City of
West Hollywood

Climate Action Plan

PUBLIC REVIEW DRAFT

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AECOM

Table of Contents

LIST OF FIGURES

LIST OF TABLES

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CHAPTER 1 – INTRODUCTION

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The City of West Hollywood (City) is proud to present this Climate Action Plan (CAP), designed to address climate change and reduce the community's greenhouse gas (GHG) emissions at the local level. Although climate change is a global problem, the City recognizes that many strategies to adapt to a changing climate and combat its progression are best enacted at the local level. This plan recommends a series of actions West Hollywood can take to reduce its contributions to global climate change by reducing GHG emissions. The CAP includes actions in which every part of our community can participate – residents, property owners, businesses, and City government. Working together, we can reduce our impacts on the environment and remain regional leaders in sustainability.

Vision

West Hollywood has a strong record of instituting environmental policies to promote a healthy environment that also result in a lower carbon footprint and per capita GHG emissions than national and statewide averages. Additionally, West Hollywood's urban form and access to public transportation make it particularly energy and resource-efficient.

As environmental concerns have grown increasingly urgent, however, West Hollywood residents, employees and elected officials have in turn expressed a strong desire for the City to take more aggressive action to do its part to reduce its ecological footprint and remain a national leader in environmental and social initiatives.

Implementing the CAP will help maintain West Hollywood's leadership position on environmental issues and will reduce communitywide GHG emissions.

Purpose, Scope and Content

Purpose

The CAP outlines a course of action to reduce municipal and communitywide GHG emissions that contribute to climate change. The CAP seeks to:

- Provide clear guidance to City staff and decision-makers regarding when and how to implement key actions to reduce GHG emissions.
- Place the City on a path to reduce annual communitywide GHG emissions by 20 to 25 percent below 2008 emission levels by 2035.
- Inspire residents and businesses to participate in community efforts to reduce GHG emissions.
- Demonstrate West Hollywood's ability to respond to and comply with California GHG reduction legislation and guidelines.

Scope

The CAP includes strategies and performance indicators to reduce GHG emissions from both municipal and communitywide activities within West Hollywood. These strategies address seven major GHG sources and recommend actions to achieve GHG reductions through:

- Community leadership and engagement
- Land use and community design
- Transportation and mobility
- Energy use and efficiency
- Water use and efficiency
- Waste reduction and recycling
- Green space

Content

The CAP is organized into the following chapters:

Introduction – This chapter discusses the City's vision and purpose in preparing a CAP. It also describes the challenges posed by increasing GHGs in the atmosphere. The greenhouse effect is defined, and a summary of State climate change legislation and policies is provided. The introduction also describes GHG reduction measures already underway within the community, and individual steps community members can take to reduce their contributions to climate change.

The Planning Process – This chapter describes the 2008 communitywide GHG emissions inventory and emission projections for 2035. It also recommends a GHG emission reduction target for the community, and the process used to identify the target. This chapter also describes the seven emission reduction strategies addressed within the CAP and how they can achieve the reduction target.

Climate Action Strategies and Emission Reduction Measures – This chapter presents recommended GHG

reduction measures within each of the seven strategies. Discussion of each recommended measure includes its reduction potential, costs, benefits, and implementation timeframes, including responsible departments and performance indicators the City and community can use to track progress. This chapter also explains how the recommended emission reduction measures were selected, considering their GHG reduction potential, financial effectiveness and community acceptability.

Implementation – This chapter describes how the City will implement the measures and actions presented in the CAP, including a discussion of available funding. It also discusses the ongoing evaluation and evolution of the CAP.

Public Participation

West Hollywood residents and business leaders participated in the formulation of the CAP. Many community members have provided valuable input that has been used to select GHG reduction measures. Many measures in the CAP were informed by the City's Environmental Task Force recommendations (2008).

On January 30, 2010, the City conducted a General Plan community workshop. The workshop was structured to provide an overview of the status of the General Plan update process, including the CAP. Community members participated in small group presentations and discussion sessions. The CAP presentation provided an overview of climate change legislation, the City's reduction target, the overall planning process and preliminary GHG reduction strategies. Workshop attendees participated in a question and discussion session regarding the CAP and brainstormed additional GHG reduction ideas.

Community members are encouraged to review the draft CAP, and to provide comments, ideas, and perspectives toward its refinement. Public input will continue to inform decision-makers' consideration of the draft CAP, the contents of the final plan, and its ongoing implementation.

Challenges

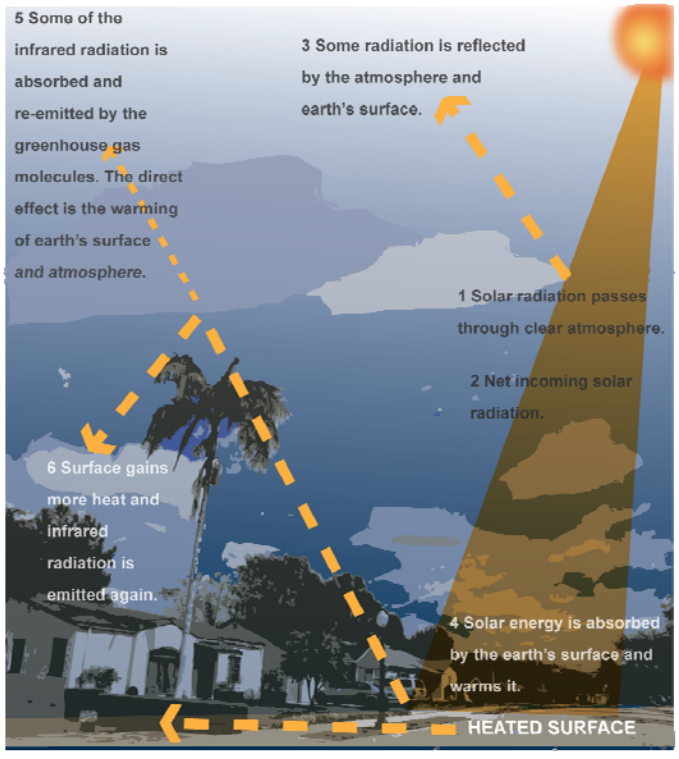
What is the Greenhouse Effect?

The greenhouse effect refers to warming that results when the atmosphere traps heat radiating from Earth toward space. Certain gases in the atmosphere act like the glass in a greenhouse – allowing sunlight to pass into the greenhouse, but blocking the heat from escaping into space. The gases that contribute to the greenhouse effect include water vapor, carbon dioxide (CO_2), methane, nitrous oxides, and chlorofluoro-carbons (National Aeronautics and Space Administration 2009). While the greenhouse effect is essential to life on earth, emissions from burning fossil fuels, deforestation, and other causes have increased the concentration of greenhouse gases to dangerous levels.

Global Greenhouse Gas Emissions

Data describing atmospheric GHG concentrations over the past 800,000 years show that concentrations of CO_2, the main GHG, have increased since pre-industrial times, from approximately 280 parts per million (ppm) to approximately 353 ppm in 1990 and approximately 379 ppm in 2005.

In 2000, the United Nations International Panel on Climate Change (IPCC) described potential global emission scenarios for the coming century. The scenarios vary from a best-case characterized by low population growth, clean technologies, and low GHG emissions; to a worst-case where high population growth and fossil-fuel dependence result in extreme



levels of GHG emissions. While some degree of climate change is inevitable, most climate scientists agree that to avoid dangerous climate change, atmospheric GHG concentrations need to be stabilized at 350-400 ppm.

California Greenhouse Gas Emissions

Between 1990 and 2004, California's annual GHG emissions increased 11% from 427 million metric tons (MMT) to 474 MMT. If emissions continue to increase at business-as-usual rates, statewide emissions are expected to increase to approximately 600 MMT by 2020, a 40% increase above 1990 levels. In order for California to participate effectively in global efforts to avoid dangerous climate change, statewide GHG emissions need to be reduced to at least 1990 levels by 2020 and 80% below 1990 levels by 2050.

Global Effects of Climate Change

Observations from around the world show that global average air and ocean temperatures have steadily increased over the past 100 years. Between 1995 and 2006, all but one of the years ranked as the warmest year on record. In addition to increased temperatures, other evidence indicates that our planet's climate is warming. Rapid levels of glacial melt, decreases in the extent of Northern Hemisphere sea ice, shorter freezing seasons, and decreasing snowpacks are a few of the changes. Increasing temperatures in particular threaten the world's ecological, social, and economic systems.

Notable examples of potential effects include:

- More frequent and intense extreme weather events (i.e. hurricanes)
- Increased stress on water resources
- Coastal areas at greater risk from sea-level rise and storm surges
- Reduced food security
- Increased threats to human health (i.e. mosquito-borne diseases)
- Ecosystem loss or degradation
- Economic and geopolitical disruption

Effects of Climate Change in West Hollywood

To date, the effects of climate change have primarily been examined at global and regional scales. Due to the scale of current models, it is difficult to identify the specific effects that climate change may have on an individual city or community.

A 2006 report by the California Climate Change Center indicates that summers in the Los Angeles area will become hotter, with a doubling (or more) of the number of heat wave days per year by 2100. In addition, the region will see a 75–85% increase in the number of days with poor air quality and high ground-level ozone concentrations. Hotter, smoggier days mean more stress on electricity and water supplies, more heat-related injuries, and additional strain on people with respiratory and cardiovascular diseases.

California Legislation and Guidelines

California has adopted a wide variety of regulations aimed at reducing the state's GHG emissions. While State actions alone will not stop global warming, adopting and implementing this legislation demonstrates California's leadership in addressing this critical challenge. Key legislation pertaining to California's reduction targets is described below.

Assembly Bill 32 (2006)

Assembly Bill (AB) 32, the *California Global Warming Solutions Act of 2006*, requires California to reduce statewide GHG emissions to 1990 levels by 2020. AB 32 directs the California Air Resources Board (ARB) to develop and implement regulations that reduce statewide GHG emissions. AB 32 requires ARB to adopt a quantified cap on GHG emissions that represents 1990 emissions levels, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement tools to assist the State to achieve the required GHG emission reductions.

Climate Change Scoping Plan

The *Climate Change Scoping Plan* was approved by ARB in December 2008 and outlines the State's plan to achieve the GHG reductions required in AB 32. The Scoping Plan contains the primary strategies California will implement to achieve a reduction of 169 MMT of carbon dioxide equivalent (CO_2e), or approximately 28% from the state's projected 2020 emission level.

Executive Order S-3-05

Executive Order S-3-05 (EO-S-3-05) recognizes California's vulnerability to reduced snowpack in the Sierra Nevada Mountains, exacerbation of air quality problems, and potential sea level rise due to a changing climate. To address these concerns, the executive order established targets to reduce GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.

Additional California Climate Change Legislation

Assembly Bill 1493 (2002)

AB 1493 requires ARB to develop and adopt regulations to reduce GHG emissions from passenger vehicles, light-duty trucks, and other non-commercial vehicles for personal transportation. In 2004, ARB approved amendments to the California Code of Regulations adding GHG emissions standards to California's existing standards for motor vehicle emissions.

Assembly Bill 811 (2008)

AB 811 helps finance the upfront costs of solar and other energy efficiency improvements that are permanent fixtures to a property. AB 811 authorizes cities and counties to establish assessment districts in order to provide loans to property owners with long-term repayments added to their annual property tax bills.

Executive Order S-1-07 (2007)

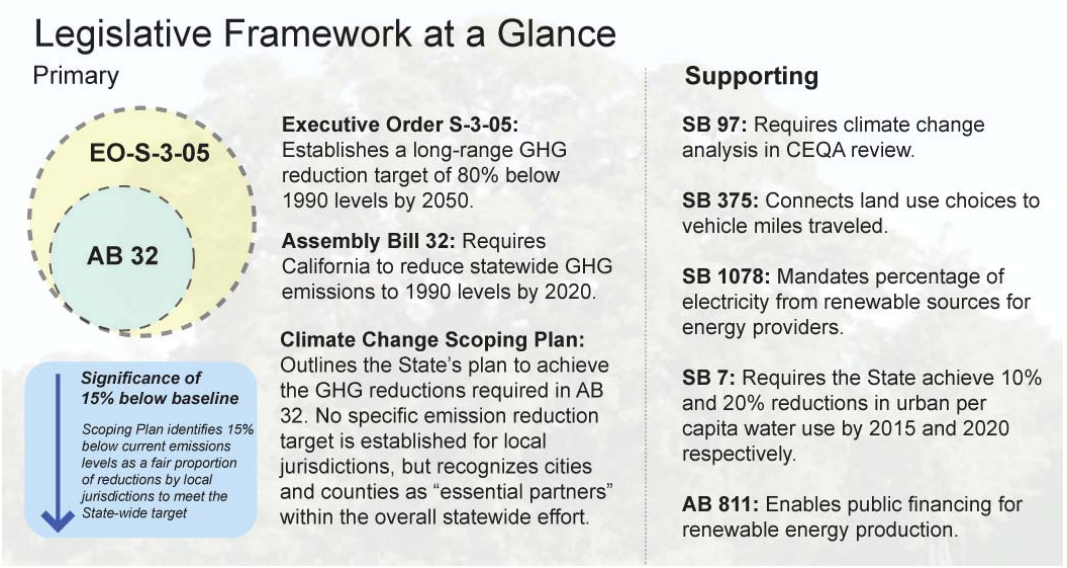
EO-S-1-07 establishes a Low-Carbon Fuel Standard to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10% by 2020.

Senate Bill 7 (2009)

SB 7 requires the state to achieve a 20% reduction in urban per capita water use by December 31, 2020. The state is required to make incremental progress towards this goal by reducing per capita water use by at least 10% on or before December 31, 2015. SB 7 requires each urban retail water supplier to develop both long-term urban water use targets and an interim urban water use target. SB 7 also creates a framework for future planning and actions for urban and agricultural users to reduce per capita water consumption 20% by 2020.

Senate Bill 375 (2008)

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



Senate Bill 1078 (2002) and 107 (2006) and Executive Order S-14-08

SB 1078 requires retail sellers of electricity to provide at least 20% of their supply from renewable sources by 2017. SB 107 changed the target date to 2010. Executive Order S-14-08 expands the state's Renewable Energy Standard to 33% renewable power by 2020.

Senate Bill 97 (2007)

SB 97 acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. The California Resources Agency is required to certify and adopt guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

Senate Bill 1368 (2006)

SB 1368 requires the California Public Utilities Commission (PUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities, and requires the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities. The legislation further requires that all electricity provided to California must be generated in plants that meet standards set by the PUC and CEC.

Executive Order S-13-08 (2008)

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

West Hollywood Leadership

City Actions

The City of West Hollywood has adopted numerous policies, programs, and incentives to assist the community in preserving the environment. Existing City programs and policies relevant to reducing communitywide GHG emissions include the following:

Environmental Task Force – The City formed a task force of community members and City staff to examine how the community could reduce its ecological footprint. The recommendations of the task force were outlined in the Environmental Task Force Report released on September 12, 2008. The Environmental Task Force recommendations informed many of the measures in this CAP.

Green Building Ordinance - On October 1, 2007, West Hollywood adopted one of the nation's first mandatory green building ordinances. A key component of the West Hollywood Green Building Program is the Green Building Point System for new construction, which offers incentives for projects that achieve exemplary status across a range of sustainable measures. A manual for the City's Green Building Ordinance explaining the requirements and acceptable methods to achieve them is available on the City's website or at the Green Building Resource Center.

Green Building Resource Center - The Green Building Resource Center located on the second floor of City Hall provides samples of building materials and practices that increase energy efficiency, indoor air quality and water conservation. The display provides information for homeowners, renters, businesses and developers to make each new project in West Hollywood more sustainable.

Recycling - In addition to standard household (blue and green cart) recycling for all residents, the City also has a Commercial Recycling Program. The City sends all commercial refuse to a Materials Recovery Facility (MRF) for separation and processing. The City also has a restaurant food waste recycling program, and sponsors drop off sites and events for batteries, cell phones, paper, cardboard and electronic waste.

Polystyrene Ban - The City adopted a polystyrene ban in 1990. The ban prohibits use of polystyrene containers by restaurants, vendors, non-profits, and food packagers and prohibits the sale of polystyrene containers within the City for home use. Enforcing this ban has been a challenge.

Plastic Bag Ban - A proposed ban on plastic bags is currently being considered for further action by the City. The City is monitoring state legislation as well as litigation brought forward by various business and enterprise groups against multiple cities that have attempted to ban plastic bags. Future City efforts on this issue will be determined by the outcome of these legal challenges and City Council direction.

City Vehicle Fleet – The City's vehicle fleet includes nine hybrid vehicles and six bicycles used for parking

enforcement, resulting in fuel savings and reduced CO_2 emissions. With the exception of one compact pickup truck, the entire parking enforcement fleet consists of hybrid vehicles. The City also has both gasoline and hybrid vehicles for use by City staff. While not all vehicles are hybrid, the City has a hybrid/alternative vehicle procurement policy that will replace all remaining gasoline powered vehicles at the end of their life.

Tree Planting – For many years, the City has sponsored tree planting programs throughout the community. Additionally, the City operates a Heritage Tree Program to identify, maintain and protect designated Heritage Trees within the City.

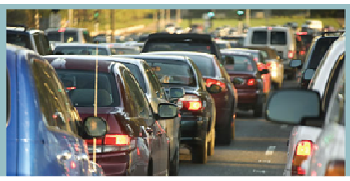
While the policies and programs listed above have the potential to reduce GHG emissions, data limitations restrict the City's ability to quantify their reduction capacity. Furthermore, to the extent that these policies and programs were in place in 2008, their GHG reduction potential is accounted for within the baseline emissions inventory.

Individual Actions

To achieve West Hollywood's GHG reduction target, every resident and business needs to participate. Ultimately, the community's GHG emissions are the sum of individual actions and choices. To achieve the desired emission reductions, we all must understand our personal ability to affect change.

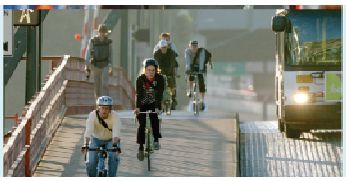
Climate change is often framed in terms of global treaties or technological advances, but a person's everyday actions are just as important in creating a solution. ***You*** are part of the solution if you decide to walk, bike, or take public transit as an alternative to driving; if you buy energy efficient appliances; if you insulate your home; if you replace incandescent light bulbs with compact fluorescent light (CFL) or Light-Emitting Diode (LED) technologies; if you air-dry your dishes and clothes; if you use the cold laundry cycle; if you take shorter showers; if adjust your thermostat; or if you plant a climate-appropriate tree.

1



Drive Smart - Smart, smooth and safe driving techniques lead to average fuel savings of 5-10%. Switching off your engine if you have to stop for more than a minute saves fuel and reduces emissions. Check tire pressure at least once every two weeks to ensure adequate inflation and save money on fuel.

2

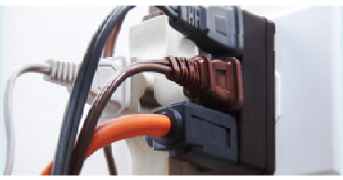


Drive Less - Bike, take public transit or walk for short daily trips. Leaving your car home twice a week can save fuel and reduce related emissions. Also, if you need to take your car, plan ahead to combine errands, instead of making multiple trips.

3

Dress for the Weather - Set your central thermostat at 68 degrees (65 at night) during winter days and at 78 degrees during summer. When indoors, dress warmly during winter months instead of turning up the heat and dress lightly in summer instead of turning up air conditioning. Use a fan to optimize air circulation.

4



Use Energy Wisely - Turn off lights and unplug appliances when not in use. Many appliances continue to draw a small amount of power when they are switched off. These "phantom" loads occur in most appliances that use electricity, such as VCRs, televisions, stereos, computers, and kitchen appliances.

5

Save Water - A leaky toilet can waste almost 200 gallons of water per day. Check for leaks regularly and fix them to save on water bills. Taking shorter showers and using less hot water saves both water and energy required for heating it. Wash only when you have a full load of clothes and dishes.

6

Plant Climate Appropriately - Plant a tree but choose climate appropriately, so that it uses less water and maintenance. Climate appropriate gardens also attract local birds and critters. Learn to create rainwater gardens to infiltrate stormwater and reduce potable water demand. Set irrigation controls to seasonal water needs.

7

Reduce and Reuse Before Recycling - Look for creative ways to reduce trash and reuse an item before simply tossing it off to the recycle bin. For example, use reusable mugs at coffee shops and reusable water bottles during travel to reduce the use of disposable and single-use items such as plastic bottles.

8

Create Your Own Reusable Shopping Bag - Reusing just one bag in your daily life (grocery/home shopping, trips to the beach/pool, gym, picnics, festivals, travel, etc.) can "eliminate" the use of approximately six plastic bags every week. Creating your own resusable bag can maintain your personal style and be durable for many uses.

9

Buy and Eat Locally - Buying locally helps to reduce emissions related to transportation of the goods (including food) from distant places. Locally grown healthy food helps to maintain a seasonal variety of produce while saving fuel and cleaning the air from unnecessary transport-related emissions.

10

Spread the Word - Learn about ways to reduce your carbon footprint and share information about the economic and environmental benefits of simple lifestyle changes with your friends, neighbors and co-workers. Take opportunities to encourage community leaders to establish environment-friendly policies and programs.

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CHAPTER 2 – THE PLANNING PROCESS

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Relationship to the General Plan

The Climate Action Plan (CAP) implements policy IRC-6.3 of the West Hollywood General Plan Infrastructure, Resources, and Conservation Element.

The General Plan includes specific goals and policies that guide the City's approach to climate change, including emissions reductions targets, guidelines for preparing inventories or plans, and general reduction strategies. Since climate change is a cross-cutting issue addressed by many elements of the General Plan, the CAP as a whole is considered an implementation measure for the policies described in this section. This structure allows the City to update the CAP on an ongoing, as-needed basis to ensure that West Hollywood's climate protection efforts reflect both current legislation and emerging best practices.

Relationship to the California Environmental Quality Act

The City's approach to addressing GHG emission reductions within the General Plan is parallel to the climate change planning process being followed by more than 50 other California jurisdictions. This process includes:

- Completing a baseline GHG emissions inventory and projecting future emissions
- Identifying a community-wide GHG reduction target
- Preparing a CAP to identify strategies and measures to meet the reduction target
- Identifying targets and reduction strategies in the General Plan and evaluating the environmental impacts of the CAP in the General Plan Environmental Impact Report (EIR)
- Monitoring effectiveness of reduction measures and adapting the plan to changing conditions
- Adopting the CAP in a public process following environmental review

This approach is consistent with CEQA Guidelines Section 15183.5 that allows jurisdictions to analyze and mitigate the significant effects of GHGs at a programmatic level, by adopting a plan for the reduction of GHG emissions. Later, as individual projects are proposed, project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review in their cumulative impacts analysis. Project-specific environmental documents prepared for projects consistent with the General Plan and CAP may rely on the programmatic analysis of GHGs contained in the EIR certified for the West Hollywood General Plan update and CAP.

A project-specific environmental document that relies on this CAP for its cumulative impacts analysis must identify the specific CAP measures applicable to the project and how the project incorporates the measures. If the measures are not otherwise binding and enforceable, they must be incorporated as mitigation measures applicable to the project. If substantial evidence indicates that the GHG emissions of a proposed project may be cumulatively considerable, notwithstanding the project's compliance with specific measures in this CAP, an EIR must be prepared for the project.

Greenhouse Gas Measurement

Determining the City's existing GHG emissions and estimating future emissions are important steps in the planning process. The inventory and projections discussed in this chapter identify the sources, distribution, and overall magnitude of GHG emissions generated within the City of West Hollywood. This

information is useful for the City to develop cost-effective GHG reduction strategies for policy areas within the City's jurisdiction.

Baseline Inventory

The purpose of the GHG baseline inventory is to identify sources and levels of GHG emissions produced by residents and businesses within the community and municipal operations. An emissions inventory was prepared for the City of West Hollywood for both communitywide and government-related sources for the 2008 operational year.

The 2008 inventory addresses the following emission sectors: residential and nonresidential energy use (i.e., commercial and industrial), transportation, solid waste, water use, and wastewater treatment. Government-related GHG emissions, which include energy use in government buildings, vehicle fleets, solid waste, streetlights, and other government-owned/operated facilities, are a subset of the communitywide emissions inventory.

Business-as-Usual GHG Projection Scenarios

Communitywide GHG emissions were also projected for the years 2020 and 2035 under a business-as-usual scenario. The business-as-usual scenario assumes that historical data and trends are representative of future year consumption rates for energy, water, and waste. The proposed General Plan and the GHG reduction measures recommended in the CAP would not be adopted or implemented.

Although the trends for each projection show an increase in GHG emissions, emission reductions are anticipated due to programs and regulations applied at the federal and state levels, such as vehicle fuel efficiency standards, low carbon fuel standards, and renewable energy portfolio requirements. These actions at the federal and state levels are not considered in the 2020 and 2035 projections. However, as these reductions are an important part of West Hollywood's GHG emissions reduction strategy, they are presented as reduction measures in Chapter 3.

As projections were developed for both 2020 (the AB 32 target year) and 2035 (the planning horizon for the General Plan), the CAP references both projections when reporting emission reduction potential of recommended measures. Given the level of uncertainty in projecting 2020 and 2035 activity and associated emission levels, these projections are for planning purposes, and are subject to change. As 2020 and 2035 approach, the City will reevaluate its future GHG reduction targets to incorporate progress toward long-term GHG reduction goals.

Greenhouse Gas Emission Sources

Assuming that the same type of current emissions-generating practices continue to occur within West Hollywood, communitywide GHG emissions are anticipated to increase by 11% in 2020 over 2008 levels, and by 21% in 2035 over 2008 levels. Sources of GHG emissions for 2008, 2020, and 2035 are the following, in descending order:

- Transportation sources (~62%)
- Commercial and industrial energy use (~20%)
- Residential energy use (~12%)
- Wastewater treatment (~4%)
- Solid waste (~1%)
- Water use (~1%)

Transportation emissions are the largest portion of communitywide GHG emissions. The magnitude of GHG emissions increases from 2008 to 2020 and 2035

due primarily to anticipated future population growth (and related consumption) in West Hollywood.

A description of the methods and sources of information used to complete the GHG emissions inventory and to project the City's 2020 and 2035 emissions for each end-use sector (e.g., energy, transportation, waste, water) is provided in Appendix A. All GHG emissions have been calculated in metric tons carbon dioxide equivalent emissions (MT CO_2e).

A summary of West Hollywood's communitywide 2008, 2020, and 2035 GHG emissions is provided in Table 2-1. Figure 2-1 illustrates the City's communitywide emissions by sector for baseline year 2008.

location, and emission reductions anticipated from implementation of statewide legislation. The target was established following evaluation of a wide range of land use, transportation, energy, waste and water related measures and consideration of General Plan policies.

To achieve 20%, communitywide GHG emissions must be reduced to approximately 466,000 MT CO_2e per year by 2035. To achieve 25%, communitywide GHG emissions must be reduced to approximately 437,000 MT CO_2e per year by 2035.

Chapter 3 identifies recommended GHG reduction measures capable of approaching the target, and describes the relationship of West Hollywood's local actions to statewide efforts to curb GHG emissions.

