Greener Glendale Plan

THE CITY OF GLENDALE'S SUSTAINABILITY PLAN

COMMUNITY ACTIVITIES

Credits and Acknowledgments

Funded by **Glendale Water & Power** and the **United States Department of Energy**

Produced by the **City of Glendale Community Development Department**

with Assistance from ICLEI (Local Governments for Sustainability), and the Statewide Energy Efficiency Collaborative

City Council and City Manager

Laura Friedman, Mayor
Rafi Manoukian, Council Member
Ara Najarian, Council Member
Frank Quintero, Council Member
David Weaver, Council Member
Scott Ochoa, City Manager

GWP Commission

Terry Chan, President
Armen Adjemian, Commissioner
Zanku Armenian, Commissioner
Deborah Dentler, Commissioner
Hugh Yao, Commissioner

Planning Commission

Greg Astorian, Commissioner
Stephanie Landregan, Commissioner
Chang Lee, Commissioner
Hank Scheetz, Commissioner
A. Erik Yesayan, Commissioner

City Departments

City Attorney
City Clerk
City Treasurer
Community Development
Community Services & Parks
Finance
Fire
Glendale Water and Power
Human Resources
Information Services
Library
Management Services
Police
Public Works

External Agencies and Partners

Local Governments for Sustainability (ICLEI)
Southern California Gas Company
Los Angeles County Sanitation Districts
California Energy Commission
California Air Resources Board
Southern California Association of Governments

Project staff: Cassandra Pruett, Planning Assistant; Laura Stotler, Principal Planner.

Cover photo by Gary Edstrom, 2004.

This plan was adopted by the Glendale City Council on March 27, 2012.

Community Development Department

Table of Contents

Introduction

Given the broad consensus that modern global development and consumption patterns are causing negative environmental, social, and economic impacts, the City of Glendale is joining an increasing number of California local governments committed to addressing sustainability at the local level. Sustainability is a long-term approach to environmental protection and process improvements. It prevents pollution from the start and calls for systems thinking, which acknowledges the connections between the economy, the environment, and social responsibility.

The Greener Glendale Plan is funded by the United States Department of Energy's Energy Efficiency and Conservation Block Grant and Glendale Water and Power (GWP), and is being completed in order to meet grant requirements and State legal requirements to address greenhouse gases.

The *Greener Glendale Plan*: *Community Activities* is the City of Glendale's plan for helping the community of Glendale achieve better sustainability. The Plan assesses what actions the City and community have already taken to be more sustainable, and recommends how to build on these efforts. The Plan indicates that the City of Glendale has already completed or initiated many sustainability programs. In fact, the City began implementing these well before 1990. Because complete data is not available that far back, the City is not able to measure the result of these early efforts. Instead, it is using year 2004, the earliest year for which it has complete data, as its baseline, and comparing it to data from year 2009 in order to identify the growth trend of greenhouse gas emissions (GHG).

During these years, Glendale reduced its energy and water consumption, and related GHG emissions by seven percent. Six percent of the reduction was due to GWP increasing the amount of energy generated from renewable sources. The other one percent was most likely due to GWP's numerous community conservation programs and water restrictions, but may also be due to reduced consumption during the economic downturn. At the writing of this report, Glendale's water use restrictions have been lifted, and economic recovery over time is expected. It is crucial to continue conservation efforts and to integrate sustainability into the recovering economy. In addition to maintaining momentum, Glendale needs to meet statewide conservation targets by increasing further its sustainability efforts.

The Greener Glendale Plan takes advantage of common sense approaches and innovative policies that the local government is uniquely positioned to implement. The actions identified

can reduce consumption and waste along with the associated costs, improve air quality and environmental health, and provide other benefits to Glendale for years to come.

Environmental Context

Although Glendale's political control is limited to the jurisdictional boundaries of the City, Glendale is inexorably connected to and dependent on the natural environment in which it exists. The land area we call Glendale is part of a natural system of topography, air, water, plants and animals (see Appendix A for details). This ecosystem provides to those in Glendale the resources needed for a healthy, safe, and attractive environment in which to live.

Humans have changed the ecosystem more in the past fifty years than ever before, largely to meet the growing demands for food, fresh water, materials, and fuel,[1] and to meet increasing global consumption. This has resulted in substantial damage to the environment on which humans depend for survival. Interruptions to the ecosystem cause unpredictable changes that can affect the resources we depend on, including food, water, land, and climate.

Modern economic and development patterns have not generally accounted for the value of local ecosystems. Typically, local ecosystems as a resource are bypassed in favor of human-made solutions. Urban environments often have been designed and built to depend on imported resources (e.g., water and energy) and artificial structures (e.g. for environmental management functions such as control of natural forces and removal of pollution). However, this development paradigm is proving unsustainable. The global ecosystem is failing, and the stability and reliability of those imported and artificial resources on which we currently depend are threatened.

Glendale can increase its ability to sustain itself into the future by developing in harmony with the local environment. This includes preserving existing natural resources, and gradually reshaping the urban environment in a way that fosters and supports the ecosystem, and takes advantage of the resources it provides. Protecting the ecosystem can provide numerous benefits to the community, including supplying and cleaning air and water, heating and cooling homes, controlling floods, enhancing the economy, reducing sickness and disease, supporting good health, and providing cultural (aesthetic, recreational, educational, and spiritual) assets.[1]

This document describes ways in which Glendale can begin moving toward a new paradigm of urban inhabitation.

Purpose, Scope, and Process Behind the Greener Glendale Plan

Purpose

On November 9, 2010, the City of Glendale adopted a resolution to address sustainability and climate change and to use the United Nations Urban Environmental Accords as a framework for sustainability actions (Appendix

[1] Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC.

B). The UN Accords outlines seven focus areas (Energy, Water, Waste, Transportation, Urban Design, Urban Nature, and Environmental Health) for achieving better sustainability. The Greener Glendale Plan describes specific measures the City can take to address these topic areas. The plan also addresses how Glendale can meet its state mandated reduction targets for greenhouse gas (GHG) emissions (the air pollution emissions widely believed to contribute to global climate change [Appendix C]). GHG emissions are a subset of the UN Accords Energy category.

Scope

This Plan covers objectives and strategies for increased sustainability within Glendale. Because the local government is included within the geographical boundaries of Glendale, its sustainability activities are also referenced in this document. However, they are thoroughly analyzed in a separate document, the Greener Glendale Plan for Municipal Operations.

