable activity. The goal is not to make it more difficult to drive, but rather to make highways, parking lots, and cars in general, a less dominant feature of the built environment.

The following measures and actions are highlighted for further consideration, as significant strategies to reduce greenhouse gas emissions in the community:

- **Continue to support the implementation of the Downtown Transit Oriented Development (TOD) Strategy.** Fosters better bus services in downtown and improved connectivity to BART system to promote ridership of public transit. Strategy incorporates increased height limits and minimum densities, and reduced parking requirements for sites near the BART station and along the East 14th Street transit corridor. This includes development of the San Leandro Crossings project, the downtown parking garage and the Albertsons and Town Hall Square sites.

- **Develop design standards for parking lots and encourage placement to the rear of businesses.** This would ensure that parking contributes positively to the overall character of the street and neighborhood.

- **Allow reduced parking requirements where specific conditions are met.** These conditions should include transportation demand management measures, such as shuttle buses to BART and other designations, carpooling and vanpooling programs, shared cars, bicycle storage facilities.

4.2 Goal: Ensure that public transportation is safe, convenient and affordable and provides a viable alternative to driving

Using public transportation is one of the best ways to reduce greenhouse gas emissions, energy consumption, and traffic congestion. Public transport can considerably reduce the amount of miles driven by all vehicles within a given time frame and area (quantified as vehicle miles traveled, or VMTs). Furthermore, public transit can be one of the safest modes of travel, more cost-effective compared to a single passenger vehicle, an effective strategy for improving air quality and creating strong neighborhood centers.

Policies in the San Leandro General Plan are consistent with this goal, and already promote collaboration with AC Transit and BART to ensure that public transit service remains safe, reliable, affordable, and to improve service frequency and coverage within San Leandro neighborhoods and employment centers. The City of San Leandro supports efforts by AC Transit and BART to integrate their schedules to reduce the loss of time associated with intermodal connections.

The current San Leandro LINKS shuttles run in a three mile loop between the downtown BART station and the industrial part of West San Leandro. The LINKS shuttle is free to all riders and is funded by businesses along the route through the Business Improvement District Tax and grants from the Alameda County Congestion Management Agency.

San Leandro also seeks to promote the use of transit vouchers, transit passes and other financial incentives by local businesses to encourage their employees to use public transportation when traveling to and from work. A number of implementing actions are listed for consideration to help the City meet its goals of ensuring that public transportation is a viable alternative to driving, by remaining safe, convenient and affordable.

- **Establish a Transportation Management Association (TMA).** Create a non-profit partnership of public and private employers working together to address local transportation and air quality issues. Create a website that provides employers with valuable information about how to create a successful Transportation Commute Program for their employees and how they and their employees will benefit from joining San Leandro's TMA.

- **Promote pre-tax commuter checks for community and City employees.** Providing transit incentives may encourage employees to take BART or AC Transit to work.

- **Implement programs to increase transit ridership.** Promote better cross-town connections that feed into existing corridor transit systems.

- **Implement projects to increase safety and comfort for bus riders.** Increase the number of new bus shelters and benches, ensuring that they are safe, well lit and well maintained.

- **Improve bus service routes.** Partner with AC Transit to integrate bus routes into broader alternative transportation system, identify gaps in bus service routes and potential scenarios for addressing such gaps.

- **Explore innovative transit improvement projects.** One example includes Bus Rapid Transit (BRT) which employs methods such as priority traffic signals, well-built and well-lit bus stations to make its bus service more reliable, comfortable and expeditious. BRT usually includes improvements around bus lanes to make access safer and comfortable for pedestrians and bicyclists.[19]

4.3 Goal: Promote and accommodate alternative, environmentally friendly methods of transportation, such as walking and bicycling

In order to make San Leandro more bicycle and pedestrian friendly, the City has established a goal for the bicycle system to provide access to all downtown streets, along with priority to streets accessing BART and BRT stations. To this end, the City of San Leandro completed a 2004 Bicycle and Pedestrian Master Plan Update to set a blueprint for completing a bicycle and pedestrian network, support facilities, safety, education and enforcement and a capital improvement plan. Since then, the bicycle network has been expanded and improved. Further improvements may include the addition of West Joaquin Avenue, Parrott Street, and Martinez Street as part of the downtown TOD project. The City is also looking into providing indoor and/or covered bicycle parking to further encourage bike ridership.

The City also initiated two new projects in 2008 to encourage walking: a seasonal Downtown Farmer's Market and Downtown Lighting and Pedestrian Improvements, which included converting a portion of a parking lot into a plaza which has created an outdoor meeting space in a central downtown location. With respect to future development projects, the City has a commitment to improve pedestrian activity through enhancements such as sidewalk width, safety, landscaping and lighting.

The Safe Routes to School (SR2S) program was established to increase the number of children that ride their bicycle or walk to school through increased funding for projects that include improvements in infrastructure and educational programs to promote walking and bicycling. The City of San Leandro has been involved in SR2S programs through partnerships from the City's Police Department and the Engineering and Transportation Department. The City has also been active in securing funding for these projects from state and federal grants. It received

[19] AC Transit's proposed BRT project would create an 18-mile corridor of designated bus lanes through three cities – Berkeley, Oakland and San Leandro. BRT is estimated to reduce 21,000 vehicle miles traveled (VMT) per day (Source: AC Transit website). The proposed 2.5 mile route through San Leandro would run from downtown San Leandro along East 14th St. to Bay Fair BART, which could result in savings of over 500 tons of CO_2 annually. The project is still in the planning stages and may begin construction in 2012.

a SR2S grant and installed four lighted crosswalks at four schools. Through a partnership with a local transportation non-profit *TransForm*, the City has initiated two SR2S programs: one at Roosevelt Elementary School which focuses on walking and another at Bancroft Middle School which focuses on biking.

Measures and actions for consideration:

- **Improve bike routes for safety.** Develop a numbering system for the City's bike routes. Work with bicycle advocacy groups in San Leandro and neighboring communities to publish a regional bike route map for general use. Require stricter police regulation on bike lanes to reduce accidents from parked cars.

- **Continue to update and implement the Bicycle and Pedestrian Master Plan (2004).** Update and implement the master plan to further create a network of safe routes for pedestrians and bicyclists to make the City more accessible through sustainable strategies.

- **Improve crossings for pedestrians and cyclists at intersections in the City.** This can be done through the use of enhanced crosswalks and corner bulb-outs to increase crosswalk visibility, slow turning traffic, as well as installation of detection loops for bicycles.[20] User-friendly pavements and crossings can encourage a higher number of pedestrians and bicyclists.

- **Expand the Safe Routes to Schools program.** San Leandro has already been actively involved with this program. Staff could work with neighborhoods to establish and implement programs that encourage children to walk and bicycle to school.

- **Implement the East Bay Greenway Concept Plan.** This plan creates a corridor for bicyclists and pedestrians along twelve miles of elevated BART tracks from 18th Avenue in Oakland to Hayward. Not only will this corridor promote pedestrian usage and biking, it will also include play areas to help transform neglected areas and promote healthier and stronger communities.

- **Provide incentives to city employees who carpool, bike or take public transit to work.** Adopt bicycle ordinance that would provide financial incentives to employees that bike to work as one example.

[20] Detection loops for bicycles is based on the same technology utilized for detection of vehicular traffic at traffic signals. The adoption of policies to design and adjust traffic signal sensors to detect bicycles can improve safety and convenience for bicyclists.

4.4 Goal: Enhance and expand car sharing and ridesharing programs

Car sharing is a means to provide a cheaper alternative to ownership of a private vehicle. Typical costs related to a private vehicle such as monthly payments, gasoline, insurance, maintenance and parking are taken on by an individual. Spreading these costs over many users in car sharing programs, makes it more cost-effective and promotes a "pay-as-you go" model for vehicle usage. Car sharing is more cost-effective than owning a vehicle when used less than 7,000-10,000 miles per year. While it may not be suited for daily commuter trips, it can be helpful for individuals who do not need to drive everyday and can ride public transit, walk or bike to work or school.

Source: victoriacarshare.ca

Car share vehicles are located in designated parking spots and are available for use 24 hours a day. Members of these organizations do not have to carry insurance of their own as membership includes full liability, collision coverage as well as gasoline. Car sharing is best in dense neighborhoods, central business districts, new planned unit developments, medical campuses and universities. The Downtown San Leandro BART station and the City's downtown garage are ideal locations for a car share site. San Leandro Crossings, the city's first TOD project, can also be a candidate for implementing car share vehicles.

Car sharing reduces the number of cars on the road, improves air quality and reduces carbon emissions. Car sharing companies that operate in the Bay Area (e.g. Zip Car and City CarShare) could develop a partnership with the City of San Leandro to provide these types of cars.

Another approach to reduced costs and vehicle miles traveled is to promote ridesharing programs. One of the most significant barriers to ridesharing or carpooling is simply to match interested parties with similar schedules and destinations. The City can promote regional ridesharing efforts, including setting up a website linked from the City of San Leandro's main website that would allow San Leandro residents to identify other people interested in carpooling. The City can also help educate residents and businesses on the resources available to assist individuals with organizing ridesharing programs.

Measures and actions for consideration:

- **Provide further incentives for car sharing.** Give users of car share vehicles designated on-street parking in congested areas. Make car sharing more affordable by working with car share providers to offer subsidies for low-income residents.

- **Work with car share companies to locate sites in San Leandro**, perhaps starting at the San Leandro BART station and the City's downtown garage. Putting car sharing pods in San Leandro is the first step to encourage residents and businesses to consider it as a viable option for transportation.

- **Support education and outreach regarding car sharing.** Increase outreach to community members about benefits of car sharing at public events such as the farmers' market. Allow car share providers to have free advertisement space on buses, benches and other areas throughout the city.

- **Ride share information webpage**. Set up a website linked from the City of San Leandro's main website that would allow San Leandro residents to identify other people interested in carpooling.

4.5 Goal: Encourage the use of fuel efficient vehicles, low carbon fuels and more efficient traffic operations

Among City priorities is to continue to improve major transportation arteries for circulation in and around the City. Improving flow of traffic in major corridors within San Leandro can help reduce the amount of gasoline wasted during idling at intersections as well as improve local air quality. CalTrans' Traffic Light Synchronization Program (TLSP) provides funds for cities to improve operations on local streets and roads and improve safety. San Leandro has already secured a grant from CalTrans in order to retrofit traffic signals in different corridors adding up to 13 miles of roads.

Widespread usage of electric vehicles over two decades could save consumers $175 billion in fuel costs and bring a $120 billion boon for battery makers, according to early results of a study by the Venture Lab at the University of California at Berkeley. The City may wish to consider a Plug-In Hybrid Electric Vehicle (PHEV) Resolution to encourage the use of cleaner fuels in the community. Another idea is to participate in national PHEV initiatives such as the Plug-In Partners, a national grass-roots initiative to demonstrate to automakers that a market for flexible-fuel PHEV exists today. The Campaign demonstrates viability of the market by garnering support in the form of endorsements by cities across the country, procuring "soft" fleet orders and developing rebates and incentives. "Soft" fleet orders are vehicle commitments to

strongly consider purchasing flexible fuel plug-in hybrids if they are manufactured. There is no financial commitment involved in making a "soft" fleet order.

While a variety of other low carbon fuel sources, such as hydrogen and compressed natural gas, have been previously under development for use to replace gasoline and diesel, electric vehicles are believed to be one of the most viable emerging low carbon fuel sources. This is due to the relatively low infrastructure barriers to entry, mainly an existing power grid infrastructure and commercially available hybrid electric vehicles already highly popular on the market. PHEV are also arguably one of the most fuel efficient vehicles, in terms of reducing our dependence on foreign oil, as well as reducing greenhouse gas emissions.[21]

The City has applied for a Federal Transportation Investment Generating Economic Recovery (TIGER) grant for funding of the new Downtown parking garage which includes an electric battery swap station and one level of parking for electric vehicles. This project is being pursued in conjunction with the BetterPlace, a venture-backed company based in Palo Alto that aims to reduce global dependency on petroleum through the creation of a market-based transportation infrastructure supporting electric vehicles .

A number of measures and actions are presented below to promote the adoption of fuel efficient and low carbon vehicles, as well as efficient vehicle operations:

- **Make existing traffic flow more efficiently to reduce the amount of time people spend idling in city traffic.** Improve vehicle detection to minimize car idling at traffic signals. Improve signal timing along arterials. Improve signal communication to allow rapid diagnosing and repair at traffic signals.

- **Provide preferred and designated parking for more fuel efficient vehicles, such as zero emissions vehicles and hybrid vehicles.** Preferred and designated parking should be located near key destinations and reduces time spent searching for parking.

- **Continue working towards implementing plug-in stations at various locations throughout the City**. Increasing the number of plug-in stations will increase the convenience and availability of electric "fuel" for hybrid and all-electric vehicles.

- **Provide incentives in City parking and transportation demand management policies for developers and business owners that provide charging stations for plug-in**

[21] Source: EPRI. "Environmental Assessment of Plug-In Hybrid Electric Vehicles. Volume 1: Nationwide Greenhouse Gas Emissions." Accessed at: http://mydocs.epri.com/docs/public/PHEV-ExecSum-vol1.pdf

electric vehicles. Incentives may be monetary, although other ideas include providing free publicity and other forms of recognition.

- **Install plug-in stations at the Water Pollution Control Plant**. Could take advantage of energy being produced by the plant and in potential PV projects in and around the plant. Plug-in station could be used by vendors, employees for their personal transportation, and plant and other City fleet vehicles.

4.6 Goal: Increase and enhance urban green space

The City of San Leandro is proud to have been recognized by the National Arbor Day Foundation as "Tree City USA" for the past eleven years. Increasing the urban canopy with a sustained tree planting program reduces the heat island effect and therefore lowers the energy needed to cool San Leandro homes and businesses. Trees also sequester carbon dioxide and might be an opportunity for greenhouse gas reduction credits under the Climate Action Reserve's urban forestry protocol. Additional co-benefits include better quality of life for residents and increased property values.