Table 2-1: West Hollywood Baseline and Projected GHG Emissions and Percent Contributions

Emissions Sector	2008 Baseline MT CO2e (percent of total emissions)	2020 Baseline MT CO2e (percent of total emissions)	2035 Baseline MT CO2e (percent of total emissions)
Transportation	361,350 (62%)	412,450 (64%)	452,600 (64%)
Commercial/Industrial Energy Use	116,197 (20%)	116,028 (18%)	127,653 (18%)
Residential Energy Use	70,378 (12%)	77,519 (12%)	84,081 (12%)
Wastewater Treatment	20,981 (4%)	22,768 (4%)	24,974 (4%)
Solid Waste	8,543 (1%)	9,267 (1%)	10,172 (1%)
Water Consumption	5,764 (1%)	8,200 (1%)	8,971 (1%)
Total	**583,213 (100%)**	**646,232 (100%)**	**708,451 (100%)**
GHG Emissions per Service Population	***9.7***	***9.9***	***9.9***

Notes: CO2e = carbon dioxide equivalent; MT= metric tons; Service population includes population and jobs in the City of West Hollywood.
Source: Data compiled by AECOM 2010.

Municipal Emissions

Municipal (government-related) GHG emissions, which include energy use in government buildings, vehicle fleets, solid waste, streetlights, and other government-owned/operated facilities, are a subset of the communitywide emissions inventory. Table 2-2 summarizes municipal baseline emissions from sectors for which data are available. Emissions from the municipal vehicle fleet, solid waste, and water/wastewater are not reported, as data for these sectors were not available at the time of this writing.

Table 2-2: West Hollywood 2008 Municipal Emissions

Emissions Sector	2008 Baseline MT CO2e
Buildings and Facilities Electricity Use[1]	670
Buildings and Facilities Natural Gas Use[2]	52
Street Lights[3]	2,211
Traffic Control[3]	69

[1] Based on City municipal accounts data from SCE.
[2] Based on City municipal accounts data from SCG.
[3] From *Electricity Use Report for City of West Hollywood*, prepared by SCE
Notes: CO2e = carbon dioxide equivalent; MT= metric tons
Source: Data compiled by AECOM 2010.

GHG Emission Reduction Target

The City Council has established a GHG emissions reduction target of 20 to 25% below 2008 emission levels by 2035. The target represents the community's aspirations to achievable emission reductions within West Hollywood's specific land use setting and

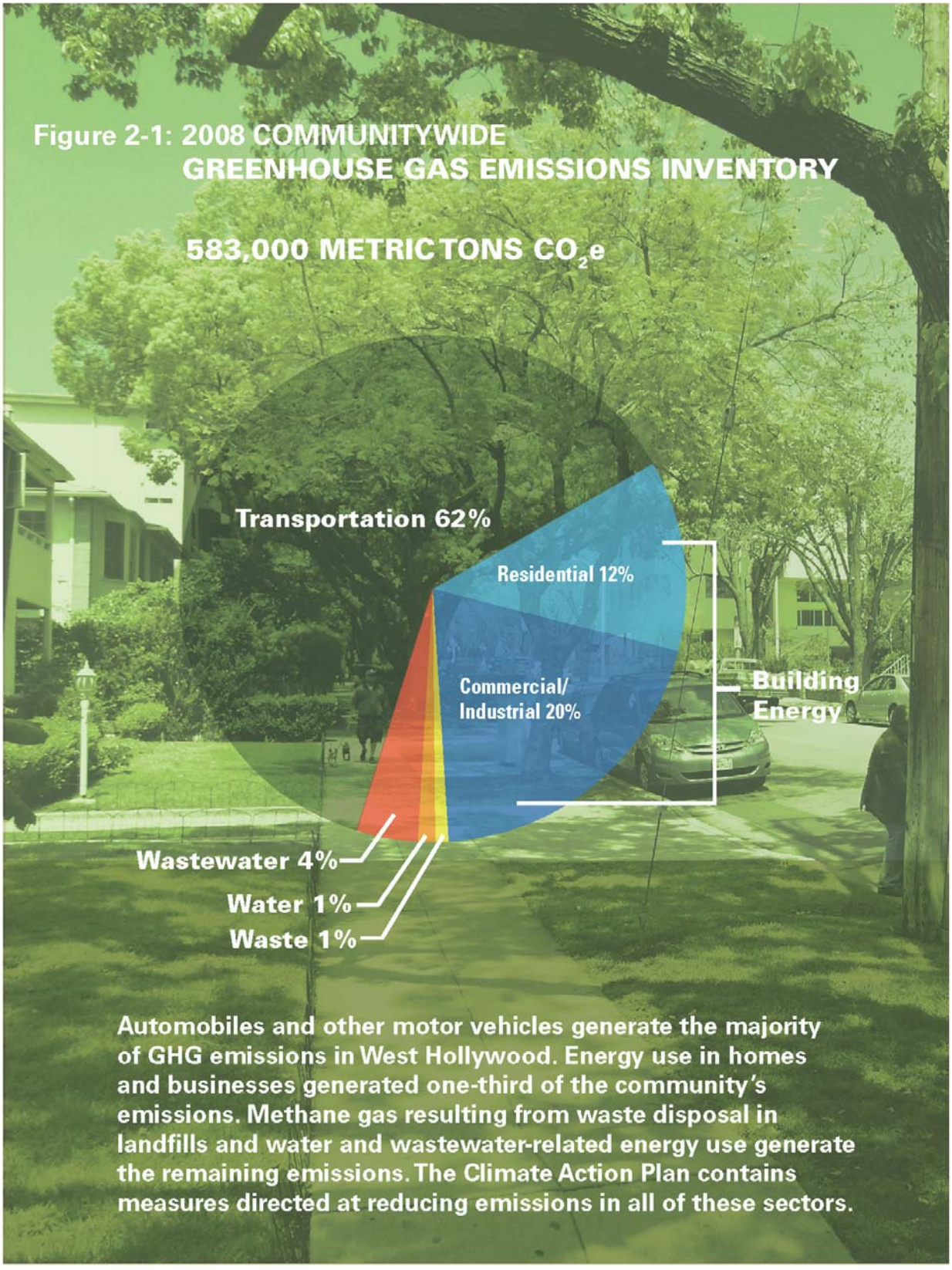
Figure 2-1: 2008 COMMUNITYWIDE
GREENHOUSE GAS EMISSIONS INVENTORY
583,000 METRIC TONS CO_2e
Transportation 62%
Residential 12%
Commercial/
Industrial 20%
Building
Energy
Wastewater 4%
Water 1%
Waste 1%
Automobiles and other motor vehicles generate the majority of GHG emissions in West Hollywood. Energy use in homes and businesses generated one-third of the community's emissions. Methane gas resulting from waste disposal in landfills and water and wastewater-related energy use generate the remaining emissions. The Climate Action Plan contains measures directed at reducing emissions in all of these sectors.

CHAPTER 3 – CLIMATE ACTION STRATEGIES AND EMISSION REDUCTION MEASURES

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Selection of Emission Reduction Strategies

Building on the City's tradition of environmental leadership, the Climate Action Plan (CAP) sets forth a plan to reduce communitywide greenhouse gas (GHG) emissions. Implementing the seven reduction strategies presented in this Chapter can assist the City in achieving its 2035 communitywide reduction target of 20% to 25% below 2008 emission levels. The strategies identified in this Chapter affect issues within the City's direct influence. Each strategy is sub-divided into a series of GHG emission reduction measures.

Measures were developed by (a) evaluating existing community conditions, (b) identifying emission reduction opportunities within the community, including those identified by the City's Environmental Task Force (c) reviewing best practices from other jurisdictions and organizations, and (d) incorporating State and regional laws, guidelines, and recommendations. After considering a wide range of potential measures, measures were recommended based on the following criteria:

- What is the cost of implementation to the City and what private costs and savings can be achieved?
- Is it technically possible to implement the measure and would the community support it?
- Does the measure create additional community co-benefits (e.g., quality of life, public health)?

The seven emission reduction strategies are as follows:

Community Leadership and Engagement: The intent of this strategy is for the City to provide an example for the community by reducing municipal emissions and engaging City staff to further facilitate sustainability practices and programs in municipal operations and throughout the community.

Land Use and Community Design: The land use and community design strategy encourages specific types of development in key areas to help achieve GHG emission reduction goals, promote transit, walking and bicycling as viable transportation modes, and help improve the physical health of residents.

Transportation and Mobility: The transportation and mobility strategy identifies opportunities to improve mobility such as walking, bicycling, and transit use, and to decrease the need to drive.

Energy Use and Efficiency: The energy use and efficiency strategy recommends ways to increase energy efficiency in existing buildings, enhance energy performance for new construction, and increase use of renewable energy.

Water Use and Efficiency: The intent of this strategy is to conserve water through efficient use and conservation.

Waste Reduction and Recycling: This strategy builds on past City successes by increasing waste diversion, reducing consumption of materials that otherwise end up in landfills, and increasing recycling.

Green Space Strategy: This strategy expands and improves green spaces to reduce the urban heat island effect, capture carbon emissions, and enhance the community.

Each strategy recommends measures and actions that translate the CAP's vision into on-the-ground action. *Measures* define the direction that the City will take to accomplish its GHG reduction goals. *Actions* define the specific steps that City staff and decision-makers will take over time.

GREENHOUSE GAS REDUCTION POTENTIAL

In 2035, GHG emission reductions from the seven strategies within the CAP have the potential to reduce GHG emissions 96,220 metric tons of carbon dioxide equivalent (MT CO_2e). GHG emission reductions attributed to State legislation have the potential to reduce GHG emissions by 180,230 MT CO_2e. Together, statewide legislation and GHG reduction strategies have the potential to reduce GHG emissions in West Hollywood by approximately 276,450 MT CO_2e, which is approximately 25.9% below 2008 emission levels as measured from business-as-usual conditions in 2035.

In 2020, GHG emission reductions from the seven strategies within the CAP and statewide reductions have the potential to reduce GHG emissions by approximately 161,670 MT CO_2e to 484,562 MT CO_2e, which is approximately 16.9% below 2008 emission levels, as measured from business-as-usual conditions in 2020. Thus, the recommended CAP measures ***exceed the City's GHG reduction target of 20% to 25% below 2008 emission levels by 2035***. They also enable the City to meet AB 32 goals by exceeding a 15% below current emissions level standard by 2020.

Figure 3-1 summarizes the GHG reduction potential of the CAP. Figure 3-2 indicates the GHG reduction potential of each of the emission reduction strategies and emission reductions associated with State legislation. Table 3-1 summarizes the GHG reduction potential of the CAP and State legislation.

Table 3-2 indicates the GHG emissions per service population (i.e., residents plus employees). With implementation of the CAP, GHG emissions per service population would decrease from 9.7 MT CO_2e, in 2008, to 7.4 MT CO_2e in 2020, and 6.0 MT CO_2e in 2035. Without implementation of the CAP, GHG

Figure 3-1: 2035 GREENHOUSE GAS EMISSIONS REDUCTION TARGET
20-25% BELOW 2008 LEVELS (REDUCTION OF 241,881 - 271,041 MT CO_2e)

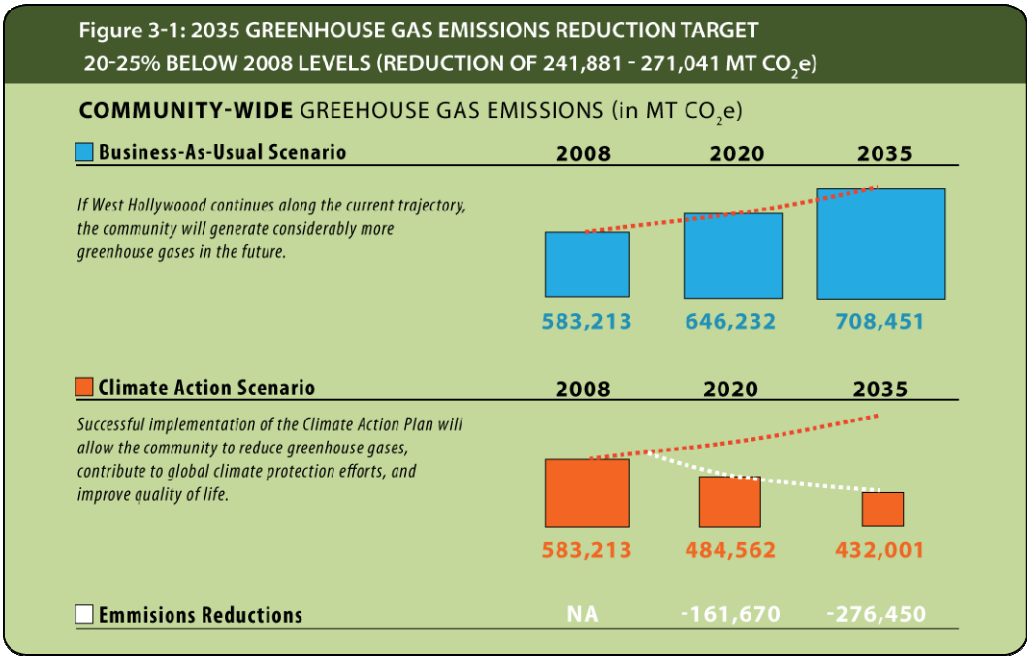


Figure 3-2: GREENHOUSE GAS EMISSIONS REDUCTION POTENTIAL

STRATEGY	ICON	PERCENT OF TOTAL REDUCTION	GHG REDUCTION POTENTIAL
Statewide Reductions		65.2%	180,230 MT CO_2e
Energy Use and Efficiency		30.6%	84,570 MT CO_2e
Water Use and Efficiency		1.6%	4,350 MT CO_2e
Transportation and Mobility		1.3%	3,650 MT CO_2e
Waste Reduction and Recycling		1.2%	3,260 MT CO_2e
Green Space		0.1%	240 MT CO_2e
Community Leadership and Engagement		0.1%	150 MT CO_2e
Land Use and Community Design		Supporting	Supporting

Table 3-1: Total GHG Emission Reductions		
GHG Emission Reduction Area	2035 GHG Emission Reductions (MT CO_2e)	%
Recommended CAP Measures	96,220	34.8%
State Legislation	180,230	65.2%
Total GHG Emission Reductions	**276,450**	**100%**

Table 3-2: GHG Emissions per Service Population with Implementation of the CAP (except 2008)			
	2008 (baseline)	2020	2035
GHG Emissions (MT CO_2e/yr)	583,213	484,562	432,001
Estimated Population	37,348	24,934	44,182
Estimated Employment	22,911	40,385	27,462
GHG Emissions per Service Population	**9.7**	**7.4**	**6.0**
GHG Emissions per Service Population without the CAP	9.7	9.9	9.9

emissions per service population would increase from 9.7 MT CO_2e in 2008 to 9.9 MT CO_2e in 2020 and remain at that level through 2035.

Measure Structure

This section of the CAP is organized by the following strategies: community leadership and engagement, land use and community design, transportation and mobility, energy use and efficiency, waste reduction and recycling, and green space. These seven strategies represent the primary ways to reduce communitywide GHG emissions in West Hollywood. Each strategy section begins with an introduction to the overarching concepts that tie that particular strategy to GHG emission generation and potential reductions. This introduction is followed by the component strategies, measures, and actions that translate the City's vision into on-the-ground implementation.

GHG Reduction Measures

Measures define the programs, policies, and projects that the City will undertake to accomplish its GHG emission reduction target. The following paragraphs describe the format and content of the measures.

Measure Description

Measure descriptions provide important background information and describe the City's rationale and policy direction. Additionally, some descriptions provide detailed guidance that will be used in program implementation.

Action and Progress Indicators Tables

Detailed action steps and progress indicators are provided in a table following each measure description. Actions identify specific steps that the City will take to implement the measure. The table also identifies responsible departments and establishes an implementation schedule for each action.

Table 3-3 indicates the various City departments and divisions that will be responsible for implementing the CAP.

Progress indicators and performance targets provided in the table enable staff, the City Council, and the public to track implementation and monitor overall CAP progress.

Table 3-3: City Departments Responsible for Implementing the CAP		
Abbreviation	Department	Divisions
ASD	Administrative Services Department	City Clerk, Human Resources, Legal Services
CC	City Council	
CDD	Community Development Department	Building & Safety, Planning, Transportation
CMD	City Manager's Department	City Attorney, Economic Development, Public Safety & Community Services
DPW	Department of Public Works	Commercial Code Compliance, Engineering, Parking
FIN	Department of Finance & Technology	General Accounting, Information Technology, Revenue Management
HSD	Human Services Department	Facilities and Landscape, Recreation, Social Services
PIO	Public Information and Prosecution Services	Cable TV, Digital Media, Public Information/Media Relations, Film Office
RSH	Rent Stabilization & Housing	Housing, Redevelopment, Rent Stabilization, Residential Code Compliance

GHG Reduction Potential

Values within the GHG Reduction Potential column of the measure summary identify the estimated annual emission reductions anticipated in 2035 in MT CO_2e. Many measures generate directly attributable GHG reductions. However, not all measures have a quantifiable GHG reduction potential. Non-quantified measures are included in the CAP as supporting measures that facilitate the reduction potential of related quantified measures, or that complement the suite of policies and programs proposed throughout the CAP.

Non-quantified measures consist of measures for which a GHG reduction potential could not be estimated at the time of plan preparation for one of the following reasons: (a) insufficient data exists to quantify GHG reduction potential, (b) no reliable quantification methodology currently exists to calculate these reductions, or (c) the GHG emission reductions attributable to the measure do not directly reference any component of the baseline GHG inventory, and thus cannot be counted towards the City's 2035 emissions reduction target. Supporting measures remain within the CAP because the City and the community recognize that even though their effect cannot be measured, these actions do reduce global GHG emissions and have important community co-benefits. Additional information pertaining to the GHG reduction calculations is provided in Appendix B.

Community Co-Benefits

Beyond reducing GHG emissions, many recommended CAP measures have the potential to provide other important benefits to the community. These co-benefits represent an improvement in the quality of life in West Hollywood and protect the earth's climate. The co-benefits are identified using the following icons:

Regional smart growth

Reduced water use

Improved water quality

Improved air quality

Reduced energy use

Increased green space

Reduced urban heat island effect

Improved public realm

Improved public health

Costs and Savings

For each measure, potential costs and savings to the City, residents, and businesses are categorized as very low, low, medium, and high. Table 3-4 summarizes these category definitions. Supporting information on costs and savings is provided in Appendix C.

Table 3-4: Measure Cost and Savings Ranges

Cost/Savings Type	Range
Cost to City (average annual)	Very Low: $0 - $10,000 Low : $10,001 - $50,000 Medium: $50,001 - $100,000 High: $100,001 or greater
Cost to resident or property owner (average annual)	Very Low: $0 - $100 Low : $101 - $250 Medium: $251 - $500 High: $501 or greater
Savings to resident or property owner (average annual)	Very Low: $0 - $100 Low : $101 - $250 Medium: $251 - $500 High: $501 or greater

Funding and Financing

Though the City will bear some financial burden to implement measures in the CAP, a wide range of funding sources and financing strategies can be leveraged to offset costs to the City and local residents and businesses.

General types of funding or financing applicable to each CAP measure have been identified. Chapter 4 and Appendix C provide further discussion of applicable funding sources and financing programs for each measure. Most, if not all, of the sources described require additional effort to access. Although information in the CAP is current as of 2010, the array of funding and financing options is ever-evolving. Additional opportunities for funding or financing CAP measures will likely emerge as the City implements the CAP.

COMMUNITY ENGAGEMENT AND LEADERSHIP

Community engagement and effective participation are key to successful implementation of the CAP.

During the CAP implementation period, the City will conduct outreach programs that involve residents and businesses in various GHG-reducing activities, assessments and actions. Effective public participation will increase the likelihood that the GHG reduction measures recommended in this plan achieve estimated participation rates. Higher participation rates can be achieved if the outreach and education programs are adapted over time to meet the changing needs of the community.

The City also accepts responsibility for its share of emissions within the communitywide inventory. Besides supporting and implementing state legislation, the City will take immediate action to reduce the carbon footprint of municipal operations. Specific measures related to municipal operations are described in this section.

GHG Reduction Potential

150 MT CO_2e
0.1% of total GHG reductions

GHG Reduction Potential:
Supporting measure (Lacks substantiation)

Community Co-Benefits:

Cost to City:
High

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; City funds

LEADERSHIP

CL-1.1: Create a position for a City Sustainability Manager/Coordinator and support staff to oversee implementation of the Climate Action Plan and sustainability programs.

Measure Description:

The City of West Hollywood will create a position for a Sustainability Manager/Coordinator to oversee implementation of the CAP and other sustainability programs, on a funds-available basis. In the interim, the City will continue to use available resources, including the option of hiring consultants, to assume the responsibilities of implementing the CAP and additional sustainability policies.

In addition, the Sustainability Manager/Coordinator will research and recommend additional policies that promote more sustainable City operations. Short-term actions include, but are not limited to, adopting an environmentally preferable purchasing policy for City operations, conducting zero-waste City meetings by using reusable and biodegradable products, and implementing paperless office polices. The Sustainability Manager/Coordinator will also coordinate training to enhance the expertise of the Community Development Department and Public Works Department in sustainability practices.

	Actions	Timetable	Responsibility
A	Create a position for a Sustainability Manager/Coordinator.	Short Term (1-2 years)	CMD, CC
B	Adopt additional green policies for City operations.	Short Term (1-2 years)	CC, CDD
	Performance Indicator	**Target**	
i	N/A	N/A	

MUNICIPAL ENERGY USE

CL-1.2: Reduce energy use in City facilities and operations.

Measure Description:

The City of West Hollywood has an opportunity to serve as an example to the community by transitioning to more energy-efficient municipal buildings and operations. The following actions work together to reduce energy demand, improve energy efficiency, and incorporate renewable energy technology within City buildings.

The City will conduct energy audits of municipal buildings and operations and will take action to reduce energy consumption. Such actions include but are not limited to continuing to replace lighting with energy efficient lighting and installing energy efficient hand dryers, which also reduce paper towel waste. Additionally, as street lighting is the largest municipal contributor of GHG emissions in West Hollywood, the City will coordinate with Southern California Edison to convert street and sidewalk lighting to energy efficient lighting technologies.

The City will install electronic building performance displays in each publicly accessible building. These displays will provide building managers, employees, and visitors with easy-to-understand information on electricity, gas, and water use. Over time, this information can facilitate more efficient use of energy and water in municipal operations.

Action		Timetable	Responsibility
A	Conduct an energy audit of all municipal buildings.	Short Term (1-2 years)	HSD
B	Install solar photovoltaics on municipal buildings.	Medium Term (2-5 years)	FIN, HSD
C	Purchase remaining energy from renewable sources.	Medium Term (2-5 years)	FIN
D	Install electronic building performance displays in all publicly accessible buildings.	Medium Term (2-5 years)	HSD
E	Continue to install energy efficient lighting and hand dryers in municipal operations.	Short Term (1-2 years)	HSD
F	Advocate for utility providers to shift to renewable resources.	Short Term (1-2 years)	CC, CM
G	Work with Southern California Edison to convert all street ,sidewalk, and park lighting to energy-efficient technologies.	Medium Term (2-5 years)	HSD, DPW
Performance Indicator		**Target**	
i	Percentage of energy efficiency improvement through retrofits and conservation measures.	20% by 2020 40% by 2035	
ii	Percentage of municipal operations electricity from renewable sources.	100% by 2035	

GHG Reduction Potential:
150 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
Low to Medium

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

GHG Reduction Potential:
Not quantified (Supporting measure for CL-1.1 and CL-1.2)

Community Co-Benefits:

Cost to City:
Very Low to Low

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; City Funds

MUNICIPAL WATER USE

CL-1.3: Reduce water use in City facilities and operations.

Measure Description:

The City of West Hollywood has already taken actions to reduce water use in municipal buildings and in City operations. The City can continue to serve as an example to the community by using water more efficiently. Conserving water also reduces GHG emissions associated with pumping and transporting water and treating wastewater.

For landscaped areas, weather-based evapotranspiration (ET) controller irrigation systems analyze soil moisture content and irrigate only when plants need water. These systems optimize irrigation efficiency and avoid over watering. The City will install weather-based ET controller irrigation systems in municipal landscapes where feasible.

	Action	Timetable	Responsibility
A	Continue water audits of all municipal buildings and operations.	Short Term (1-2 years)	HSD
B	Continue to reduce water consumption in municipal buildings.	Medium Term (2-5 years)	HSD
C	Continue to reduce water consumption in municipal landscape irrigation.	Medium Term (2-5 years)	HSD
D	Install evapotranspiration systems in City landscapes.	Medium Term (2-5 years)	HSD
	Performance Indicator	**Target**	
i	Municipal building water use reduction since 2008.	20% by 2020 40% by 2035	
ii	Municipal landscape water use reduction since 2008.	20% by 2020 50% by 2035	

TRANSPORTATION

CL-1.4: Reduce single-occupancy vehicle commuting by City employees.

Measure Description:

The City of West Hollywood employs approximately 225 people. The City has an opportunity to serve as an example to the community by reducing single-occupancy vehicle use by City employees by continuing to promote and incentivize alternatives to driving. Providing subsidized transit passes, telecommuting, reducing available parking, and increasing opportunities for bicycling provide viable alternatives to driving to work. The City currently offers a parking cash out program for employees who do not drive or only drive to work on certain days.

	Action	Timetable	Responsibility
A	Continue to provide TDM subsidies to City employees.	Short Term (1-2 years)	ASD, CDD, FIN
B	Explore creating a small-scale car sharing program for City employees.	Medium Term (2-5 years)	CDD, ASD
C	Explore creating a small-scale bike sharing program for City employees.	Medium Term (2-5 years)	CDD, ASD
D	Explore the conversion of approximately 5,000 square feet of City-owned surface parking lots to green space.	Medium Term (2-5 years)	DPW, HSD
E	Eliminate free parking passes for employees.	Medium Term (2-5 years)	CMD
F	Promote telecommuting and alternative work schedules for City employees.	Short Term (1-2 years)	ASD
	Performance Indicator	**Target**	
i	Percentage of employees who commute to work using a mode other than a single-occupancy vehicle.	50% by 2020 75% by 2035	

GHG Reduction Potential:
Not quantified
(Data not available)

Community Co-Benefits:

Cost to City:
Medium

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

Land Use and Community Design

As a completely built-out community, West Hollywood's land use strategy focuses on redevelopment and infill development in five commercial sub-areas located throughout the City, and in transit overlay districts.

The GHG inventory does not account for any specific land-use related emissions, but rather considers the effects of land use comprehensively within the transportation sector. Where people live determines how far they travel to work, to shopping, and to other destinations, and influences whether they choose to walk, bike, use public transit, or drive. If residents live near bus stops, neighborhood-serving commercial centers, or their work places, they are more likely to use alternative lower-emission travel modes than to drive.

The recommended measures in this section are primarily *supporting* measures that reduce GHG emissions. They have not been individually quantified, but they have been included in the CAP to support land use strategies identified within the General Plan that reduce GHG emissions in the community.

GHG Reduction Potential

GHG reductions from this strategy are considered within the Transportation and Mobility Strategy

TRANSIT ORIENTED DEVELOPMENT

LU-1.1: Facilitate the establishment of mixed-use, pedestrian- and transit oriented development along the commercial corridors and in Transit Overlay Districts.

Measure Description:

The distribution of land uses and the degree of street connectivity within a city influences how people travel. Land use strategies that place everyday needs close to each other provide a foundation for the use of alternative modes of transportation.

The City's land use strategy is focused around transit oriented development (TOD), which involves the development of housing, commercial space, services, and job opportunities close to public transportation. TOD also reduces dependency on cars and time spent in traffic, and more closely links residents to jobs and services.