Process

The Community Development Department Planning Division is working with other City departments to develop the Greener Glendale Plan through a five-milestone process. The 5-milestone process, a common planning approach applied towards sustainability planning, involves:

1) Inventorying existing conditions
2) Adopting a target
3) Developing a plan to meet the target
4) Implementing the plan
5) Monitoring progress and reporting results, then repeating the cycle as necessary.

Sustainability and Climate Change

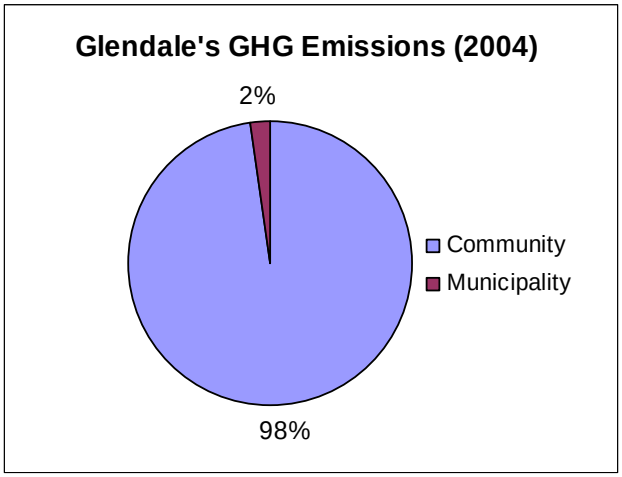
Sustainability plans typically address topics such as the environment (natural systems, planning and design, energy and climate), the economy (economic development, employment and workforce training), and society (affordability and social equity; children, health and safety; and education, arts, and community)[2].

This document is a first iteration sustainability plan for Glendale. It primarily focuses on the environment because it is mandated by the project funding, and is a good first step. It also touches upon economic sustainability. Future iterations of this document may explore economic and societal issues more thoroughly, in the context of Glendale community members' sustainability goals.

One of the issues addressed in this Plan is how Glendale will contribute to the mitigation of global climate change. This document analyzes Glendale activities against seven topics of sustainability as well as related GHG emissions that contribute to climate change. The document shows how implementing sustainability measures will result in reduced GHG emissions by Glendale, thereby decreasing Glendale's contribution to global climate change.

[2] *What is a Sustainability Plan*, ICLEI (www.ICLEI.org)

Staff conducted an inventory of GHG emissions for the entire community of Glendale. The inventory includes GHG emissions from activities within the geographical boundaries of Glendale, including energy purchased from outside Glendale yet consumed within its boundaries. The local government GHG emissions are included in the total community GHG count, and amount to 2% of the total.



The GHG inventory quantifies emissions from community consumption of electricity, natural gas, vehicle fuel, water, and the generation and disposal of waste. Emissions resulting from the production and delivery of consumer products are not included (see discussion in "Waste" chapter). The Hyperion II wastewater treatment plant and Bob Hope Airport are not included because they are not within the geographical boundaries of Glendale. The emissions calculated for utility power generation and purchases for community use are discussed in Appendix D. For information on the greenhouse gas inventory methodology, please see Appendix E.

Total GHG Emissions for Glendale were 1,734,867 MTCO2e (Metric Tons of CO2e [CO2e = CO2 equivalent, the six GHGs[3] inventoried and converted into CO2 units]) in 2004, and 1,614,709 MTCO2e in 2009, a decrease of 7%.

Emissions due to electricity, water, natural gas consumption, and waste generation decreased while emissions from transportation and landfill emissions increased. As a note, the landfill emissions fluctuate from year to year and are on a long-term downtrend, and transportation emissions were calculated from estimated vehicle miles traveled data rather than from direct fuel consumption data, which means the data is less reliable.

<u>From 2004 to 2009</u>

Natural Gas – 11% decrease

Water Transport – 20% decrease

Waste Generation – 23% decrease

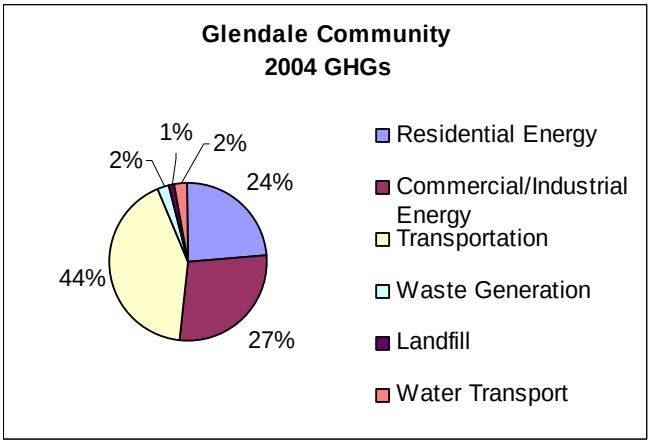
Electricity – 18% decrease (due to energy source, not a reduction in energy consumption)

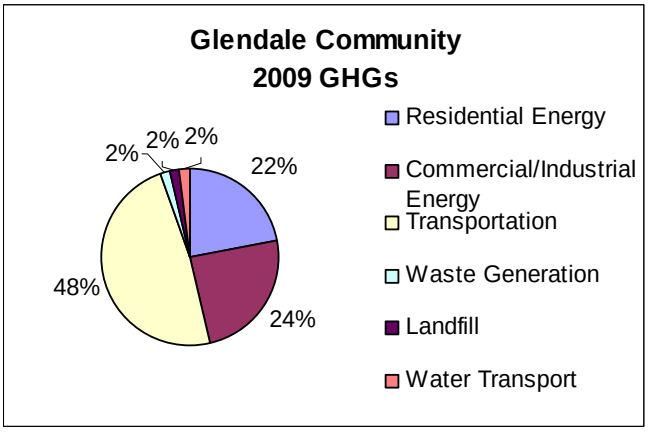
Landfill – 19% increase

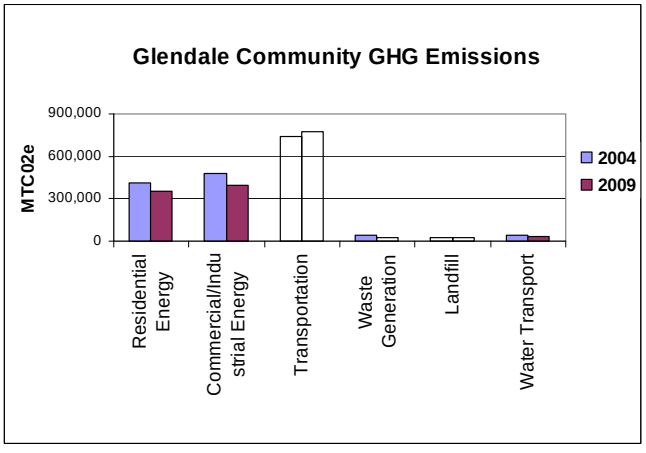
Transportation – 5% increase

Please see Appendix F for details on the GHG inventory results.