Marina Park

The 2002 San Leandro General Plan includes an Open Space, Parks and Conservation Element to management the City's park and open space areas, as well as conserve natural resources such as soil, water and natural habitat. A number of programs are aimed to reduce or avoid the degradation of diverse ecosystems, including wetlands, riparian woodlands, grassland and the "urban forest" consisting of trees and shrubs which provide habitat for birds and small mammals. The preservation of natural ecosystems is an important component to avoid the emissions of carbon dioxide from clear-cutting and land clearing practices.

Furthermore, the globalization of trade overseas has significantly increased the greenhouse gas emissions associated with food production. Highway and local transportation emissions are also related to the movement of food into and within the community. Urban agriculture has the potential to reduce greenhouse gas emissions in the community and contribute to food security and food safety.

Measures and actions for consideration:

- **Increase urban forest canopy.** Maximize tree planting as part of public open space and street improvements. Calculate GHG emissions reduction from urban forest sequestration utilizing the Climate Action Reserve Forest Protocol. American Forests is a non-profit organization that offers grants to fund tree planting projects. American Forests' Global ReLeaf Grant program could provide funding to increase urban forest canopy.

- **Adopt an Urban Agriculture Ordinance.** The ordinance would amend the Zoning Code to allow beekeeping, and expand limited animal husbandry (including the keeping of chickens) and limited commercial horticulture (to facilitate the development of urban Community Supported Agriculture) in certain residential districts. Currently these uses are not permitted in most residential districts. The ordinance may also designate areas for community gardens with new zoning regulations.

- **Provide education and outreach regarding benefits and best practices of growing food in San Leandro.** Promote local gardening through programs such as Community Supported Agriculture (CSA) that employ sustainable methods of providing food to consumers.

- **Allow multi-unit residential projects to provide street-level public open space in lieu of some required on-site private open space**. Providing public open space promotes visual appeal and community gathering places, which are important components of pedestrian-oriented communities.

5. Waste Reduction and Recycling

While it may not be immediately obvious, reducing the amount of waste deposited into the landfill through material reuse, reduction, and recycling is one of the most important strategies San Leandro residents can take to reduce greenhouse gas emissions. This is because the products we use travel along a supply chain - from raw materials extraction, through manufacturing, transportation, and ultimately deposition in a landfill - with each of these stages powered by fossil energy resulting in greenhouse gas emissions.

Upstream from the consumer, fossil fuel energy is used to extract the raw materials such as wood, metals, etc. from which products are made. Additional energy, primarily coal-based electricity and natural gas, is needed to manufacture consumer goods in factories. Petroleum is used for the transportation of raw materials to the factory, moving manufactured goods to market, and moving waste from the consumer's curbside to landfills.

Emissions occur downstream from the consumer as well. When organic material such as food, wood, paper, or other biologically derived material is deposited in landfills, it decays in an oxygen-free environment that produces methane (CH_4). Methane is an extremely potent greenhouse gas, such that 1 pound of methane is considered to be as powerful as 21 pounds of carbon dioxide. Often, some of this methane is captured and combusted at the landfill for the generation of electricity. However, much of the methane leaks to the atmosphere. This methane leakage is the primary source of the City of San Leandro's greenhouse gas emissions from the waste category.

Waste reduction and recycling is a powerful tool for reducing emissions all along the consumer materials lifecycle. Reducing the amount of materials required through re-use, for example using canvas bags instead of plastic and paper bags from the grocery store, represents the best opportunity to reduce GHG emissions in a significant way. The reduction in energy-related CO_2 emissions from the raw material acquisition and manufacturing process, and the absence of emissions from waste management, combine to reduce GHG emissions more than any other option.

Recycling represents the second best opportunity to reduce GHG emissions. For these materials, recycling reduces energy-related CO_2 emissions in the manufacturing process and avoids emissions from waste management. The U.S. EPA estimates that if a city of 100,000

with average waste generation (4.5 lbs/day per capita), recycling (30 percent), and baseline disposal in a landfill with no gas collection system could increase its recycling rate to 40 percent, it would reduce emissions by more than 3,400 metric tons of CO_2e per year.

Composting is a management option for food discards, yard trimmings, and other biogenic materials that significantly reduces the generation of methane in landfills. EPA researchers believe that well-managed compost operations usually do not generate CH_4 because they typically maintain an oxygen rich environment. EPA also found that composting results in carbon storage, meaning carbon dioxide is effectively removed from the atmosphere, of approximately 0.05 metric tons of CO_2 per ton of organics composted and applied to agricultural soil.

Photo Credit: Kessner Photography

As San Leandro works towards a more sustainable future, waste reduction and recycling will be a key component of a comprehensive strategy. For this Climate Action Plan, we are focusing on goals and measures that address the "Three R's": Reduce, Re-use, Recycle (and compost).

The City of San Leandro has already established a 75 percent waste diversion goal by 2010. The City may wish to expand on such efforts and adopt a zero waste policy as San Francisco and Oakland have done.

5.1 Goal: Increase recycling and composting in the residential sector

San Leandro offers food scrap recycling collection services to residents. The food scrap program allows residents to mix food and food soiled paper with yard trimmings for weekly collection. The program is easy, convenient and provided at no additional cost to garbage and recycling collection rates. The City offers food scrap pails and pail liners for free to residents. Traditionally, meat and bones aren't used in composting, but because the waste hauler grinds the items, these items are acceptable. Food scrap recycling is also offered to San Leandro residents and businesses served by Oro Loma Sanitary District, which also offers bi-weekly

recycling pick-ups. In 2012, Oro Loma Sanitary District intends to begin offering weekly curb-side recycling.

The following measures are designed to increase the diversion from the waste stream of recyclable materials such as metals, plastics, and paper as well as the composting of organic materials such as food and plant materials for the residents of San Leandro.

The measures and actions for consideration are:

- **Increase residential participation in curbside recycling and composting programs.** Educate residents about food scrap recycling practices and clarify which materials are recyclable and compostable. Provide additional incentives and opportunities to recycle and compost.
- **Partner with StopWaste.Org to promote home composting programs.** StopWaste.Org currently offers discount compost bins. The City of San Leandro may consider offering an additional subsidy for such bins, including vermicomposting bins, and promoting local composting workshops.
- **Promote programs for recycling electronic waste or "E-waste."** StopWaste.Org has programs to support proper recycling and disposal practices for common household electronics such as TVs, computer monitors, batteries and fluorescent light bulbs.

5.2 Goal: Increase recycling and composting in the commercial sector

The following measures are designed to increase the diversion from the waste stream of recyclable materials such as metals, plastics, and paper as well as the composting of organic materials such as food and plant materials from San Leandro businesses.

In January 2003, the City of San Leandro adopted a Construction and Demolition Debris Recycling Ordinance to ensure that job site debris is recycled. The Ordinance requires contractors to recycle 100 percent of all asphalt/concrete and 50 percent of all other construction and demolition debris from projects valued at $100,000 or greater at the time the building permit is issued.

Mandatory requirements for businesses to recycle and compost food scraps can significantly reduce the amount of waste that is sent to landfills, which reduces methane emissions and creates nutrient-rich compost which can be reused to grow food. The resulting compost also

helps reduce the use of chemical fertilizers and pesticides, which have an impact on GHG emissions. Below is a summary of the measures and actions for consideration:

- **Consider a mandatory curbside recycling and composting programs.** A San Leandro ordinance could be based on the City of San Francisco' and Seattle's Mandatory Recycling and Composting Ordinances. It would require San Leandro businesses to separate recyclables, compostables, and trash and participate in recycling and composting programs. Property managers of multifamily units would be required to provide adequate recycling containers and service for all of their units or face fines. Under Seattle's law, a business owner or apartment landlord can be fined if more than 10 percent of what gets tossed out in garbage containers is considered recyclable material.

- **Continue working with StopWaste.Org to promote programs that help local businesses recycle, reduce waste and buy products made of recycled materials.** StopWaste.Org provides grants, loans, workshops and training seminars and on-site assistance to local businesses.

- **Work with restaurants to manage food waste.** Ensure that restaurants are taking part in food scrap recycling program, where the city collects food and food-soiled paper from green recycling carts. Promote awareness of the City's Water Pollution Control Plant program that accepts restaurant grease.

- **Limit industrial waste.** Identify large industrial waste generators and work directly with them to reduce and recycle materials.

5.3 Goal: Promote waste reduction and material re-use in the community

Many of the products we buy, including the packaging and containers, will eventually require disposal. Waste reduction refers to reducing the amount of waste produced, such as using durable/reusable items instead of disposable items, repairing/restoring used items, and avoiding excess packaging when choosing product brands. The Alameda County Waste Reduction and Recycling Act of 1990 promotes an annual non-monetary award program for businesses which demonstrate a significant reduction in the use of packaging materials or waste reduction through the durability and/or recyclability of their products.

San Leandro's Solid Waste and Recycling Division maintains a website with resources for residents and businesses and promotes initiatives such as the junk mail reduction kit, and information on local recycling centers for drop-off and buy-back of materials.

Some businesses already offer small financial incentives for bringing your own shopping bag (e.g. 5 cents per bag). The City may consider a policy to encourage local retailers to adopt their own waste reduction programs. The following measures are designed to further encourage reduction and re-use of materials so that energy and emissions are saved up- and down-stream from the consumer. Measures and actions for consideration:

- **Promote reusable transport packaging in the commercial industrial sector.** Work with StopWaste.Org to promote the campaign to get businesses to switch to reusable shipping materials.

- **Promote re-use of materials in the community.** Offer education to community members about different ways of re-using materials in their homes as well as businesses. Simple tasks could include the use of the blank side of a paper to re-print or use for other tasks.

- **Support programs for locally produced compost.** Partner with Davis Street Waste Transfer Station to blend green waste with WPCP bio-solids to create a compost product that can be used locally.

- **Reduce plastic/paper waste associated with shopping bags**. Offer residents a reusable shopping bag with a City of San Leandro brand (e.g. the "Healdsbag" from Healdsburg, CA). The bags could include a "Shop San Leandro" message to promote local businesses. Consider adopting a plastic bag ban. San Francisco's plastic bag ban has cut use by 5 million plastic bags.

- **Adopt a styrofoam ban and introduce bio-degradable containers to food related businesses.** Reduce the amount of non-biodegradable waste that ends up in landfills by banning Styrofoam containers and promoting the use of compostable food ware in restaurants.

6. Municipal Operations

The San Leandro Climate Action Plan is meant to be a comprehensive plan encompassing both community and municipal government actions to reduce greenhouse gas emissions. While municipal operations constitute a small fraction of the total inventory, municipal action can help reduce operation costs and has important symbolic value demonstrating leadership that extends beyond the magnitude of emissions actually reduced.

San Leandro City Hall

San Leandro staff has already been proactively promoting environmental responsibility and conservation related to city operations. In July 2007, a Green Employee Survey was distributed to staff to find effective programs to reduce the staff carbon footprint. The results of the survey yielded a number of ideas and potential programs including encouraging staff to bike and take transit to work, reduce waste related to City events, developing "Recycling Champions" in City departments and staff education on opportunities to reduce emissions at their homes. These ideas have been incorporated into this Climate Action Plan.

A separate survey was administered to ascertain the locations and distances of employee commuting. Since this survey was distributed, four City Hall employees were able to identify rideshare opportunities, and now carpool from southern Contra Costa County and enjoy the preferred parking spaces at City Hall.

In this chapter, we organize measures under four overarching goals across City buildings, vehicles, waste and water conservation to reduce emissions related to the wastewater treatment plant.

6.1 Goal: Increase energy efficiency and renewable energy use in City facilities

Greenhouse gas emissions related to buildings, streetlights and water/sewage facilities comprise 34 percent of San Leandro's total government operations emissions inventory. Recognizing the importance and cost reduction opportunities of efficient operations, the City of San Leandro has acted decisively to promote energy efficiency in all aspects of government

operations. Following the "reduce, then produce" idea, the City's project to generate electricity from renewable resources at the water pollution control plant (WPCP) is underway.

City Buildings

Since 2005, the City of San Leandro has implemented various lighting and heating, ventilating and air conditioning (HVAC) upgrades to City facilities that have contributed to greater energy efficiency. Phase I of a three part Civic Center HVAC and water heating system upgrade was completed in late 2007. The upgrade included replacing three boilers with higher efficiency (90+ percent) boilers. The former boilers were rated at 80 percent efficiency and were inadequate to heat the building. The City is looking to replace 180 tons of cooling, going from 8.9 kW per ton to 5.2 kW per ton. The next two phases of this project are scheduled to take place over the next few years, subject to funding, and will contribute to greater energy efficiency.

Other potential future upgrades for the Civic Center include improving insulation, window upgrades, and installing a building controls system which would allow the Public Works department improved control and greater flexibility in monitoring the HVAC system and would also allow the system to be managed remotely, saving valuable staff resources. These improvements could be funded by a low interest loans made available by the American Reinvestment and Recovery Act (ARRA) Loan Program.

In November 2007, the City enrolled in the ABAG Energy Watch Partnership and held its initial meeting to discuss the Energy Assessment Report (EAR). At this meeting, seven buildings were prioritized for energy efficiency audits. As of March 2008, the City has completed three lighting retrofits across Fire Stations 12 and 13, and the South Offices building.

Fire Station 12

In May 2008, the City Council adopted a Municipal Green Building Ordinance. This requires that all municipal projects (new buildings or remodels) at or over $3M in value (indexed to 2008 dollars) be designed/built to LEED Silver or higher and certified with the US Green Building Council (USGBC). The San Leandro Senior Community Center began construction in fall 2008 and the architect has targeted a LEED Silver rating in the project. The architect will submit the application and paperwork for the LEED certification when the project is complete. The Downtown parking garage, which will include 2,000 square feet of office space, is design to achieve LEED Silver certification.