In West Hollywood, new development will primarily be directed to the City's commercial corridors and Transit Overlay Districts, with an emphasis on developing transit-supportive infill uses on Santa Monica Boulevard near potential rail transit at the intersections of San Vicente Boulevard, Fairfax Avenue and La Brea Avenue.

The City will also encourage mixed-use development in most commercial corridors.

	Action	Timetable	Responsibility
A	Target most new development to the City's commercial corridors and Transit Overlay Districts served by high levels of existing or potential public transit.	Short Term (1-2 years)	CDD
B	Encourage mixed-use development in most commercial corridors.	Short Term (1-2 years)	CDD
C	Change development standards to encourage mixed use development in Transit Overlay Districts.	Short Term (1-2 years)	CDD
D	Encourage higher density development in Transit Overlay Districts when fixed rail transit arrives.	Long Term (15-25 years)	CDD

GHG Reduction Potential:

Not quantified individually (Included in transportation strategy reductions)

Community Co-Benefits:

Cost to City:

Very Low

Private Cost:

None

Private Savings:

None

Potential Funding Sources:

State and federal grants; Public-private partnerships; City funds

GHG Reduction Potential:
Not quantified (Lacks substantiation)

Community Co-Benefits:

Cost to City:
Very Low to Low

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

REUSE OF BUILDINGS

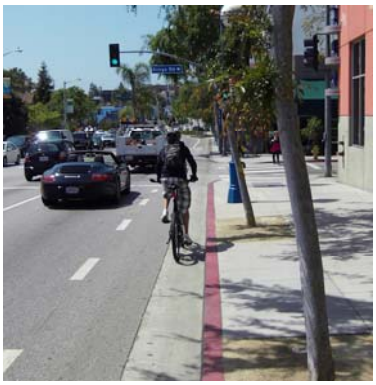
LU-1.2: Encourage the preservation and reuse of existing buildings.

Measure Description:

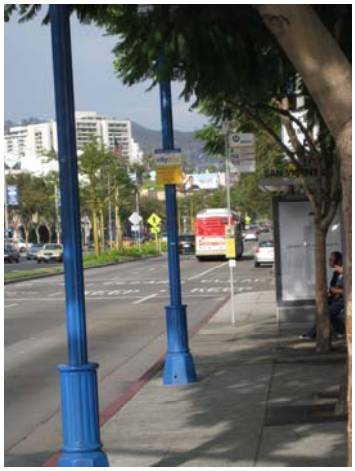
Preserving historic buildings can be an important climate protection strategy that does not conflict with the goal of building new transit-oriented housing. Preserving and reusing existing buildings preserves embodied energy in buildings, and reduces the GHG emissions associated with demolishing buildings, transporting demolition debris, and building new structures. Existing buildings can be intensified to create additional housing or commercial space to help meet future demand. The City will review and amend the Historic Preservation Ordinance and Zoning Ordinance to strengthen provisions to promote adaptive reuse of structures within West Hollywood.

	Action	Timetable	Responsibility
A	Amend the Zoning Ordinance to promote reuse of existing buildings.	Short Term (1-2 years)	CDD
B	Amend the Historic Preservation Ordinance to strengthen provisions to promote reuse of historic buildings.	Short Term (1-2 years)	CDD

TRANSPORTATION AND MOBILITY



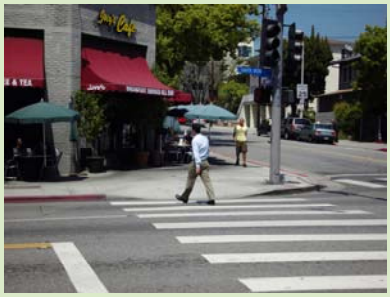
Transportation-related emissions make up the largest component (62%) of West Hollywood's 2008 GHG emissions inventory. These emissions are determined largely by the number of vehicle miles traveled (VMT) by residents and employees. Long vehicle trips between destinations and high numbers of trips create high emissions. Successfully reducing vehicle emissions relies on creating shorter vehicle trips, either by making alternative modes of transportation (such as transit, bicycling or walking) truly viable, or by increasing proximity of diverse land uses. Technological advancements in vehicle fuel efficiency and reduction of fuel carbon content at a statewide level will also reduce vehicular GHG emissions.



According to the 2000 US Census, almost 75% of West Hollywood residents drove alone to work, about 6% carpooled, 7% worked from home, 6% used public transit, and approximately 6% walked or biked or used another means to get to work. To reduce GHG emissions within the community, the City must take action to reduce driving and to increase effective use of alternative modes to move goods and people. West Hollywood will improve streets to provide better support for bikes, busses, and pedestrians. Other steps the City will take to influence resident travel behavior include improving bike and pedestrian infrastructure throughout the City, encouraging transit improvements, and managing parking demand and supply. As public transit generates 80% fewer GHG emissions than most cars, multiple measures recommend transit services and infrastructure in West Hollywood.

GHG Reduction Potential

3,650 MT CO_2e
1.3% of total GHG reductions



GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
Medium to High

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

INCREASE WALKING

T-1.1: Increase the pedestrian mode share in West Hollywood with convenient and attractive pedestrian infrastructure and facilities.

Measure Description:

West Hollywood's compact size and higher density make it a very walkable City. Almost all residential neighborhoods are already within easy walking distance of commercial areas. Providing more connectivity and convenient and enjoyable pedestrian access is essential for improving residents' quality of life and reducing transportation-related GHG emissions.

To increase walking, the City will create pedestrian obstacle studies that identify existing barriers and impediments to walking within the City, including the effect of heavy vehicle traffic. Pedestrian infrastructure and traffic calming improvements will include, but are not limited to, sidewalk expansion and repair, diagonal crosswalks, countdown signals, shade tree planting, benches, bulbouts, and raised crosswalks. The City will ensure sidewalks and crosswalks are maintained in good condition and will regularly evaluate pedestrian safety indicators (e.g., citizen complaint and collision data) and make necessary investments, including encouraging mixed-use development and pedestrian-oriented design.

Residents would be the primary beneficiaries of these investments, and could accrue substantial financial savings* by electing to drive less in favor of walking.

	Action	Timetable	Responsibility
A	Conduct a pedestrian obstacle study.	Short Term (1-2 years)	DPW,HSD, CDD
B	Update the Bicycle and Pedestrian Plan as appropriate, and ensure continued implementation of the Plan.	Short Term (1-2 years)	CDD
C	Conduct planned closing of select streets to auto traffic on occasional nights or weekends to create temporary pedestrian streets.	Short Term (1-2 years)	CDD, DPW
D	Expand the existing Parks Route Walking Paths.	Short Term (1-2 years)	HSD
E	Construct pedestrian and traffic calming improvements identified in the pedestrian obstacle study.	Long Term (5-10 years)	DPW/HSD/ CDD
	Performance Indicator	Target	
i	Increase pedestrian mode share of all trips.	N/A	

* *According to the Victoria Transport Policy Institute report,* Traffic Calming Benefits, Costs and Equity Impacts, *a resident would save approximately nearly $4 per trip for non-motorized travel during peak hours in urban areas, with smaller savings occurring during non-peak hours in urban areas and for rural travel.*

INCREASE BICYCLING

T-2.1: Increase the bicycle mode share by providing accessible, convenient, and attractive bicycle infrastructure.

Measure Description:

Approximately 5.5 miles of bike lanes currently exist in the City, compared to approximately 43.7 miles of roadway – in other words, approximately 13% of the City's street network has dedicated bicycle facilities (although a number of low-traffic residential streets also accommodate bicycle travel and connect portions of the bike lane network). The adopted West Hollywood Bicycle and Pedestrian Mobility Plan (2003) identifies an additional 11.3 miles of bike lanes and routes to build-out the current network. The lack of designated bike lanes and a complete bike network connecting to destinations outside of City borders hinder bicycling for many residents.

This measure requires that the City implement, and amend if necessary, the Bicycle and Pedestrian Plan to provide additional bike lanes and routes where gaps exist. This could include formally designating side streets as bike routes to allow bicyclists to avoid high traffic areas. Furthermore, the City will coordinate with the City of Los Angeles and City of Beverly Hills to connect West Hollywood bike routes to existing and planned routes in these cities, where feasible.

The City should pursue a multi-jurisdictional bikesharing program with regional partners such as Southern California Association of Governments (SCAG), Westside Cities Council of Governments (WSCOG), and the City of Los Angeles. Bike sharing systems provide short-term bike rental through an automated system. Similar to carsharing, bike sharing systems contain a large fleet distributed at high and medium density areas. Unlike carsharing, bike sharing systems usually allow for one-way trips and sometimes provide short-term (e.g., daily, weekly) membership options. Bike sharing increases mobility by providing an additional, flexible transportation mode. It has the potential to introduce new people to urban bicycling, reduce automobile trips, and improve livability.

	Action	Timetable	Responsibility
A	Update the Bicycle and Pedestrian Mobility Plan as appropriate.	Short Term (1-2 years)	CDD
B	Install bike lanes and routes, including improved signage and wayfinding, to complete the City's bicycle network.	Medium Term (2-5 years)	CDD
C	Require bike parking for multi-family residential or commercial developments of more than 5,000 square feet.	Short Term (1-2 years)	CDD
D	Require development projects in Transit Overlay Districts to provide bike parking and/or facilities for bike sharing programs.	Medium Term (2-5 years)	CDD
E	Collaborate with SCAG, WSCOG, and the City of Los Angeles on a bike sharing program.	Long Term (5-10 years)	CC, CDD
	Performance Indicator	**Target**	
i	Increase bicycle travel mode share in the City	N/A	

GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
High

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private artnerships; City funds

GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
Very Low

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

INCREASE BICYCLING

T-2.2: Install bike racks and bike parking in the City where bike parking infrastructure currently does not exist.

Measure Description:

Bike parking is essential to encourage bicycle ridership for commuting, shopping, and errands. The City will identify areas that currently lack appropriate levels of bicycle parking and will install the needed facilities. The City will also continue to require new development to provide adequate bicycle parking and bicycle infrastructure such as lockers and shower facilities in accordance with existing municipal code requirements.

Action		Timetable	Responsibility
A	Conduct a bicycle parking analysis in the City's commercial areas.	Short Term (1-2 years)	CDD
B	Update the Bicycle and Pedestrian Mobility Plan as appropriate, and ensure continued implementation of the Plan.	Short Term (1-2 years)	CDD
C	Install bicycle parking facilities in underserved areas.	Medium Term (2-5 years)	HSD, CDD
Performance Indicator		Target	
i	Increase bicycle travel mode share in the City.	N/A	

INCREASE TRANSIT

T-3.1: Support efforts to build the Metro Westside (Red Line) subway extension and lobby for a West Hollywood alignment.

Measure Description:

Metro has identified three potential subway stations that could serve West Hollywood if the Metro subway is extended to West Hollywood: Santa Monica Boulevard and Fairfax Avenue, Santa Monica Boulevard and La Brea Avenue, and Santa Monica Boulevard near San Vicente Boulevard. All areas are planned for transit-oriented development. In addition, a potential subway stop is also being studied near Cedars-Sinai Hospital and the Beverly Center, just outside the City boundary.

City lobbyists currently identify local, state and federal legislation and administration policies and funding proposals that address transportation mitigation efforts on the westside of the Los Angeles region, including within the City of West Hollywood, and specifically those that address the Metro Westside subway extension. Furthermore, City lobbyists will continue to advocate for supporting legislation and projects at the local, state and federal level in coalition with the City's regional partners, SCAG and the Westside Cities Council of Governments.

	Action	Timetable	Responsibility
A	Continue to lobby local, state, and federal officials for the Metro Westside subway extension.	Short Term (1-2 years)	CDD, CC

GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
Very Low

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
City funds

GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
High

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

INCREASE TRANSIT

T-3.2: Expand locally-managed transportation services and provide education on public transportation options.

Measure Description:

The City provides community outreach and publicity about the City's transit services. New transit brochures are widely distributed and new signage is installed at transit stops. Additional outreach on local transit services will include providing an overview of all the transit programs funded by the City. A feature story on the City's cable news show and a segment of the program "Senior Buzz" could be devoted to an overview of transit services. The Senior Center's quarterly newsletter and the City's newsletter should feature all of the City's transit programs and an interview with a resident who is a frequent transit user. Transit information should be included in gift bags distributed at the Kid's Fair and the Senior Health Fair. The City will also discuss options for transit service outreach to business and visitors with the Chamber of Commerce and the Convention and Visitor's Bureau.

Currently, locally managed transit service largely serves seniors and people with disabilities. Additional vans can be added to the service and routes can be modified so that additional target users can be served. This could include an expansion into nighttime hours to reduce congestion and associated effects on Sunset Boulevard.

Action		Timetable	Responsibility
A	Provide public information on locally-managed transportation services and public transit options (e.g., Metro, Dash, CityLine).	Short Term (1-2 years)	CDD, HSD, PIO
B	Work with employers to make bus information available to employees.	Short Term (1-2 Years)	CDD, CMD
C	Expand locally-managed transportation service hours and route coverage.	Long Term (5-10 years)	CDD

IMPROVE TRANSIT

T-3.3: Conduct a public transit gap study that analyzes strategies to increase transit use within the City and identify funding sources for transit improvements.

Measure Description:

The City will work with Metro to conduct a public transit gap analysis to evaluate ways to increase transit use. The study will identify existing transit conditions and document deficiencies and improvement opportunities. The study will provide the City and Metro with information needed to refine future transit and public outreach programs. As part of this study, providing incentives for discretionary transit riders will also be explored.

Additionally, the City will study the feasibility of dedicated rush hour bus lanes along major roadways in West Hollywood, such as Santa Monica Boulevard, Sunset Boulevard, La Brea Avenue, and Fairfax Avenue.

	Action	Timetable	Responsibility
A	Conduct a public transit gap study in partnership with Metro.	Medium Term (2-5 years)	CDD
B	Conduct a feasibility study for a street car line along Santa Monica Boulevard from La Brea Avenue to Doheny Drive.	Medium Term (2-5 years)	CMD, CDD
C	Work with Metro to plan a free monthly transit day, during which West Hollywood residents can ride Metro for free.	Medium Term (2-5 years)	CDD
D	Determine the feasibility of dedicated rush hour bus lanes along major roadways. Coordinate feasibility analysis with the Cities of Beverly Hills and Los Angeles.	Medium Term (2-5 years)	DPW, CDD

GHG Reduction Potential:
Not quantified individually (Included in total strategy reduction)

Community Co-Benefits:

Cost to City:
Medium

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
High

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

IMPROVE TRANSIT

T-3.4: Consult with Metro to provide bus stops with convenient bicycle and pedestrian access and essential improvements such as shelters, route information, benches, and lighting.

Measure Description:

Improving the comfort, accessibility and convenience of transit stations can encourage higher levels of transit use. The City will work with Metro to continue to enhance shade, weather protection, seating, lighting, and route information at transit stops in the City.

The City will also work with Metro to evaluate the potential for providing real-time bus arrival information at West Hollywood transit stops. Major stations would have time of arrival display boards. Riders at minor bus stops could access time of arrival information on cellular phones.

	Action	Timetable	Responsibility
A	Consult with Metro to ensure that bus stops provide shade, weather protection, seating, lighting, route information, and real time information.	Medium Term (2-5 years)	CDD, DPW
	Performance Indicator	**Target**	
i	Percentage of bus stops with improvements including shade, weather protection, seating, lighting, route information, and real time information.	60% by 2020 80% by 2035	

REDUCE DRIVING

T-4.1: Enhance ride-share infrastructure to facilitate community participation.

Measure Description:

The City will work with SCAG and other agencies to facilitate ridesharing opportunities, including carpooling and vanpooling. Specifically the City will work with partners to upgrade ride-matching systems to use current technologies (e.g., cell phone-enabled ridematch applications), and develop a ridematch social networking website; online electronic payment options; and rideshare stations that provide covered shelter, lighting, and secured bicycle parking.

Action		Timetable	Responsibility
A	Work with SCAG to develop a plan and schedule to update ride-match systems to more advanced technologies.	Short Term (1-2 years)	CDD, CC
B	Work with SCAG to encourage employers to create rideshare databases for their employees and employees of adjacent businesses.	Short Term (1-2 years)	CDD, CC
C	Identify locations for community ride-share stations and develop appropriate infrastructure.	Medium Term (2-5 years)	CDD, DPW
Performance Indicator		Target	
i	Increase rideshare mode for commute trips.	N/A	

GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
Low to High

Private Cost:
None

Private Savings:
Low to High

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
Very Low to Low

Private Cost:
None

Private Savings:
Low to High

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

REDUCE DRIVING

T-4.2: Pursue a car sharing program with car-share providers and regional partners including the City of Los Angeles, SCAG, and the Westside Cities Council of Governments.

Measure Description:

Car sharing programs offer viable alternatives to automobile ownership and help encourage the use of alternative travel modes. The City will work with existing car-share providers to expand services and car pickup and drop-off locations in the City. The City will coordinate with SCAG, the City of Los Angeles, and the Westside Cities Council of Governments to expand car sharing opportunities in the Los Angeles basin.

	Action	Timetable	Responsibility
A	Collaborate with car share companies to expand car sharing in West Hollywood.	Medium Term (2-5 years)	CDD
B	Offer reduced parking requirements for new development projects that provide dedicated car-share facilities.	Short Term (1-2 years)	CDD
C	Collaborate with regional partners to expand car sharing.	Medium Term (2-5 years)	CDD

REDUCE DRIVING

T-4.3: Assess and implement parking strategies in commercial corridors and in Transit Overlay Districts.

Measure Description:

Parking policies can affect both the quality and feasibility of mixed-use and transit-oriented development (TOD) projects. The cost of parking in TOD projects can be very high. The average cost for a structured parking space is $16,842 in the Los Angeles area (Victoria Transport Policy Institute 2010). Excessive parking requirements drive up the cost of development and housing and undermine the use of other travel modes — especially walking and transit — even in areas with high-quality transit and pedestrian amenities provided at considerable public expense. The City will evaluate and revise current parking requirements in commercial corridors and the Transit Overlay Districts to better accommodate transit-supportive development. The City will also evaluate shared parking strategies to enable higher density/intensity development in appropriate areas. As part of the TDM program, the City will require provision of a transit subsidy for every multi-family residential unit and/or commercial space in new development projects, tied to the lifetime of the residential units and/or commercial space.

Reduced parking requirements, combined with increased accessibility to alternative modes of transportation, will reduce vehicle miles traveled and emissions, create more attractive streets, reduce development costs, and reduce the amount of impervious pavement (which in turn decreases stormwater runoff and mitigates the urban heat island effect).

	Action	Timetable	Responsibility
A	Amend the Zoning Code to reduce parking requirements for new development in the commercial corridors and the Transit Overlay District.	Medium Term (2-5 years)	CDD
B	Evaluate potential for shared parking strategies in the commercial corridors and the Transit Overlay District.	Medium Term (2-5 years)	CDD, DPW
C	Implement parking pricing strategies in the commercial corridors and the Transit Overlay District.	Medium Term (2-5 years)	DPW
D	Amend the Zoning Code to establish parking maximums for new development projects in the Transit Overlay District.	Medium Term (2-5 years)	CDD
E	Require developers of new multifamily residential and commercial development located along commercial corridors and in TOD zones to unbundle parking and eliminate the assignment of specific stalls to specific occupant	Short Term (1-2 years)	CDD
F	Require developers and/or property management to provide a 50% transit subsidy for all employees/residents for the 20-year lifetime of the building for all new multi-family residential and commercial development in the commercial corridors and transit overlay areas.	Medium Term (2-5 years)	CDD

GHG Reduction Potential:
Not quantified individually (Included in total strategy reductions)

Community Co-Benefits:

Cost to City:
Low to Medium

Private Cost:
None

Private Savings:
High

Potential Funding Sources:
City funds

ENERGY USE AND EFFICIENCY

West Hollywood has a substantial opportunity to reduce communitywide GHG emissions related to energy use in residential and commercial buildings. Energy used in homes and businesses (for heating, cooling, lighting, and to power appliances) makes up a substantial portion of the community's GHG emissions. Residential energy use comprises 12% of total GHG emissions, whereas non-residential energy use comprises 20% of GHG emissions in West Hollywood.

Compared to other California jurisdictions, West Hollywood is built out, and a substantial number of residents work in adjacent cities. The potential to achieve a high level of GHG reductions from land use and transportation changes is somewhat limited. However, the majority of the City's commercial buildings and homes were built before California's Title 24 energy efficiency standards took effect. Retrofitting commercial buildings and homes to meet current energy efficiency standards offers great potential to achieve emission reductions, especially compared with other strategies within the CAP.

Emissions produced due to building energy use vary depending on how the energy is generated, and the type of energy used (i.e., electricity or natural gas). Most energy-related GHG emissions are created by burning fossil fuels. Although natural gas is a cleaner fuel than electricity generated at a coal-fired power plant, both contribute to GHG emissions. A better option would seek energy produced from renewable sources, which have negligible GHG emissions.

GHG Reduction Potential

84,750 MT CO_2e
30.6% of total GHG reductions

REDUCED ENERGY USE

E-1.1: Develop a comprehensive outreach program to facilitate voluntary residential and commercial building energy efficiency improvements.

Measure Description:

Energy efficiency improvements to residential and commercial structures can reduce energy bills and GHG emissions. Rental properties represent over 75% of the housing stock in West Hollywood. The City will partner with Southern California Edison (SCE) and community organizations to conduct public education and outreach campaigns that encourage residents and businesses to voluntarily complete energy efficiency improvements within their homes and businesses and to take advantage of the low-cost energy efficiency financing program described in Measure E-1.2.

As part of the outreach program, the City will enhance its website by linking to information on existing energy efficiency rebates and other financial incentives. SCE provides numerous incentives to residents and businesses for energy efficiency improvements. The website could also contain local case studies of homes and businesses that have completed cost effective energy efficiency improvements.

Additionally, the City will partner with community non-profits to provide residents and businesses with free home energy audits and free installation of basic energy and water efficiency improvements. The City will provide these organizations with technical assistance to ensure that the programs effectively reach a large number of households and businesses in the City.

	Action	Timetable	Responsibility
A	Work with Southern California Edison and community organizations to develop energy efficiency outreach programs for homes and businesses.	Short Term (1-2 years)	CDD, PIO, DPW
B	Develop and maintain a website linking to information about energy efficiency rebates, incentives, and case studies.	Short Term (1-2 years)	CDD
	Performance Indicator	**Target**	
i	Percentage of rental properties with energy efficiency improvements since 2008.	20% by 2020 40% by 2035	
ii	Percentage of non-residential properties with energy efficiency improvements since 2008.	20% by 2020 40% by 2035	

GHG Reduction Potential:
11,580 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
Low

Private Cost:
Low to High

Private Savings:
Very Low to Low

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

GHG Reduction Potential:
Not quantified (Included in E-1.1)

Community Co-Benefits:

Cost to City:
Very Low to High (depending on finance program)

Private Cost:
None

Private Savings:
Low to High (depending on finance program)

Potential Funding Sources:
Public-private partnerships; City funds

REDUCE ENERGY USE

E-1.2: Develop a comprehensive residential renewable energy program that provides incentives, outreach, financing, and other forms of assistance.

Measure Description:

The up-front costs of energy efficiency improvements, such as solar hot water and solar photovoltaic systems, can be a considerable barrier for many homeowners. West Hollywood, in partnership with other entities, will provide a series of cost-effective financing options to reduce this burden. Financing options could include, but are not limited to, on-bill financing, energy efficient mortgages (cost of energy efficiency improvements are added to a mortgage loan), or revolving loans from bond sales. The City will evaluate various financing products that would encourage property owners to invest in energy efficiency upgrades in existing homes.

The structure of the potential programs and products varies greatly. On-bill financing, low interest loans, and energy-efficient mortgages establish a lender/borrower relationship in which the City, utility, or private lender loans the building owner money to pay for upgrades, which is paid back over time. The cost (or payback) to the City depends on how much it subsidizes interest rates. In the case of the bond, the City would administer a revolving loan fund with the bond proceeds, pursuant to provisions of Assembly Bill (AB) 811.

The City could also participate in the CaliforniaFIRST property assessed clean energy (PACE) program, as a means to help facilitate program initiation and administration. The City will develop a comprehensive outreach program to maximize community participation in renewable energy generation. The City has already streamlined the permitting process and eliminated permit fees for solar system installation.

	Action	Timetable	Responsibility
A	Evaluate financing programs, including AB 811, that are being developed by regional /state agencies and select the appropriate programs to fund residential investment in renewable energy.	Short Term (1-2 years)	CDD, FIN, CMD
B	Develop capacity to administer selected energy efficiency financing programs within the City.	Medium Term (2-5 years)	CC, DPW, CDD
C	Develop a comprehensive outreach program to maximize participation in energy efficiency/renewable energy programs.	Medium Term (2-5 years)	CDD, PIO, DPW

REDUCE ENERGY USE

E-1.3: Work with Southern California Edison to accelerate smart grid integration into the community.

Measure Description:

The smart grid is an emerging energy management system, which combines information technology with renewable energy to improve how electricity is generated, delivered, and consumed. The smart grid will reduce energy demand, improve integration of distributed energy production, and increase the efficiency of electricity transmission and distribution. These changes will help residents and businesses save energy, and can reduce GHG emissions associated with energy production.

West Hollywood will work with Southern California Edison and other neighboring cities to encourage full implementation of smart grid technologies.

Beginning in 2009, SCE plans to replace about 5 million existing traditional electric meters with new "smart" electricity meters. The new meters use a two-way communication system that will provide customers with:

- Access to detailed energy use and cost information.
- New dynamic pricing programs.
- The ability to program home appliances and devices to respond to energy use preferences based on cost, comfort and convenience.

However, the value of the smart grid does not end at the meter; its full value is realized when it extends into homes and businesses. The City and its partners will, therefore, promote the use of smart appliances in homes and businesses through outreach and incentives. The City will also require smart grid-compatible major appliances (e.g., heating, ventilation, air conditioning) in new construction when technologies are available.

While full integration of the smart grid will take time to realize, energy analysts estimate that it can ultimately reduce electricity-related GHG emissions by between four and 30% below current levels (CISCO 2008).

	Action	Timetable	Responsibility
A	Partner with SCE to develop a community smart grid integration plan.	Medium Term (2-5 years)	CMD
B	Develop an outreach program that informs property owners and businesses about smart grid and smart appliance technologies.	Medium Term (2-5 years)	CDD, DPW, PIO
C	Lobby SCE to expand smart-grid program to include West Hollywood.	Short Term (1-2 years)	CMD
D	Update the Green Building Ordinance to require smart grid energy management and compatible heating, ventilation, air conditioning and lighting in new construction.	Medium Term (2-5 years)	CC, CDD
	Performance Indicator	**Target**	
i	Percent of existing buildings using smart meters.	60% by 2035	
ii	Percent of new buildings using smart meters.	100% by 2035	

GHG Reduction Potential:
3,610 MT CO_2e/yr.

Community Co-Benefits:

Cost to City:
Low

Private Cost:
Low

Private Savings:
Low to Medium

Potential Funding Sources:
Public-private partnerships; City funds

GHG Reduction Potential:
16,900 MT CO_2/yr

Community Co-Benefits:

Cost to City:
Medium

Private Cost:
High

Private Savings:
High

Potential Funding Sources:
State Energy Program; Public-private partnerships

REDUCE ENERGY USE

E-1.4: Develop and implement a point-of-sale residential energy conservation ordinance (RECO) and commercial energy conservation ordinance (CECO).