[3] The six internationally recognized greenhouse gases regulated under the Kyoto Protocol, which are listed on page 105.

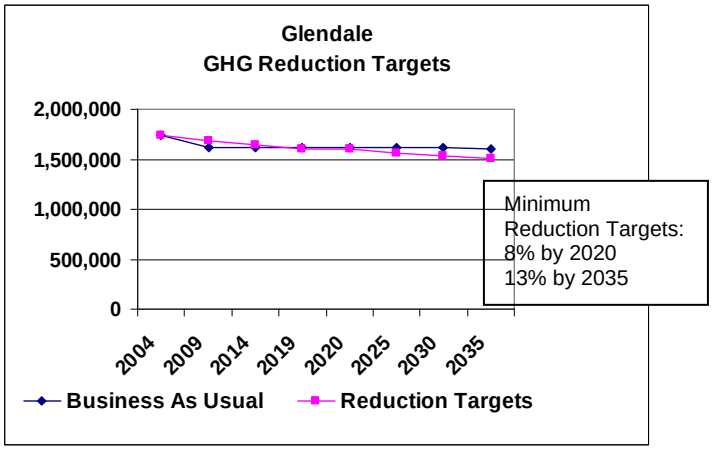






Although it is tempting to compare Glendale's total GHG emissions to neighboring cities, it is not possible because cities vary greatly in their size, activities, land uses, and geography. These factors directly determine GHG levels. Therefore, a comparison of GHG numbers between cities without a detailed analysis would not be meaningful.

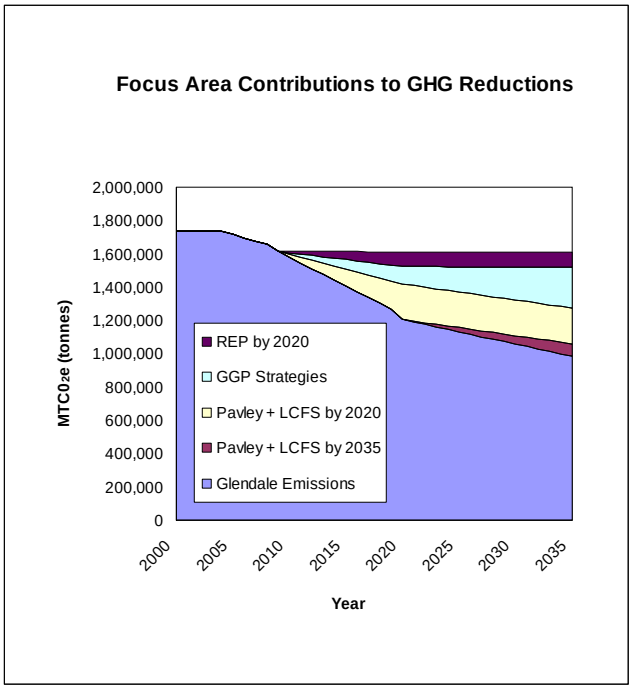
Glendale's GHG Emissions Forecast and Reduction Targets



An emissions forecast was projected for Glendale based on projections from its 2004 to 2009 trend. The emissions forecast is a "Business As Usual" forecast, a scenario estimating future emissions levels if no further local action (i.e. strategies within this Greener Glendale Plan) were to take place. The forecast indicates that if Glendale continues existing efforts, emissions will continue to slowly decline, but not enough to meet reduction targets.

Glendale minimally should meet regional (Southern California Association of Governments) GHG reduction targets of 8% by 2020, and 13% by 2035. Due to State mandated regulations affecting utilities (Renewable Portfolio Standard [RPS] requiring a Renewable Energy Portfolio [REP] of 33% by year 2020), and the transportation sector (Low Carbon Fuel Standard [LCFS], and Clean Car Standard [AB 1493, Pavley, 2002], the community should be able to meet these targets. Because the Clean

Car & Fuel Standards are not within the control of Glendale, it is difficult to predict with certainty the resulting GHG reductions. Existing estimates are 25% reduction in transportation related GHGs by 2020, and an additional 10% by 2035.



If the community chooses to adopt more ambitious targets, it will require pursuing programs for which the City currently does not have funding. The following list illustrates potential GHG reduction targets for year 2035 and the major strategy categories to achieve them. The percentages are cumulative.

Business as usual – 7%

REP (33% by 2020) – 12%

Greener Glendale Plan Strategies – 26%

Pavley + LCFS by 2020 – 38%

Pavley + LCFS by 2035 – 43%

Almost all of the sustainability programs recommended throughout this document are expected to result in greenhouse gas emission reductions in some way. However, it is only possible to quantify those reductions with known specific activity data, for example, gallons of fuel saved, kWh energy saved, or vehicle miles reduced. Many programs at the conceptual level do not have this data available.

The purpose of this document is to outline a catalog of potential community sustainability programs. When additional funding becomes available, specific programs will be explored in more detail to determine feasibility.

The following charts indicate priority levels for the various programs within this document.

List 1 illustrates the Greener Glendale Plan recommended programs that have quantified GHG reduction estimates.

List 2 indicates areas of priority based on community input.

List 3 indicates a final priority list taking into account both GHG reduction potential, community priority, and feasibility.