Traffic Signals and Streetlights

In 2002, 750 traffic signal lights were converted to more energy efficient LED (light-emitting diodes) bulbs starting with the green and red traffic lights. Since then, all traffic signals have been converted to LED technology, from the older incandescent lamps. Traffic signals that use LEDs consume 80-90 percent less energy and generally last 5-7 years, compared to just a year for a comparable incandescent light signal. LED traffic signals also offer significant peak demand savings since they operate 24 hours a day.[22]

Given the success of the LED traffic signals, the City is now looking to replace streetlights with more efficient fixture types. Switching to energy efficient streetlights will save taxpayer money and greenhouse gases. Most street lights are high pressure sodium (HPS) lamps. The streetlight retrofit would require replacing the entire head of each street light, to replace the HPS lamp and ballast. Retrofitting the street lights are expected to result to reduced electricity consumption by up to 40 percent..

Water and Sewage Facilities

The Water Pollution Control Plant (WPCP) is generally the largest single energy user of all City facilities. A project to install a cogeneration unit is already underway. The cogeneration unit will run off the methane gas produced in the digesters. The cogeneration will produce electricity to operate the plant and heat to run the plant's anaerobic digester.

Reduce, then Produce

Following the City's initial efforts to reduce energy use, The City is considering assessing the feasibility of a solar installation site at the Water Pollution Control Plant. Given the economic and environmental benefits of improving the energy efficiency of municipal buildings, the City will prioritize efficiency improvements prior to the more expensive solar PV installations. Power purchase agreements (PPAs) may also be an approach to installing solar systems. A PPA involves leasing the photovoltaic equipment and paying for the energy on a monthly basis. Third-party PPAs are generally feasible for large (>500 kW) PV systems, but not for small systems (<100 kW) as the administrative and financing costs often outweigh the potential tax benefits. The City is waiting for energy efficiency upgrades to be completed on City Hall before evaluating potential photovoltaic systems for that building.

Measures and actions for consideration:

[22] Consortium for Energy Efficiency. http://www.cee1.org/gov/led/led-main.php3

- **Complete retrofits of all traffic signals, pedestrian walk signs, and streetlights with LED lights.** The City of San Leandro has already installed red and green LED traffic signals. LED or inductive lamps are significantly more energy efficient than conventional lamps and save on maintenance costs due to their longer lifetimes. Assess and leverage utility incentives for energy-efficient traffic and pedestrian signals and streetlights.

- **Complete recommended retrofits from ABAG/PG&E study.** Conduct energy efficiency retrofits in the buildings prioritized by ABAG Energy Watch Partnership, Fire Stations 9, 10, and 11, and evaluate HVAC efficiency and conservation opportunities. Other retrofits recommended by the ABAG/PG&E study have already been completed.

- **Water Pollution Control Plant (WPCP).** Continue to evaluate opportunities to purchase high efficiency equipment.

- **Conduct feasibility study of solar PV installations on City property including the WPCP.** Solar photovoltaic (PV) panels displace conventional electricity. The City would need to start with a solar feasibility analysis for installations on city facilities. A solar power purchasing agreement (PPA) could help to minimize first costs. One potential site already identified is at the Water Pollution Control Plant.

- **Install solar water heating at San Leandro indoor pools (Boy's and Girl's Club).** Thermal solar energy reduces energy needs for heating water. These upgrades can be subsidized by state and PG&E rebates.

6.2 Goal: Reduce emissions related to City fleet operations

City fleet operations comprise almost 50 percent of the City's emissions inventory, and represents one of the most difficult emissions sources to address. The City fleet encompasses necessary vehicles ranging from police cars to maintenance trucks to forklifts that all serve important jobs to keep the community safe, clean and attractive.

In 2008, the City purchased its first hybrid vehicle, a Chevy Malibu replacing a 1995 Chevy Lumina. The hybrid's fuel efficiency, 30 mpg, compared to the Lumina's, 21.5 mpg, yielded a savings of 172 gallons of gasoline, $705 in gasoline costs and 2 tons of CO_2 annually.

Since the 2005 inventory of its emissions, the City has also undertaken measures to reduce its emissions on the Public Works' heavy fleet vehicles. In order to comply with the California Air Resources Board's Particulate Matter Retrofit Program, the City retrofitted fleet vehicles with diesel particulate filters. All of the retrofit devices installed on City vehicles were "level 3" PM-10

control devices that reduce particulate matter (PM-10) by more than 85 percent. In addition to reducing PM-10, the filters also reduce tailpipe nitrous oxide (N_2O) emissions. The City completed the retrofit program in September 2009, 27 months ahead of the December 2011 compliance deadline.

There are two main strategies for reducing emissions related to vehicle operations – reduce emissions per mile driven (through low carbon fuel, or fuel efficiency), and reduce the number of miles driven. Measures and actions for consideration:

- **Replace a few City fleet vehicles with a car share program or replace cars with hybrids or electric vehicles as needed.** Following the City of Berkeley model, the City may consider replacing 2-3 City fleet vehicles with 1 hybrid or electric vehicle from a car share company.[23] Also, the City should replace fleet cars with hybrids or electric vehicles on an ongoing basis, whenever feasible.

- **Continue to review and enhance maintenance procedures to ensure efficient vehicle operations.** The City is committed to continuing to keep engines properly tuned and tires properly inflated to improve fuel efficiency. In addition, the City's Fleet Department is a registered Green Business.

- **Continue to retire underused and inefficient City fleet vehicles.** Consider a Usage Analysis Policy to assess the operating costs and annual mile usage of each vehicle to compare costs per mile of each fleet vehicle. These types of metrics can provide information to ensure cost-effective and reduced greenhouse gas emissions related to fleet operations.

6.3 Goal: Increase recycling, composting and material reuse related to municipal operations

Although waste generated through City offices, landscaping and construction projects comprise a small portion (7 percent) of the City's total municipal emissions inventory, it remains an important component to overall sustainability. Actions to reduce waste and increase waste diversion in municipal buildings and operations demonstrate important leadership to the community.

[23] Other cities have joined local car sharing agencies and encouraged staff to use the vehicles, but Berkeley has contracted to develop vehicle reservation software that dedicates the vehicles for City employee use during the work week and enables general members to use the vehicles on evenings and weekends.

In October 2004, the City of San Leandro adopted a comprehensive Environmentally Preferable Purchasing (EPP) Policy to encourage all staff to consider environmental aspects when procuring products and services for the City. Factors to be considered include durability, water and energy conservation, reduction of material use, recycled content, reduction of packaging and reduction in toxicity. Furthermore, the City requires adherence to its Environmentally Preferable Purchasing (EPP) policy in its janitorial contracts, which commits companies to using "green" cleaning products.

Measures and actions for consideration:

- **Pilot program for composting.** Composting organic waste, including food waste, related to City operations divert waste from landfills and results in the reuse of organic nutrients.
- **Make double sided printing the default setting for all City printers and copiers**. Double sided printing reduces impact on trees and can benefit the city by reducing operational costs.
- **Institute green policy for refreshment catering and food disposal at City events.** A green policy can minimize waste by encouraging the use of compostable disposable plates and silverware, as well as the diversion of food waste. The policy may also encourage the consumption of locally grown food and a ban on bottled water.
- **Continue to require janitorial service providers to adhere to City Environmentally Preferable Purchasing (EPP) policy**. The City of San Leandro is already doing this. EPP entails using products or services that reduce impact on the environment and human health compared to another product that serves the same purpose. This could mean purchasing biodegradable and/or non-toxic cleaning products.
- **Continue to adhere to the Bay Friendly Landscaping Guidelines to reduce landscaping waste.** The StopWaste.Org Bay Friendly Landscaping guidelines promote a holistic approach to gardening that fosters soil health and conserves water, while reducing waste and preventing pollution. The City adheres to these guidelines while selecting new plants at City facilities

6.4 Goal: Promote source reduction measures in the community related to the utility services provided by the City

As the largest single electricity consuming facility within the City operations, special consideration must be given to the Water Pollution Control Plant (WPCP). The WPCP has served the citizens, businesses, and industries in the City of San Leandro continuously since 1939.

- The WPCP responds to reports of sewer line backups.
- Wastewater from homes, businesses, and factories is collected and carried to the treatment plant through 130 miles of sewer lines and 17 remote lift stations.
- The WPCP produces a high quality secondary effluent and is designed to treat wastewater at a rate of 7.6 million gallons per day (MGD). The plant is staffed 24 hours, 7 days a week.

East Bay Municipal Utility District (EBMUD) sponsors water efficiency programs within the San Leandro community. Water conservation can reduce the amount of wastewater treated in the WPCP, and reduce energy usage related to this City facility, thus leading to greenhouse gas emissions reductions. Available programs include clothes washer rebates, landscape rebates, gray water and irrigation controller programs, as well as free water conservation devices for both the residential and non-residential sectors.

The City's effort in developing its recycled water capacities greatly decreases the amount of energy used in transporting water to San Leandro. Recognizing this, in 2008 the City completed a $1.6 million dollar project to use reclaimed water from San Leandro's Water Pollution Control Plant for the majority of irrigation needs at the Marina and Tony Lema golf courses at Monarch Bay.

Throughout the system, the City extracts wastewater treated at the WPCP that would otherwise be discharged into the Bay through the East Bay Dischargers Authority pipeline at the San

Leandro Marina. The new system saves 98 million gallons a year in City demand for EBMUD water, which equates to roughly the amount 600 households use in a year.[24]

The reclaimed water system provides roughly 95% of golf course irrigation needs with the remaining 5% (used on the greens) drawn from EBMUD's drinking water sources. The new system was launched just as the East Bay Municipal Utility District announced a mandatory drought management program to safeguard the district's shrinking water supply.

Beginning in August 2008, the City began using recycled water for the sewer collection system cleaning activities. Currently, a minimum of 2,200 gallons per day in recycled water is being used for this process. Hydrant water is used for cleaning activities east of East 14th Street where reclaimed water is not available.

In June 2009, the City adopted the Bay-Friendly Landscaping Ordinance, requiring that all landscaping in municipal and public/private partnership projects (new and refurbished) at or over $100,000 in value and 2,500 square-feet in area achieve the minimum Bay Friendly Landscape score as recommended by StopWaste.Org. Bay-Friendly Landscaping is a holistic approach to gardening and landscaping that works in harmony with the natural conditions of the San Francisco Bay Watershed. Bay-Friendly practices foster soil health, conserve water and other valuable resources while reducing waste and preventing pollution.

A Water Efficient Landscaping Ordinance will be considered by City Council in December 2009 and would increase water efficiency of new or remolded landscapes greater than 2,500 square feet by requiring "smart" timers, encouraging the preservation of native vegetation, prohibiting watering during certain hours and limiting the amount of turf allowed, among other regulations. Some provisions of this ordinance may be applied to landscapes less than 2,500 square feet. This ordinance is designed to fulfill the requirements of the Water Conservation in Landscaping Act of 2006 (AB 1881.)[25]

Measures and actions for consideration:

- **Partner with East Bay MUD and StopWaste.Org to leverage existing programs to encourage the installation of water efficient technologies in the community.** East Bay MUD offers rebates and tips for reducing water consumption. StopWaste.Org also promotes

[24] According to the California Energy Commission's report: California's Water-Energy Relationship (CEC-700-2005-011-SF), November 2005, reclaimed water can save 1,450 kWh of electricity per million gallons of water reclaimed.
[25] If the proposed ordinance, which is based on edits to the existing Zoning Code Article 19 Landscaping is not adopted, the State's model ordinance will be adopted by default.

water efficient landscaping practices. Promote use of low flow water fixtures to reduce water use and inflow.

- **Install more efficient pumps and motors at the WPCP.** Complete retrofits of efficient pumps and motor systems can reduce energy use, lower maintenance costs. Variable-frequency drives, devices that adjust speeds of electric motors, can also provide cost savings as well as energy savings for treatment plants.

- **Explore opportunities to use grey water (recycled water) for landscape irrigation.** Grey water refers to water from bathroom sinks, washing machines, showers and tubs that can be reused for irrigation or toilet flushing. Grey water reduces water usage, saves money and reduces the load on sewage treatment plants. The City may also consider entering into a new contract with EBMUD that encourages more recycled water reuse (such as having them provide the Tony Lema golf course a loan or grant to change sod to a more tolerant species).

- **Composting agreement between the Davis Street Transfer Station and the WPCP.** Opportunities could exist to supply DSTS with recycled water and to combine their green waste and WPCP bio solids for compost.

7. Implementation

The preceding chapters describe the principal sources of the City of San Leandro's greenhouse gas emissions and outline related goals and possible actions for achieving the community's target of reducing emissions to 25 percent below 2005 levels by 2020. The San Leandro community, City staff and expert input went into developing the content of these chapters, but the most important component of San Leandro's climate action effort is implementing the actions described.

Although significant GHG reduction policies and initiatives are already in place, the actions proposed in this plan, by necessity, far surpass the scale of existing efforts. Implementing the plan and ensuring that it results in real, additional GHG emissions reductions will require increased coordination across sectors and institutionalizing climate protection efforts across the community.

The large number of measures and programs recommended in this plan will take many years to implement, given limitations in both staff time and funding. A cost-benefit analysis and prioritization methodology is presented below to assist the City in developing a phased implementation plan. The cost-benefit analysis is based on a subset of the measures previously detailed in this plan. These measures were selected by the San Leandro Climate Protection Task Force as warranting further research on costs and magnitude of GHG reduction potential, in order to determine near-term action.

This chapter outlines the main components of the process for turning this plan into action and identifies specific actions from earlier chapters that are recommended for short-term implementation (i.e. by the end of 2012).

7.1 Cost-Benefit Analysis

In collaboration with the San Leandro Climate Protection Task Force, 26 actions were selected for cost-benefit analysis, from the full list of over 80 implementing actions that were presented in the preceding chapters.