Measure Description:

The City will develop and implement a RECO and CECO requiring energy and water efficiency upgrades in existing housing and commercial buildings prior to the transfer of ownership to reduce the community's GHG emissions and utility bills. Exemptions will be provided for newer construction or upgraded buildings, as these buildings likely already have higher energy efficiency than older buildings, as well as for properties that have already been upgraded and are resold within 5 years.

The RECO and CECO will require specific energy and water efficiency measures to achieve a 25% efficiency improvement upon sale of the property. The ordinance will also require a 30% improvement in the water efficiency of plumbing fixtures and fixture-fittings.

Based on average residential property turnover in similar cities, as many as 55% of the City's residential units may be sold to new owners between 2010 and 2035. RECO-required improvement costs would be approximately $7,500 to $10,000 for the average single family home (as of 2009 incorporating a cost ceiling of 2% of the sales price, not to exceed $25,000). For commercial buildings, efficiency upgrades are estimated to cost between $1.00 and $3.00 per square foot, with a cost ceiling of 2% of the sales price, not to exceed $75,000. It is estimated that approximately 40% of commercial buildings would turnover by 2035.

The expense of required improvements is expected to be absorbed into the building's purchase price and the mortgage, and is usually an acceptable expense for the purchaser considering the long-term savings., Financing options described in measure E-1.2 would reduce this up-front cost to homeowners.

This would be a self-enforcing program. Minimal City resources would be dedicated to inspection or verification. The City would implement the RECO and CECO in phases. Phase 1 would consist of a mandatory audit (carried out by private-sector auditors) and voluntary improvements, extending for a period of five years. The City will develop incentives to encourage improvements identified in audits during Phase 1. Improvements identified in audits would become mandatory in Phase 2.

Action		Timetable	Responsibility
A	Adopt a RECO and CECO requiring point-of-sale energy efficiency upgrades.	Short Term (1-2 years)	CC, CDD
B	Develop a package of required improvements that achieves a 25% improvement in efficiency.	Short Term (1-2 years)	CDD
C	Work with organizations to develop a list of qualified energy and water efficiency contractors and auditors that could help homeowners comply with the ordinance.	Short Term (1–2 years)	CDD
Performance Indicator		**Target**	
i	Percentage of RECO-improved units since 2008.	22% by 2020 55% by 2035	
ii	Percentage of CECO-improved buildings since 2008.	17% by 2020 40% by 2035	

REDUCE ENERGY USE

E-1.5: Develop an energy efficient appliance upgrade program for residents and business owners to promote upgrades from inefficient appliances to new Energy Star appliances.

Measure Description:

This is one of the most critical measures recommended in the CAP. It is based on voluntary community participation to gradually upgrade home and business appliances to Energy Star models. Successful implementation of this measure relies on a robust public outreach program to increase community awareness regarding building appliance choices.

Modern technology has contributed to the development of high-quality energy efficient appliances. The Energy Star rating is an internationally recognized standard for energy efficient consumer products. By promoting Energy Star-rated home and business appliances, the City can reduce GHG emissions from lighting, refrigerators, dishwashers, clothes washers, wall air conditioning units, computers and monitors, copy machines, and exit signs.

The City will also partner with SCE, the Gas Company, and other organizations to identify funding strategies and financial incentives to support appliance replacements.

Action		Timetable	Responsibility
A	Collaborate with SCE, the Gas Company, and nonprofit agencies to develop a comprehensive outreach and financial incentives program to encourage voluntary replacement of inefficient appliances with new Energy Star appliances.	Short Term (1-2 years)	CDD, PIO, DPW
Performance Indicator		Target	
i	Detailed performance indicators and assumptions for this measure are outlined in Appendix B.	N/A	

GHG Reduction Potential:
10,230 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
Low

Private Cost:
High

Private Savings:
Low to High

Potential Funding Sources:
State Energy Program; Public-private partnerships

GHG Reduction Potential:
Not quantified
(Supports Measure E-2.2)

Community Co-Benefits:

Cost to City:
Low

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
City funds

GREEN BUILDINGS

E-2.1: Continue to fund and operate the Green Building Resource Center.

Measure Description:

On October 1, 2007, West Hollywood adopted one of the nation's first mandatory green building ordinances. The ordinance ensures that new buildings will be healthier for residents, and use energy and resources more efficiently. The City's Green Building Program establishes development standards that apply to all development, including all new residential and commercial projects, as well as remodels and tenant improvements. A key component of West Hollywood's Green Building Program is the Green Building Point System for new construction, which offers incentives for projects that achieve exemplary status across a range of sustainable indicators.

The Green Building Resource Center provides samples and information about building materials and practices that increase energy efficiency, indoor air quality and water conservation. The resource center will continue to showcase energy efficient building materials and offer public education to increase awareness of energy-efficiency materials and practices.

Additionally, the City will develop a solar energy system information center offering exhibits and information as part of the Green Building Resource Center. The City will either purchase or develop a photovoltaic system display and related materials for use by the public.

	Action	Timetable	Responsibility
A	Continue to fund and operate the Green Building Resource Center.	Short Term (1-2 years)	CDD
B	Provide public workshops and education on green building and materials and energy efficiency.	Short Term (1-2 years)	CDD
C	Develop solar energy system displays and materials.	Short Term (1-2 years)	CDD

GREEN BUILDINGS

E-2.2: Require all new construction to achieve California Building Code Tier II Energy Efficiency Standards (Section 503.1.2).

Measure Description:

The City, in coordination with the California Energy Commission, will amend its existing Green Building Ordinance to reflect the Tier II energy efficiency standards contained in Section 503.1.2 of the 2008 California Green Building Code (CGBC), as the required standards for energy efficiency for all new construction. This standard states that new construction must exceed 2007 California Energy Code requirements (by 30% over 2007 Title-24 requirements).

Using an alternative calculation method approved by the CEC, each building's energy costs and CO_2 emissions would be calculated, and compared to the standard or "budget" building. This requirement would minimize the GHG emissions associated with new development in the City.

Action		Timetable	Responsibility
A	Adopt the Tier II energy efficiency standards contained in Section 503.1.2 of the 2008 California Green Building Code as required energy efficiency standards for new construction.	Short Term (1-2 years)	CDD
Performance Indicator		Target	
i	Reduce energy use in new construction by 30% from 2008 levels.	100% by 2035	

GHG Reduction Potential:
5,610 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
Low

Private Cost:
High

Private Savings:
High

Potential Funding Sources:
City funds

GHG Reduction Potential:
Not quantified (lacks substantiation)

Community Co-Benefits:

Cost to City:
Very Low to Low

Private Cost:
High

Private Savings:
Medium

Potential Funding Sources:
Public-private partnerships; City funds

REDUCED ENERGY DEMAND

E-3.1: Require that all new construction and condominium conversions be sub-metered to allow each tenant the ability to monitor their own energy and water use.

Measure Description:

Multi-family residential buildings and multi-tenant commercial buildings typically do not have separate water, gas, and electric meters for each unit. Group meters, consequently, encourage landlords to charge a flat rate to all tenants. This flat rate reduces an individual tenant's incentives to conserve energy and water. The City will amend the Green Building Ordinance to require that all new construction and condo conversions of multi-family buildings and multi-tenant commercial buildings be sub-metered for water, gas, and electric for each unit to encourage conservation.

	Action	Timetable	Responsibility
A	Amend the City's Green Building Ordinance to require new development and condominium conversions of multi-family units and multi-tenant commercial buildings to install electricity, gas, and water meters for each unit.	Short Term (1-2 years)	CDD

REDUCED ENERGY DEMAND

E-3.2: Require the use of recycled materials for 20% of construction materials in all new construction.

Measure Description:

Building products with recycled content reduces the extraction of virgin materials, reduces solid waste generation, and supports recycling of construction and demolition waste materials. The City will amend the Green Building Ordinance to require that new development projects incorporate materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 20% of the total value of the materials in a project. Exemptions will be provided if the applicant can prove that the requirement is unattainable for the project. In these cases, the highest feasible level will be required.

Additionally, the City will provide information on its website regarding the availability of recycled building materials in construction. The program will promote use of locally available construction materials (within 500 miles).

	Action	Timetable	Responsibility
A	Amend the City's Green Building Ordinance to require the use of recycled materials for 20% of construction materials in all new construction.	Short Term (1-2 years)	CC, CDD
B	Improve the City's Green Building website with links for design and building professionals to organizations that provide information regarding the availability of recycled building materials for construction, emphasizing the availability of locally available construction materials (sourced within 500 miles).	Short Term (1-2 years)	CDD

GHG Reduction Potential:
Not quantified
(Not in inventory)

Community Co-Benefits:

Cost to City:
Medium

Private Cost:
Variable
(depending on materials)

Private Savings:
None

Potential Funding Sources:
City funds

GHG Reduction Potential:
21,840 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
Medium

Private Cost :
High

Private Savings:
High

Potential Funding Sources:
State and federal Grants; CaliforniaFIRST; Public-private partnerships; City funds

RENEWABLE ENERGY

E-3.3: Facilitate installation of solar hot water heating systems on commercial and multi-family buildings.

Measure Description:

Commercial-scale solar water heating (SWH) systems are designed to provide large quantities of hot water to commercial and multi-family buildings using solar energy. A typical system includes roof- or wall-mounted solar collectors that work along with a pump, heat exchanger, and one or more large storage tanks. SWH systems can reduce the amount of natural gas or electricity used to heat water in conventional systems and thereby reduce GHG emissions.

In January 2010, the California Public Utility Commission approved a decision that creates a new statewide program providing $358.3 million in financial incentives and market development funding for SWH and other solar thermal technologies. The California Solar Initiative's new Thermal Program sets aside $305.8 million for direct financial incentives for consumers of SWH systems and another $31.25 million for market facilitation, with the balance going to program administration, inspections, measurement, and evaluation.

Commercial and multi-family customers who install certified SWH systems will qualify for incentives of up to $500,000 to offset capital costs, beginning on June 1, 2010. Incentive levels will decline in four stages as the solar thermal market grows. Actual incentive payments will be determined by the thermal output of the system.

The City, in partnership with utilities and other organizations, will take an active role in promoting and facilitating the installation of SWH systems on commercial and multi-family buildings in the community. The City will create an outreach program aimed at maximizing the number of businesses that invest in SWH systems. The City will also streamline building permit processes for SWH system installation and provide permit fee waivers.

	Action	Timetable	Responsibility
A	Create an outreach program that promotes SWH systems and educates business owners about the California Solar Initiative - Thermal Program and related federal incentives.	Short Term (1-2 years)	CDD/PIO
B	Remove regulatory barriers to SWH systems installation and streamline permitting processes.	Short Term (1-2 years)	CDD
	Performance Indicator	**Target**	
i	Percentage of commercial and multi-family buildings that have installed solar hot water systems since 2008.	25% by 2020 75% by 2035	

RENEWABLE ENERGY

E-3.4: Facilitate the installation of solar photovoltaic systems on multi-family residential, commercial, and industrial buildings, and parking lots.

Measure Description:

Multi-family residential, commercial, and industrial rooftops and parking lots provide excellent opportunities for solar energy generation. Commercial and industrial facilities, as well as multi-family buildings, tend to have large, flat roofs that are often well-suited for solar photovoltaic (PV) energy generation. A rough estimate of roof area was compiled by the City and totals approximately 16.4 million square feet.

The City will work to remove or minimize any regulatory and structural barriers that inhibit the installation of solar energy systems. The City will also unite interested property owners with proven solar energy companies through public outreach methods. By partnering with solar energy companies, building owners may have PV systems installed on their roofs or parking lots with at no up-front cost. The solar energy company may retain ownership of the installed PV systems and provide maintenance and repairs over the equipment lifespan. Property owners can purchase electricity from the solar energy company through a power purchase agreement.

To maximize participation, the City will provide outreach and technical assistance to interested property owners.

	Action	Timetable	Responsibility
A	Conduct analysis of potential regulatory, structural, and market barriers to installing photovoltaic systems on residential, commercial, and industrial buildings and parking lots.	Short Term (1-2 years)	CDD
B	Develop outreach and technical assistance programs to encourage the installation of solar photovoltaic systems.	Short Term (1-2 years)	CDD
	Performance Indicator	**Target**	
i	Percentage of estimated Citywide roof area with photovoltaic panels.	5% by 2020 12% by 2035	

GHG Reduction Potential:
14,800 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
Medium to High

Private Cost:
None

Private Savings:
Medium to High

Potential Funding Sources:
CaliforniaFIRST, Public-private partnerships; City funds

WATER USE AND EFFICIENCY

Water-related GHG emissions are mainly caused by energy used to pump, transport, heat, cool, and treat water and wastewater. In a dry climate, water demand and resulting emissions are magnified due to a relative shortage of naturally occurring water sources. Therefore, water conservation strategies have a double benefit of reducing energy demand and managing a limited resource. About 1% of the West Hollywood's communitywide emissions are related to water use.

The City will work with water purveyors (the City of Beverly Hills and Los Angeles Department of Water and Power) to identify community actions that can reduce potable water demand, minimize wastewater generation, explore viable alternative sources of water, manage stormwater runoff, and help to maintain a healthy balance in the local aquatic ecosystem.

GHG Reduction Potential

4,350 MT CO_2e
1.6% of total GHG reductions

REDUCED WATER USE

W-1.1: Reduce per capita water consumption by 30% by 2035.

Measure Description:

Reductions in water demand reduce emissions because less energy is used to pump, treat, deliver, and collect water and wastewater.

The majority of residential and commercial buildings in West Hollywood are more than 30 years old. Water fixtures and appliances have improved considerably since these units were built, and replacing antiquated equipment would result in valuable water conservation benefits. West Hollywood will partner with the City's water providers, the City of Beverly Hills and Los Angeles Department of Water and Power, to encourage voluntary water conservation in existing residential and commercial buildings and landscapes. The partnership will provide targeted outreach programs, free water efficiency audits, and rebate incentives. To improve indoor water efficiency, outreach programs will focus on upgrades to water fixtures, fixture fittings, leak repairs, and appliances (e.g., dishwashers and clothes washers).

Property owners will be encouraged to increase indoor water efficiency by 30% or greater. Outreach focused on water-efficient landscaping will build on the existing native plant list and encourage property owners to use climate-appropriate plants, efficient irrigation systems, rainwater capture, and greywater, as applicable. Property owners will be encouraged to reduce use of potable water for irrigation by at least 50%.

	Action	Timetable	Responsibility
A	Work with water utilities to expand water conservation outreach and promote existing rebate programs.	Short Term (1-2 years)	DPW
B	Update the climate-appropriate native plant list and continue to encourage residents and businesses to use low-water and low-maintenance plant materials.	Short Term (1-2 years)	CDD
C	Develop a targeted landscape irrigation outreach program for landscape professionals.	Short Term (1-2 years)	CDD
D	Increase enforcement of the Water Conservation Plan and Green Building Ordinance through an enforcement officer position, fines, and a water abuse hotline.	Short Term (1-2 years)	CC, CDD, DPW
	Performance Indicator	**Target**	
i	Percentage of households and businesses that voluntarily reduce indoor water consumption by 30% or more over 2008 levels.	15% by 2020 30% by 2035	
ii	Percentage of households and businesses that voluntarily reduce irrigation water consumption by 50% or more over 2008 levels.	10% by 2020 30% by 2035	

GHG Reduction Potential:
4,350 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
High

Private Cost:
Low to High

Private Savings:
Low to High

Potential Funding Sources:
City funds

GHG Reduction Potential:
Not quantified (Supports Measure W-1.1)

Community Co-Benefits:

Cost to City:
Very Low

Private Cost:
Low to High

Private Savings:
Low to Medium

Potential Funding Sources:
Partnerships with Private Companies; Partnerships with Organizations; City Funds

REDUCED WATER USE

W-1.2: Encourage all automated irrigation systems installed in the City to include a weather-based control system.

Measure Description:

Weather-based evapotranspiration (ET) controller irrigation systems analyze soil moisture content and irrigate only when plants need water. These systems optimize irrigation efficiency and avoid over watering. Studies demonstrate that such systems can reduce residential landscape irrigation by 16% (City of Irvine 2001).

The City will develop a program to encourage the use of ET controllers in private landscapes and publicize existing rebate programs for ET systems.

	Action	Timetable	Responsibility
A	Work with water utilities to promote evapotranspiration systems and publicize existing water provider rebate programs.	Short Term (1-2 years)	Public Works
	Performance Indicator	**Target**	
	N/A	N/A	

WASTE REDUCTION AND RECYCLING

Waste-related GHG emissions result from product consumption and disposal, and from pre-consumer commercial and industrial processes. In West Hollywood, about 1% of GHG emissions are associated with solid waste generation and disposal in landfills. Waste disposal creates emissions when organic waste (e.g., food scraps, yard clippings, paper, and wood) is buried in landfills and anaerobic digestion takes place, emitting methane, a potent GHG, as a by-product of the digestive process. Additionally, extracting and processing raw materials for consumer products, distributing them to consumers and disposing of them creates a large portion of global GHG emissions.

The City currently contracts with a private contractor to provide citywide waste collection and recycling. The City recognizes that, due to limited remaining landfill space in the Puente Hills landfill, disposing solid waste will become more expensive as communities oppose the expansion and creation of new landfills adjacent to populated areas. Presently, most waste reduction practices focus on diverting waste products from landfills through recycling strategies. However, it is also important to consider programs that reduce overall waste generation, and to first consider reuse options.

Personal choices regarding products, packaging, and consumption determine personal contributions to community waste streams. Lowering overall consumption and buying more climate-friendly, durable products with minimal packaging can reduce both waste generation and GHG emissions.

GHG Reduction Potential

3,260 MT CO_2e
1.2% of total GHG reductions

GHG Reduction Potential:
3,260 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
Medium

Private Cost:
None

Private Savings:
None

Potential Funding Sources:
State and federal grants; City funds

WASTE REDUCTION

SW-1.1: Establish a waste reduction target not to exceed 4.0 pounds per person per day.

Measure Description:

Manufacturing, distributing, and using products—as well as the disposal of the resulting waste—all result in emissions of GHGs. When waste decomposes in landfills, it produces methane, a very potent GHG. Preventing waste recycling reduces energy demand and GHGs.

Senate Bill (SB) 1016 requires that the 50% solid waste diversion requirement mandated by AB 939 be measured in terms of pounds per person per day. The Department of Resources Recycling and Recovery, or CalRecycle, set targets for per capita per day disposal rates. For residents, the target is 5.8 pounds per person per day (ppd). For employees, the target is 7.7 ppd. In 2007 and 2008, the residential per capita disposal rates in West Hollywood were 5.6 ppd and 5.2 ppd, respectively. In the same years, the employee per capita disposal rates in West Hollywood were 6.8 ppd and 6.2 ppd, respectively. West Hollywood was successful in achieving per capita disposal rates below both the resident and employee targets set by CalRecycle for both 2007 and 2008.

This measure sets a target to reduce the per capita per day waste disposal rate to 4.0 ppd in West Hollywood for residences and for employees of businesses in West Hollywood. Additionally, the City will work with the County, neighboring cities and other organizations to create a low-waste plan and provide public education regarding low-waste strategies and implementation.

Action		Timetable	Responsibility
A	Create a low-waste plan to reduce per capita per day solid waste disposal.	Medium Term (2-5 years)	Public Works
B	Provide public education programs regarding low-waste strategies and implementation.	Medium Term (2-5 years)	Public Works
Performance Indicator		**Target**	
i	Maximum per day per capita solid waste disposal rate.	4.0 ppd by 2035	

EXTENDED PRODUCER RESPONSIBILITY

SW-1.2 Work with Los Angeles County cities and other organizations to urge adoption of State and federal legislation that requires extended producer responsibility, and improves the recyclability of products and packaging.

Measure Description:

Current practice places the cost of discarding product waste and packaging on local communities. "Extended Producer Responsibility" (EPR) is a strategy that holds manufacturers accountable for their products and packaging through their entire lifecycle. Producers are then responsible for designing products to be more durable or easily recyclable, taking back spent products from consumers and either reusing or recycling them, and/or contributing to recycling infrastructure.

West Hollywood will work with other California cities to collectively urge the State and federal governments to pass legislation requiring extended producer responsibility, and improving the recyclability of products and packaging. The City will also work within the community to encourage take-back programs. Such legislation would reduce waste streams to landfills, lifecycle emissions and other environmental degradation associated with use of many consumer products.

	Action	Timetable	Responsibility
A	Develop a resolution of support to urge the state and federal governments to pass legislation requiring extended producer responsibility and improving recyclability of products and packaging.	Medium Term (2-5 years)	CC
B	Evaluate options and opportunities to extend producer responsibility for product waste at the local level. Expand opportunities for retail businesses to participate in take-back programs and grant-funded education.	Medium Term (2-5 years)	CDD, DPW, CC

GHG Reduction Potential:
Not quantified (Lacks substantiation)

Community Co-Benefits:

Cost to City:
Very Low

Private Cost:
Very Low

Private Savings:
None

Potential Funding Sources:
Public-private partnerships; City funds

GHG Reduction Potential:
Not quantified (Included in SW-1.1)

Community Co-Benefits:

Cost to City:
Medium

Private Cost:
High

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City funds

ELIMINATE WASTE

SW-1.3: Encourage the use of reusable and biodegradable materials in retail and commercial establishments.

Measure Description:

California retailers distribute more than 19 billion plastic retail carryout bags annually. Less than 5% are currently recycled (CalRecycle 2010). Since plastic bags are lightweight and easily caught in the wind, they make up a significant amount of the litter found in storm drains that lead directly to the beach and ocean. Similar to plastic bags, polystyrene food packaging is lightweight and aerodynamic, easily blown into gutters and storm drains even when properly discarded. Polystyrene is also very brittle, so when littered it quickly breaks into small pieces making cleanup difficult. Because plastic bags and polystyrene products are petroleum byproducts, reducing or eliminating plastic bags and polystyrene in the environment reduces GHGs entering the atmosphere.

This measure directs the City to create a stringent plan to enforce the City's existing polystyrene ban. The City will create a joint outreach and education program with the Chamber of Commerce and select business associations to provide information to businesses regarding the City's ban and the environmental harm created by polystyrene. The City will also work with the business community to establish a timeframe to phase out the use and sale of polystyrene products and present businesses with alternatives to polystyrene.

This measure also requires that the City adopt a plastic bag ban to reduce both waste and GHG emissions associated with the production and disposal of plastic bags.

Currently, a proposed ban on plastic bags is being reviewed for further action. The City is monitoring litigation brought forward by various business and enterprise groups against multiple cities that have attempted to ban plastic bags. Future steps toward banning plastic bags will be determined by the outcome of these legal challenges and further direction from City Council.

	Action	Timetable	Responsibility
A	Develop a plastic bag ban appropriate to the City.	Medium Term (2-5 years)	CC, CDD
B	Create an enforcement plan to increase compliance with the City's existing polystyrene ban.	Medium Term (2-5 years)	DPW
C	Create a program to promote reusable shopping bags and biodegradable food packaging containers.	Medium Term (2-5 years)	DPW

GREEN SPACE

Green space consists of a variety of places that, when integrated within an urban environment, provide valuable recreation and health services to the community. In West Hollywood, green space includes the urban forest, parks, landscaped medians and parkways, and natural stormwater-absorbing landscapes. Additional green space benefits can be provided within the City by reducing the urban heat island effect, reducing building energy use, improving stormwater and waste management, and improving public health. The measures contained within this strategy describe actions to increase green space through innovative programs to fund and incentivize green space. West Hollywood also has large expanses of roof space that provide opportunities to add more green space.

The City also recognizes trees as a valuable asset. Trees beautify neighborhoods, increase property values, reduce noise and air pollution, keep buildings cool in the summer, create privacy, and establish habitat for bird species. Importantly, the urban forest also captures and stores carbon as the trees grow. Measures in this section seek to add to West Hollywood's already well established urban forest.

GHG Reduction Potential

240 MT CO_2e
0.1% of total GHG reductions

GHG Reduction Potential:
160 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
High

Private Cost:
Low to Medium

Private Savings:
None

Potential Funding Sources:
State and federal grants; Public-private partnerships; City and utility funds

URBAN FOREST

G-1.1: Increase and enhance the City's urban forest to capture and store carbon and reduce building energy consumption.

Measure Description:

The urban forest contributes to West Hollywood's livability and attractiveness as a place to live, work and visit. Trees play a valuable role in the identity of the City and also perform important environmental functions such as removing pollutants and carbon dioxide from the air we breathe.

The City will plant additional trees and provide ongoing maintenance of public trees. The City will also create incentives to encourage property owners to plant trees on private land.

The City will encourage planting of species known to be low-maintenance, and to provide high levels of sequestration and optimal building energy reduction benefits.

	Action	Timetable	Responsibility
A	Continue to implement an urban forest management plan.	Short Term (1-2 years)	HSD
B	Develop an outreach and incentive program providing information about the benefits of West Hollywood's urban forest and encourage the planting of additional trees on private property.	Short Term (1-2 years)	HSD
C	Supplement palm trees with canopy trees where appropriate.	Medium Term (2-5 years)	HSD
	Performance Indicator	**Target**	
i	Total new trees planted by 2020.	100	
ii	Total new trees planted by 2035.	500	

GREEN ROOFS AND ROOF GARDENS

G-1.2 Establish a green roof and roof garden program to standardize, promote, and incentivize green roofs and roof gardens throughout the City.

Measure Description:

Green roofs and roof gardens are roof tops or building surfaces planted with vegetation. Green roofs reduce the urban heat island effect, sequester carbon, provide habitat, retain water during storms, beautify the City, and increase the energy efficiency of buildings. As West Hollywood is a built-out City, green roofs and roof gardens could provide a significant increase in green space. West Hollywood has abundant roof space that could be used as green roofs.

Successful green roofs require defined engineering and management processes and building codes. The Community Development Department will create a program to establish and promote green roofs throughout the City, especially in areas where roof top solar panels are impractical. Both public and private buildings will be considered. The City will continue to incentivize green roofs through the Green Building Program.

Action		Timetable	Responsibility
A	Develop a Green Roof program that standardizes and promotes green roofs. Continue to incentivize green roofs through the Green Building Program.	Medium Term (2-5 years)	CDD
B	Encourage development of green roofs by providing outreach and education activities.	Medium Term (2-5 years)	CDD,
Performance Indicator		Target	
i	Percentage of new green roofs as a percentage of total city roof space per year.	0.1%	
ii	Percentage of total green roofs by 2035.	3.0%	

GHG Reduction Potential:
80 MT CO_2e/yr

Community Co-Benefits:

Cost to City:
Medium to High

Private Cost:
High

Private Savings:
Not estimated

Potential Funding Sources:
Public-private partnerships; City funds

GHG Reduction Potential:
Not quantified (Lacks substantiation)

Community Co-Benefits:

Cost to City:
Medium to High

Private Cost:
Very Low to High (depending on fees and incentives established)

Private Savings:
Very Low to High (depending on fees and incentives established)

Potential Funding Sources:
Public-private partnerships; City funds

INCREASE GREEN SPACE

G-1.3 Establish an innovative program to increase green space throughout the City.

Measure Description:

West Hollywood has opportunities to increase green spaces, including parks, throughout the City. Additional green spaces will reduce the urban heat island effect, capture stormwater and increase water retention, and beautify the community. Increasing green space could include placing vegetated swales and/or bioretention swales in alleys, landscaping strips, parkways, bulb-outs, parking separators and other appropriate areas, as well as creating pocket parks in new development and expanding existing City parks as feasible.