List 1: Greener Glendale Plan Strategies with quantified GHG reductions (Contributes 13% GHG Reduction) *Please notice below that certain community businesses and schools have contributed their sustainability efforts to the Greener Glendale Plan.*

	Sustainability Category	Measure	***Estimated*** **MTCO2e GHG Reduction**	**Cumulative GHG Reduction**
ESTIMATED GHG EMISSION REDUCTIONS BY 2020	Transportation	California vehicle and fuel standards	214,326	214,326
	Energy	Increase REP to 33% (additional 16%)	88,423	302,749
	Cross Cutting	Sustainability outreach and education	98,550	401,299
	Cross Cutting	Smart Grid Applications	32,821	434,120
	Energy	Encourage/require energy efficiency audits and upgrades at time of building sale	19,597	453,717
	Cross Cutting	***Community business and school efforts (see pg.22 and Appendix G for details)***	***9,921***	463,638
	Urban Design	Green Building Standards	6,965	470,603
	Urban Design	Zone changes since 2004	5,769	476,372
	Water	Encourage/require water efficiency audits and upgrades at time of building sale	4,825	481,197
	Water	Provide rebates for reduction of turf	4,128	485,325
	Waste	Zero Waste Plan (70% diversion rate)	2,634	487,959
	Cross Cutting	Other local government efforts by 2020 (See Appendix H)	2,538	490,497
	Waste	Plastic bag ban	1,514	492,011
	Urban Nature	GWP Tree Power Program	881	492,892
	Urban Nature	Plant 3,400 trees by 2020 (local government)	868	493,760
	Transportation	Program helping businesses establish EV charging stations/rebate for installation of EV charging stations	225	493,985
	Transportation	Increases in EV purchases due to outreach	162	494,147
	Transportation	Community electric vehicle (EV) purchases since 2009	161	494,308
BY 2035	Transportation	California vehicle and fuel standards	75,427	569,735
	Energy	Encourage/require energy efficiency audits and upgrades at time of building sale	29,396	599,131
	Water	Encourage/require water efficiency audits and upgrades at time of building sale	7,237	606,368
ADDITIONAL GHG EMISSION REDUCTIONS BY 2035	Waste	Zero Waste Plan (90% diversion rate by 2030)	5,854	612,222
	Cross Cutting	Other local government efforts by 2035 (See Appendix H)	3,922	616,144
	Water	Provide rebates for reduction of turf	2,752	618,896
	Cross Cutting	Other local government efforts - ambitious target (See Appendix H)	2,507	621,403
	Urban Nature	Plant additional 7,750 trees (local government)	1,978	623,381
	Urban Nature	GWP Tree Power Program	1,321	624,702

*Please see discussion in “Waste” section. Actual emission reductions are likely higher.

List 2: Community Priority Lists

The following items indicate the programs or program areas selected by the community as top priority at each of the Greener Glendale Open House events. They were listed as priority actions to *build on existing efforts.*

Open House #1 (April 27, 2011)

Programs

Energy

- Facilitate permitting and construction of alternative building structures, materials, and site location.

Water

- Provide rebates for reduction of turf.

Waste

- Work with restaurants to encourage use of biodegradable take-out materials and elimination of disposable/non-recyclable materials such as Styrofoam.

Transportation

- Provide development incentives for providing alternative fuel infrastructure.

Urban Design

- Develop economically successful, pedestrian friendly streets that act as destination centers in Glendale.
- Require development to include shade trees, cool paving and roofing, and increased permeability and natural landscaping.

Urban Nature & Environmental Health

- Identify the most toxic products used in Glendale and adopt a plan to remove them.

Open House #2 (January 23, 2012)

Program Areas

Energy

- Reduce citywide energy consumption by facilitating and coordinating community energy efficiency projects

Water

- Reduce community water consumption through promotion, education, and outreach campaigns.
- Implement stormwater management practices to protect water quality and replenish local groundwater sources.

Waste

- Community education and outreach

Transportation

- Facilitate the provision of alternative transportation infrastructure

Urban Design

- Continue to implement regional urban planning strategies to increase sustainability and livable environments

Urban Nature

- Ensure there is accessible park and recreational open space to serve residents

Environmental Health

- Promote the use of locally grown, organic foods

Economic Development

- Raise the city's profile as a forward thinking, "green" city

For details about the community outreach that was conducted, please see Appendix I.

The final priority list takes into account the effectiveness in reducing greenhouse gas emissions, community priority, and feasibility.

List 3: Final Priority List

1. Conduct community outreach and education to promote and encourage sustainable practices.
2. Retrofit existing development for increased energy and water efficiency, waste reduction, reduction in use of toxics, and increased use of natural landscaping including native trees and plants.
3. Promote and support alternative forms of transportation and vehicle fuel.
4. Promote and support the use of renewable energy.
5. Install public works conservation demonstration projects within the community.
6. Continue to implement urban planning strategies to increase sustainability and livable environments.

Sustainability Achievements: What Glendale Has Accomplished

For decades, Glendale has shown its commitment to sustainability. This section outlines these achievements. Data is not available to quantify the GHG reductions from early sustainability efforts. Therefore, this chapter describes these measures in narrative form. It is important to note that Glendale has already pursued the relatively easy to achieve, affordable measures ("low-hanging fruit"). In fact, Glendale has already pursued numerous measures involving significant investment.

No GHG inventory was completed for years 1990 – 2004, so measures implemented during those years will not be reflected in the inventory. Measures implemented between 2004 – 2009 will be reflected in the GHG inventories that were conducted for those years. All measures implemented after 2009 will be reflected in the reduction strategies listed in each sustainability topic chapter within this report.

The following list contains efforts relating to projects that affect or are used by the entire community. Local government projects that address specific municipal facilities or activities are addressed in the Greener Glendale Plan for Municipal Operations.

Energy

- Introduced hydro power into Glendale's utility energy mix (1936)
- Began community outreach to promote and encourage water and energy efficiency (1990)
- Grayson Power Plant switched from fuel oil to natural gas and landfill gas (1995)
- Began "Business Energy Solutions Rebate" program (for Large and Medium sized businesses) (2000)
- Installed LED lights in all traffic signals (2000)
- Began "Living Wise" program (conservation education for 6th grade students) (2001)
- Began "Smart AC Tune-Ups and Duct Sealing Services" program (2002)
- Began small business "Smart Business Energy Savings Upgrades" program (2002)
- Began "Smart Home Energy and Water Surveys Program" (2003)
- Introduced wind power into Glendale's utility energy mix (2003)
- Began "Cool Care" low-income refrigerator replacement program (2003)
- Began "Smart Home Peak Hogs" energy efficiency upgrade rebate program for owners of multi-family residential buildings (2004)
- City of Glendale constructed a 261 KW solar generation station at Glendale Community College (2004)
- Conducted energy efficiency upgrades on Grayson Power Plant resulting in 9% equipment efficiency increase, a 2% power plant efficiency increase, and reduction in water consumption (2004)
- Began "Smart Home Energy & Water Savings Rebates" program (2005)
- Began "Smart Home Refrigerator Recycling" program which offers rebates and incentives to GWP customers for replacing old refrigerators with more energy-efficient models (2006)