For the cost-benefit analysis, costs for implementation, agencies responsible for implementation and the potential greenhouse gas emissions benefit were estimated. Based on this information, the measures are scored for the relative environmental and economic impacts of each measure. The measures were also scored on ease of implementation to prioritize near-term actions. The

methodology employed for the prioritization of measures was developed by KEMA Inc., with each project evaluated with a total of nine possible points based on three elements:

- **GHG reduction (metric tones CO_2)** – Measures were analyzed for approximate annual quantity of greenhouse gas reductions that could be reasonably achieved.[26]

GHG Reduction	Score
> 500 $MTCO_2$	3
50 - 499 $MTCO_2$	2
< 50 $MTCO_2$	1

- **City Costs** – KEMA estimated upfront and first costs to the City to implement the measure. Most measures were related to City programs for the community, with no savings directly generated for the City. For the few measures that did result in annual savings to the City, payback periods were generally greater than five years and were qualitatively considered in determining the final score.

City Costs	Score
< $50,000	3
$50-999,000	2
> $1 million	1

- **Feasibility** – The analysis also considered whether or not significant barriers may make implementation of the measure challenging, mainly related to technical and political barriers (e.g. community resistance). In general, a project is considered to have high implementation ability if staff has flexibility to implement with minimal institutional and procedural barriers. Political viability is also included in this score, in consideration of potential stakeholder concerns or opposition.

Feasibility	Score
High	3
Medium	2
Low	1

[26] Emissions Factors utilized: 0.638 lbs CO_2 saved/kWh saved. 0.0053 metric tons CO_2 saved/therm saved. (Source: PG&E public report and The Climate Registry General Reporting Protocol)

The final prioritization score is a summation of the score for each criteria, with a maximum potential score of nine.

7.2 Results of the Cost-Benefit Analysis

The below four tables summarize the high level results of the cost-benefit analysis and assist in developing the prioritization of actions to assist the City of San Leandro to achieve its greenhouse gas emissions target. For more details, see Appendix C.

Table 5. Building Energy Use Actions

Proposed Measure	GHG Score	Cost Score	Feasibility Score	Total Score
Goal: Improve energy efficiency and reduce costs of energy upgrades for residential properties				
Offer home performance classes by building staff	2	3	3	8
Develop a revolving loan fund for home performance audits and improvements	2	2	3	7
Adopt a Residential Energy Conservation Ordinance (RECO)	3	2	1	6
Adopt a third-party or municipal financing program for residential energy efficiency retrofits	2	2	2	6
Goal: Improve energy efficiency and reduce costs of energy upgrades for commercial and industrial properties				
Require "beyond compliance" for new Commercial and Industrial construction (e.g. by 10%)	3	3	1	7
Adopt a Commercial Energy Conservation Ordinance (CECO)	3	2	1	6
Goal: Increase residential, commercial, and industrial renewable energy use				
Adopt a third-party or municipal financing program for renewable energy systems	2	2	2	6
Goal: Promote green building practices in both the new construction and remodel market				
Encourage green building operations, e.g. LEED-EBOM, Commercial Checklist	1	3	3	7
Mandatory green building ordinance for private new construction	3	2	1	6

Table 6. Transportation and Land Use Actions

Proposed Measure	GHG Score	Cost Score	Feasibility Score	Total Score
Goal: Encourage Community Development which Promotes Walkable Communities				
Continue to implement Transit Oriented Development (TOD) Strategy	3	3	3	9
Goal: Ensure that public transportation is safe, convenient and affordable to provide a viable alternative to driving				
Establish a Transportation Management Association	2	2	2	6
Implement Programs to Increase BART Ridership	2	2	2	6
Support innovative transit improvement projects	1	3	2	6
Goal: Promote and accommodate alternative, environmentally friendly methods of transportation, such as walking and bicycling				
Create a larger network of safe bike routes	3	2	2	7
Goal: Enhance and expand car sharing and ridesharing programs				
Locate car share pods in San Leandro, starting at the San Leandro BART station.	2	3	2	7
Goal: Encourage the use of fuel efficient vehicles, low carbon fuels and more efficient traffic operations				
Make existing traffic flow more efficiently to reduce the amount of time people spend idling in city traffic.	2	2	3	7
Goal: Increase and Enhance Urban Green Space				
Increase urban canopy cover.	2	2	2	6

Table 7. Waste Reduction and Recycling Actions

Proposed Measure	GHG Score	Cost Score	Feasibility Score	Total Score
Goal: Increase recycling and composting in the residential sector				
Adopt mandatory curbside recycling and composting programs.	3	3	1	7
Goal: Increase Recycling and Composting in the Commercial and Industrial Sectors				
Adopt mandatory requirement for businesses to recycle and compost food scraps	3	3	1	7
Goal: Promote waste reduction and material re-use in the community				
Partner with Davis St. Transfer Station to support programs for locally produced compost	1	2	1	4
Reduce plastic/paper waste associated with reusable San Leandro brand shopping bags and bag tax	1	2	1	4

Table 8. Municipal Operations Actions

Proposed Measure	GHG Score	Cost Score	Feasibility Score	Total Score
Goal: Increase energy efficiency and renewable energy use in City facilities				
Complete facility upgrades (e.g. recommended retrofits from ABAG/PG&E study)	2	2	3	7
Conduct feasibility study of solar PV panels on City property.	2	1	2	5
Goal: Reduce emissions related to City fleet operations				
Replace a few City fleet vehicles with a car share program and replace vehicles with hybrids or electric vehicles when feasible.	1	3	2	6
Goal: Increase recycling, composting and material reuse related to municipal operations				
Institute green policy for refreshment catering and food disposal at City events.	1	3	3	7
Goal: Promote source reduction measures in the community related to utility services provided by the City				
Reduce energy use at the WPCP through community water efficiency programs	1	3	3	7

7.3 Prioritization Methodology

The project scoring resulted in the grouping of the projects into three implementation categories based on their relative scores. The three categories are defined as follows:

- **Near-term Actions (Scores ranging from 7 to 9):** Projects that received the highest relative scores and are recommended for high priority consideration for implementation.
- **Mid-term Actions (Scores ranging from 5 to 6):** Moderate relative scores and the second group of projects considered for funding and implementation.
- **Longer-term Actions (Scores ranging from 3 to 4):** The lowest relative score and the third group considered for funding.

Additional measure characteristics were researched by KEMA, but not included in the scoring criteria (due to the desire to keep the scoring methodology relatively simple). The following measure characteristics are included in Appendix C.

- **City savings** – Any annual cost savings that will be realized by the City.
- **Residential/business costs** – Summary of costs that will be primarily shouldered by households and local businesses.
- **Residential/business savings** – Potential for cost savings that households and local businesses will achieve through implementation of the measure.
- **Potential funding sources** – Assessment of potential funding sources and grants that may be available to offset measure costs.
- **Other co-benefits –** Other benefits to the community, including job creation, air quality and achievement of other City goals and objectives.

7.4 Actions Recommended for Implementation

While short-term priorities are illustrated, please note that priorities can and do shift based on funding availability, advances in technology, new and better ideas and other reasons. The Climate Action Plan, and this Implementation section, should be considered a living document.

7.4.1 Near-term Implementation

The actions below are recommended for high priority in implementation. Most of the measures were included in the cost-benefit analysis. However, a few actions were included as notable "low-hanging fruit" due to low effort and obvious opportunities to leverage existing efforts and programs at least cost to the San Leandro community.

Building Energy Use

The below actions are recommended for near-term prioritization. These activities span measures that generally have a high ratio of greenhouse gas emissions reductions with lower costs. For example, based on San Leandro's very successful do-it-yourself (DIY) seismic retrofit class for homeowners, the City developing home performance classes to educate City residents on simple, cost-effective measures that can be taken to save energy in their home. Example measures may include weather stripping, added insulation, and proper maintenance of HVAC and water heater equipment in the home.

In order to support homeowners to implement recommended measures, a revolving loan fund is included in the near-term activities to provide financial support. In order to successfully implement new financing programs, the City is recommended to develop a marketing plan, which may include actions such as certifying installers and providing factsheets on different technology options.

Other education and outreach efforts are also recommended, including links to the PG&E energy efficiency programs website from the City website, and providing incentive information at the plan check desk. There are significant no-cost and low-cost activities that the City should implement by more aggressively leveraging existing resources being provided by PG&E and the State of California.

Summary of near-term priority actions related to building energy use:

- Offer home performance classes by building staff
- Develop a revolving loan fund for home performance audits and improvements
- Require "beyond compliance" for new commercial and industrial construction (e.g. by 10%)
- Encourage green building operations, e.g. LEED Existing Buildings Operations and Maintenance and StopWaste.Org's Small Commercial Checklist

- More aggressively distribute information on existing energy efficiency and renewable energy programs.

Transportation and Land Use

It is also recommended that the City continue to aggressively implement the Transit Oriented Development (TOD) Strategy to support a vibrant downtown area with diverse transit options and attractive features for pedestrian access and enjoyment. Other recommended actions include coordinate establishment of voluntary transportation management associations in partnership with local businesses, prioritizing the implementation of the City's Bicycle and Pedestrian Master Plan and associated improvements, as well as promoting car share in the community, especially in the downtown and BART station areas.

Summary of near-term priority actions related to transportation and land use:

- Continue to implement Transit Oriented Development (TOD) Strategy
- Establish a Transportation Management Association
- Create a larger network of safe bike routes
- Locate car sharing sites in San Leandro, starting at the San Leandro BART station
- Make existing traffic flow more efficiently to reduce the amount of time people spend idling in city traffic by improving the traffic signal system

Waste Reduction and Recycling

The City is recommended to continue to partner with StopWaste.Org to promote waste reduction and recycling in the community. StopWaste.Org currently offers discount compost bins as well as programs to support proper recycling and disposal practices for electronic waste (E-waste). Other programs are available in the community, including the Salvation Army for redistribution of large furniture and other objects. Additional education to community members is recommended on different ways of reusing materials in their homes, as well as in business operations. Simple tasks could include the use of the blank side of a paper to reprint or use for other tasks.

Summary of near-term priority actions related to waste reduction and recycling:

- Compile a list of relevant recycling and composting programs available to the community and distribute widely.
- Continue to partner with StopWaste.Org to promote home composting programs and consider offering an additional subsidy.

Municipal Operations

Some of the City facilities do not have energy management systems (EMS) which impedes the ability to control individual zones of lighting and heating, ventilation and cooling (HVAC) for the most efficient building operations. Currently, upgrading these controls is recommended as the highest priority for reducing energy consumption and improving occupant comfort in City facilities. Another significant opportunity may be to retrofit street lights with LED or other energy efficient fixtures, which could reduce electricity use by up to 40 percent.

Other actions identified include reducing waste related to City operations through a green policy for refreshment catering and food disposal at all City events, as is done at the Farmer's Market and green building events. This would include requiring large recycling containers, prominent signage, recyclable and compostable plates and tableware. The City is also recommended to more aggressively promote existing water conservation programs available to the community and to adopt the Water Efficient Landscaping Ordinance.

Summary of near-term priority actions related to municipal operations:

- Complete facility upgrades, including new building controls to support energy efficiency and LED or inductive street lights
- Institute green policy for refreshment catering and food disposal at City events.
- Reduce energy use at the WPCP through community water efficiency programs
- Adopt the Water Efficient Landscaping Ordinance

7.4.2 Mid-term Implementation

Recommendations are also included for implementation as a medium priority.

Building Energy Use

To support homeowners and local businesses interested in efficiency and renewable energy projects, California law AB 811 authorizes all cities and counties in California to designate areas within which willing property owners could enter into contractual assessments to finance the installation of distributed renewable generation, as well as energy efficiency improvements, that are permanently fixed to the property owner's residential, commercial, industrial, or other real property. These financing arrangements would allow property owners to finance renewable generation and energy efficiency improvements through low-interest loans that would be repaid as an item on the property owner's property tax bill. Since revenue must be raised in order to fund these loans, options include using the general fund, issuing municipal bonds, partnering with a utility to get financing or setting up private financing.

Mandatory requirements such as a RECO, CECO or a Green Building Ordinance are likely to take several years to fully develop the necessary details and to develop community support and buy-in for action. There are certainly proactive steps that can be taken, including the involvement of key members from the real estate industry and meetings with stakeholders to begin assessing the feasibility and scope of action.

Summary of mid-term priority actions related to building energy use:

- Establish a third-party or municipal financing program for energy efficiency retrofits
- Establish a third-party or municipal financing program for renewable energy systems
- Adopt a Residential Energy Conservation Ordinance (RECO)
- Adopt a Commercial Energy Conservation Ordinance (CECO)
- Mandatory green building ordinance for private new construction

Transportation and Land Use

More aggressive transportation and land use programs include expanding options for linking the BART station to residential areas and places of employment.

Other innovative transit improvement projects may emerge in the mid-term. The future of the bus rapid transit (BRT) line suggested by AC Transit is uncertain, but significant opportunities exist to improve transit both corridor transit and cross-town transit to increase access, convenience, speed of travel and frequency of service. It is recommended that the City continue to monitor such projects, since East 14th Street is a key arterial linking activity centers (e.g. Bayfair Mall) and employment centers such as downtown Oakland. While BART operates in near proximity, a street-level transit option with more frequent local stops could help to further revitalize the East 14th Street corridor and provide service for locations that feed into corridor transit systems.

Another action with important greenhouse gas reduction potential is to focus efforts on increasing the urban tree canopy and adopt specific goals, such as to expand the number of trees by 5 to 10 percent. Trees reduce heat island effects in the City during the summer, as well as sequester carbon from the atmosphere.