	Action	Timetable	Responsibility
A	Update the Residential Parkway Guidelines to convert impermeable hardscapes to permeable softscapes using native or drought tolerant planting.	Short Term (1-2 years)	DPW, CDD
B	Create an incentive program for developers that include pocket parks, increased open space and other new open space as part of programming for new development.	Medium Term (2-5 years)	DPW, CDD
C	Implement a parks master plan to guide operations, specify improvements, and pursue expansion of parks and open spaces, including new pocket parks throughout the City.	Medium Term (2-5 years)	DPW, CDD
D	Review existing and explore new funding mechanisms for acquiring additional park land and open space.	Medium Term (2-5 years)	HSD, FIN
E	Convert unused areas within public rights-of-way, such as triangular areas next to angled parking, into permeable planted spaces.	Medium Term (2-5 years)	CDD, DPW
F	Convert Neighborhood Traffic Management Program projects such as traffic circles, bulb outs, diverters, etc. to permeable planted spaces, as feasible.	Medium Term (2-5 years)	CDD, DPW
G	Study the feasibility of adopting a parkland dedication ordinance to exact and receive parkland fees from new development, for projects not including subdivision of land and airspace.	Medium Term (2-5 years)	HSD, CDD

ADDITIONAL EMISSIONS REDUCTIONS FROM STATEWIDE LEGISLATION

Implementing the recommended measures and actions will result in a potential reduction of up to 96,220 MT CO_2e emissions. The community cannot achieve the emission reduction target of 20% to 25% below 2008 emission levels based solely upon implementation of these strategies. Therefore, the community will assume credit for a portion of the GHG emission reductions that will occur through legislation being implemented at a statewide level.

To implement AB 32, the State of California has established companion legislation that will reduce statewide generation of GHG emissions across all emissions sectors. SB 107 establishes performance standards for GHG emission reductions from electric utilities. AB 1493 establishes performance standards for GHG emission reductions from motor vehicles, while Executive Order (EO)-S-1-07 establishes performance standards for the carbon intensity of transportation fuels. At the time of CAP preparation, the City only has confidence in estimating the GHG emission reductions associated with SB 107, AB 1493, and EO-S-1-07. In the future, as the regulatory framework surrounding AB 32 grows, it may be possible to evaluate a wider range of statewide reductions.

Senate Bill 107

SB 1078 and SB 107 have established increasingly stringent renewable energy requirements for California utilities. SB 1078 required investor-owned utilities to provide at least 20% of their electricity from renewable resources by 2020. SB 107 accelerated the timeframe to take effect in 2010. Renewable energy includes wind, solar, geothermal, or any Renewable Portfolio Standard (RPS) -eligible sources. SCE, West Hollywood's electricity provider, delivered 16% of its electricity from renewable sources in 2008, and has contracts in place to deliver 20% by 2020 as required by law. At a minimum, this performance criterion would also be in effect at the CAP target year (2035). However, EO-S-14-08 would increase the RPS further to 33% by 2020. Although this order has yet to be codified, the CAP assumes 33% RPS would be achieved by 2035.

Table 3-5 provides the estimated emissions reduction effect of SB 107 and EO-S-14-08 on West Hollywood's 2035 GHG emissions.

Assembly Bill 1493

Table 3-5: GHG Emission Reductions from State Legislation

Legislation	GHG Emission Reductions from Projected 2035 Emission (MT CO_2e)
SB 107	5,490
EO-S-14-08	17,840
AB 1493	124,050
EO-S-1-07	32,850
Total	**180,230**
See Appendix A for detailed assumptions and calculations.	

AB 1493 will result in GHG emission reductions from on-road passenger motor vehicles sold in California. The emission reduction potential associated with implementation of AB 1493 vehicle emission standards would vary depending on the first regulated model year and vehicle turnover between the present fleet and the fleet in 2035.

To provide an estimate of the reasonably foreseeable GHG emission reduction potential of motor vehicle emission regulations, the GHG emission reductions associated with AB 1493 were estimated using the Air Resources Board (ARB) Pavley + Low Carbon Fuel Standard Postprocessor software (Version 1.0). It is expected that implementation of AB 1493 will reduce on-road mobile-source GHG emissions by approximately 27.41% by 2020. Table 3-5 shows the estimated GHG emission reduction potential of AB 1493 in West Hollywood.

Executive Order S-1-07

To reduce the carbon intensity of transportation fuels, ARB has developed a Low Carbon Fuel Standard (LCFS), which reduces the carbon intensity of California's transportation fuels by at least ten percent by 2020 as called for by Executive Order S-01-07.

The LCFS is a performance standard with flexible compliance mechanisms that incentivizes the development of a diverse set of clean, low-carbon transportation fuel options to reduce GHG emissions.

Table 3-5 shows the estimated GHG emission reduction potential of S-1-07 in West Hollywood.

SUMMARY

Table 3-6 summarizes the GHG reductions anticipated by implementing the quantified measures recommended in the CAP, and provides subtotals for each strategy. This level of GHG reduction can only be realized if the progress indicators and targets are achieved throughout the course of implementing the CAP.

As a whole, the measures were designed and benchmarked to specific standards to enable the City to achieve its GHG reduction target of 20 to 25% percent below 2008 levels by 2035. As proposed, the CAP exceeds this target, with a projected 25.9% reduction. The CAP includes other supporting

Table 3-6: Summary of GHG Reduction Measure Performance		
Measure Number and Title	2035 GHG Reductions (MT CO_2e/yr)	Percent Reduction
Community Leadership and Engagement (CL)		
CL-1.2: Reduced Municipal Energy Use	150	0.1%
Subtotal CL	**150**	**0.1%**
Land Use and Community Design (LU)	*Supporting*	*Supporting*
Transportation and Mobility (T) (All measures)	**3,650**	**1.3%%**
Energy Use and Efficiency (E)		
E-1.1: Voluntary Energy Efficiency Improvements	11,580	4.2%%
E-1.3: Smart Grid Technology	3,610	1.3%%
E-1.4: Residential and Commercial Energy Conservation Ordinance	16,900	6.1%%
E-1.6: Appliance Upgrades	10,230	3.7%
E-2.2: Green Building Code Tier II	5,610	2.0%
E-3.3: Commercial and Multi-Family SWH Systems	21,840	7.9%
E-3.4: Multi-Family, Commercial/Industrial Solar PV	14,800	5.4%
Subtotal E	**84,750**	**30.6%**
Water Use and Efficiency (W)		
W-1.1: Reduce Per Capita Water Use by 30%	4,350	1.6%
Subtotal W	**4,350**	**1.6%**
Waste Reduction and Recycling (SW)		
SW-1.1: 4.0 ppd Waste Reduction Target	3,260	1.2%
Subtotal SW	**3,260**	**1.2%**
Green Space (G)		
G-1.1: Increase Urban Forest	160	0.1%
G-1.2: Green Roofs and Roof Gardens	80	0.0%
Subtotal G	**240**	**0.1%**
Statewide Reductions		
SB 107: Renewable Portfolio (20% - 2020)	5,490	2.0%
EO-S-14-08: Renewable Portfolio (33% -2035)	17,840	6.5%
AB 1493: Vehicle Emission Standards	124,050	44.9%
EO-S-1-07: Low Carbon Fuel Standard	32,850	11.9%
Subtotal Statewide Reductions	**180,230**	**65.2%**
Total Reductions	**276,450**	**100%**
	25.9% from 2008 baseline	

measures that achieve GHG emission reductions, but could not be quantified, due either to a lack of substantial evidence or limitations inherent in quantifying the effect of less tangible programs and policies. For the CAP to successfully guide West Hollywood toward meeting its GHG reduction target, the City must play a prominent role in implementing the CAP's programs and policies. The public also has a role by participating in and ensuring success of the measures and actions.

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CHAPTER 4 – IMPLEMENTATION

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Overview

The City recognizes that climate change is a critical challenge. The Climate Action Plan (CAP) provides vision and guidance for communitywide climate protection efforts. To achieve GHG emission reduction targets, this vision must be translated into on-the-ground change. This chapter describes how the City of West Hollywood will implement the recommended CAP measures. The chapter contains the following three sections:

- **Measure Implementation:** Describes how City staff will implement CAP measures and related actions, and the role of progress indicators, and timetables.
- **Plan Evaluation and Evolution:** Discusses the need to evaluate, update, and amend the CAP over time, to ensure that the plan remains effective and current.
- **Funding Sources and Financing:** Describes funding sources and financing available to implement CAP measures and actions for implementing communitywide and municipal CAP measures.

Measure Implementation

Ensuring that the recommended measures translate from policy language into on-the-ground results is critical to the success of the CAP. To facilitate this, each measure described in Chapter 3 contains a table that identifies specific actions the City will carry out. The table also identifies responsible departments and establishes an implementation schedule for each action.

The second section of each table provides progress indicators and performance targets that enable staff, the City Council, and the public to track measure implementation and monitor overall progress. These tables provide interim progress indicators where possible.

Upon adoption of the CAP, the identified City departments will become responsible for implementing assigned actions. The CAP recommends that the City create a position for a sustainability manager/coordinator and support staff to oversee implementation of the CAP and sustainability programs. In order to assess the status of City efforts, CAP implementation meetings are recommended every three months. Some actions will require inter-departmental or inter-agency cooperation and appropriate partnerships will be established accordingly.

Plan Evaluation and Evolution

The CAP lays out a comprehensive, communitywide strategy to reduce greenhouse gasses (GHGs) and improve community sustainability. City staff will evaluate the CAP's performance over time and be prepared to alter or amend the plan if it is not achieving the reduction target.

Plan Evaluation

Two types of performance evaluation are important: evaluation of the CAP as a whole and evaluation of the individual component measures. Communitywide GHG emission inventories will provide the best indication of CAP effectiveness, and provide a way to reconcile actual growth with the growth projected in the General Plan update and CAP. Conducting periodic inventories allows comparison with the 2008 baseline and demonstrates ability to achieve the reduction target. The Community Development Department, Planning Division will coordinate communitywide inventories every five years beginning in 2013 to gauge the City's performance and progress in reaching the CAP's target.

While communitywide inventories will provide information about overall GHG reductions, it is also important to understand the effectiveness of the individual measures. Evaluating the emission reduction capacity, cost, and benefit of individual measures improves implementation of the CAP. Through such evaluation, the City can more vigorously promote successful measures and reevaluate or replace under-performing measures. Evaluating measure performance requires both data regarding community participation and measurement of GHG reduction capacity.

The Community Development Department, Planning Division will coordinate evaluation of measures on the same schedule as communitywide inventories, and will summarize progress toward meeting the GHG reduction target in a report to the City Council that describes:

- Estimated annual GHG reductions
- Achievement of progress indicators
- Participation rates (where applicable)
- Implementation costs
- Cost savings and payback (when feasible)
- Community co-benefits realized
- Remaining barriers to implementation

Plan Evolution

To remain relevant, the CAP must adapt and evolve over time as new information on climate change science and risk emerges, new GHG reduction technologies and innovative municipal strategies are developed, new financing options are created, and state and federal legislation advances.

It is also possible that communitywide inventories will indicate that West Hollywood is not achieving its reduction target. As part of the evaluations identified above, the City will assess the implications of new findings in the field of climate change, explore new opportunities for GHG reduction and climate adaptation, respond to changes in climate policy, and incorporate relevant changes to ensure an effective and efficient CAP.

Funding Sources and Financing

Each recommended measure is accompanied by an analysis of costs and savings, and potential funding sources, financing strategies, and partnership opportunities. This section describes potential funding sources and financing that West Hollywood could pursue to offset the financial burden of implementing the CAP.

The spectrum of public and private funding options for recommended measures is ever-evolving. This section outlines viable funding options that are current to the CAP, but will eventually become out of date. However, there are general sources of funding that provide the most up-to-date information possible, including:

- U. S. Department of Energy (DOE)
- California Energy Commission (CEC)
- California Infrastructure and Economic Development Bank
- Los Angeles County Metropolitan Transportation Authority
- Southern California Association of Governments
- Southern California Edison

Costs and Savings

The City is not the only entity bearing financial responsibility for implementing for CAP measures. There will be a private cost borne by residents and businesses for certain measures. In recognition of this, a costs and savings analysis was performed for each measure to evaluate the cost to the City, as well as potential costs and savings to residents, businesses, or property owners. A summary of this analysis can be found for each measure recommended in Chapter 3. Background information underlying anticipated costs and savings is provided in Appendix C.

The distribution of costs over time varies among the recommended measures. Some measures require only funding from the City or other public entities, whereas others require that residents and businesses contribute. In nearly all measures that require some investment by residents or business owners, there are substantial long-term savings that will allow recuperation of initial investments. Other co-benefits such as improved air quality or public spaces are also anticipated. Some measures require little or no private investment, but have potential to generate long-term savings for residents or business owners.

Funding Strategy

Interagency collaboration is critical to success. Strategic public funding by the City, regional government agencies, and the State for capital projects, incentives, outreach/education, and new legislation will be required to achieve CAP objectives. To decrease costs and improve the plan's efficiency, actions should be pursued concurrently whenever possible.

Funding sources have not been identified for all actions; however, numerous federal, State, and regional grants are available. Additionally, West Hollywood should partner with nearby cities and jurisdictions to administer joint programs when feasible. As many businesses in the Los Angeles area are leaders in resource efficiency, renewable energy, and green infrastructure, many public-private partnership opportunities exist that can decrease implementation costs. Many of the measures and

actions have potential to be self-financing if properly designed and implemented.

State and Regional Grants

Many State and regional grant programs are available to fund transportation and infrastructure improvements. The programs listed below represent the current status of the most relevant of these programs. The City should evaluate the current status of these programs before seeking funding, as availability and application processes are routinely updated.

California FIRST: Property-Assessed Clean Energy (PACE)

The CaliforniaFIRST Program is a property-assessed clean energy (PACE) finance program enabled through AB 811. The CaliforniaFIRST Program permits property owners within participating regions to finance the installation of energy and water improvements within their home or business and payback the amount as a line item on their property tax bill. This program allows land-secured loans for homeowners and businesses who install energy-efficiency projects and clean-energy generation systems to be paid back through assessments on individual property tax bills. If the property is sold, the outstanding loan balance is taken over by the new owner, allowing property owners to avoid up-front installation costs, while at the same time requiring little or no investment of local government general funds.

The CaliforniaFIRST Program is sponsored by the California Statewide Communities Development Authority (California Communities), an association of counties and cities in partnership with Renewable Funding and the Royal Bank of Canada Capital Markets. Following a successful pilot, California Communities intends to extend CaliforniaFIRST to include all interested counties and cities.

Recent legislation, AB 474, expanded the program's reach to include the financing of water efficiency projects. Eligible projects under the CaliforniaFIRST Program may include, but are not limited to: air sealing, wall and roof insulation, energy-efficient windows, tankless water heaters, solar photovoltaics, and low-flow toilets.

California Energy Commission Energy Efficiency Financing

The California Energy Commission (CEC) offers low-interest loans for public institutions to finance energy-efficient projects and programs. Interest rates are currently at between 1 and 3%. Projects with proven energy and/or capacity savings are eligible, provided they meet the eligibility requirements for Energy Conservation Assistance Account (ECAA) loans. Examples of projects include:

- Lighting systems
- Pumps and motors
- Light emitting diode (LED) streetlights and traffic signals
- Automated energy management systems/controls
- Building insulation
- Renewable energy generation and combined heat and power projects
- Heating and air conditioning modifications
- Wastewater treatment equipment

At the time of this writing, the CEC Energy Efficiency Financing program is closed due to oversubscription of funds. No date has been established for reinstituting the program.

California Comprehensive Residential Building Retrofit Program

The California Comprehensive Residential Building Retrofit Program is a program under the State Energy Program (SEP) administered by the CEC to create jobs and stimulate the economy through a comprehensive program to implement energy retrofits in existing residential buildings. The Program focuses on deploying re-trained construction workers and contractors, and youth entering the job market to improve the energy efficiency and comfort of California's existing housing, creating a sustainable energy workforce in the process.

Public-Private Partnerships

The Los Angeles area is home to numerous private companies who provide renewable energy or green infrastructure. The success of the CAP depends in part on collaboration between these businesses and the City and public. Southern California Edison administers

numerous energy efficiency programs that the City can leverage and help advertise to residents. Solar companies will also be an important asset to the CAP, as the advent of the Power Purchase Agreement enables businesses, residents, and the City to install solar panels and access solar power at no cost. Partnering with these businesses, as well as new businesses, will enable the City to save money and to provide the community with green infrastructure.

Power Purchase Agreements

Renewable energy has become increasingly more accessible and cost-effective due to Power Purchase Agreements (PPAs). In a PPA, a private company or third party installs a renewable energy technology, often solar panels, at no cost to the consumer and maintains ownership of the installed panels, selling customers the power produced on a per kilowatt-hour basis at a contractually-established rate. The rate is lower than what customers pay their utility today, and increases at a fixed annual percentage (usually 2.5 to 4.0 %) which is typically lower than utility rate escalation. In addition to installing the panels, the third party monitors and maintains the systems to ensure functionality. The contract period for a PPA is typically 15 years, at which point the third party will either uninstall the panels or sign a new agreement with the building owner. These agreements are ideal for demonstration projects implemented by the City and residents or businesses.

Energy Service Performance Contracts

Energy service performance contracts are a common way to provide financing for equipment necessary to implement energy efficiency improvements. An energy service performance contract would be an agreement between West Hollywood and an energy service company. The energy service company would implement a renewable energy or energy efficiency program and guarantee that the energy savings will meet or exceed annual payments to cover all project costs. Typical projects include:

- Lighting
- Heating, ventilation and air conditioning (HVAC)
- Control systems
- Building envelope improvements (e.g., insulation)
- Cogeneration and combined heat and power
- Demand response
- Renewables and biomass
- Water and sewer (metering and use reduction)
- Sustainable materials and operations

Energy Savings Performance Contracting

Under an energy savings performance contract, an energy services company guarantees the amount of energy saved, and further guarantees that the value of that energy is sufficient to make the debt service payments as long as the price of energy does not fall below a stipulated price floor. Typically, an energy savings performance contract would have a simple payback of 10 years or less to allow for the cost of money and other fees to be included in the overall project payback. Lending institutions often look for less than 15 years including all fees.

Typical projects include:

- Energy management systems
- Interior and exterior lighting
- Boiler replacement/repair of steam systems
- High-efficiency HVAC systems
- LED traffic systems
- Wastewater treatment plant pumps and motors

On-Bill Financing

By partnering with Southern California Edison (SCE), West Hollywood could facilitate the repayment of loans for efficiency upgrades on utility bills. SCE is in the process of implementing a pilot on-bill financing program for small businesses.

Upgrades would be selected by the building owner (in coordination with SCE) such that the efficiency savings would pay for the investment over a fixed period of time. Customers would share monthly energy efficiency savings with the utility until the loan is paid back, at which point all savings would be reflected in lower monthly bills.

Energy Efficiency Mortgages

Energy Efficiency Mortgages provide owners additional financing (whether at time-of-sale or upon refinancing) for energy efficiency improvements at discounted interest rates. Energy efficiency upgrades could be chosen that would allow owners to realize a

net monthly savings. The goal is to provide capital for energy efficiency upgrades at a discounted interest rate.

The Federal Housing Administration (FHA) offers an Energy Efficient Mortgage Loan program that helps current or potential homeowners lower their utility bills by enabling them to incorporate the cost of adding energy-efficient improvements into their new home or existing housing.

Partnerships with Other Jurisdictions and Organizations

Partnering with neighboring jurisdictions is another key implementation strategy West Hollywood can undertake to support the CAP. Various jurisdictions within Los Angeles County could serve as potential partners in implementing the CAP strategies.

Self-Financing Strategies

CAP measures include incentives, as well as regulations or fees, to encourage change in communitywide transportation, energy and water use, and solid waste disposal habits. It is important that the fees established in the CAP be self-financing. The money raised through the fees would then be used to implement the CAP measures determined to provide the best mitigation results. West Hollywood will actively explore opportunities to establish programs that are self-financing, and thus sustainable over the long term.

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APPENDIX A: GREENHOUSE GAS EMISSIONS INVENTORY AND PROJECTIONS

APPENDIX A: GREENHOUSE GAS EMISSIONS INVENTORY AND PROJECTIONS

This appendix summarizes the methodologies and assumptions contained within the greenhouse gas emission inventory and projections.

INTRODUCTION

The purpose of a greenhouse gas (GHG) emissions inventory is to identify sources and levels of GHG emissions to enable policy makers to implement cost-effective GHG-reduction strategies in policy areas over which they have operational or discretionary control.

AECOM has developed a GHG emissions inventory (inventory) for communitywide GHG emission sources for the 2008 base year for the City of West Hollywood. This inventory will be used to support the Climate Action Plan (CAP).

An emissions "sector" is a distinct subset of a market, society, industry, or economy, whose components share similar characteristics. With respect to GHG inventories, sectors can be thought of as public or private, with associated subsectors, although the Intergovernmental Panel on Climate Change (IPCC) defines sectors that cut across public and private activity, such as energy, industrial processes, and waste. For purposes of the GHG inventory and projections, the public and private sectors are separated and further broken down into categories of energy use (residential/commercial/industrial electricity and natural gas), transportation (on-road mobile sources), waste, and water (technically a subset of the energy sector).

The 2008 inventory was compiled for the following emission sectors: residential and nonresidential (i.e. commercial and industrial) electricity and natural gas use (i.e., energy use), transportation, solid waste, water use, and wastewater treatment. Government-related GHG emission sources, which include government buildings, vehicle fleets, solid waste, streetlights, and other government-owned/operated facilities can be considered a subset of the communitywide emissions inventory.

AECOM also prepared communitywide GHG emission projections for 2020 and 2035 under a business-as-usual scenario (i.e., a scenario without the GHG reduction measures that will become part of the CAP). There is currently no agency-adopted or recommended protocol for preparing communitywide GHG emissions inventories. The field of practice, and available tools and methods continue to evolve in the absence of standardized guidance. This affords the City considerable flexibility in establishing a defensible approach to estimating GHG emissions that reflects local conditions and priorities. The California Air Resources Board (ARB) has developed the Local Government Operations Protocol (LGOP) in partnership with the California Climate Action Registry (CCAR), The Climate Registry (TCR), and Local Governments for Sustainability (ICLEI) to address municipal emissions. The LGOP is designed to provide a standardized set of guidelines to assist local governments in quantifying and reporting GHG emissions associated with their government operations (ARB 2008).

A summary of the baseline (2008) communitywide and municipal GHG emissions, 2020 and 2035 projections, and calculation methodologies employed are discussed below.

COMMUNITYWIDE GREENHOUSE GAS EMISSIONS INVENTORY

Overview

The inventory includes GHG emissions associated with energy use (i.e., electricity and natural gas) for residential and nonresidential land uses, mobile-source emissions associated with on-road vehicles, solid waste disposal, wastewater treatment, and water consumption. The inventory also includes municipal emissions as a subset of the total communitywide emissions.

Analysis

Emission Factors

An emission factor is a representative constant that relates the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant (EPA 2010). Several reputable sources of information can be used to gather emission factor information.

Sources of GHG emission factors used in preparing the communitywide inventory include:

- ARB: On-Road Mobile-Source Emission Factor Model (EMFAC2007), Version 2.3, 2006.
- The California Climate Action Registry (CCAR): General Reporting Protocol, Version 3.1, 2009.
- Intergovernmental Panel on Climate Change: IPCC Guidelines for National Greenhouse Gas Inventories, 2006.
- Southern California Edison (SCE) Annual 2007 Entity Emissions.
- U.S. Environmental Protection Agency (EPA): Waste Reduction Model (WARM), 2009.

These emission factors likely represent GHG emissions from activities occurring in West Hollywood. Transportation data from the West Hollywood travel demand model were used in conjunction with EMFAC2007 to develop on-road mobile-source GHG emissions.

Demographic Data

GHG emission projections for certain sectors were calculated using anticipated development levels and resulting population growth in the city. 2008 population data was obtained from the California Department of Finance and 2035 population was estimated based on the projected number of households anticipated within the General Plan Update. 2020 population was linearly interpolated using the 2008 and 2035 population data. Growth rates from the U.S. Department of Energy – Energy Information Administration were also used (DOE 2010) to project electricity and natural gas consumption.

Consumption Data

The inventory was prepared using consumption and generation data from the following sources:

- Southern California Gas Company (SCG) for residential and nonresidential natural gas consumption.
- SCE for residential and nonresidential electricity consumption.
- City of West Hollywood for waste generation and characterization.
- California Department of Resources, Recycling, and Recovery (CalRecycle – formerly known as the California Integrated Waste Management Board [CIWMB]) for waste characterization.
- City of Los Angeles for wastewater.

- Los Angeles Department of Water and Power (LADWP), City of Beverly Hills, and the California Energy Commission (CEC), California Energy - Water Relationship Staff Report (CEC-700-2005-011-SF) for water consumption.

Each of these sources is directly applicable to the inventory.

Methodology

Communitywide and municipal 2008 GHG emissions were calculated using a "bottom-up" approach, which involves multiplication of an emission factor for a given process by a consumption or "activity" rate for that process. This approach ensures the highest level of control over the quality of the data used to generate the emissions inventory.

Table 1 and Exhibit 1 summarize the magnitude and relative contribution of communitywide emissions from each sector in 2008, 2020, and 2035. Supplemental tables supporting the emission calculations are provided in Appendix A.

GHG EMISSION SECTORS

Each GHG emissions sector is discussed in the following sections.

Residential and Nonresidential Energy

Electricity use data for residential and nonresidential land uses were obtained from SCE, and natural gas use data were obtained from SCG. Residential and nonresidential electricity-related GHG emissions and projections were calculated using bottom-up methods with SCE emission factors. Electricity demand for the year 2008 from the *Electricity Use Report for City of West Hollywood*, prepared by SCE, was used in conjunction with SCE's emission factors to estimate GHG emissions associated with electricity use (SCE 2009). SCG's natural gas consumption data were used with CCAR emission factors to estimate current GHG emissions. Future projections were based on electricity and natural gas consumption growth rates from the U.S. Department of Energy's Energy Information Administration (EIA 2010, Pacific Region).