- Began new community outreach campaign to promote and encourage energy and water conservation (2007)
- Began formal effort to test water delivery pumps for energy efficiency and upgrade as needed (2007)
- Began "Compact Fluorescent Light (CFL) Giveaway Program" (2007). This program is now expired.
- Began "GWP Green Partners Program" to allow customers to buy green power (2008). This program is now expired.
- Began solar energy rebate program (2008)
- Achieved a 20% utility renewable energy portfolio (2008)
- Began sending home energy reports to residential customers (2009)
- Began "Green Allowance" program encouraging partnerships between children and their parents to save money through energy and water conservation (2009). This program is now expired.
- 100 old, energy in-efficient refrigerators throughout Glendale Unified School District were replaced with new ENERGY STAR rated models (2009)

Water

- Instituted "No Water Waste Policy" (1990)
- Instituted the mandatory water conservation plan that regulates water usage for landscaping according to a phasing plan (1990)
- Began requiring reclaimed water dual-plumbing for commercial high-rise development (1990)
- Began community outreach to promote and encourage water and energy efficiency (1990)
- Developed recycled water system (early 1990's). The system currently supports 80 customers and 20 miles of piping. The City uses recycled water for many of its Public Works services. New multi-family residential buildings are required to have piping connections to recycled water.
- Began utilizing reclaimed water for landfill irrigation (1994)
- Installed drip irrigation demonstration project at City Hall (1990s)
- Community education and outreach program to prevent illegal stormdrain dumping (1996)
- Began requiring Urban Stormwater Mitigation Plans for 13 categories of development projects (2002)
- Began installation of trash capture devices on City-owned catch basins and storm drain pipes (2002). To date, the City has installed 523 devices.
- Began "Smart Home Energy and Water Surveys Program" (2003)
- Began "Smart Home Energy & Water Savings Rebates" program (2005)
- Installed native plant demonstration garden at the Integrated Waste Recycling Center (2006)
- Began new community outreach campaign to promote and encourage energy and water conservation (2007)
- Began installing drought tolerant landscaping in parks and mulching low use turf areas, shrub beds, planters, tree wells, etc. in parks and community centers (2008)

- Began employing pest management practices that minimize use of toxic pesticides in parks and community centers (2008)
- Eliminated seasonal planting and seasonal planting areas in parks and community centers (2008)
- Converted all Public Works water-using vehicles (e.g. street sweepers, tree watering tanks, etc.) from potable to reclaimed water (2008)

Waste

- Installed Scholl Canyon landfill gas collection system (1986)
- Recycling program (1989)
- Household hazardous waste pickups (1991)
- Began utilizing Scholl Canyon landfill gas for energy production (1994)
- Achieved 52% diversion (recycling) rate (2000)
- Achieved 61% recycling diversion rate (2009)

Transportation

- Incorporated pedestrian facilities into projects as routine accommodation (1990s)
- Modified the Glendale Metrolink Station for service as a transfer center to connect services and routes to facilitate regional transportation (1990s)
- Adopted the Bikeway Master Plan (1995)
- Introduced first CNG vehicle into Beeline bus fleet (1996)
- Began utilizing rubberized asphalt (2.5 tires per ton of asphalt concrete) in street improvement projects (1997)
- Adopted street standards for multi-modal users in the Circulation Element (1998)
- Provision of real time bus information (2003)
- Began utilizing up to 15% recycled asphalt concrete in street improvement projects (2004)
- Achieved pavement condition index (PCI) of 73 (Higher PCIs reduce gas usage. State average is 68) (2005).
- Downtown Mobility Study (2007)
- Began incorporating bicycle infrastructure into projects as routine accommodation (2008)
- To date, the entire Beeline fleet is CNG, except four older buses equipped with particulate traps that are scheduled for replacement with CNG vehicles in 2013.

Urban Design

- Provided subdivision standards for solar orientation and cluster development (1990s)
- Adams Square Revitalization (1998-2008)
- Mixed-use development standards (2004)
- Downtown Specific Plan (2006)
- Green affordable housing development (2007)
- Housing Element of General Plan (2009)

Urban Nature

- Began protecting native trees growing within Glendale limits, under the Indigenous Tree Ordinance (1982)
- Began purchase of open space for habitat and watershed protection and recreation (1980s)

- Completed inventory of existing street trees and potential sites for additional street trees (1980s).
- Completed re-inventory of all City street trees (1992)
- Conducted studies and adopted standards for protection of blueline streams and ridgelines (1990s)
- Began formal maintenance program for street trees (2000)
- Formally adopted annual street tree planting program (2000)
- Developed Deukmejian Wilderness Park (2004)
- Began "Tree Power" program that provides free trees and planting support (2006)
- Developed Adams Square Mini Park (2006)
- Developed Cerritos Park (2006)
- Began including street tree planting in capital improvement projects as routine accommodation (2008)
- Developed Glendale Heritage Garden Mini Park (2010)

Environmental Health

- Verdugo community garden (1980)
- Anti-litter programs (1980's)
- Fire Department regulation of commercial toxics use and storage (1987)
- Downtown Glendale Farmers' Market (1992)
- Palmer community garden (1996)
- No smoking ordinance (2008)
- Monterey East community garden (2009)

Climate Change Policy

The Policy Context of Climate Planning

California

Since 2005, the State of California has responded to growing concerns over the effects of climate change by adopting a comprehensive approach to addressing emissions in the public and private sectors. California's role as a global leader was solidified with the passage of the Global Warming Solutions Act of 2006 (AB 32).

AB 32

AB 32 requires the state to reduce its greenhouse gas emissions to 1990 levels by 2020. In December 2007, the California Air Resources Board (CARB) identified the 2020 limit, equal to statewide emissions in 1990, of 427 million MTCO2e gases. It also requires the California Air Resources Board (CARB) to develop a policy plan for reaching AB 32 emissions reduction goals and to adopt and enforce regulations to implement the plan.