Summary of mid-term priority actions related to transportation and land use:

- Implement programs to increase BART ridership, such as expanding the San Leandro LINKS program
- Support innovative transit improvement projects
- Increase urban canopy cover

Waste Reduction and Recycling

A mid-term action identified is to adopt mandatory waste reduction and recycling policies that will require businesses to maintain adequate recycling containers, and for residents to participate in recycling and composting programs. There are many models for mandatory programs, and we recommend that the City of San Leandro to conduct a feasibility assessment of specific potential program requirements and evaluate alternate options. Overall, mandatory recycling and composting programs have been shown to dramatically increase recycling rates in cities across the U.S.[27]

Summary of mid-term priority actions related to waste reduction and recycling:

- Adopt mandatory curbside recycling and composting programs.
- Adopt mandatory requirement for businesses to recycle and compost food scraps

Municipal Operations

Mid-term recommendations include conducting feasibility studies for renewable energy generation in the community, such as solar PV at the Water Pollution Control Plant. Another potential site is the Boys & Girls Club indoor pool, which may benefit from solar water heating. There may be PG&E rebates available for solar thermal installations.

The City may also consider providing City employees access to shared vehicles dedicated for work-related trips during standard working hours, and to employees and the public on evenings and weekends. This type of program can also familiarize City employees with the concept of car share and promote new models for vehicle that promotes a "pay-as-you-go" financing model for vehicle operation.

Summary of mid-term priority actions related to municipal operations:

- Conduct feasibility study of solar PV panels on City property
- Replace a few City fleet vehicles with a car share program

[27] StopWaste.Org recently released a report. "Increasing Recycling in the Commercial Sector: Assessment of Mandatory Commercial Recycling Program and Exclusive Hauler Arrangements." April 2009. Accessed at: http://www.stopwaste.org/docs/alamedamandcomm_finalreport_sera_v5.pdf and http://www.stopwaste.org/docs/commercial_survey_final_report-_revised.pdf

7.4.3 Longer-term Implementation

In the future, technological opportunities for emissions reductions are uncertain; however, a few waste reduction and recycling actions are identified as longer-term priorities.

Waste Reduction and Recycling

- Partner with Davis St. Transfer Station to support programs for locally produced compost
- Reduce plastic/paper waste associated with reusable San Leandro brand shopping bags and by potentially implementing a plastic bag tax

7.5 Community Education and Outreach

Throughout each of these categories, the City can play a substantial role in generating awareness and educating residents about ways to reduce emissions. While the City can help initiate a movement which emphasizes sustainable practices, it is crucial that other members of the community such as residents and small businesses are engaged in the process in order to achieve the reduction targets mentioned in this plan. The target will only be achieved through building a movement that achieves sustained action and coordination across stakeholders and sectors.

As mentioned previously, there are significant opportunities for the City to leverage existing programs funded by the State of California, PG&E and East Bay Municipal Utility (EBMUD) district to support community efforts to improve energy efficiency, install renewable energy, facilitate transit/biking/walking initiatives and other actions that households and businesses can take. The City of San Leandro should make a concerted effort to distribute information more widely on funding opportunities for residents and local businesses. Actions may include more information posted on the City website, and marketing materials posted at key locations including City Hall and the libraries. Additional actions may include partnering with PG&E and EBMUD to further develop marketing presentations and workshops for the community.

Another potential avenue to get the community involved would be to hold an “eco-fair” annually. These fairs could allow local green vendors to meet potential clients and the City could provide people with free CFLs and water saving devices. Residents could also learn about the myriad of energy efficiency, renewable energy programs, and recycling programs available in the City.

Specific actions that the community can take today are included in Appendix A of this Climate Action Plan.

7.6 Monitoring Progress

The Climate Protection Task Force will remain an important entity to oversee the implementation of the San Leandro Climate Action Plan. Whenever funding permits, the City should put a monitoring program in place and responsibility should be assigned to a specific department and staff, such as a sustainability coordinator. For each action recommended for near-term implementation, the City will work to define, monitor and report on measurable indicators of success. Continuous evaluation of GHG reduction strategies is important to ensure that resources are allocated efficiently to meet City goals for both emissions reductions and other economic priorities.

A number of tools and practices exist that can enable the City to track and report progress toward achieving the goals outlined in this plan, including monitoring the funds allocated to climate protection goals. The City has received recognition for its excellent financial accounting systems. Its periodic audits to Department of Housing and Urban Development (HUD) have been consistently approved.

Tools can be as simple as spreadsheet tracking sheet developed to monitor estimated annual energy and water savings, and waste diverted, and associate greenhouse gas reduced. Fortunately, consistent estimates for electricity and natural gas savings are provided for energy efficiency measures from the California Energy Commission (CEC) and California Public Utilities Commission (CPUC) Database on Energy Efficient Resources (DEER). Other indicators of success may include miles of bike lanes, and number of households actively participating in composting and recycling programs.

The below actions are recommended to promote regular, transparent reporting of progress towards meeting the City of San Leandro's greenhouse gas reduction goal.

- **Designate a Sustainability Coordinator –** The City should appoint a permanent, full-time Sustainability Coordinator or Energy Officer to coordinate with the existing Climate Protection Task Force, develop and implement programs and actions and be responsible for monitoring and reporting on progress towards meeting the 2020 emissions reduction goal, grant procurement, and coordination with other jurisdictions on regional efforts.

- **Launch a Climate and Sustainability Website** – The City should develop and maintain a web-based portal that enables the City to effectively and transparently communicate the goals outlined in the Climate Acton Plan and progress towards achieving those goals. Evaluation and measurement of the annual outcomes related to specific actions

may also be published. The website should also provide resources to residents and businesses on cost-effective opportunities to reduce emissions.

- **Track community-wide aggregate emissions** – The City should conduct a greenhouse gas emissions inventory approximately three to five years. Measuring GHG emissions on a regular basis is important to verifying that the climate initiatives are effectively reducing emissions and that the appropriate scale of GHG reductions are being pursued.

8. Funding Sources

For implementation of the Climate Action Plan, the City must evaluate strategies for financing climate protection actions and provide adequate, reliable and consistent long-term program funding. This chapter provides an overview of available funding sources to help determine appropriate potential program funding sources and funding levels to support existing and new programs outlined in this plan. Other funding sources may be available that are not listed here.

8.1 Federal Funding

American Reinvestment and Recovery Act (ARRA) Loan Program

Low-interest loans (with an interest rate of 1%) are available through the California Energy Commission for municipal energy saving projects. The maximum loan amount is $3 million per application and $20 million to $25 million is currently available. Loans must be repaid from energy cost savings within approximate 13 years simple payback. Eligible projects include improving lighting systems, replacing streetlights or traffic signals LEDs, installing automated energy management systems/controls and building insulation, energy generation including renewable and combined heat and power projects, heating and air conditioning modifications and upgrading waste water treatment equipment. Swimming pools and golf courses are not eligible for funding under this program. All projects financed using this program must be completed and fully disbursed on or before March 31, 2012. Information about this program is available online at http://www.energy.ca.gov/efficiency/financing/index.html.

Federal Transportation Investment Generating Economic Recovery (TIGER) Grant

The Federal Transportation Investment Generating Economic Recovery (TIGER) grant program was created by the American Investment and Recovery Act (ARRA) of 2009. The City has applied for a TIGER grant to fund the new Downtown parking garage which includes an electric battery swap station and one level of parking for electric vehicles. Information about the TIGER program is available at http://www.dot.gov/recovery/ost/.

8.2 State Funding

California Solar Initiative (CSI)

Single-family Affordable Solar Homes (SASH) Program provides solar incentives on qualifying affordable single-family housing. To qualify for a fully subsidized 1 kW system, homeowners must meet the legal definition of "low-income residential housing" in Public Utilities Code 2852. Eligibility is limited to owner-occupied households that received electric service from the investor-owned utilities (e.g. Pacific Gas & Electric) and whose household income is at or below 50 percent of the area median income (AMI). To qualify for a highly subsidized solar system is determined by household income less than 80% AMI, housing stock eligibility, Federal Income Tax liability, and eligibility for the California Alternative Rates for Energy (CARE) Program.

Multifamily Affordable Solar Housing (MASH) Program provides solar incentives on qualifying affordable housing multifamily dwellings. To qualify for MASH Track 1 or Track 2 incentives, a property must meet the definition of “low-income residential housing” per Public Utilities Code 2852 and have occupancy permit for at least two years prior to applying for incentives. More information about this and the SASH program can be found on the California Public Utilities Commission’s website (http://www.cpuc.ca.gov/PUC/energy/Solar/).

CalTrans Traffic Light Synchronization Program (TLSP)

CalTrans Traffic Light Synchronization Program (TLSP) provides funds for cities to improve operations on local streets and roads and improve safety. San Leandro has already secured a grant from CalTrans in order to retrofit traffic signals in different corridors adding up to 13 miles of roads. Information about this program is available online at http://www.dot.ca.gov/hq/traffops/sysmgtpl/TLSP/.

Energy Conservation Assistance Account Program (ECAA)

Projects that are not eligible for funding under the ARRA Loan Program may be eligible for funding through the California Energy Commission’s Energy Conservation Assistance Account Program (ECAA), which offers loans with three percent interest to finance energy-efficiency improvements. Information about this program is available online at http://www.energy.ca.gov/efficiency/financing/index.html.

8.3 Utility Rebate Programs

PG&E and EBMUD Residential Appliance Rebates

Pacific Gas and Electric Co. (PG&E) offers rebates to customers who purchase qualifying energy efficient appliances, including dishwashers, hot water heaters and room air conditioners. Rebates range from $30 to $75 for qualifying appliances. PG&E and EBMUD are also currently offering a combined rebate of up to $200 for installing high-efficiency clothes washers. More information on these programs is available at http://www.pge.com/myhome/saveenergymoney/rebates/appliance/ and http://www.ebmud.com/drought/rebates.html.

PG&E LED Streetlight Replacement Program

The City of San Leandro may be eligible for PG&E's LED streetlight replacement program which provides rebates to cities that replace existing streetlights with more energy efficient LED fixtures (up to $125 per fixture). More information on this program is available at http://www.pge.com/mybusiness/energysavingsrebates/ rebatesincentives/ref/lighting/lightemittingdiodes/incentives/index.shtml

PG&E Commercial Appliance Rebates

PG&E offers rebates to business customers on hundreds of products including refrigeration units, lighting fixtures, heating systems, food service appliances, boilers and water heaters, and insulation. More information and a complete list of products eligible for rebates is available online at http://www.pge.com/mybusiness/energysavingsrebates/rebatesincentives/ref/index.shtml.

PG&E Home Energy Efficiency Improvements Rebates

PG&E offers rebates to customers who make energy efficiency improvements when remodeling their homes. Currently PG&E offers a rebate of up to $0.20 per square foot for cool roof installations and $0.15 per square foot of attic and wall installation installed. Additionally, PG&E has rebates for homeowners who upgrade their home's heating and cooling systems. Rebates are available for installing energy efficient furnaces (up to $300), air conditioning units (up to $50) and whole house fans (up to $100). Finally, PG&E will provide up to $400 in rebates to customers who test and seal their home's duct system. More information on this program is available at http://www.pge.com/myhome/ saveenergymoney/rebates/remodeling/.

EBMUD Free Conservation Device Program

EBMUD is currently offering free water-saving devices including water conserving showerheads, kitchen and bathroom faucet aerators and toilet low flush bags. More information on this program is available at http://www.ebmud.com/conserving_&_recycling/conservation_devices/default.htm.

8.4 Non-Governmental Organizations

American Forests Global ReLeaf Grant Program

American Forests is a non-profit organization founded in 1875 that promotes forest conservation. American Forest's Global ReLeaf Program provides grants to fund tree planting projects in urban and natural areas. More information is available online at http://www.americanforests.org/global_releaf/.

California ReLeaf Urban Forestry Grant Program

The California ReLeaf Urban Forestry grant program provides funding to assist nonprofit and community-based groups throughout California with urban forestry projects. The program is funded through a contract with the California Department of Forestry and Fire Protection (CAL FIRE). More information is available online at http://californiareleaf.org/ programs/grants.

9. Conclusion

Under California's SB375 and AB 32 legislations, local governments are uniquely positioned to be leaders in reducing greenhouse gas emissions and influence development trends for decades to come. The City of San Leandro has an impressive legacy of environmental stewardship while improving residents' quality of life and supporting local businesses.

The San Leandro Climate Protection Task Force has identified areas and opportunities to reduce GHG emissions related to city operations. As illustrated in this report, the services provided to residences and businesses are the focus and source of GHG emissions. City-wide conservation efforts can serve to maintain and increase the level of service provided, while minimizing GHG emissions. The key to a successful Climate Action Plan will be to build upon previous City energy conservation efforts, water and solid waste reduction initiatives, and other sustainability projects. This plan will remain a living document to support the City's efforts to manage GHG emissions for a sustainable future for all.

Appendix A – 10 Steps to Reduce Your Carbon Footprint

From CoolClimate.org

1. Change your commute

Did you know that one third of the CO_2 produced in the US is from the transportation of people or goods? Pick one day a week to walk, bike, take public transportation or carpool to work or when you're running errands. If possible, live close to your workplace. When driving, remember to combine several car trips into one trip and avoid idling. Additionally, you can get better fuel efficiency by following the speed limit. Exceeding the speed limit by just 5 mph during highway travel results in an average fuel economy loss of 6%.

2. Be a better consumer

Did you know that the average American generates about 4.4 lbs of trash each day? To reduce the amount of trash you generate, follow these few easy steps. Use re-usable coffee mugs and shopping bags. If you forget your mug or bag at the store, buy a new reusable mug or bag and keep the extra one in your purse or car for use the next time you're out. Alternatively, set aside $1 each time you forget your mug or bag; depending on your memory, you'll have enough funds to purchase a reusable item sooner or later. Also, reuse as many things as possible and recycle at home, work, and school.

3. Shop local

The shorter the distance your food travels to your plate or that product travels to your home, the fewer greenhouse gases are produced. Declare one day a week "Local Day" and eat foods produced within 50 miles of your house.