Table 1: West Hollywood 2008, 2020, and 2035 Communitywide GHG Emissions

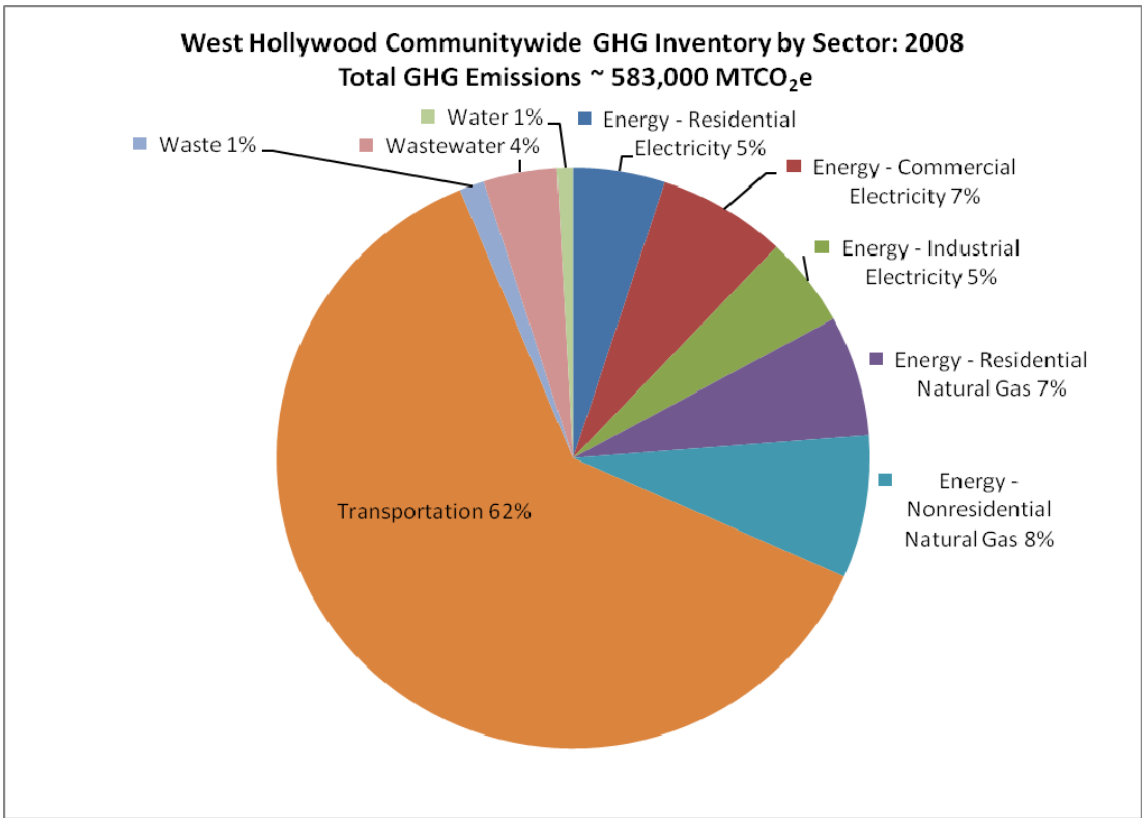
	2008 Inventory Emissions		2020 Inventory Emissions		2035 Inventory Emissions	
Community Sector	**MT CO_2e**	**Percent**	**MT CO_2e**	**Percent**	**MT CO_2e**	**Percent**
Residential Electricity Use	29,086	5%	31,243	5%	34,256	5%
Commercial Electricity Use	39,451	7%	42,977	7%	49,831	7%
Industrial Electricity Use	27,908	5%	28,071	4%	31,210	4%
Residential Natural Gas Use	41,292	7%	46,276	7%	49,825	7%
Nonresidential Natural Gas Use	48,838	8%	44,980	7%	46,612	7%
On-road Mobile-Sources	361,350	62%	412,450	64%	452,600	64%
Solid Waste	8,543	1%	9,267	1%	10,172	1%
Wastewater Treatment	20,981	4%	22,768	4%	24,974	4%
Water Use	5,764	1%	8,200	1%	8,971	1%
Total	**583,213**	**100%**	**646,232**	**100%**	**708,451**	**100%**
Per Capita (MT/person)[1]	**15.62**		**16.00**		**16.03**	

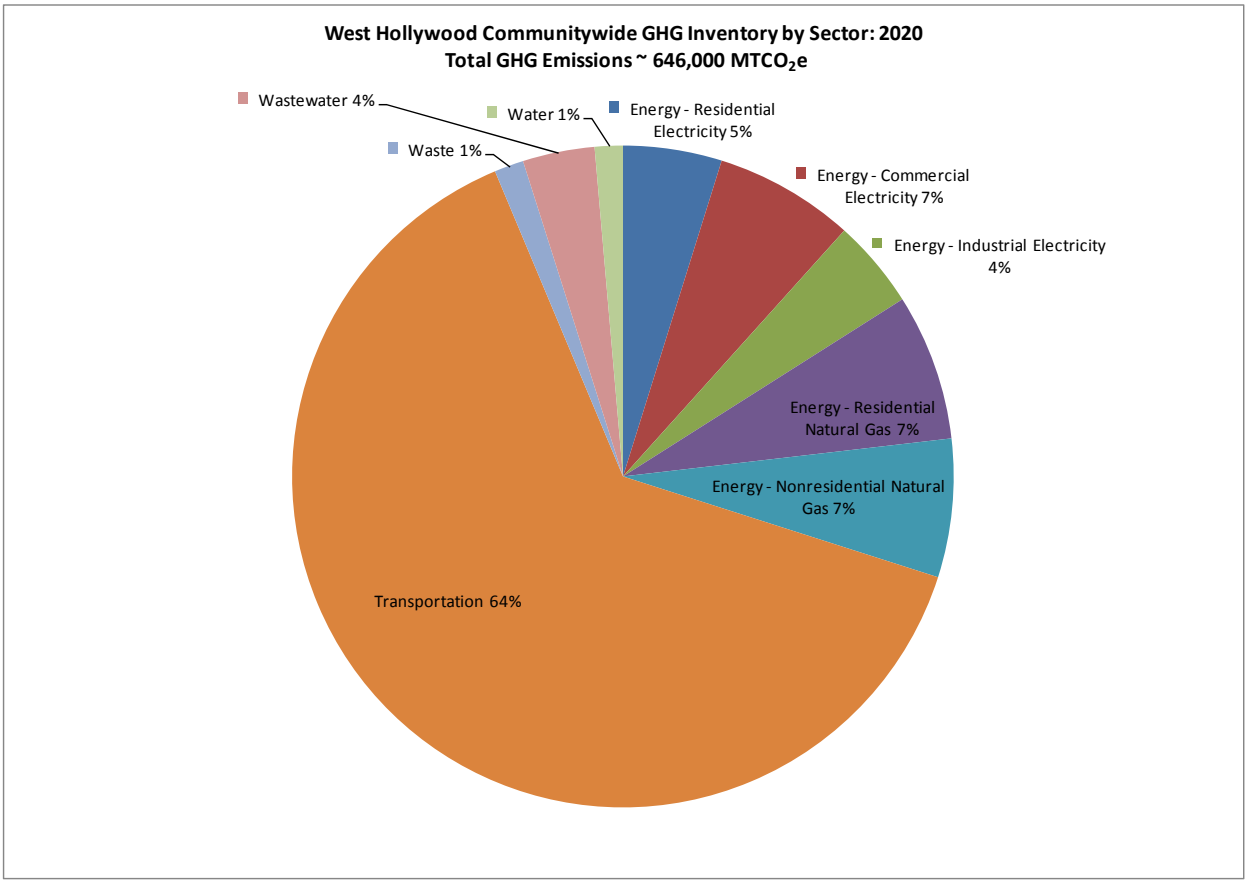
Notes: CO_2e = carbon dioxide equivalent; MT= metric tons

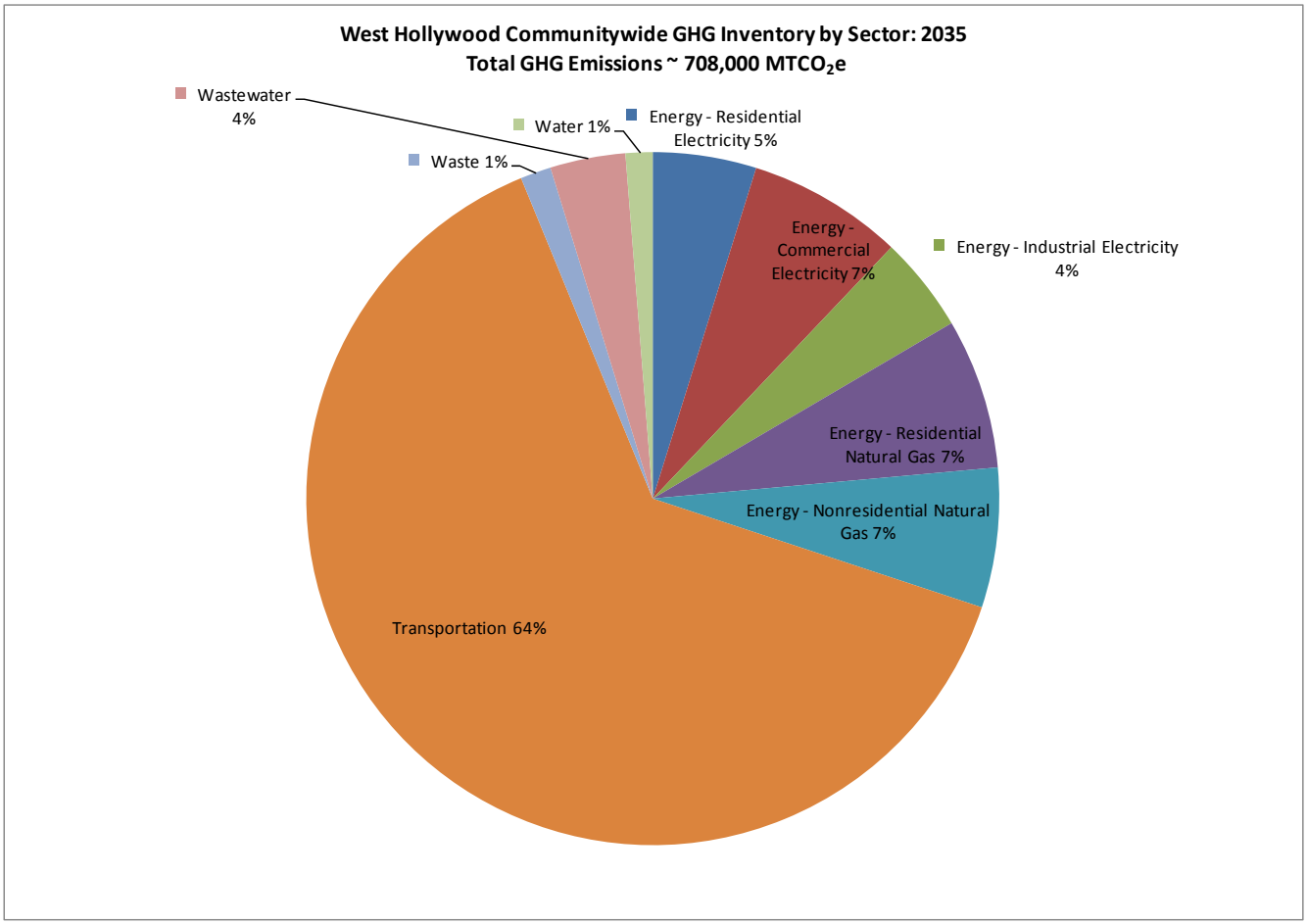
[1] Based on 2008 and 2020 populations of 37,348 and 44,182; the 2020 population was linearly interpolated from the 2008 and 2020 population data.

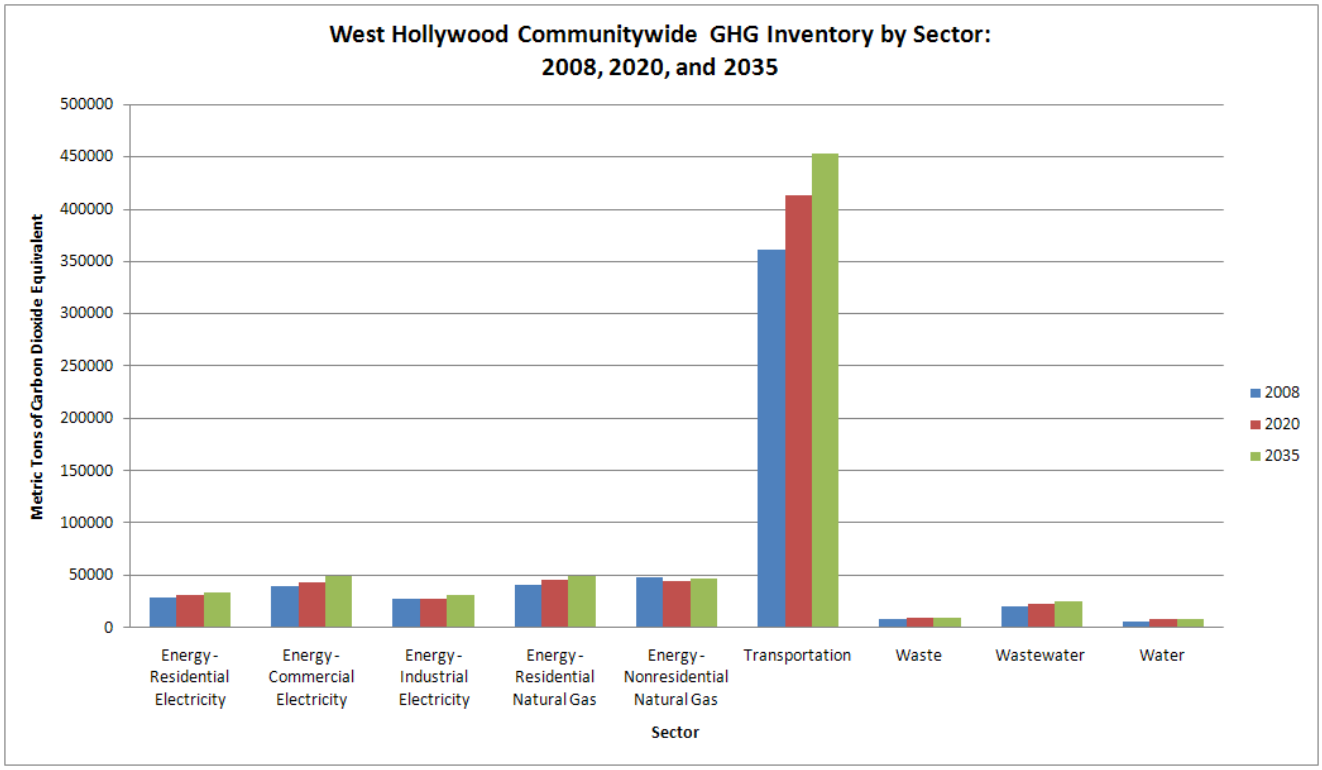
Source: Data compiled by AECOM 2010.

Exhibit 1: West Hollywood Communitywide GHG Inventory by Sector: 2008, 2020, and 2035






West Hollywood Communitywide GHG Inventory by Sector: 2035
Total GHG Emissions ~ 708,000 MTCO2e
Wastewater 4%
Water 1%
Energy - Residential Electricity 5%
Waste 1%
Energy - Commercial Electricity 7%
Energy - Industrial Electricity 4%
Energy - Residential Natural Gas 7%
Energy - Nonresidential Natural Gas 7%
Transportation 64%


West Hollywood Communitywide GHG Inventory by Sector: 2008, 2020, and 2035
Metric Tons of Carbon Dioxide Equivalent
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
Energy - Residential Electricity
Energy - Commercial Electricity
Energy - Industrial Electricity
Energy - Residential Natural Gas
Energy - Nonresidential Natural Gas
Transportation
Waste
Wastewater
Water
Sector
2008
2020
2035

Mobile Sources

On-road mobile-source GHG emissions were calculated using a bottom-up method based on vehicle miles traveled (VMT) data estimated from the City of West Hollywood's travel demand model by Fehr and Peers. Vehicle population was calculated from the most recent National Household Travel Survey (NHTS) produced by the U.S. Department of Transportation in 2002. VMT and vehicle population data were combined with EMFAC2007 emission factors to calculate on-road mobile-source GHG emissions using California-based emission factors for analysis years 2008, and for 2020 and 2035 growth scenarios consistent with the General Plan update, but exclusive of implementation of transportation demand management policies (Fehr and Peers 2010).

Pass-through vehicle trips and associated VMT (i.e. trips that neither begin nor end inside the City) are not counted as part of the City's total daily trips. In accordance with policy guidance provided by the SB 375 Regional Targets Advisory Committee, the daily VMT associated with the following vehicle trip types (and their associated GHG emissions) were allocated to the City in the following way:

- Internal to External: Trips beginning inside the City and ending outside the City (50%)
- External to Internal: Trips beginning outside the City and ending inside the City (50%)
- Internal to Internal: Trips beginning and ending inside the City (100%)

External to external trips beginning outside the City and ending outside the City were not included.

Solid Waste

GHG emissions and projections from solid waste disposal were calculated using a bottom-up method relying on City waste generation and characterization data, CalRecycle waste characterization data, and emission factors contained in EPA's WARM model. Projections were calculated using population and employment data from the City's General Plan Update as an indicator for future growth in solid waste-related GHG emissions.

Wastewater Emissions

Domestic wastewater treatment emissions were calculated using the City of Los Angeles' Hyperion Sewage Treatment Plant influent quality and treatment process data. GHG emissions were calculated using IPCC methodology for centralized, aerobic wastewater treatment plants. Projections were calculated using population and employment data from the City's General Plan Update as an indicator for future growth in wastewater-related GHG emissions.

Water Consumption Emissions

GHG emissions associated with water use (i.e., conveyance and distribution) were calculated using a bottom-up method based on City water supply data, CEC electricity demand factors, and CCAR emission factors. Projections were calculated using population and employment data from the City's General Plan Update as an indicator for future growth in water-related GHG emissions.

DISCUSSION

Total communitywide GHG emissions are anticipated to grow by approximately 11% and 21% between 2008 and 2020, and 2008 and 2035, respectively under a business-as-usual scenario, due largely to projected growth.

The largest sources of GHG emissions for 2008, 2020, and 2035 are the following, in descending order:

1. On-road mobile sources (~62%)
2. Nonresidential (commercial and industrial) electricity consumption (~12%)
3. Nonresidential natural gas consumption (~8%)
4. Residential natural gas consumption (~7%)
5. Residential electricity consumption (~5%)
6. Wastewater generation (~4%)

On-road mobile source emissions are the largest contributor to communitywide GHG emissions. Climate conditions in the southern California region often result in a smaller relative contribution of energy-related emissions due to less intense need for space heating/cooling as compared to other locations such as northern California.

The remaining sources are similar in magnitude (~1% of the total GHG emissions in 2008, 2020, and 2035):

1. Solid waste
2. Water consumption

The magnitude of GHG emissions increases from 2008 to 2020 and 2035, due primarily to anticipated future population growth (and related consumption) in West Hollywood. The relative percentage of emissions in each sector remains relatively insensitive to change during the projection period. Per capita emissions are predicted to remain relatively similar during the projection period.

GOVERNMENT-RELATED (MUNICIPAL) EMISSIONS

Government-related (municipal) GHG emission sources, which include government buildings, vehicle fleets, solid waste, streetlights, and other government-owned/operated facilities, can be considered a subset of the communitywide emissions inventory. Table 2 summarizes the magnitude of municipal baseline emissions from sectors for which data are available. Emissions from the municipal vehicle fleet, solid waste, and water/wastewater are not reported since data for these sectors were not available at the time of this writing.

Table 2: West Hollywood 2008 Municipal GHG Emissions

Municipal Sector	2008 Inventory Emissions MT CO_2e
Buildings and Facilities Electricity Use[1]	670
Buildings and Facilities Natural Gas Use[2]	52
Street Lights[3]	2,211
Traffic Control[3]	69

[1] Based on City municipal accounts data from SCE.
[2] Based on City municipal accounts data from SCG.
[3] From *Electricity Use Report for City of West Hollywood*, prepared by SCE
Notes: CO_2e = carbon dioxide equivalent; MT= metric tons.
Source: Data compiled by AECOM 2010.

CONCLUSION

West Hollywood will likely be able to achieve the largest, most cost-effective emissions reductions from on-road mobile-source, and energy conservation-related GHG reduction measures. Developing and implementing sustainability measures to reduce VMT, wasted fuel, and heating/cooling needs should be strong focus areas within the CAP.

REFERENCES

Beverly Hills, City of. 2005. *City of Beverly Hills 2005 Urban Water Management Plan*.

California Air Resources Board (ARB). 2006. *EMFAC 2007 computer program,* Version 2.3. Sacramento, California.

California Air Resources Board (ARB). 2008. *Local Government Operations Protocol*, Version 1.0. September 25.

The California Climate Action Registry (CCAR). 2009. *General Reporting Protocol*, Version 3.1.

California Energy Commission (CEC). 2005. *California Energy - Water Relationship Staff Report*, CEC-700-2005-011-SF.

Fehr and Peers. 2010. *City of West Hollywood General Plan Greenhouse Gas Emissions Analysis*. March 19.

Intergovernmental Panel on Climate Change (IPCC). 2006. *IPCC Guidelines for National Greenhouse Gas Inventories*; Chapter 6: Wastewater Treatment and Discharge.

Southern California Edison (SCE). 2009. *Electricity Use Report for City of West Hollywood Year 2008*. September 8.

U.S. Department of Energy-Energy Information Administration. 2010. *Supplemental Tables to the Annual Energy Outlook, Pacific Region*. Available: http://www.eia.doe.gov/oiaf/aeo/ supplement/supref.html. Accessed March 20, 2010.

U.S. Environmental Protection Agency (EPA). 2009. Waste Reduction Model (WARM).

U.S. Environmental Protection Agency (EPA). 2010. Emission Factors Information. Available: http://www.epa.gov/ttn/chief/efpac/abefpac.html. Accessed March 2, 2010.

APPENDIX B: CLIMATE ACTION PLAN STRATEGIES CALCULATIONS DETAIL AND ASSUMPTIONS

APPENDIX B: CLIMATE ACTION PLAN STRATEGIES CALCULATIONS DETAIL AND ASSUMPTIONS

This appendix summarizes the assumptions and parameters used to calculate greenhouse gas (GHG) emission reduction performance of recommended Climate Action Plan (CAP) measures for which a quantified reduction is provided.

Summary Table of GHG Reduction Measure Performance		
Measure Number and Title	GHG Emission Reductions (MT CO_2e)	
CAP Measures	**2020**	**2035 (Target Year)**
CL-1.2: Reduced Municipal Energy Use	60	150
Transportation and Mobility (all measures)	1,460	3,650
E-1.1: Voluntary Energy Efficiency Improvements	5,790	11,580
E-1.3: Smart Grid Technology	810	3,610
E-1.4: Residential and Commercial Energy Conservation Ordinance	7,060	16,900
E-1.6: Appliance Upgrades	4,100	10,230
E-2.2: Green Building Code Tier II	680	5,610
E-3.3: Commercial and Multi-Family SWH	6,860	21,840
E-3.4: Multi-Family, Commercial/Industrial Solar PV	5,920	14,800
W-1.1: Reduce Per Capita Water Use by 30%	3,960	4,350
SW-1.1: 4.0 ppd Waste Reduction Target	2,970	3,260
G-1.1: Increase Urban Forest	70	160
G-1.2: Green Roofs and Roof Gardens	30	80
Reductions from CAP Measures		*96,220*
Statewide Legislation		
SB 107: Renewable Portfolio (20% - 2020)	20,700	5,490
EO-S-14-08: Renewable Portfolio (33% - 2035)	-	17,840
AB 1493: Vehicle Emission Standards	66,620	124,050
EO-S-1-07 Low Carbon Fuel Standard	34,580	32,850
Reductions from Statewide Legislation	*121.900*	*180,230*
Total	**161,670**	**276,450**

As, illustrated in Figure 1, together, statewide legislation and GHG reduction strategies have the potential to reduce GHG emissions in West Hollywood by approximately 276,450 MT CO_2e, which is approximately 25.9% below 2008 emission levels as measured from business-as-usual conditions in 2035.

As illustrated in Figure 2, in 2020, GHG emission reductions from the seven strategies within the CAP and statewide reductions have the potential to reduce GHG emissions by approximately 161,670 MT CO_2e to 484,562 MT CO_2e, which is approximately 16.9% below 2008 emission levels, as measured from business-as-usual conditions in 2020.

Thus, the recommended CAP measures ***exceed the City's GHG reduction target of 20% to 25% below 2008 emission levels by 2035***. They also enable the City to meet AB 32 goals by exceeding a 15% below current emissions level standard by 2020.