The resulting AB 32 Scoping Plan was adopted by CARB in December 2008. Among the many strategies articulated, it encourages local governments to reduce emissions in their jurisdictions by a degree commensurate with state goals. Given that identifying 1990 emissions levels can be difficult for some local governments, a reduction of approximately 15 percent below "current" levels (this language was used in 2008) is given as a rough equivalency. However, AB 32 stopped short of setting mandatory targets for local government compliance. The state has not set an air quality threshold, though it has the authority to do so through the CARB. California's 35 air districts, which operate independent of the state and CARB, are responsible for enforcing state and federal air pollution reduction laws in their jurisdiction, including AB 32. The air districts can establish threshold levels that are enforceable within their jurisdiction, and some air districts have set significance thresholds, which trigger mitigation requirements. These thresholds vary by region. The South Coast Air Quality Management District, Glendale's regional air quality district agency, has not set for the region significance thresholds related to GHG emissions.

In addition, AB 32 identifies the following strategies that will impact local governance:

- Develop a California cap-and-trade program (currently in draft and scheduled to start in 2012, with compliance obligations in 2013)
- Expand energy efficiency programs.
- Establish and seek to achieve reduction targets for transportation-related GHG emissions.
- Expand the use of green building practices.

- Increase waste diversion, composting, and commercial recycling toward zero-waste.
- Continue water efficiency programs and use cleaner energy sources to move and treat water.
- Reduce methane emissions at landfills.
- Preserve forests that sequester carbon dioxide.

Important steps that have already been taken by the state include mandating stronger vehicle emissions standards (AB 1493, 2002), establishing a low-carbon fuel standard (EO # S-01-07, 2007), mandating a climate adaptation plan for the state (S-EO # 13-08, 2008), establishing a Green Collar Job Council, and establishing a renewable energy portfolio standard for power generation or purchase in the state. The state also has made a number of legislative and regulatory changes that have significant implications for local governments.

SB 97

SB 97 (2007) requires the Office of Planning and Research to maintain greenhouse gas planning guidelines for the California Environmental Quality Act (CEQA). In addition, CARB is tasked with creating energy-use and transportation thresholds for CEQA reviews that, if exceeded, would require local governments to account for greenhouse gas emissions when reviewing project applications.

CEQA

CEQA (California Environmental Quality Act) is a State statute that requires public agencies to evaluate the environmental impacts of discretionary development plans and projects in their jurisdictions. Pursuant to law, the state Office of Planning and Research updated CEQA guidelines to require analysis of climate change in CEQA documents, which came into effect in March 2010. Many jurisdictions are finding that climate change impacts from local government activities are "significant" under CEQA, and are identifying emissions reductions targets and Climate Action as mitigation measures to reduce climate change impacts to less-than-significant levels.

The California Attorney General's Office provides guidance on when to prepare a Climate Action Plan if the local government intends it to serve as its primary CEQA mitigation strategy for its General Plan:

"If a city or county intends to rely on a Climate Action Plan as a centerpiece of its mitigation strategy, it should prepare the Climate Action Plan at the same time as its general plan update and EIR (Environmental Impact Report). This is consistent with CEQA's mandate that a lead agency must conduct environmental review at the earliest stages in the planning process and that it not defer mitigation. In addition, we strongly urge agencies to incorporate any Climate Action Plans into their general plans to ensure that their provisions are applied to every relevant project."[4]

[4] Climate Change, the California Environmental Quality Act, and General Plan Updates: Frequently Asked Questions from the California Attorney General's Office. 2011, Jan 26. <http://ag.ca.gov/globalwarming/pdf/CEQA_GP_FAQs.pdf>

Furthermore, a local government may elect to incorporate climate mitigation into its General Plan and fulfill CEQA through a fully integrated plan rather than separate efforts.

The Natural Resources Agency added a new provision, Section 15183.5 that became effective in March 2010, which provides a framework for plan-level greenhouse gas emissions reduction plans.[5] An adequate plan must:

- Quantify existing and projected community-wide greenhouse gas emissions over a specified time period;
- Establish greenhouse gas emissions reduction targets over the life of the plan which, if achieved, would render the community's greenhouse gas emissions to be less than significant;
- Identify and analyze the greenhouse gas emissions resulting from specified activities in the community;
- Identify a suite of specific, enforceable measures that, collectively, will achieve the emissions targets;
- Establish a mechanism to monitor the plan's progress and to require amendment if the plan is falling short;
- Be adopted in a public process following environmental review.

Increasingly, local governments view this approach as a practical necessity, in part because state guidance specifies that lead agencies should consider the extent a project complies with a statewide, regional or local climate action plan in order to assess "significance".[6] Notably, the guidance does not offer a guaranteed safe harbor for such projects – leaving continued uncertainty.

Finally, a local government may claim exemption from CEQA through a Categorical Exemption, assuming that the criteria for exemption are met.[7]

State Renewable Energy Programs

California has the most aggressive Renewable Portfolio Standard (RPS) in the nation, requiring 33% renewable procurement by 2020 (20% average over years 2011 – 2013, 25% by 2016, 33% by 2020). Additionally, the state promotes solar uptake in the private sector with the California Solar Initiative (CSI) regulated by the California Public Utility's Commission CSI proceedings.

AB 811

AB 811 (2007) authorizes all local governments in California, if they so choose, to establish special districts that can be used to finance energy efficiency, solar, or other renewable energy improvements to homes and businesses in their jurisdiction. Because of opposition by Fannie Mae and Freddie Mac, federal regulators have effectively put most of the local programs dealing with residential properties on hold. It may take additional federal legislation to get residential programs fully back on track, although programs designed for commercial properties face no similar roadblocks. A handful

[5] Ibid.
[6] Natural Resources Agency. CEQA Guideline Number 15064.4.
[7] California Department of Transportation. Chapter 34 – Exemptions to CEQA. Accessed 2011, Jan 26. < http://www.dot.ca.gov/ser/vol1/sec5/ch34ce/chap34.htm>.

of programs in California are continuing, but at the time of publication, uncertainty remains.