4. Dry-up Household Water Consumption

Did you know that water-related energy use consumes 19% of California's electricity, 30% of its natural gas, and 88 billion gallons of diesel fuel every year? To reduce your water consumption at home, turn off your water when it's not being used, take shorter showers, stop unseen leaks by reading your meter, install low-flow shower heads and aerators on your facet, install and use water efficient landscaping and irrigation methods (for example, plant drought tolerant plants and/or install permeable surfaces and drip irrigation systems), and use EnergyStar appliances.

5. Unplug it

Did you know that appliances, chargers, home theater equipment, stereos and televisions use electricity even when their power is "off"? Eliminating this "leaking" electricity could save you 6–26% on your average monthly electricity bill. Take a walking tour of your home and unplug seldom-used appliances and install power strips so that the power to frequently used items can be easily turned off.

6. Change the lights

Replace any incandescent light bulbs that remain in your home with compact fluorescent lights (CFLs). Replacing one incandescent light bulb with a CFL can save $30 or more in electricity costs over the bulb‘s lifespan.

7. Set your Thermostat for the Season

Set your thermostat in winter to 68°or less during the daytime, and 55° before going to sleep (or when you're away for the day), to save 5-20% of your space heating costs. During the summer, set thermostats to 78° degrees or more to save 5-20% of your cooling costs. For an easy fix, purchase an inexpensive programmable thermostat that makes these changes for you.

8. Increase Energy Efficiency at home

Did you know that you can save up to 350 lbs. of CO_2 and $150 per year at home by simply keeping air filters clean? To determine more ways to increase energy efficiency, take advantage of free home energy audits offered by many utility companies. When you are ready to purchase an appliance, ensure that you purchase an EnergyStar appliance. To reduce carbon emissions associated with energy use, install or purchase alternative energy for your electricity needs.

9. Stop Unwanted Services

Did you know that junk mail production in the US consumes as much energy as 2.8 million cars? Stop your junk mail at www.directmail.com/junk_mail. Stop unwanted catalogs at www.catalogchoice.org.

10. Get your friends and families to reduce their carbon emissions

Appendix B – Climate Action Survey Results

B1. Web-Based Climate Action Survey Instrument

1. Climate Action Survey

The City of San Leandro is putting together a Climate Action Plan, aimed at reducing the City's Greenhouse Gas (GHG) emissions. GHG emissions are changing the earth's climate and pose a serious threat to our community's economic well being, public health and the environment. In 2007, the State of California passed AB32, an assembly bill requiring jurisdictions in California to reduce GHG emissions to 1990 levels by the year 2020. In February 2007 the San Leandro City Council adopted a goal to reduce its greenhouse gas (GHG) emissions 25% below 2005 levels by 2020.

The City has completed an inventory of San Leandro's GHG emissions. Using 2005 as the base year, San Leandro emitted more than 882,000 tons of GHG emissions, of which less than 1% was generated by City government operations. More than 99% are considered community emissions.

The City's Climate Action Plan will work to establish new ways of living and working in San Leandro, including the City's municipal operations, and engaging with the public on ways to reduce energy use, waste generation and GHG emissions. The City of San Leandro is asking for input from its residents, employees and businesses to better understand the level of support for different types of reduction strategies.

If you have any questions about this survey or about the City of San Leandro's efforts on its Climate Action Plan, please contact:

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1. Which of the following describes you: (select all that apply)

- ☐ Resident of San Leandro
- ☐ Owner of a business in San Leandro
- ☐ City of San Leandro Employee (including SLPD)
- ☐ Employee of a business that operates in San Leandro
- ☐ Other (please specify)

2. Transportation

Transportation generates 61% of the community-level GHG emissions in San Leandro. Approximately 45% of total community emissions are related to vehicle miles traveled on highways. Local driving trips also create a substantial pa of these emissions (16%).

Although the City has limited control over highway emissions, transportation as a category is a significant emissions source and highlights the importance of regional planning and transit-oriented development.

1. How do you typically commute to work? (Select one or more that represent your normal travel mode(s)

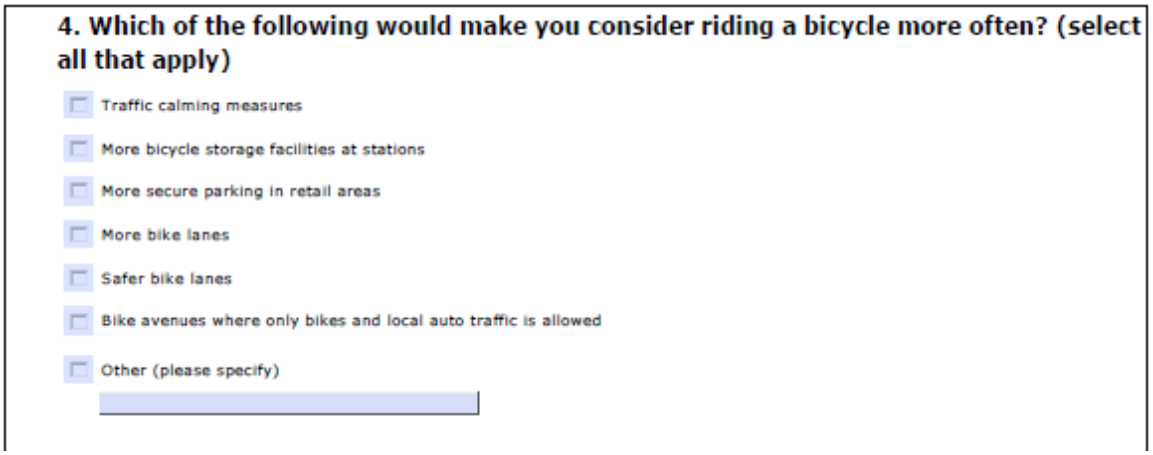
- ☐ Private car (alone)
- ☐ Carpool
- ☐ BART
- ☐ Bus
- ☐ Bicycle
- ☐ Walk
- ☐ Work from home
- ☐ Other (please specify)

2. How often do you ride public transit, other than to commute? (select one)

- ○ Every day
- ○ Multiple times per week
- ○ Once a week
- ○ Every month
- ○ Only a few times a year
- ○ Other (please specify)

3. Which of the following would make you consider riding transit more often? (select al that apply)

- ☐ More convenient transit stops closer to home, work, shopping, and recreation
- ☐ More expensive gas
- ☐ More expensive tolls
- ☐ Cleaner and safer transit
- ☐ A free shuttle from public transit stations to work
- ☐ If using transit was faster than driving
- ☐ Other (please specify)



4. Which of the following would make you consider riding a bicycle more often? (select all that apply)

- ☐ Traffic calming measures
- ☐ More bicycle storage facilities at stations
- ☐ More secure parking in retail areas
- ☐ More bike lanes
- ☐ Safer bike lanes
- ☐ Bike avenues where only bikes and local auto traffic is allowed
- ☐ Other (please specify)

3. Buildings

Energy use in residential and commercial buildings accounts for approximately 36% of San Leandro's community-level GHG emissions. The building sector is an area with the most affordable and achievable reduction opportunities, since energy efficiency is the most cost-effective measure for GHG reductions and offers numerous co-benefits, such as cost savings over time and the promotion of new "green collar" jobs.

1. Which of the following would you be willing to do (or already have done) in your home to reduce your energy usage, if money were not a consideration? Note: prices for efficiency measures are estimates, only (select all that apply)

- ☐ Change light bulbs to more energy efficient alternatives ($5 per bulb)
- ☐ Replace refrigerator with more energy efficient model ($900)
- ☐ Insulate home ($4,000)
- ☐ Install solar hot water heater ($5,000)
- ☐ Install photovoltaic (PV) solar panels on the roof ($18,000)
- ☐ Other (please specify)

2. Should the City require that buildings be retrofitted to a higher level of energy efficiency at the time of resale, or when doing major additions and remodels? (select one)

- ○ Yes
- ○ No

Comments:

3. Should the City provide low-interest loans to property owners who want to retrofit their homes or businesses to be more energy-efficient? (select one)

- ○ Yes
- ○ No

Comments:

4. Would you participate in a no-cost home or business energy audit that could demonstrate easy ways to reduce your energy consumption? (select one)

- ○ Yes
- ○ No

Comments:

4. Neighborhood

Numerous studies show that, on average, people who live in pedestrian-oriented mixed-use neighborhoods make fewe vehicle trips than those who live in typical single-family neighborhoods. Effective pedestrian/bicycle networks are also critical to reduce vehicle trips and related emissions.

1. From your home or office, how long would it take to safely walk to purchase daily goods and services (grocery store, cafe, post office, bakery, gym, restaurants)? (select one)

- ○ 5 minutes
- ○ 10 minutes
- ○ 15 minutes
- ○ Greater than 15 minutes
- ○ Not possible

Comments:

2. Do safe routes exist for children to walk or bike to school in your neighborhood? (select one)

- ○ Yes
- ○ They are okay, but not great (How would you improve this?)
- ○ No (How would you improve this?)

Comments/Ideas for improvements:

5. Renewable Energy

Renewable energy (such as wind, solar, hydroelectric, and geothermal energy) has the potential to greatly reduce emissions. Many utilities are investing in renewable energy to reduce emissions and to offer customers greener energy options. The City is currently exploring several options to support making renewable energy more affordable.

1. The average Bay Area household spends $150 a month on home energy bills. Would you be willing to spend an additional $6 a month on your energy bill to offset all GHG emissions associated with the energy used in your home? (select one)

- ○ Yes
- ○ No

Comments:

2. Should the City install renewable energy facilities such as photovoltaic (PV) panels o wind turbines on City buildings and properties? (select one)

- ○ Yes
- ○ No

Comments:

6. Water

Providing, transporting and purifying water in California consumes large amounts of energy and creates substantial GH emissions.

1. Which of the following water saving strategies should the City or Water District implement? (select all that apply)

- ☐ Provide credits on water bills if a household uses less than an established number of gallons per month
- ☐ Provide no-cost voluntary home and business water audits to identify ways to reduce both consumption and water bills
- ☐ Charge high water users progressively higher rates
- ☐ Require new construction and major remodels/additions to use the lowest water-consuming appliances available

7. Waste

Emissions from waste accounts for 3% of San Leandro's community emissions. Emissions from residential and business waste result primarily from the breakdown of organic materials that then form methane in landfills. Significant reductions in greenhouse gas emissions are realized when materials are diverted from the waste stream and are instea recycled or composted.

"Zero Waste" strategies strive to recycle or compost all materials and eliminate disposal and incineration altogether.

1. Which of the following waste reduction strategies should the City implement? (selec all that apply)

- ☐ Establish a City goal to become a "Zero Waste" community
- ☐ Adopt a City goal that no compostable organics (food scraps, yard trimmings, etc.) go into the landfills or incinerators by 2015
- ☐ Provide incentives to encourage on-site composting at homes, schools, and businesses with sufficient space
- ☐ Require construction waste minimization and recycling standards for all new construction, major additions and remodel projects
- ☐ Explore the creation of a resource recovery district within the City to facilitate recycling, composting, and reuse of materials

Comments:

8. Support for Emission Reductions

1. To what extent would you support City-led efforts to meet mandated greenhouse gas emissions targets? (select one)

- ○ I would not support the efforts at all
- ○ I would support voluntary incentive-based measures, but that is all
- ○ I would support the City in creating mandatory requirements in order to meet the targets
- ○ I would support mandatory requirements and increased taxes in order to meet the targets

Comments:

B2. First Round of Results (June 30, 2009)

The Climate Action Survey results were downloaded on June 30, 2009 to inform the development of the City of San Leandro Climate Action Plan. In this section, we outline the graphical results of the Climate Action Survey.

1. Which of the following describes you: (select all that apply)

	Response Percent	Response Count
Resident of San Leandro	50.5%	101
Owner of a business in San Leandro	6.0%	12
City of San Leandro Employee (including SLPD)	**58.5%**	**117**
Employee of a business that operates in San Leandro	6.0%	12
Other (please specify)	16.5%	33
	answered question	200
	skipped question	0

Since June 4, 2009, two hundred people have responded to the Climate Action Survey. Fifty percent of respondents are city residents, while fifty percent commute to San Leandro to work. Over half of those who responded to the survey are employees of the City of San Leandro, while six percent of those who replied are business owners and an equal number are employees of a business that operates in San Leandro.

Transportation:

2. How do you typically commute to work? (Select one or more that represent your normal travel mode(s)

	Response Percent	Response Count
Private car (alone)	**82.5%**	**156**
Carpool	5.8%	11
BART	10.1%	19
Bus	1.1%	2
Bicycle	5.3%	10
Walk	9.0%	17
Work from home	5.3%	10
Other (please specify)	4.2%	8
answered question		**189**
skipped question		**11**

3. How often do you ride public transit, other than to commute? (select one)

	Response Percent	Response Count
Every day	1.6%	3
Multiple times per week	4.2%	8
Once a week	7.4%	14
Every month	15.8%	30
Only a few times a year	**58.9%**	**112**
Other (please specify)	12.1%	23
answered question		**190**
skipped question		**10**

The vast majority of respondents make limited use of public transit, but most indicate a willingness to use public transit if it were more convenient. Over eight-two percent of respondents typically drive to work alone. Ten percent of survey-takers commute to work on

BART, while nine percent walk to work. Approximately six percent of respondents carpool to their place of employment. Just over five percent of survey-takers report that they typically commute to work by bike and an equal number usually work from home. Less than two percent of respondents usually commute by bus. Overall, most survey takers rarely ride transit for non-work trips. Only four percent of respondents report riding transit multiple times per week for non-work trips, and less than eight percent ride transit even once a week for non-work trips. In total, sixty percent of those polled report riding transit only a few times per year for non-work trips.