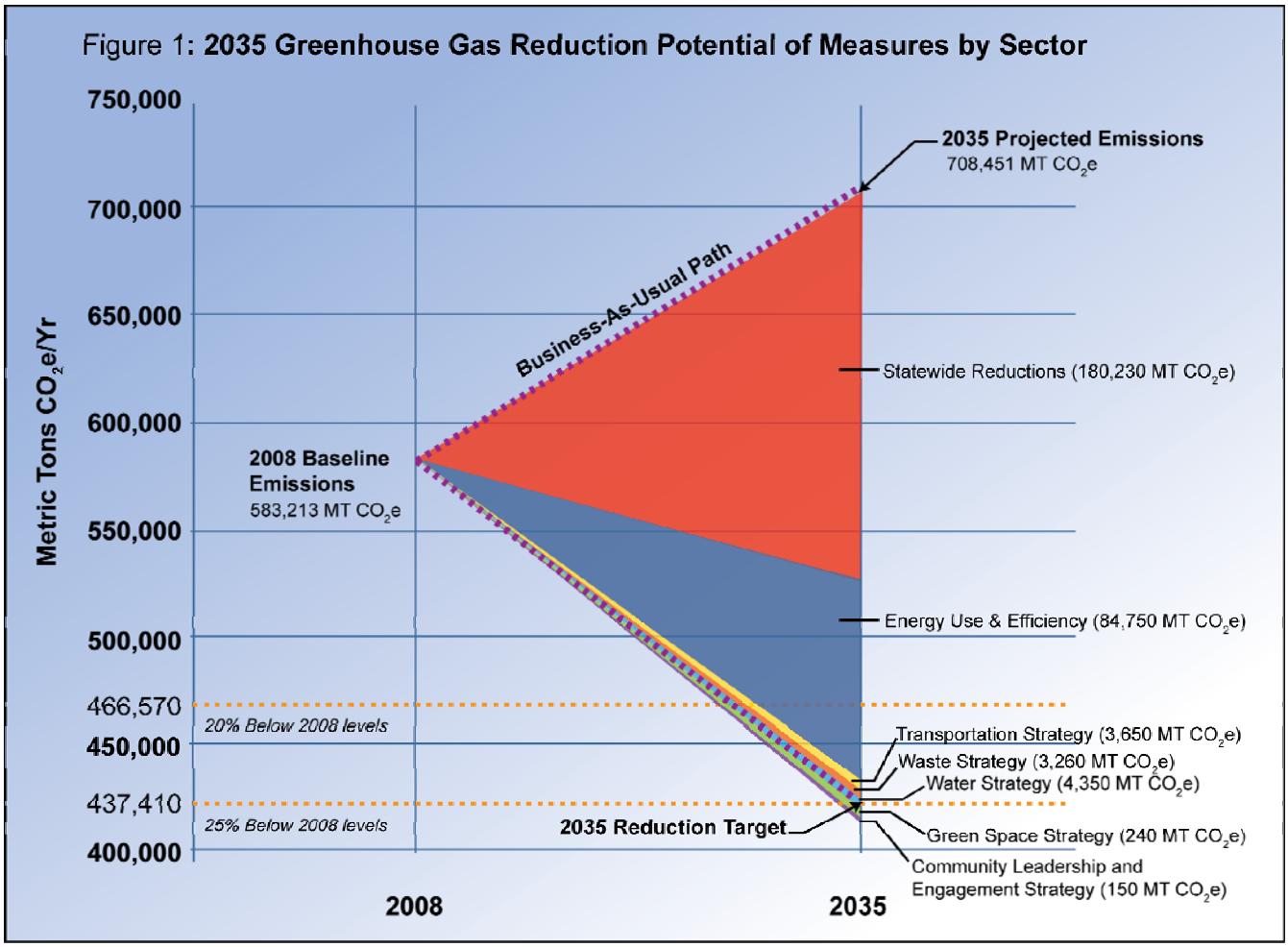
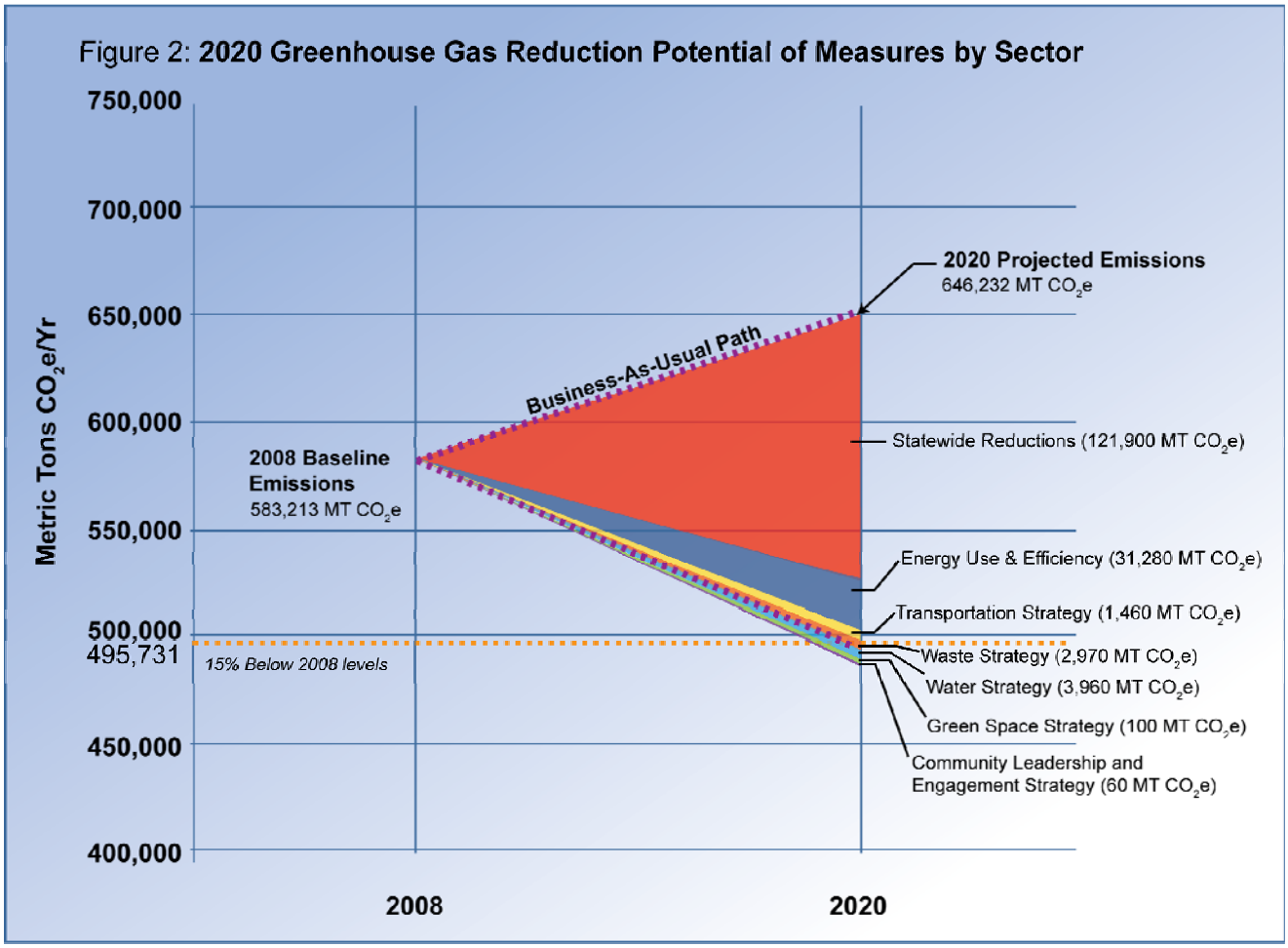


Figure 1: 2035 Greenhouse Gas Reduction Potential of Measures by Sector
Metric Tons CO2e/Yr
750,000
700,000
650,000
600,000
550,000
500,000
466,570
450,000
437,410
400,000
2008
2035
2035 Projected Emissions
708,451 MT CO2e
Business-As-Usual Path
Statewide Reductions (180,230 MT CO2e)
2008 Baseline
Emissions
583,213 MT CO2e
Energy Use & Efficiency (84,750 MT CO2e)
20% Below 2008 levels
Transportation Strategy (3,650 MT CO2e)
Waste Strategy (3,260 MT CO2e)
Water Strategy (4,350 MT CO2e)
25% Below 2008 levels
2035 Reduction Target
Green Space Strategy (240 MT CO2e)
Community Leadership and
Engagement Strategy (150 MT CO2e)



Community Leadership and Engagement

Measure CL-1.2: Reduce energy use in City facilities and operations.

This measure assumes that the City will install solar panels on municipal buildings to generate renewable GHG-free electricity. The performance indicator provided in Measure CL-1.2 calls for 20,000 square feet of solar panels to be installed on City buildings and/or parking lots by 2035, with a target of 8,000 square feet by 2020.

The energy generation potential of the solar panels was calculated using assumptions regarding the wattage potential and hours of operation. Solar panels were assumed to generate 10 watts per square foot and operate at this capacity for 6 hours per day, 30 days per month. These assumptions were used to calculate the total kilowatt-hours generated from implementation of the measure. The GHG reduction potential was calculated using Southern California Edison (SCE)-specific electricity consumption emission factors.

Estimated Area of Photovoltaic Systems (Sq Ft)	Generation Time (hours/year)	Solar Potential (watts/square foot)	Electricity Production Rate (KWh/sq. ft.)	Generation Capacity (MWh/yr)	SCE CO_2 Emission Factor (lbs/kWh)	GHG Emissions Reduction (MT/year)
20,000 (2035)	2,160	10	21.6	432	0.66572	**150**
8,000 (2020)	2,160	10	21.6	432	0.66572	**60**

Sources of information:
SCE Emission factor from Climate Registry (2007)

Land Use and Community Design

The measures and actions contained within the land use and community design strategy were not individually quantified for GHG reductions. The GHG reductions attributed to land use and community design measures and actions are captured within the transportation and mobility measures and actions.

Transportation and Mobility

The aggregate GHG reduction potential of the recommended transportation and mobility strategy measures was calculated using traffic model output created to support the City of West Hollywood General Plan update. The reduction potential of individual transportation and mobility measures was not quantified.

The traffic model estimated the amount of vehicle miles traveled (VMT) under a business-as-usual 2035 No Project scenario, a 2035 General Plan scenario that incorporates proposed land use changes and transportation demand management measures recommended within the General Plan update, and a 2020 scenario incorporating proposed land use changes. Daily carbon dioxide (CO_2) emissions for each scenario were calculated by applying emissions factors for each five mile-per -hour speed bin to the VMT data outputs. These daily CO_2 emissions were converted to metric tons of carbon dioxide equivalent emissions per year (MT CO_2e/yr). GHG reductions attributed to the reduction in average daily VMT amount to approximately 3,840 MT CO_2e/yr in 2035.

	Average Daily VMT	Carbon Dioxide Emissions (Metric Tons/Day)	Carbon Dioxide Emissions (Metric Tons/yr)	GHG Emissions (MT CO2e/yr)
2035 No Project (Total)	1,722,988	1,250	456,250	480,263
2035 General Plan (Total)	1,713,053	1,240	452,600	476,421
2020 No Project (Total)	N/A	1,128	412,806	**434,533**
2020 General Plan (Total)	1,603,784	1,130	412,450	**433,073**
Difference Between: 2035 General Plan – No Project	9,935	10	3,650	**3,842**
Difference Between: 2020 General Plan – No Project	N/A	2	356	**1,460**

Sources of information:
VMT and GHG emissions reductions provided by City of West Hollywood, Fehr & Peers Associates, Nelson/Nygaard Consulting Associates 2010

Energy Use and Efficiency

Measure E-1.1: Develop a comprehensive outreach program to facilitate voluntary residential and commercial building energy efficiency improvements.

The2035 performance indicator for Measure E-1.1 identifies that 40 percent of existing residential units and 40 percent of existing commercial buildings will increase energy efficiency by 20 percent by 2035. The 2020 performance indicator for Measure E-1.1 identifies that 20 percent of existing residential units and 20 percent of existing commercial buildings will increase energy efficiency by 20 percent by 2020.

Emission Sub-Sector	Emissions (MT CO_2e/yr)	Efficiency Improvement		Participation Rate (% of households or businesses)		GHG Emissions Reduction (MT CO_2e/yr)	
		2020	2035	2020	2035	2020	2035
Residential Energy (2008)	70,378	20%	20%	20%	40%	2,580	5,160
Commercial Energy (2008)	88,289	20%	20%	20%	40%	3,210	6,420
Total						**5,790**	**11,580**

Sources of information:

California Energy Commission [CEC] 2003. *Impact Analysis 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings*; California Energy Commission [CEC] 2007. *Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings*

Measure E-1.3: Work with Southern California Edison (SCE) to accelerate smart grid integration into the community.

This measure would catalyze the West Hollywood community's integration into the smart grid system. The smart grid system would help residents and businesses manage electricity demand more efficiently in every demand scenario (e.g., peak, off-peak). West Hollywood's integration into the smart grid system is anticipated to reduce total electricity consumption from both the residential and non-residential sector by 8%. The performance indicator for Measure E-1.3 indicates that 60% of existing residential and commercial buildings will integrate smart grid technology by 2035. The performance indicator for Measure E-1.3 also indicates that 15% of existing residential and commercial buildings and 40% of new buildings will integrate smart grid technology by 2020. All new construction will be required to integrate the technology.

Emission Sub-Sector	Emissions (MT CO_2e/yr)	Efficiency Improvement		Participation Rate (% of households or businesses)		GHG Emissions Reduction (MT CO_2e/yr)	
		2020	2035	2020	2035	2020	2035
Residential + Commercial Electricity Use (2008)	68,537	8%	8%	15%	60%	660	2,620
Residential + Commercial Electricity Use (2035/2020 - 2008)	15,550 (2035)/5,683 (2020)	8%	8%	40%	100%	150	990
Total						**810**	**3,610**

Sources of information:
Pacific Northwest National Laboratory, *Estimating the Benefits of the GridWise Initiative, Phase I Report, TR-160-PNNL, May 2004.*

Measure E-1.4: Develop and implement a point-of-sale residential energy conservation ordinance (RECO) and a commercial energy conservation ordinance (CECO).

The performance indicator for Measure E-1.4 identifies a 25 percent increase in energy efficiency in existing residential units, for 2020 and 2035. Participation rates for the RECO were calculated based on the assumption of constant tenure rates from 2000 to 2009 and that 2000 represents an average turnover rate for owner-occupied dwelling units. These improvements were aggregated for the implementation period through 2035 to arrive at the total percentage of the residential building stock (55 percent) that would perform at the energy efficiency target established within the RECO by 2035. A target of 22% was established for 2020.

Participation rates for the CECO were calculated based on the assumption that commercial and multi-family rental properties are resold every 20 years. These improvements were aggregated for the implementation period through 2035 to arrive at the total percentage of the commercial building stock (40 percent) that would perform at the energy efficiency target established within the CECO by 2035. A target of 17% was established for 2020

Emission Sub-Sector	Emissions (MT CO_2e/Year)	Efficiency Improvement		Participation Rate (% of households or businesses)		GHG Emissions Reduction (MT CO_2e/year)	
		2020	2035	2020	2035	2020	2035
Residential Energy (2008)	70,378	25%	25%	22%	55%	3,610	8,870
Commercial Energy (2008)	88,289	25%	25%	17%	40%	**3,450**	**8,030**
Total						**7,060**	**16,900**

Sources of information:
California Energy Commission [CEC] 2003. *Impact Analysis 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings*; California Energy Commission [CEC] 2007. *Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings*

Measure E-1.5: Develop an energy efficient appliance upgrade program for residents and business owners to promote upgrades from inefficient appliances to new Energy Star appliances.

This measure assumes that most household appliances currently in use within West Hollywood would be replaced with EPA Energy Star-rated models. Copiers, computers and monitors, and light bulbs used in commercial/business contexts would also be replaced to use EPA-rated models.

Appliance (Residential)	Estimated Annual Energy Savings per unit (kWh)		Participation Rate (% of Households)		GHG Emissions Reduction (MT CO_2e/year)	
	2020	**2035**	**2020**	**2035**	**2020**	**2035**
Refrigerators	97	97	38%	95%	230	580
Dishwashers	105	105	38%	95%	250	630
Clothes washers	114	114	38%	95%	270	690
Wall AC Unit	95	95	20%	50%	120	300
Light bulbs (residential)	44	44	40%	100%	2,230	5,580
Appliance (Commercial)	**Estimated Annual Energy Savings per unit (kWh)**		**Participation Rate (number of appliances)**		**GHG Emissions Reduction (MT CO_2e/year)**	
	2020	**2035**	**2020**	**2035**	**2020**	**2035**
Copiers	751	751	800	2,000	160	390
Computers and Monitors	272	272	4,000	10,000	280	700
Light bulbs (commercial)	44	44	48,000	120,000	540	1,360
Total					**4,090**	**10,230**

Sources of information:

ICLEI – Local Governments for Sustainability, *Climate and Air Pollution Planning Assistant* 2010

Measure E-2.2: Require all new construction to achieve California Building Code Tier II Energy Efficiency Standards (Section 503.1.2).

This measure assumes that all new buildings constructed within the City will achieve a level of energy efficiency 30% higher than the current 2008 California Energy Code (Title 24), consistent with Tier II of the California Green Building Code energy efficiency standards.

Emission Sub-Sector	Emissions (MT CO_2e/Year)	Efficiency Improvement	Participation Rate (% of new buildings)	GHG Emissions Reduction (MT CO_2e/year)
Residential + Commercial Electricity (2035 - 2008)	15,550	30%	100%	**5,610**
Residential + Commercial Electricity (2020 - 2008)	5,683	30%	40%	**680**

Sources of information:

California Energy Commission [CEC] 2007. *Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings*

Measure E-3.3: Facilitate the installation of solar hot water heating systems on commercial and multi-family buildings.

Installation of solar water heaters on commercial and multi-family buildings would reduce the amount of natural gas consumption associated with water heating. An Energy Star study determined that solar water heaters can reduce the amount of annual natural gas used for water heating by 60 percent. In addition, a CEC study determined that 40 percent of total commercial natural gas consumption is used for water heating. Therefore, assuming a 75 percent participation rate for commercial and multi-family buildings in 2035 and 25% in 2020, these percentages were applied to the natural gas portion of the 2035 and 2020 GHG emissions inventory respectively, to estimate the amount of natural gas and GHG emissions that would be reduced with installation of solar hot water systems.

Emission Sub-Sector	Emissions (MT CO_2e/Year)	Efficiency Improvement	Participation Rate (% of buildings)	GHG Emissions Reduction (MT CO_2e/year)
Residential – Natural Gas 2035	49,825	60%	75%	13,450
Commercial – Natural Gas 2035	46,612	60%	75%	8,390
Residential – Natural Gas 2020	46,276	60%	25%	4,160
Commercial – Natural Gas 2020	44,980	60%	25%	2,700

Sources of information:
Energy Star. 2009. *Solar Water Heater. http://www.energystar.gov/ia/new_homes/features/WaterHtrs_062906.pdf;* Department of Energy. California Energy Commission [CEC] 2007. *Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings*

Measure E-3.4: Facilitate the installation of solar photovoltaic systems on multi-family residential, commercial, and industrial buildings, and parking lots.

This measure is based on the availability of multi-family residential, commercial, and industrial buildings, and parking lot roof space for the installation of solar panels. This measure assumes that approximately 2,000,000 square feet of solar photovoltaic systems would be used throughout the City by 2035. This would be the equivalent of solar photovoltaic systems on approximately 120, 20,000 square foot buildings, assuming that 60% of a building's roof area could accommodate solar panels. This measure also assumes that approximately 800,000 square feet of solar photovoltaic systems would be used throughout the City by 2020. This would be the equivalent of solar photovoltaic systems on approximately 48, 20,000 square foot buildings, assuming that 60% of a building's roof area could accommodate solar panels.

The solar potential of feasible roof space was calculated based on assumptions regarding wattage potential and hours of operation. Solar panels were assumed to generate 10 watts per square foot and operate at this capacity for 6 hours per day. These assumptions were used to calculate the total kilowatt-hours generated from implementation of the measure. The GHG reduction potential of this measure was calculated using the same

SCE electricity consumption emission factor used to calculate the City's GHG emissions associated with electricity consumption.

Estimated Area of Photovoltaic Systems (Sq Ft)	Generation Time (hours/year)	Solar Potential (watts/square foot)	Electricity Production Rate (KWh/sq. ft.)	Generation Capacity (MWh/yr)	SCE CO_2 Emission Factor (lbs/kWh)	GHG Emissions Reduction (MT CO_2e/year)
2,000,000	2,160	10	21.6	43,200	0.66572	**14,800**
800,000	2,160	10	21.6	43,200	0.66572	**5,920**

Sources of information:

SCE Emissions factor from Climate Registry (2007)

Water Use and Efficiency

Measure W-1.1: Reduce per capita water consumption by 30% by 2035.

This measure's water efficiency actions would reduce per capita water consumption 30% by 2035 and 2020. Per capita water consumption assumes water consumption from all sources – residential, commercial, landscape irrigation, firefighting, leaks, etc.

In order to estimate the GHG reductions associated with implementation of these water conservation measures, 2008 urban water consumption and population values were used to calculate baseline per capita water consumption. Water consumption in 2035 and 2020, under a business-as-usual scenario, was estimated using 2035 and 2020 population growth estimates consistent with the General Plan.

Assuming achievement of the water conservation target, a 30 percent reduction (from the 2008 baseline) per capita water consumption rate and the projected 2035 and 2020 population were used to estimate 2035 and 2020 water consumption levels with conservation, which were subtracted from the projected 2035 and 2020 water consumption levels without conservation to calculate the annual water savings achieved in year 2035 and 2020. Similar to the methods used to calculate water-related GHG emissions for the inventory, the annual water savings were used to calculate the amount of electricity consumption and GHG emissions (associated with conveyance, distribution, and treatment of the water) that would be reduced as a result of achieving the 30% target. Estimated Reduction: **4,350** MT CO2e /yr at 2035, and **3,960** CO2e /yr at 2020.

Waste Reduction and Recycling

Measure SW-1.1: Establish a waste reduction target not to exceed 4.0 pounds per person per day.

The performance indicator for Measure SW-1.1 indicates achievement of a four-pound per person per day (ppd) waste target by 2035 and 2020. This would equate to a 23% reduction in residential waste sent to landfills and a 35% reduction in commercial waste streams.

This measure would apply to GHG emissions associated with new waste generated. Thus, this measure would result in a GHG emissions reduction of approximately **3,260** MT CO2e/year in 2035 and 2,970 MT CO2e/year in 2020

Green Space

Measure G-1.1: Increase and enhance the City's urban forest to capture and store carbon and reduce building energy consumption.

The GHG reduction potential of Measure G-1.1 is based on the building energy reduction and CO_2 sequestration capacity of an additional 500 trees to be planted in the City by 2035, with an interim target of 200 trees by 2020. The building energy reduction calculation only counts direct energy savings from reduced heating/cooling load.

Number of Trees Planted		Average Annual Energy Savings Per Mature Tree (kWh)		Total Annual Energy Savings (kWh)		SCE CO_2 Emission Factor (lbs/kWh)		GHG Emissions Reduction (MT CO_2e/year)	
2020	**2035**	**2020**	**2035**	**2020**	**2035**	**2020**	**2035**	**2020**	**2035**
200	500	204	204	102,000	102,000	0.66572	0.66572	10	30
Number of Trees Planted		**Average Annual CO2 Sequestered Per Mature Tree (Metric Tons)**						**GHG Emissions Reduction (MT CO_2e/year)**	
2020	**2035**	**2020**	**2035**					**2020**	**2035**
200	500	0.25	0.25					50	**130**
Total								**70**	**160**

Sources of information:

ICLEI – Local Governments for Sustainability, *Climate and Air Pollution Planning Assistant* 2010; The Center for Urban Forest Research *Tree Carbon Calculator*. *Available:<http://www.fs.fed.us/ccrc/topics/urban-forests/>*

USDA Forest Service, Pacific Northwest Research Station. *California Study Shows Shade Trees Reduce Summertime Electricity Use. Science Daily 7 January 2009. 20 February 2009 <http://www.sciencedaily.com/releases/2009/01/090105150831.htm>.*

Measure G-1.2: Establish a green roof and roof garden program to standardize, promote, and incentivize green roofs and roof gardens throughout the City.

The performance indicator for Measure G-1.2 identifies that approximately 500,000 square feet of new green roofs would be installed in West Hollywood by 2035, with an interim target of 200,000 square feet by 2020. The GHG reduction potential of this measure is based on the building energy reduction gained by installing a green roof versus installing a conventional roof. The building energy reduction calculation only counts direct energy savings from reduced heating/cooling load.

Square Feet of Green Roofs Installed		Average Annual Energy Savings per Square Foot of Green Roof (kWh)		Total Annual Energy Savings (kWh)		SCE CO_2 Emission Factor (lbs/kWh)		GHG Emissions Reduction (MT CO_2e/year)	
2020	**2035**	**2020**	**2035**	**2020**	**2035**	**2020**	**2035**	**2020**	**2035**
200,000	500,000	0.45	0.45	90,000	233,130	66572	0.66572	**30**	**80**

Sources of information:

ICLEI – Local Governments for Sustainability, *Climate and Air Pollution Planning Assistant* 2010; US EPA *Reducing Urban Heat Islands: Compendium of Strategies 2008*

Statewide GHG Emission Reductions

Senate Bill 107 and Executive Order S-14-08

SB 107 requires utilities to establish renewable energy portfolios of 20% by 2010, which would result in a reduction of GHG emission factors associated with electricity generation and consumption. Executive Order S-14-08 would increase the renewable energy portfolio requirement further to 33% by 2020. For West Hollywood, it was assumed that GHG emissions associated with electricity consumption would be reduced by 33% between the base year (2008) and 2035 and 2020 associated with the implementation of SB 107 and Executive Order S-14-08. The Executive Order portion of these reductions could be repealed by future administrations. If this were to occur, the City would need to revise the reduction potential calculations of the Climate Action Plan.

Senate Bill 107 and Executive Order S-14-08

Subsector	BAU Building Energy Emissions (electricity) (16% Renewable)		Building Energy Emissions (electricity) (33% Renewable)		GHG Emissions Reductions (MT CO2e/year)	
	2020	**2035**	**2020**	**2035**	**2020**	**2035**
Residential	31,243	34,256	24,920	27,323	6,323	6,933
Commercial	42,977	49,831	34,279	39,746	8,698	10,085
Industrial	28,071	31,210	22,390	24,894	5,681	6,316
Total	**102,291**	**115,297**	**81,591**	**91,963**	**20,700**	**23,334**

Sources of information:

SCE Emission factors from Climate Registry (2007)

Assembly Bill 1493 (Pavley)

AB 1493, California's mobile-source GHG emissions regulations for passenger vehicles, was signed into law in 2002. The level of GHG emissions reductions associated with AB 1493 was estimated using the ARB's Pavley + Low Carbon Fuel Standard Postprocessor software (Version 1.0) with West Hollywood-specific traffic data. It is expected that implementation of Pavley would reduce on-road mobile-source GHG emissions by approximately 27.41% by 2035 and 16.15% by 2020.

Regulated Performance Improvement		Transportation Sector Emissions		GHG Emissions Reductions (MT CO2e/year)	
2020	**2035**	**2020**	**2035**	**2020**	**2035**
16.15%	27.41%	412,450	452,600	**66,610**	**124,050**

Sources of information:

ARB Pavley + Low Carbon Fuel Standard Postprocessor software; VMT and GHG emissions reductions provided by City of West Hollywood, Fehr & Peers Associates, Nelson/Nygaard Consulting Associates 2010

Executive Order S-1-07

Executive Order S-01-07 reduces the carbon intensity of California's transportation fuels by at least ten percent by 2020. The Low Carbon Fuel Standard (LCFS) is a performance standard with flexible compliance mechanisms

that incentivizes the development of a diverse set of clean, low-carbon transportation fuel options to reduce greenhouse gas emissions. The Executive Order portion of these reductions could be repealed by future administrations. If this were to occur, the City would need to revise the reduction potential calculations of the Climate Action Plan.

The level of GHG emissions reductions associated with the LCFS were estimated using the ARB's Pavley + Low Carbon Fuel Standard Postprocessor software (Version 1.0) using West Hollywood-specific traffic data. It is expected that implementation of the standard would reduce on-road mobile-source GHG emissions by approximately 10% by 2020 and 2035. The LCFS standard reduction were applied to total transportation emissions minus the reductions already achieved by Pavley so as to avoid double counting of reduction potential.

Regulated Performance Improvement 2020 and 2035	Transportation Sector Emissions minus AB 1493 Reductions		GHG Emissions Reductions (MT CO2e/year)	
	2020	**2035**	**2020**	**2035**
10.0%	345,800	328,550	**34,580**	**32,855**

Sources of information:
ARB Pavley + Low Carbon Fuel Standard Postprocessor software; VMT and GHG emissions reductions provided by City of West Hollywood, Fehr & Peers Associates, Nelson/Nygaard Consulting Associates 2010

APPENDIX C: MEASURE COST AND SAVINGS DATA – PUBLIC REVIEW DRAFT JUNE 2010

Appendix C
Measure Cost and Savings Data - Public Review Draft June 2010

Community Leadership and Engagement
Goal CL-1 A vibrant community that reduces its effects on global climate change.

Intent: To create a framework for addressing climate change, including identifying local sources of greenhouse gas emissions, setting emission reduction targets based on known sources, meeting targets through responsive actions, and adapting the West Hollywood community to anticipated effects of climate change.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
CL-1.1	Create a position for a City Sustainability Manager/Coordinator and support staff to oversee the implementation of the Climate Action Plan and sustainability programs.	H	Staff expense / Recurring Cost	N/A	N/A	N/A	N/A			CITY COSTS: Assumed that this Manager/Coordinator will be a full-time position with salary/benefits + overhead at ~$200,000 per year. However, this person will be in charge of implementing many of the measures listed, and therefore, the costs associated with this position could be incorporated into the other measures. In this case, where noted in the measures below, costs listed would increase approx. $10,000 per measure to implement 20 measures.
CL-1.2	Reduce energy use in City facilities and operations.	L-M	Staff Expense / Initial Capital Investment	N/A	N/A	N/A	N/A			CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. The up-front cost of an energy audit can vary depending on the size and complexity of the design of the facility. A typical energy audit price tag ranges from 18 to 50 cents per square foot for facilities with less than 50,000 square feet of conditioned area, to about 12 cents per square foot for larger facilities (e.g., greater than 250,000 square feet), to 10 cents per square foot for very large facilities (e.g., greater than one million square feet). Source: California Energy Commission. Electronic building performance dashboard starter (electricity only): $10,000 - $30,000 + $950 for each additional resource (assume city will monitor electricity and water). Annual service fee + data hosting: $3,000 per year. Free for first year. Touch screen available + installation: $9,950 (32 inch flat screen + preconfigured). Source: Lucid Design Group.
CL-1.3	Reduce water use in City facilities and operations.	VL-L	Staff Expense / Initial Capital Investment	N/A	N/A	N/A	N/A			CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Weather-based irrigation controllers are most cost-effective for a medium-size or larger landscape, however they will work for any landscape. They reduce landscape water use on average by 20% in well-maintained irrigation systems. LADWP offers a rebate of $200 per controller for less than one acre of irrigated landscape; $25/station for 1 acre or more of irrigated landscape. Commercial controllers start at $1500. Source: HydroPoint WeatherTRAK. Assume the cost of the water audit will be paid for in water savings.
CL-1.4	Reduce single-occupancy vehicle commuting by City employees.	M	Recurring Cost	N/A	N/A	N/A	N/A			CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Depending on participation in the incentive transit program, the costs vary. Average cost per participating employee estimated at $35-$50 per month (Source: California Air Resources Board - Parking Cash Out Program). City has 208 employees who receive full city benefits; assume 50% participate in the program at $50 per employee per month ($62,400 per year). SAVINGS FOR CITY EMPLOYEES: Participating employees would benefit from the incentive programs offered. CA ARB Parking Cash Out Law requires that transit subsidies equal the parking cash out. Program benefits estimated at between $50 and $100 per month. Source: California Air Resources Board - Parking Cash Out Program

Land Use and Community Design
Goal LU-1 A balanced mix and distribution of land uses that encourage strategic development opportunities within the City.