SB 375

SB 375 (2008) revises the process of regional transportation planning by metropolitan planning organizations (MPOs), which are governed by elected officials from local jurisdictions. The statute calls on CARB to establish regional transportation-related greenhouse gas targets and requires MPOs to develop a regional "Sustainable Communities Strategy" (SCS) of land use, housing, and transportation policies that will move the region towards its GHG target, or an "Alternative Planning Strategy" (APS) if the SCS cannot achieve the GHG reduction goals. The statute stipulates that transportation investments must be consistent with the Sustainable Communities Strategy and provides CEQA streamlining for local development projects that are consistent with the Strategy.

On Feb 15, 2011, the State of California Air Resources Board adopted Executive Order G-11-024 Relating to Adoption of Regional Greenhouse Gas Emission Reduction Targets For Automobiles and Light Trucks Pursuant to Senate Bill 375. The Executive Order approved proposed greenhouse gas reduction targets for various MPOs, including Southern California Association of Governments (SCAG) [8]. SCAG's proposed GHG reduction targets are 8% by 2020 and 13% by 2035[9].

Other Benefits of Climate Protection Measures

In addition to addressing climate change, measures taken to reduce greenhouse gas emissions have other important benefits. The most obvious of these is the potential for significant cost savings. In 2009, Glendale spent over $184 million on energy to power buildings, and over $33 million for water. Many of the measures in this plan "pay for themselves" quickly by reducing direct costs, such as fuel or energy used, and indirect costs such as maintenance.

Other side benefits of climate change mitigation activities include enhanced energy and water security through reduction in total demand and increased reliance on local energy and water sources, and cleaner air through reduction of vehicle emissions.

Many of the actions identified in this plan to mitigate GHG emissions will also help Glendale to adapt to a changing climate. For example, extreme and prolonged heat waves can put considerable strain on the reliability of energy delivery in peak periods, possibly leading to service disruption during times when cooling is most needed. By increasing efficiency across Glendale, such service disruptions are less likely and Glendale will be able to cope better with those situations.

[8] http://www.arb.ca.gov/cc/sb375/executive_order_g11024.pdf

[9] State of California, Air Resources Board. (2010). Resolution 10-31. http://www.arb.ca.gov/cc/sb375/eo_attachment.pdf: pg 134.

Sustainability Focus Areas

Nine Focus Areas

The Greener Glendale Plan addresses sustainability in Glendale through seven topic areas as described in the United Nations Urban Environmental Accords. Please see Appendix B for a detailed breakdown of how this document addresses all components of the UN Accords. Please see Appendix A for details about the environmental and policy context of Glendale.

This document includes two additional topic areas, "Cross-Cutting Approaches" and "Economic Development."

Cross-Cutting Approaches
Economic Development
Urban Design
Waste
Energy
Urban Nature
Water
Transportation
Environmental Health

Each of the nine topics, or focus areas, explore a series of objectives with supporting strategies. An "Objective" is a goal, end-result, or target that supports a focus area and a "Strategy" is a means of realizing the objective.

Cross-Cutting Objectives & Strategies

Cross-Cutting Strategies do not clearly fall within one topic area, and are included in this section because they are considered essential to successful implementation of the other seven focus areas.

Energy efficiency is an important and common component of this plan. Energy efficiency strategies are woven into all of the focus areas.

Economic Development

As the community's economy recovers from the recent economic downturn, it is critical that sustainability be an integral part of this growth. This chapter has been added to provide sustainability measures that can be used to help stimulate the economy and help ensure sustainable economic growth.

New and Existing Strategies

This document includes a combination of existing policies and programs as well as new ideas based on community feedback and best practices from around the country. Whether a strategy is new or existing is noted in the strategy heading.

Climate Change Adaptation

With the growing recognition that climate change is already underway and science that suggests additional impacts are inevitable despite mitigation efforts, adaptation planning is rapidly becoming an important policy focus in California, the United States, and internationally.

Although 2011 was an unusually high rainfall year, historically California is already experiencing the effects of climate change. It has seen increased average temperatures, changes in temperature extremes, reduced snow pack in the Sierra Nevada, sea-level rise, and ecological shifts. These trends are expected to continue, and extreme weather events, such as heat waves, droughts, and floods, are expected to intensify.

In addition to these impacts, Glendale's geography creates specific local conditions that are sensitive to climate change:

1) Sixty-two percent of Glendale's land area is within a high fire hazard area. This is largely due to the hilly terrain as well as the fact that many of the city's residential neighborhoods extend into the urban-wildland interface. These areas are also subject to severe mudslide danger for years following wildfires.

2) Four major freeways (Golden State Freeway [Interstate 5], Foothill Freeway [Interstate 210], Glendale Freeway [California State Route 2], and the Ventura Freeway [California State Route 134]) pass through this city of 30 square miles, creating a higher than average susceptibility to freeway air pollution.

3) Glendale rests near the back of the South Coast Air Basin, against the San Gabriel and Verdugo Mountains, which are at the terminus of the basin's daytime airflows. Due to the high population density and automobile dependency of Southern California, the region's air pollution level is notoriously high. This is exacerbated by the topography, wind, and temperature patterns of the air basin, which result in the pollution becoming trapped within the basin.

Heat waves exacerbate poor air quality and high fire hazard conditions, which will be a direct challenge for Glendale and its emergency response teams. Higher temperatures will lead to higher electrical demand, and reduced snow pack in the Sierra's will further strain Glendale's water supply.

Although the purpose of this document is not to comprehensively address climate adaptation strategies, each objective is noted as to whether or not it supports climate change adaptation. The "Cross-Cutting Approaches" section includes a recommendation to complete a Climate Adaptation Plan.

Climate adaptation strategies may address the following issues[10]. Those addressed in the Greener Glendale Plan are indicated in bold lettering:

[10] USA EPA, *Climate Change Health and Environmental Effects: Adaptation*, http://www.epa.gov/climatechange/effects/adaptation.html

1. Human Health Issues (public health training, surveillance, emergency response, prevention and control)

2. **Reducing Urban Heat Island Effect** (cool roofs and land cover, shade tree planting)

3. Coastal Areas and Sea Level Rise

4. Agriculture and Forestry

5. **Ecosystems and Wildlife** (protecting and enhancing migration corridors to allow species to migrate as climate changes, supporting ecosystem resilience, etc.)