4. Which of the following would make you consider riding transit more often? (select all that apply)

	Response Percent	Response Count
More convenient transit stops closer to home, work, shopping, and recreation	46.1%	83
More expensive gas	12.8%	23
More expensive tolls	4.4%	8
Cleaner and safer transit	24.4%	44
A free shuttle from public transit stations to work	22.2%	40
If using transit was faster than driving	**55.0%**	**99**
Other (please specify)	21.7%	39
	answered question	**180**
	skipped question	**20**

The majority of those surveyed indicate that they would consider using transit if it were faster than driving and forty-four percent said more convenient transit stops would induce them to consider leaving their car in the garage. A quarter of those polled would consider transit if it were “cleaner and safer.”

Overall, for most survey takers convenience, comfort and safety are more important factors when choosing a mode of transportation than is expense. Less than five percent of respondents said that more expensive tolls would make them consider transit, and only twelve percent replied that increased fuel cost would entice them ride transit rather than drive. Approximately

five percent of respondents replied that lower transit fares would encourage them to ride rather than drive.

Additionally some survey-takers offered their own ideas for how to encourage the use of public transit. One City employee suggests that employees should be compensated for the time they spend on transit if they use that time to work. Several respondents agree that improved access to transit is needed. One survey taker says he or she wants “safer streets to and from BART at night.” Another says that more parking is needed at the BART station. Finally, multiple respondents say that expanded bike hours on BART would encourage them to use transit more frequently.

10. From your home or office, how long would it take to safely walk to purchase daily goods and services (grocery store, cafe, post office, bakery, gym, restaurants)? (select one)

	Response Percent	Response Count
5 minutes	8.7%	16
10 minutes	21.9%	40
15 minutes	27.3%	50
Greater than 15 minutes	**32.8%**	**60**
Not possible	9.3%	17
Comments:		21
answered question		183
skipped question		17

11. Do safe routes exist for children to walk or bike to school in your neighborhood? (select one)

	Response Percent	Response Count
Yes	**49.7%**	**88**
They are okay, but not great (How would you improve this?)	34.5%	61
No (How would you improve this?)	15.8%	28
Comments/Ideas for improvements:		51
answered question		177
skipped question		23

Most San Leandro residents live within a fifteen minute walk of daily goods and services; however, less than half feel that there are safe routes for children to walk or bike to school and most feel that bike-safety improvements are needed. Forty percent of San Leandro residents replied that existing routes to and from school are “ok but need improvement.” Several respondents say more crosswalks and crossing guards are needed. Others cite the need for more sidewalks and bike lanes. Overall, fifty-eight percent of residents say safer bike lanes are needed. Thirty-five percent of San Leandro residents want more bike lanes. Twenty-seven percent of residents support traffic calming measures and an equal number support the creation

of bike avenues where only cyclists and local auto traffic is allowed. Thirty percent of business owners support those ideas. Additionally, at least two city employees recommended having showers at the workplace so cyclists could shower-off after riding to work.

Energy:

6. Which of the following would you be willing to do (or already have done) in your home to reduce your energy usage, if money were not a consideration? Note: prices for efficiency measures are estimates, only (select all that apply)

	Response Percent	Response Count
Change light bulbs to more energy efficient alternatives ($5 per bulb)	**89.7%**	**166**
Replace refrigerator with more energy efficient model ($900)	68.1%	126
Insulate home ($4,000)	58.4%	108
Install solar hot water heater ($5,000)	31.9%	59
Install photovoltaic (PV) solar panels on the roof ($18,000)	37.3%	69
Other (please specify)	24.3%	45
	answered question	**185**
	skipped question	**15**

7. Should the City require that buildings be retrofitted to a higher level of energy efficiency at the time of resale, or when doing major additions and remodels? (select one)

	Response Percent	Response Count
Yes	57.5%	103
No	42.5%	76
Comments:		49
answered question		179
skipped question		21

8. Should the City provide low-interest loans to property owners who want to retrofit their homes or businesses to be more energy-efficient? (select one)

	Response Percent	Response Count
Yes	82.5%	151
No	17.5%	32
Comments:		25
answered question		183
skipped question		17

9. Would you participate in a no-cost home or business energy audit that could demonstrate easy ways to reduce your energy consumption? (select one)

	Response Percent	Response Count
Yes	73.6%	134
No	26.4%	48
Comments:		16
answered question		182
skipped question		18

12. The average Bay Area household spends $150 a month on home energy bills. Would you be willing to spend an additional $6 a month on your energy bill to offset all GHG emissions associated with the energy used in your home? (select one)

	Response Percent	Response Count
Yes	56.1%	96
No	43.9%	75
Comments:		42
answered question		171
skipped question		29

13. Should the City install renewable energy facilities such as photovoltaic (PV) panels or wind turbines on City buildings and properties? (select one)

	Response Percent	Response Count
Yes	81.3%	109
No	18.7%	25
Comments:		38
answered question		134
skipped question		66

Nearly ninety percent of respondents indicated a willingness to take steps to reduce their own energy use. Overall, eighty-nine percent of respondents have switched to energy efficient light bulbs or plan to do so. Sixty-eight percent have replaced their refrigerator with an energy efficient model or would be willing to do so. Moreover, a majority of respondents support the city taking steps to decrease the energy use of buildings in San Leandro, including requiring that buildings be retrofitted for energy efficiency at the time of resale or when undergoing major renovation. Eighty-two percent of respondents support the idea of city-provided low-interest loans to homeowners for energy-saving improvements. Fifty-six percent of all respondents and nearly sixty-percent of San Leandro residents say that they would be willing to pay an additional six dollars per month to offset the greenhouse gas emissions of the electricity they use. Eighty-one percent of those surveyed would support the installation of solar panels at City Hall; however, many survey-takers are concerned about the financial viability of such a proposal given the City's budget situation.

Water Use and Waste Reduction:

14. Which of the following water saving strategies should the City or Water District implement? (select all that apply)

	Response Percent	Response Count
Provide credits on water bills if a household uses less than an established number of gallons per month	**78.3%**	**137**
Provide no-cost voluntary home and business water audits to identify ways to reduce both consumption and water bills	57.7%	101
Charge high water users progressively higher rates	48.6%	85
Require new construction and major remodels/additions to use the lowest water-consuming appliances available	63.4%	111
	answered question	**175**
	skipped question	**25**

15. Which of the following waste reduction strategies should the City implement? (select all that apply)

	Response Percent	Response Count
Establish a City goal to become a "Zero Waste" community	48.5%	82
Adopt a City goal that no compostable organics (food scraps, yard trimmings, etc.) go into the landfills or incinerators by 2015	58.0%	98
Provide incentives to encourage on-site composting at homes, schools, and businesses with sufficient space	**72.8%**	**123**
Require construction waste minimization and recycling standards for all new construction, major additions and remodel projects	65.1%	110
Explore the creation of a resource recovery district within the City to facilitate recycling, composting, and reuse of materials	68.0%	115
Comments:		19
answered question		**169**
skipped question		**31**

San Leandro residents support all the water-saving and waste reduction measures outlined in the surveys. On-site composting was the most widely supported waste reduction measure, while the idea of providing rebates for households that use less than a certain amount of water was the most broadly supported water-saving proposal. However, some respondents expressed concern about the city doing more to promote environmentally friendly policies. The fiscal impact of these measures was a source of concern for at least one resident and city employee who wrote that he or she would support waste reduction measures “only if the budget allows…I’d rather people had jobs than for our city to be green.”

Overall Support for Greenhouse Gas Reduction:

16. To what extent would you support City-led efforts to meet mandated greenhouse gas emissions targets? (select one)

	Response Percent	Response Count
I would not support the efforts at all	4.0%	7
I would support voluntary incentive-based measures, but that is all	**46.8%**	**81**
I would support the City in creating mandatory requirements in order to meet the targets	32.9%	57
I would support mandatory requirements and increased taxes in order to meet the targets	16.2%	28
Comments:		20
answered question		**173**
skipped question		**27**

Overall, ninety-six percent of those surveyed say that they would support city-led efforts to meet mandated greenhouse gas emissions targets. Forty-six percent of respondents support voluntary measures only, while thirty-two percent support the idea of city-mandated requirements. Only sixteen percent of those surveyed would support mandatory requirements and increased taxes. Business owners are the group least supportive of mandatory requirements and increased taxes; only one business owner surveyed voiced support for increased taxes. Despite general support for city-led efforts, most of the comments made were negative, which may suggest that opponents of mandatory requirements and increased taxes feel more strongly than supporters. “No new taxes!” writes one resident, a sentiment echoed by many respondents. Others expressed doubt over the effectiveness of the city’s plans to reduce greenhouse gas emissions. One resident says he or she would support the city “if the city actually had anything effective in mind.” Another resident thinks the city’s goals were not ambitious enough, questioning, “Why is San Leandro only looking to reduce 25% below 2005 emissions vs. 1990 levels?” Residents also raised questions about the city’s efforts to reduce emissions. “What happens if mandatory requirements are not met?” wonders one respondent. This and other comments indicate that residents need more information about the city’s climate action plan.

B3. Second Round of Results (December 9, 2009)

Between July and December 2009, sixty people responded to the online Climate Action Survey. This is in addition to the two hundred responses collected during the month of June 2009. This section of Appendix B summarizes the responses of those who completed the survey between July and December.

Respondent Profile:

1. Which of the following describes you: (select all that apply)

	Response Percent	Response Count
Resident of San Leandro	**76.7%**	**46**
Owner of a business in San Leandro	10.0%	6
City of San Leandro Employee (including SLPD)	10.0%	6
Employee of a business that operates in San Leandro	3.3%	2
Other (please specify)	10.0%	6
answered question		**60**
skipped question		**0**

Over seventy-five percent of respondents are city residents. Ten percent are owners of San Leandro businesses, ten percent are City employees and three percent are employees of businesses located in San Leandro.

Transportation:

2. How do you typically commute to work? (Select one or more that represent your normal travel mode(s)

	Response Percent	Response Count
Private car (alone)	**67.3%**	**35**
Motorcycle	0.0%	0
Carpool	11.5%	6
BART	21.2%	11
Bus	3.8%	2
Bicycle	1.9%	1
Walk	5.8%	3
Work from home	11.5%	6
Other (please specify)	5.8%	3
answered question		52
skipped question		8

3. How often do you ride public transit, other than to commute? (select one)

	Response Percent	Response Count
Every day	3.8%	2
Multiple times per week	3.8%	2
Once a week	5.8%	3
Every month	23.1%	12
Only a few times a year	**48.1%**	**25**
Never	15.4%	8
Other (please specify)	0.0%	0
answered question		52
skipped question		8

Respondents have similar commuting patterns to those who replied to the June survey; overall, most respondents do not use public transit on a regular basis. Sixty-seven percent of respondents typically drive to work alone, while eight-two percent of those surveyed in June do. Twenty-one percent of survey-takers commute to work on BART while nine percent walk to work. Eleven percent of respondents carpool to their place of employment while an equal number work from home. Approximately six percent of respondents typically walk to work, while four percent usually commute by bus. Only one respondent regularly commutes by bicycle. Overall, most survey takers rarely ride transit for non-work trips. Approximately eight percent of respondents report riding transit every day or multiple times per week for non-work trips while approximately six percent ride transit at least once a week for non-work trips. Twenty-three percent of respondents report riding transit at least once a month for non-work trips while nearly two-thirds never ride transit or ride transit only a few times a year for non-work trips.

4. Which of the following would make you consider riding transit more often? (select all that apply)

	Response Percent	Response Count
More convenient transit stops closer to home, work, shopping, and recreation	56.0%	28
More expensive gas	16.0%	8
More expensive tolls	8.0%	4
Lower transit fares	30.0%	15
Cleaner and safer transit	34.0%	17
A free shuttle from public transit stations to work	30.0%	15
If using transit was faster than driving	**60.0%**	**30**
Other (please specify)	14.0%	7
answered question		50
skipped question		10

The majority of those surveyed indicate that they would consider using transit if it were faster than driving (sixty percent) or if transit stops were more convenient to their homes or places of work (fifty-six percent). Thirty-four percent of respondents said that transit needs to be “cleaner and safer” before they would consider it. Lower transit costs and more convenient connections

to employment centers could also increase transit ridership; thirty percent of respondents said lower fares would make them consider communing by transit while an equal percent said that a free shuttle from public transit stations to their place of employment could convince them to leave their car at home. Overall, survey takers indicated that an increase in driving costs would not likely convince them to use transit. Only sixteen percent of respondents said that a rise in gas prices would make them consider transit while eight percent said that an increase in tolls would make them change their communing patterns.

10. From your home or office, how long would it take to safely walk to purchase daily goods and services (grocery store, cafe, post office, bakery, gym, restaurants)? (select one)

	Response Percent	Response Count
5 minutes	22.0%	11
10 minutes	8.0%	4
15 minutes	32.0%	16
Greater than 15 minutes	**34.0%**	**17**
Not possible	4.0%	2
Comments:		7
answered question		**50**
skipped question		**10**

11. Do safe routes exist for children to walk or bike to school in your neighborhood? (select one)

	Response Percent	Response Count
Yes	**46.9%**	**23**
They are okay, but not great (How would you improve this?)	36.7%	18
No (How would you improve this?)	16.3%	8
Comments/Ideas for improvements:		16
answered question		**49**
skipped question		**11**

In general, survey responses indicate that most San Leandro neighborhoods are well designed to facilitate pedestrian activity. Most San Leandro residents live within a fifteen minute walk of daily goods and services. Half of San Leandro residents replied that safe walking routes to school exist, while thirty-two percent replied that existing routes to and from school are ok but need improvement. Seventeen percent of San Leandro residents who replied, reported that safe routes to school do not exist in their neighborhoods. Multiple respondents commented that more crossing guards are needed and expressed concerns that the number of crossing guards has been reduced due to budget cuts.