Intent: To encourage specific types of new development in key areas of West Hollywood to help diversify the economy, support a high level of social services, achieve climate change reduction goals, promote viable alternative transportation		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
LU-1.1	Facilitate the establishment of mixed-use, pedestrian- and transit oriented development along the commercial corridors and in the Transit Overlay Districts.	VL	Staff Expense	N/A	N/A	N/A	N/A			CITY COSTS: Minimal additional time for Community Development Dept. staff.
LU-1.2	Encourage the preservation and reuse of existing buildings.	VL-L	Staff Expense	N/A	N/A	N/A	N/A			CITY COSTS: Minimal additional time for Community Development Dept. staff. Cost may be higher (but still low) if a consultant is hired to assist the City.

Transportation and Mobility
Goal T-1 A pedestrian-first City.

Intent: To maintain, protect, and enhance West Hollywood's urban village feel and walkability with attractive, welcoming and pleasing pedestrian infrastructure and facilities.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
T-1.1	Increase the pedestrian mode share in West Hollywood with convenient and attractive pedestrian infrastructure and facilities.	M-H	Consultant Fee / Installation Cost	N/A	N/A	N/A	N/A			CITY COSTS: Costs will consist of consultant fees to conduct pedestrian obstacle study ($45,000-$55,000. Source: Nelson / Nygaard Consulting Associates) and to update the Bicycle and Pedestrian Plan, as well as construction costs to install pedestrian and traffic calming improvements. Construction costs vary by type of improvement.

Goal T-2 - A comprehensive bicycle network throughout the City.

Intent: To increase bicycling throughout West Hollywood by providing accessible, convenient, and attractive bicycle infrastructure.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
T-2.1	Increase the bicycle mode share in West Hollywood by providing accessible, convenient, and attractive bicycle infrastructure.	H	Initial Capital Investment + Ongoing Maintenance / Staff Expense for collaboration	N/A	N/A	N/A	N/A			CITY COSTS: Cost of infrastructure development is highly variable. Cost estimates for bike infrastructure: Class I Bike Path - $1M - $2M per mile; Class II Bike Lanes - $10k - $1M per mile (depending on level of roadway improvement required); Class III Bike Routes - $2K - $600K per mile (depends on level of treatment: route signage only would be lower end, signage and shoulder striping, pavement markings, signal actuation would be higher end). Source: Alta Planning.
T-2.2	Install bike racks and bike parking in the City where bike parking infrastructure currently does not exist.	VL	Initial Capital Investment; Minimal Maintenance	N/A	N/A	N/A	N/A			CITY COSTS: Assume the City will install less than 30 4-bike racks. The cost of bike racks are $315 per 4-bike rack ($265 per rack + $50 for installation). Source: Nelson / Nygaard Consulting Associates

Appendix C
Measure Cost and Savings Data - Public Review Draft June 2010

Goal T-3 - A transit system that enables residents and visitors to reduce vehicle trips.

Intent: To provide a transit system that serves the needs of residents and visitors as a competitive, viable, efficient, practical, and reliable alternative to auto travel within, to, and through the community.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
T-3.1	Support efforts to build the Metro Westside subway extension (Red Line) and lobby for a West Hollywood alignment.	VL	Staff Expense	N/A	N/A	N/A	N/A			CITY COSTS: Minimal additional time for City staff.
T-3.2	Expand locally-managed transportation services and provide education on public transportation options.	H	Annual Expense	N/A	N/A	N/A	N/A			CITY COSTS: Education expenses estimated to be $5,000; expanding CityLine services estimated to be $500,000 - $1M annually. Source: West Hollywood Environmental Task Force (WHETF)
T-3.3	Conduct a public transit gap study that analyzes strategies to increase transit use within the City and identify funding sources for transit improvements.	M	Staff Expense / Consultant Fee	N/A	N/A	N/A	N/A			CITY COSTS: Minimal Community Development Dept. staff expense. Cost of conducting public transit gap study estimated at $50,000. Source: Nelson / Nygaard Consulting Associates
T-3.4	Consult with Metro to provide bus stops with convenient bicycle and pedestrian access and essential improvements such as shelters, route information, benches, and lighting.	H	Initial Capital Investment + Ongoing Maintenance / Staff Expense	N/A	N/A	N/A	N/A			CITY COSTS: Assumed that City will provide bus shelters, benches, and existing street lights will provide lighting. Estimated that 5-10 stops need enhancement + 10 new stops = 15-20 stops total. $15,000 per transit stop = $225,000-$300,000. Source: AECOM.

Goal T-4 - Reduced driving and traffic congestion in the City.

Intent: To reduce vehicle miles traveled and vehicle trips in an effort to improve mobility and maintain the quality of the physical environment.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
T-4.1	Enhance ride-share infrastructure to facilitate community participation.	L-H	Website Development + Construction Costs	N/A	N/A	L-H	Recurring Savings	X		CITY COSTS: The cost of establishing a website will be minimal. The cost of building park and ride lots or other infrastructure could be considerable, unless current sites are used. SAVINGS: The average monthly commute cost is approximately $300, assuming a 20 mile round trip commute, $3.20 per gallon fuel cost, 20 miles per gallon, and $50 monthly parking cost. Yearly cost of commuting alone is $3400. Ridesharing with 1 person would save approximately $1,700 per year. Source: Commute Cost Calculator. www.commutesmart.info/commute-cost-calculator.asp.
T-4.2	Pursue a carshare program with carshare providers and regional partners including City of Los Angeles, SCAG, and Westside Cities Council of Governments.	VL-L	Staff Expense	N/A	N/A	L-H	Recurring Savings	X		CITY COSTS: City staff costs. SAVINGS: The cost to own and operate a medium-sized car is approximately $8,500 per year (Source: AAA). Carsharing is not a cost-effective replacement of a car for daily car commuters but can replace a second car for short trips. Zipcar costs $25 to join + annual fee of $50; depending on the car model, driving costs from $8 /hour and $66 /day (any 24-hour period) during the week and $9 /hour and $72 /day on weekends. Source: Zipcar
T-4.3	Assess and implement parking strategies in commercial corridors and in Transit Overlay Districts.	L-M	Staff Expense / Consultant Fee	N/A	N/A	H	Savings on Initial Capital Investment or Ongoing Maintenance Costs		X	CITY COSTS: Cost of amending zoning code for Community Development Dept. staff. City may want to hire a consultant to evaluate shared parking and parking pricing strategies. PRIVATE COSTS: Savings associated with reduced parking requirements for building owners/developers. The average cost of developing a surface lot parking space is between $2,000 and $5,000, with ongoing maintenance costs. Operations and maintenance, including sweeping, painting and resurfacing, is generally figured at 1.5 percent of the initial construction cost annually, or between $30 and $75. Source: International Bike Fund

Energy Use and Efficiency
Goal E-1 Reduce the total and per capita amounts of energy used in the City.

Intent: To reduce the harmful environmental effects of energy consumption through efficiency, conservation, and renewable production of energy.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
E-1.1	Develop a comprehensive outreach program to facilitate voluntary residential and commercial building energy efficiency improvements.	L	Staff Expense / Consultant Fee	L-H	Initial Capital Investment	VL-L	Energy Savings	X	X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Assume many marketing/education-related strategies could be addressed concurrently. Assumes $75,000 per campaign (all E-1 strategies per campaign) for strategies-related to marketing. Campaign conducted twice over the course of the implementation period, for a total cost of $150,000 ($37,500 per measure). PRIVATE COSTS AND SAVINGS: Cost (and subsequent energy savings) to residents/businesses depend on the energy efficiency improvement installed.
E-1.2	Develop a comprehensive residential renewable energy program that provides incentives, outreach, financing, and other forms of assistance.	See below	See below	See below	See below	See below	See below	See below	See below	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Assume many marketing/education-related strategies could be addressed concurrently. Assumes $75,000 per campaign (all E-1 strategies per campaign) for strategies-related to marketing. Campaign conducted twice over the course of the implementation period, for a total cost of $150,000 ($37,500 per measure). Also, see below.
	On-bill Financing	VL	Staff Expense	N/A	N/A	VL	Savings on Initial Capital Investment	X	X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. City could coordinate with Southern California Edison to facilitate the repayment of loans for efficiency upgrades on utility bills. Upgrades would be selected by the building owner (in coordination with the City such that the efficiency savings would pay for the investment over a fixed period of time. Customers would "share" monthly energy efficiency savings with the utility until the loan is paid back, at which point all savings would be reflected in lower monthly bills. The goal is to simplify loan repayment and (in combination with a funding source) reduce upfront cash outlay by property owners. In addition, some models of on-bill financing would allow for the loan to remain with the property (even if sold by the current owner), thereby sharing the cost of upgrades over time with future beneficiaries of those upgrades. PRIVATE SAVINGS: This incentive primarily addresses the prohibitive costs of investing the necessary capital into an energy efficiency retrofit up front, through distributing investment costs over a period of time. This makes energy efficiency investments more feasible for individuals who do not have the capital to invest up front. Savings calculations are for an assumed average retrofit expense of $10,000, and a on-bill financing program that offers a discount of 100 basis points relative to prevailing mortgage rates (for home equity financing), amortized over a 10 year period. Savings are estimated to be $40 annually. Source: Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis; AECOM

	Low Interest Loans	H	Staff Expense	N/A	N/A	L	Savings on Initial Capital Investment	X	X	CITY COSTS: The City, utilities, or private lenders could offer loans to property owners for pre-approved energy efficiency upgrades. Low interest rates could be guaranteed through volume or by City buy-down. The goal is to provide capital for energy efficiency upgrades at a discounted rate. Initial Costs: Policy assessment: $20,000 - $50,000. The City would need to assess strategies for maximizing the effectiveness of a low interest loan program, educating a contractor/auditor network and addressing the split incentives between investors and energy end-users (e.g., between a landlord and tenant). Development of billing and collection process: $20,000 - $100,000. If the City manages the loan program in-house and intends to affix the loan to the property, then a repayment system would have to be arranged. Initial or Annual Costs (depending on structure of financing): City investment: $100,000-$1,000,000. This investment is wholly dependent on how much the County intends to subsidize interest rates. PRIVATE SAVINGS: For an assumed average retrofit expense of $25,000, and a low-interest loan program that offers a discount of 200 basis points relative to prevailing mortgage rates (for home equity loan financing), amortized over a 10 year period. Average annual savings approximately $200. Source: Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis; AECOM
	Energy Efficiency Mortgages	L-M	Staff Expense	N/A	N/A	M	Savings on Initial Capital Investment	X		CITY COSTS: Energy Efficiency Mortgages can provide owners additional financing (whether at time-of-sale or upon refinancing) for energy efficiency improvements at discounted interest rates. Energy efficiency upgrades could be chosen that would allow owners to realize a net monthly savings. The goal is to provide capital for energy efficiency upgrades at a discounted interest rate. Initial Costs: Partner development: $20,000 – $40,000. Costs to the City would generally be low because these products would be administered through private lenders, but the City would need to devote some financial resources to assisting with partner recruiting. Technology upgrades: $0 – $60,000. Depending on the City's role in administration, there may be costs incurred in development of a database to track and verify energy efficiency upgrades in participating properties. PRIVATE SAVINGS: This program provides an incentive through reduced mortgage rates for homes that qualify as energy efficient. For an assumed average home cost of ~$500,000 with a energy efficient mortgage rate discount of 50 basis points relative to prevailing mortgage rates, amortized over a 30 year period, average annual savings are approximately $500. Source: Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis; AECOM
	Revolving Loan from Bond Sale	M-H	Staff Expense / Consultant Fee / Capital Investment (Technology)	N/A	N/A	H	Savings on Initial Capital Investment	X	X	CITY COSTS: Energy savings could be financed through a (potentially tax-exempt) municipal bond issue. The City would administer a revolving loan fund with the bond proceeds. The goal is to provide capital for energy efficiency upgrades at the lowest cost of capital possible. Initial Costs: Policy assessment: $40,000 - $80,000. Further research would be needed to consider whether the City's internal funds would be a better (less expensive, more flexible) option than bonds. Technology upgrades: $20,000 - $40,000. Depending on the repayment mechanism and administrative system chosen by the City, some costs would be incurred for establishing a tracking system to manage the loan fund that results from the revenue bond. PRIVATE SAVINGS: For an assumed average retrofit expense of $50,000 (revolving loan would target larger energy efficiency retrofits than other incentive programs), and a low-interest loan program that offers a discount of 400 basis points relative to prevailing interest rates, amortized over a 10 year period. Average annual savings are approximately $800. Source: Cascadia Consulting Group, Inc. Existing Building Energy Policy Analysis; AECOM
E-1.3	Work with Southern California Edison to accelerate "Smart Grid" integration in the community.	L	Staff Expense / Consultant Fee	L	Initial Capital Investment	L-M	Recurring Energy Savings	X	X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description, including collaborating with SCE to extend smart grid to West Hollywood. Assume many marketing/education-related strategies could be addressed concurrently. AECOM community-outreach professionals recommend a high tech approach consisting of a video clip, newsletter, and website activity. $75,000 per campaign (all E-1 strategies per campaign) for strategies-related to marketing. Campaign conducted twice over the course of the implementation period, for a total cost of $150,000 ($37,500 per measure). PRIVATE COSTS: Assumed cost of smart meter $220, including installation. Assumed consumer cost of electricity decrease of 6% due to the smart grid technology. Average residential consumption is 600 kWh/month with average rates at $0.15/kWh.
E-1.4	Develop and implement a point-of-sale residential energy conservation ordinance (RECO) and commercial energy conservation ordinance (CECO).	M	Staff Expense	H	Initial Capital Investment	H	Recurring Energy Savings	X	X	CITY AND PRIVATE COSTS/SAVINGS: **RECO:** Ordinance development part of the City Sustainability Manager/Coordinator's job description. It is most cost effective to incorporate energy efficiency measures into buildings during new construction and major renovations because the improvements can be financed as part of the entire package, and benefits are realized throughout the entire life of the building. Since homeowners pay for the inspections, the expense to the administrating agency is small. In most cases, all costs are recoverable through filing fees, which range from $15-50. Even in places where employees were hired specifically for RECO purposes, the programs haven't been budget drains. Furthermore, a San Francisco report states that "the cost to San Francisco's city budget has been nil, and the cost of enforcement through the city's Housing Inspection Services Division has been very inexpensive." In San Francisco, the cost of RECO, assuming a 10-year life of energy savings, is $16.9 million, of which the government share of $200,000 is 1.2 percent (all to the Department of Buildings inspection). But the annual energy savings from the measure, about $2.3 million, begins to exceed the annual investment in about seven years because the savings are cumulative. According to SPUR, the cost to reduce one ton of carbon through RECO, assuming a 10-year life of energy improvements, is about $274. The government cost is about $3 per ton saved. Costs for West Hollywood assumed to be 25% to 40% of San Francisco, or $50,000 to $80,000. **CECO:** Estimates the cost to Department of Building Inspection to implement a new CECO law in San Francisco is $200,000 per year. Like RECO, CECO requirements are inexpensive for the government, compared to the private costs of implementation. Costs for WeHo assumed to be 25% to 40% of San Francisco, or $50,000 to $80,000. PRIVATE COSTS: While up front costs may be high for owners, investments in building performance typically result in savings. A 2008 study of 23 LEED-EB1 rated buildings found that LEED-EB certification cost an average of $1.61 per square foot, including both hard and soft costs. The majority of
E-1.5	Develop an energy efficient appliance upgrade program for residents and business owners to promote upgrades from inefficient appliances to new Energy Star appliances.	L	Staff Expense / Outreach	L-H	Initial Capital Investment	L-H	Recurring Energy Cost Savings	X	X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Assume many marketing/education-related strategies could be addressed concurrently. Assumes $75,000 per campaign (all E-1 strategies per campaign) for strategies-related to marketing. Campaign conducted twice over the course of the implementation period, for a total cost of $150,000 ($37,500 per measure). PRIVATE COSTS: SCE offers rebates for energy efficient appliances ranging from $50 for an Energy Star room air conditioner to $100 for an Energy Star refrigerator. Appliance costs vary depending on model and size; refrigerators typically start at $400 and room air conditioners start at $200.

Appendix C
Measure Cost and Savings Data - Public Review Draft June 2010

Goal E-2 Green buildings that reduce their effects on the natural environment.

Intent: For West Hollywood to remain a leader in promoting buildings that reduce energy use, reducing water use, using less material and providing a healthy environment for occupants.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
E-2.1	Continue to fund and operate the Green Building Resource Center.	L	Annual expense	N/A	N/A	N/A	N/A			CITY COST: Cost estimated to be $15,000 per year. Source: West Hollywood Environmental Task Force (WHETF) Report
E-2.2	Require all new construction to achieve California Building Code Tier II Energy Efficiency Standards (Section 503.1-2)	L	Staff Expense / Outreach	H	Initial Capital Investment	H	Recurring Savings	X	X	CITY COSTS: Assumed additional funding required for monitoring and enforcement ($10,000-$20,000). Cost of producing guidance and educational material on how to meet code ($25,000). PRIVATE COSTS: The incremental cost of complying with this code as opposed to old code costs is on average about $1,350 per house. SAVINGS: Assumed consumer cost of energy decrease of 30% due to more stringent building code. Average residential consumption is 600 kWh/month with average rates at $0.15/kWh.

Appendix C
Measure Cost and Savings Data - Public Review Draft June 2010

Goal E-3 Buildings that have reduced non-renewable energy demand.

Intent: To reduce communitywide and municipal building-related energy use.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
E-3.1	Require that all new construction and condominium conversions be sub-metered to allow each tenant the ability to monitor their own energy and water consumption.	VL-L	Staff Expense	H	Initial Capital Investment	M	Energy savings	X	X	CITY COSTS: City staff costs. Assumed additional funding required for monitoring and enforcement of $5,000-$10,000. PRIVATE COSTS: Cost of installing sub-meters in building assumed to be $500 per unit + $3.00 per month reading fee. For average building with 4 units, cost would be $2000. Energy savings assumed to be 15%.
E-3.2	Require use of recycled materials for 20% of construction materials in new construction.	M	Staff Expense / Outreach	Variable	Initial Capital Investment	N/A	N/A	X	X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Assumes $75,000 per campaign for strategies-related to marketing. 2 campaigns per 10-year period = $150,000 total for 3 E-3 measures ($50,000 per measure). PRIVATE COSTS: Cost to building or property owner would depend on the extent and kind of recycled materials used. Potentially cost neutral, or low to medium price premium on construction.
E-3.3	Facilitate the installation of solar hot water heating systems on commercial and multi-family buildings.	M	Staff Expense	H	Initial Capital Investment	H	Savings on Initial Capital Investment	X	X	CITY COSTS: Community Development Dept. staff expense to identify and remove regulatory barriers. Assumes $75,000 per campaign for strategies-related to marketing. 2 campaigns per 10-year period = $150,000 total for 3 E-3 measures ($50,000 per measure). PRIVATE COSTS: The cost of a solar thermal system is approximately $5,000. Source: The Solar Guide SAVINGS: Federal tax incentives are 30% of installation cost. A solar thermal system reduces hot water bill from 50 to 100%. Savings will vary considerably. Source: Handbook of Water Use and Conservation
E-3.4	Facilitate the installation of solar photovoltaic systems on multi-family residential, commercial, and industrial buildings, and parking lots.	M-H	Staff Expense / Outreach / Consultant Fee	N/A	N/A	M-H	Savings on Initial Capital Investment	X	X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Assumes $75,000 per campaign for strategies-related to marketing. 2 campaigns per 10-year period = $150,000 total for 3 E-3 measures ($50,000 per measure). Assumes City will hire consultant to assist with analysis and identify areas best for solar installation. PRIVATE COSTS: Cost to building owner to install and administer PV system negligible to low, depending on power purchase agreement. SAVINGS: The cost of financing a solar system could be moderately reduced if group discounts were negotiated with a solar installer/contractor. The building owner could leverage other incentives: $1.55-$2.10/watt installed - California Solar Initiative incentives for homeowners in investor-owned utility territories (PG&E, SCE, SDG&E) to install photovoltaic systems. There is also a federal tax credit of 30% on the total cost of the installed system.

Water Use and Efficiency
Goal W-1 - Reduced water use ensuring a long-term water supply.

Intent: To conserve the City's water supply and reduce the negative environmental effects of water use through water efficiency, conservation, capture, and reuse.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
W-1.1	Reduce per capita water consumption by 30% by 2035.	H	Staff Expense / Outreach	L-H	Initial Capital Investment	L-H	Savings on Initial Capital Investment and Reduced Water Use	X	X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Outreach campaign estimated at $25,000. Assume City will also hire an Enforcement Officer at a total cost of ~$150,000 per year for salary/benefits+overhead. PRIVATE COSTS AND SAVINGS: Costs and water savings will vary depending on the water efficiency improvements implemented. LADWP and SCE offer incentives/rebates to assist, such as $300 for a high efficiency clothes washer and $100 for high efficiency toilet. Source: LADWP and SCE
W-1.2	Encourage all automated irrigation systems installed in the City to include a weather-based control system.	VL	Staff Expense	L-H	Initial Capital Investment	L-M	Savings on Initial Capital Investment and Reduced Water Use	X	X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. PRIVATE COSTS AND SAVINGS: Weather-based irrigation controllers are most cost-effective for a medium-size or larger landscape, however they will work for any landscape. They reduce landscape water use on average by 20% in well-maintained irrigation systems. LADWP offers a rebate of $200 per controller for less than one acre of irrigated landscape; $25/station for 1 acre or more of irrigated landscape. Residential controllers cost between $300 and $1000. Commercial controllers start at $1500. Source: HydroPoint WeatherTRAK

Waste Reduction and Recycling
Goal SW -1-Integrated best practices for solid waste management and reduced waste.

Intent: To reduce waste by diverting and reusing resources from the waste stream and reducing consumption of materials that otherwise end up in landfills.		Cost to City (Annual Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
SW-1.1	Establish a waste reduction target not to exceed 4.0 pounds per person per day.	M	Staff Expense / Consultant Fee / Outreach	N/A	N/A	N/A	N/A			CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description; Low Waste Plan cost estimated at $25,000-$50,000; Assumes $75,000 per campaign (outreach for all waste reduction strategies in one campaign) for strategies-related to marketing. 2 campaigns per 10-year period = $150,000 total for 3 SW-1 measures ($50,000 per measure). Source: AECOM
SW-1.2	Work with other California cities and organizations to urge adoption of State and federal legislation that requires extended producer responsibility, and improves the recyclability of products and packaging.	VL	Staff Expense	VL	Initial Capital Investment	N/A	N/A		X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. PRIVATE COSTS AND SAVINGS: If legislation is passed, product manufacturers will incur a cost to alter packaging and/or establish take-back program. Innovative companies may be able to save money by reusing old packaging.
SW-1.3	Encourage the use of reusable, and biodegradable materials in retail and commercial establishments.	M	Staff Expense / Outreach	H	Reoccurring Cost	N/A	N/A		X	CITY COSTS: Part of the City Sustainability Manager/Coordinator's job description. Assumes $75,000 per campaign (outreach for all waste reduction strategies in one campaign) for strategies-related to marketing. 2 campaigns per 10-year period = $150,000 total for 3 SW-1 measures ($50,000 per measure). PRIVATE COSTS: San Mateo County (http://www.mercurynews.com/breaking-news/ci_14901206) estimates that banning polystyrene will cost businesses $200 to $500 more per year to use other materials. This cost may be passed to customers in form of higher prices for products served in the alternative material.

Appendix C
Measure Cost and Savings Data - Public Review Draft June 2010

Green Space
Goal G-1 - Expanded urban green spaces and sustainable landscapes.

Intent: To expand and enhance green spaces and the City's urban forest to reduce the heat island effect, sequester carbon, beautify the community, promote physical activity, and facilitate cultural exchange and community activity.		Cost to City (Annual Cost or First Cost)		Private Cost		Private Savings		Applicability		Economics Notes/ Assumptions
MEASURE		VL/L/M/H	Type	VL/L/M/H	Type	VL/L/M/H	Type	Resident	Business	
G-1.1	Increase and enhance the City's urban forest to capture and store carbon and reduce building energy consumption.	H	Staff Expense / Outreach / Consultant Fee	L - M	Tree purchase and maintenance	N/A	N/A	X	X	CITY COSTS: City staff costs. Assume many marketing/education-related strategies could be addressed concurrently. Assumes $75,000 per campaign (outreach for all green space strategies in one campaign) for strategies-related to marketing. 2 campaigns per 10-year period = $150,000 total for all 3 G-1 measures ($50,000 per measure). Cost for Urban Forest Management Plan = $80,000 - $200,000, depending on scope of work. Additional City Costs for tree purchase and planting, which depends on tree species, size, and location. PRIVATE COSTS: Tree purchase and planting costs depend on tree species, size, and location. Approximate cost for typical tree: ~$200; may be less if City or SCE purchases trees for residents at cost.
G-1.2	Establish a green roof and roof garden program to regulate, promote, and incentivize green roofs and roof gardens throughout the City.	M-H	Staff Expense / Outreach / Incentives	H	Initial Capital Investment	Possible but not calculated	Increased roof lifespan / possible energy savings	X	X	CITY COSTS: City staff costs. Full cost to City depends on the incentive program established. Assume many marketing/education-related strategies could be addressed concurrently. Assumes $75,000 per campaign (outreach for all green space strategies in one campaign) for strategies-related to marketing. 2 campaigns per 10-year period = $150,000 total for all 3 G-1 measures ($50,000 per measure). PRIVATE COSTS AND SAVINGS: Costs to building owners/developers will vary depending on the structure of the incentives offered. Green roofs can cost twice as much as a conventional roof to install (Source: Paladino & Company, Inc.). However, a typical green roof has an expected life span of approximately 40 years versus a conventional roof that typically only lasts 10 to 20 years before replacement. Also, green roofs are better insulators than conventional roofs and may reduce heating/cooling costs.
G-1.3	Establish an innovative program to increase green space throughout the City.	M-H	Staff Expense / Consultant Fee	Variable	Parkland fees	Variable	Incentives		X	CITY COSTS: City staff costs. Full cost to City depends on the incentive program established. Assumes City will also conduct outreach to support the program (see notes for G-1.1 and G-1.2). PRIVATE COSTS AND SAVINGS: Costs and savings to developer will vary depending on the structure of the fees and incentives offered. Also, studies have shown that real estate next to parks lease/sell faster and at higher prices, further benefiting developers.