5. Which of the following would make you consider riding a bicycle more often? (select all that apply)

	Response Percent	Response Count
Traffic calming measures	20.8%	10
More bicycle storage facilities at stations	33.3%	16
More secure parking in retail areas	27.1%	13
Shower facilities at work	12.5%	6
More bike lanes	33.3%	16
Safer bike lanes	**47.9%**	**23**
Bike avenues where only bikes and local auto traffic is allowed	29.2%	14
Not applicable - Do not use bicycles for physical reasons	14.6%	7
Other (please specify)	27.1%	13
answered question		48
skipped question		12

Among all respondents, forty-eight percent of respondents said that safer bike lanes would make them consider bicycling more frequently. Better police enforcement of bicycle lanes is needed according to at least one respondent who wrote: “SLPD should enforce parking violations into bicycle lanes.” A third of respondents replied that more bicycle storage facilities at stations would encourage them to bike more often while an equal number said that more bike lanes are needed. More secure bicycle parking in retail areas was cited by twenty-seven

percent of respondents as a way of encouraging cycling. Overall, support was higher for bicycle boulevards than for other traffic coming measures.

Energy:

6. Which of the following would you be willing to do (or already have done) in your home to reduce your energy usage? (select all that apply)

	Response Percent	Response Count
Change light bulbs to more energy efficient alternatives	**88.0%**	**44**
Install dual pane or low-e windows	64.0%	32
Replace refrigerator with more energy efficient model	56.0%	28
Replace washer/dryer with more energy efficient models	62.0%	31
Replace dishwasher with more energy efficient model	52.0%	26
Insulate home	64.0%	32
Install tankless or solar hot water heater	40.0%	20
Install photovoltaic (PV) solar panels on the roof	42.0%	21
Other (please specify)	30.0%	15
	answered question	**50**
	skipped question	**10**

Nearly ninety percent of respondents indicated a willingness to take steps to reduce their own energy use, a level of support equal to that which the June survey recorded. Overall, eighty-eight percent of respondents have switched to energy efficient light bulbs or plan to do so. A majority of respondents have taken steps to decrease energy use in their home; sixty-four percent have installed dual pane windows and an equal number have insulated their home. A majority of residents have also replaced at least one major appliance with an energy-saving model. Forty percent indicate that they have or would be willing to install photovoltaic solar

panels on their home and an equal number have or would consider installing a solar water heating system.

7. Should the City require that buildings be retrofitted to a higher level of energy efficiency at the time of resale, or when doing major additions and remodels? (select one)

	Response Percent	Response Count
Yes	70.0%	35
No	30.0%	15
Comments:		14
answered question		50
skipped question		10

8. Should the City provide low-interest loans to property owners who want to retrofit their homes or businesses to be more energy-efficient? (select one)

	Response Percent	Response Count
Yes	82.0%	41
No	18.0%	9
Comments:		12
answered question		50
skipped question		10

9. Would you participate in a no-cost home or business energy audit that could demonstrate easy ways to reduce your energy consumption? (select one)

	Response Percent	Response Count
Yes	70.6%	36
No	29.4%	15
Comments:		7
answered question		51
skipped question		9

Support is high for city-led efforts to increase energy efficiency; seventy percent would support a Residential Energy Conservation Ordinance that requires that buildings be retrofitted for energy efficiency at the time of resale or when undergoing major renovation. Over seventy percent would participate in a free energy audit and eighty-two percent would like to see the city provide low interest loans to residents to make energy-efficient improvements.

12. The average Bay Area household spends $150 a month on home energy bills. Would you be willing to spend an additional $6 a month on your energy bill to offset all GHG emissions associated with the energy used in your home? (select one)

	Response Percent	Response Count
Yes	65.3%	32
No	34.7%	17
Comments:		13
answered question		49
skipped question		11

A majority of respondents also indicated a willingness to pay an additional six dollars a month to offset the greenhouse gas emissions of their energy use, but many commented that they would need to learn more about the program first and expressed concern about the effectiveness of carbon credits.

Water Use and Waste Reduction:

14. Which of the following water saving strategies should the City or Water District implement? (select all that apply)

	Response Percent	Response Count
Provide credits on water bills if a household uses less than an established number of gallons per month	**77.1%**	**37**
Provide no-cost voluntary home and business water audits to identify ways to reduce both consumption and water bills	70.8%	34
Charge high water users progressively higher rates	50.0%	24
Require new construction and major remodels/additions to use the lowest water-consuming appliances available	68.8%	33
	Comment:	13
	answered question	**48**
	skipped question	**12**

15. Which of the following waste reduction strategies should the City implement? (select all that apply)

	Response Percent	Response Count
Establish a City goal to become a "Zero Waste" community	56.5%	26
Adopt a City goal that no compostable organics (food scraps, yard trimmings, etc.) go into the landfills or incinerators by 2015	**78.3%**	**36**
Provide incentives to encourage on-site composting at homes, schools, and businesses with sufficient space	76.1%	35
Require construction waste minimization and recycling standards for all new construction, major additions and remodel projects	76.1%	35
Explore the creation of a resource recovery district within the City to facilitate recycling, composting, and reuse of materials	76.1%	35
Comments:		10
answered question		**46**
skipped question		**14**

Support is high for all the water-saving and waste reduction measures outlined in the surveys. Providing credits to residents who reduce their water use was the most popular water saving measure, with over three-quarters of respondents indicating their support for it. Many respondents commented that they would like the city to encourage grey water use. An ambitious City composting goal was the most widely supported waste reduction measure, with seventy-eight percent of respondents in support of the idea. Survey takers were least enthusiastic about the goal of making San Leandro a “zero waste community,” which is supported by fifty-six percent of respondents.

Overall Support for Greenhouse Gas Reduction:

16. To what extent would you support City-led efforts to meet mandated greenhouse gas emissions targets? (select one)

	Response Percent	Response Count
I would not support the efforts at all	8.3%	4
I would support voluntary incentive-based measures, but that is all	**45.8%**	**22**
I would support the City in creating mandatory requirements in order to meet the targets	20.8%	10
I would support mandatory requirements and increased taxes in order to meet the targets	25.0%	12
Comments:		12
answered question		**48**
skipped question		**12**

Overall, ninety-two percent of those surveyed say that they would support city-led efforts to meet mandated greenhouse gas emissions targets. Forty-six percent of respondents support voluntary measures only, while twenty percent support the idea of city-mandated requirements. Surprisingly, twenty-five percent of those surveyed would support mandatory requirements and increased taxes, which was supported by only sixteen percent of respondents in the June survey.

The idea of levying new taxes generated the most comments. While some respondents said they opposed any new taxes, especially given the current economic situation, others were open to the idea. “(I) would have to learn more about the taxes to support them,” wrote one commenter, suggesting “perhaps household-income sliding scale taxes.” Another survey taker wrote, “I don't think the citizens should pay more taxes, but companies should (the large ones such as Wal-Mart, Target, etc).” Others suggested using tax revenue to reduce the cost of permits for installing solar panels.

At least one survey taker said that the city is not setting ambitious enough goals, writing “San Leandro should set its GHG reduction goals to be closer in line with the CAP goals of Oakland

(staff proposed) 36% below 2005 levels by 2020,Berkeley 33% below 2000 levels by 2020, and San Francisco 20% below 1990 levels by 2012."

Appendix C – Detailed Cost-Benefit Results

Climate Action Goal	Proposed Action	Total Score	GHG Reductions (MTCO2)	Municipal Costs	Feasibility	City Savings	Resident/ Business Costs	Resident/ Business Savings	Potential Funding Sources	Co-Benefits
Building Energy Use										
Improve Energy Efficiency and Reduce Costs of Energy Upgrades for Residential Properties	Residential Energy Conservation Ordinance (RECO)	6	~ 700	$150,000	Potentially homeowner resistance	None	Yes	Yes	ARRA/SEP	Jobs
	Municipal financing program for residential energy efficiency retrofits	6	200	Medium	Medium - requires some effort	Low	Low	Varies	ARRA/SEP	Jobs
	Revolving loan fund for home performance audits	7	115	$250,000	Higher with EECBG funds	None	Low	Yes	ARRA/SEP	Jobs
	Home performance classes by building staff	8	120	Low	Some staff time	None	None	Yes	ARRA/SEP	
Improve Energy Efficiency and Reduce Costs of Energy Upgrades for Commercial and Industrial Properties	Commercial Energy Conservation Ordinance (CECO)	6	650	$150,000	Potential business resistance	None	Yes	Yes	ARRA/SEP	Jobs
	Require "beyond compliance" for new C&I construction (e.g. by 10%)	7	> 1000	Low	Political - developers, businesses	None	Yes	Yes	PG&E (Savings By Design)	
Increase Residential, Commercial, and Industrial Renewable Energy Use	Municipal financing program for residential renewable energy	6	300 - 400	Medium	Medium - requires some effort	Low	7% interest on loan	Average $1000/year	ARRA/SEP	Jobs
Promote green building practices in both the new construction and remodel market	Mandatory green building ordinance for private new construction	6	> 1000	Medium	Political - developers, businesses	None	1.5% premium to non-green building.	Significant energy savings over the lifetime of the building		Jobs, water savings, green space, productivity

Climate Action Goal	Proposed Action	Total Score	GHG Reductions (MTCO2)	Municipal Costs	Feasibility	City Savings	Resident/ Business Costs	Resident/ Business Savings	Potential Funding Sources	Co-Benefits
	Encourage green building operations, e.g. LEED-EBOM, Commercial Checklist	7	Low	Low	Should be fairly easy	None	None - voluntary measure	Signficant energy savings over the lifetime of the building		Jobs, water savings, green space, productivity
Transportation and Land Use										
Encourage Community Development which Promotes Walkable Communities	Continue to implement Transit Oriented Development (TOD) Strategy	9	750	Low	Already being done	Low	Low	Low	CA Dept. of Housing and Community Development	Reduction in VMTs, access to transit
Ensure that public transportation is safe, convenient and affordable to provide a viable alternative to driving	Establish a Transportation Management Association	6	96-112	$150,000-200,000/40 members	Some progress already made	None	Low	Low	Membership dues	Reduces congestion, improves mobility
	Implement Programs to Increase BART Ridership	6	~ 50	~ $300,000	Cost of new bus - $250,000	None	None	Residents: Gas-$80,000/y	Business improvement district tax	Reduction in VMTs
	Support innovative transit improvement projects	6	1-1.5	Low	Some costs	Low	None		Regional Measure 2, Alameda County Measure B	PR, reduction in VMTs
Promote alternative, environmentally friendly methods of transportation, such as walking and bicycling	Create a larger network of safe bike routes	7	540	$5,000-$50,000/mile	Some physical barriers (e.g. easements)	None	None	Gasoline: $55,000-$277,000	Public Works - Measure B Fund	Health and air quality improvement

Climate Action Goal	Proposed Action	Total Score	GHG Reductions (MTCO2)	Municipal Costs	Feasibility	City Savings	Resident/ Business Costs	Resident/ Business Savings	Potential Funding Sources	Co-Benefits
Enhance and expand car sharing and ridesharing programs	Locate ZipCar and City CarShare pods in San Leandro, starting at the San Leandro BART station.	7	100	Low	Key challenge: Building a carshare user base	None	Low	$3,600-$4,800/yr		Potential reduction in # of private cars from the community
Encourage the use of fuel efficient vehicles, low carbon fuels and more efficient traffic operations	Make existing traffic flow more efficiently to reduce the amount of time people spend idling in city traffic.	7	~ 400	$558,000 ($458,000 with ARRA funds)	Ongoing effort	~$121,000	None	Low (Gasoline)	TLSP Grant (CalTrans), Traffic Congestion Relief Fund	Improvement in travel time
Increase and Enhance Urban Green Space	Increase Urban Canopy Cover	6	150-250	$500,000	Potential issue of tree retention	~$250,000	None	Low	SL - Public Works	PR
Waste Reduction and Recycling										
Increase recycling and composting in the residential sector	Mandatory curbside recycling and composting programs.	7	> 1000	Costs to enforce	Low - may be difficult	Low	Low. Residents pay for garbage but not for recycling.	Low	Increased revenues from recycled materials	Jobs
Increase Recycling and Composting in the Commercial and Industrial Sectors	Mandatory requirement for businesses to recycle and compost food scraps	7	> 1000	Costs to enforce	Low - may be difficult	Low	Low. Businesses pay for garbage but not for recycling.	Low	Increased revenues from recycled materials	Jobs
Promote waste reduction and material re-use in the community	Partner with Davis St. Transfer Station to support programs for locally produced compost	4	5	Unknown	Would require significant effort	Unkown	Low	Low	General Fund	Compost for residents

Climate Action Goal	Proposed Action	Total Score	GHG Reductions (MTCO2)	Municipal Costs	Feasibility	City Savings	Resident/ Business Costs	Resident/ Business Savings	Potential Funding Sources	Co-Benefits
	Reduce plastic/paper waste associated with reusable San Leandro brand shopping bags and bag tax	4	3	Medium	Likely difficult to carry out	High (revenue from bag tax)	Low $20/year/person	Low	Bag tax	Cuts down on marine pollution
Municipal Operations										
Increase energy efficiency and renewable energy use in City facilities	Complete facility upgrades (e.g. recommended retrofits from ABAG/PG&E study)	7	~300 - 600	Medium with ARRA funds	Low	~$24,000	None	None	Potentially PG&E funds	Better building maintenance
	Solar Panels on City facilities	5	80	High ($1 million)	High cost, feasibility study	~$44,000	None	None	CSI may rebate 25%	PR
Reduce emissions related to City fleet operations	City Fleet Replacement with Carshare	6	Low	Low	Potential concerns from fleet department	~$50,000	Per use fee	Yes	Existing Sedan sales, City fleet and mileage reimbursements	PR
Increase recycling, composting and material reuse related to municipal operations	Green catering and food disposal at City events	7	0.1	Low (slight increase in catering costs)	Low, some staff time	None	None	None	None	PR
Promote source reduction measures in the community related to utility services provided by the City	Reduce energy use at WWTP through community water efficiency programs	7	5	Low	Low	Low	Low	Low	Yes	Yes, water savings