6. **Water Resources** (altering infrastructure, changing demand, reducing risk, improving efficiency, planning for alternative water sources, changing water allocations, and conserving soil moisture)

7. **Energy** (increasing efficiency to offset increased energy consumption due to warming, diversifying power supply in the event of power plant failures due to excess demand or extreme weather conditions)

Climate change mitigation strategies are closely interlinked with, and often overlap climate change adaptation strategies. For example, reducing energy consumption helps mitigate climate change when it results in less production of energy from fossil fuels. Reducing energy consumption also helps communities adapt to climate change because it helps offset the increased demand on the electric supply due to increased temperatures (e.g. by increased use of air conditioning).

Cross-Cutting Approaches

This section focuses on sustainability measures that affect more than one sustainability category, and/or are considered integral to successful implementation of the other seven focus areas.

Objective	Supports Climate Change Adaptation
CC1 – Implement Smart Grid Applications	Y
CC2 – Implement Community Business and School Sustainability Efforts	Y
CC3 – Implement Sustainability Outreach and Education	Y
CC4 – Implement Municipal Operations Sustainability Efforts	Y
CC5 – Collaborate with Schools on Strategies within this Plan	Y
CC6 – Monitor the Progress of the Greener Glendale Plan and Revise as Needed	N
CC7 – Develop a Climate Adaptation Plan	Y

CC1 – Smart Grid Installation and Applications

GWP is transitioning to a Smart Grid energy and water management system, which will provide opportunities for energy and water savings by community members and GWP. Community members will be able to access real-time information about their energy and water consumption to help them monitor and make decisions about it. This data system will also enable GWP to provide faster service and more reliable water and energy supply. Benefits from this installation will continue for 15 years. GWP is promoting the benefits of this system to GWP customers, and encouraging their interaction with and participation in the Smart Grid tools (e.g. via social media applications and in-home display devices).

CC2 – Community Business and School Sustainability Efforts

Several community businesses and schools shared their own sustainability efforts for inclusion in the Greener Glendale Plan (next page and Appendix G). This is not a comprehensive list of all activities in the community. The largest employers in the city were contacted, and emails inviting participation were sent to Chambers of Commerce, Business Improvement Districts, and businesses who have participated in GWP's conservation programs. Continuation of this effort is encouraged, and would fit well within the awards and campaigns strategies within each sustainability topic, as well as the Economic Development component.

Community Businesses, Schools, and Hospitals

The following schools, businesses, and hospitals are contributing to Glendale's sustainability goals (details in Appendix G).

Name	Energy	Water	Waste	Transportation	Urban Design	Urban Nature	Enviro-Health	Quantified GHG reductions contributing to reduction target
Americana at Brand	✓	✓	✓				✓	
Ariada Salon & Spa	✓		✓					
CBRE 505 N. Brand	✓	✓	✓				✓	✓
550 N. Brand Owner's Corporation, CBRE	✓	✓	✓				✓	
CBRE 655 N. Central	✓	✓	✓					
Cushman & Wakefield 400 & 450 N. Brand	✓	✓	✓	✓			✓	✓
Dreamworks	✓	✓	✓	✓			✓	
Economy Office Supply	✓		✓					
Forest Lawn	✓	✓	✓	✓				
Glendale Community College	✓	✓	✓					
Glendale Federal Credit Union	✓	✓	✓	✓			✓	✓
Glendale Unified School District	✓	✓	✓				✓	✓
J's Maintenance	✓	✓	✓	✓			✓	✓
JC Penney	✓	✓		✓				✓
Nordstrom	✓		✓					
Piedmont Office Mgmt (Nestle and Children's Hospital)	✓	✓	✓	✓			✓	✓
Target	✓	✓	✓					

CC3 – Sustainability Outreach and Education

The most prevalent theme originating from community suggestions for the Greener Glendale Plan is the need for more sustainability outreach and education programs to foster sustainable habits and lifestyles for people in Glendale. Suggested programs span the range of UN Accords Sustainability Topics. For better organization and ease of use, these programs have been presented within the respective sustainability topic chapters, e.g. Energy, Water, Waste, etc. Additional ideas are listed below.

CC3 - A	**Establish City staff sustainability coordination**- Many measures in this plan will require staff coordination that is not currently in place. Effective implementation of this plan will not be possible without designation of one or more staff to oversee its progress. Minimally, the Plan should be integrated into each department's strategic planning process. Coordination of the Plan can also be shared across departments by being added to existing staff work loads. Another option is to identify funding for and create a new position to coordinate all sustainability efforts across the City and community.
Status: New	**Implementation Actions Needed:** Coordination between City Manager and City Council to determine the most appropriate method of ensuring sustainability coordination occurs, given the City's staff and funding constraints.

CC3 - B	**Establish a forum for community direction of sustainability efforts -** Whether through an ad hoc committee or focus group (comprised of members of existing City Commissions/Boards), or informal feedback process, community direction should be integral to the planning and implementation of community sustainability outreach and education campaigns. City staff should coordinate with this group in leading community sustainability efforts.
Status: New	**Implementation Actions Needed:** Obtain funding for this effort, work with the community to establish an operating structure, work with this group to assist development and implementation of other measures within this plan.

CC3 - C	**Develop a comprehensive sustainability education and outreach program and implement community wide** – Create a community-wide conservation campaign that encompasses the outreach strategies from the chapters within this report. This should become the community-wide conservation campaign and branded as such. It should be promoted via GTV6, online media, community communication channels, workshops with community groups and schools, etc., as funding allows. It should build on GWP's existing community conservation programs, and expand to include other sustainability topics beyond energy and water. Appendix I (Coalition for Greener Glendale comments) may be consulted for additional event and outreach ideas.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff/intern, and coordinate with City staff and the community to develop campaign contents and strategy.

Status: New	

Status: New	

The Greener Glendale Plan for Municipal Operations addresses in detail sustainability for internal operations within Glendale's local government. A few items from that report that were particularly relevant to the entire community have been included in this document. The rest was not duplicated in this document for the purposes of clarity and focus. A summary of the key sustainability programs listed in the Municipal Operations document is provided in Appendix H. The Municipal Operations efforts contribute to the community's GHG reduction goal, which is why they are included.

CC5 – Collaborate with Schools about the Strategies within this Plan
Community comments included support for the City collaborating with local schools about the strategies within the Greener Glendale Plan. Specific strategies have been articulated within various sustainability topics within this report, including Energy, Waste, and Transportation.

CC5 - A	**Work with Glendale Unified School District, Glendale Community College, and all other schools in the city to coordinate implementation of school-related strategies listed in this plan**
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

CC5 - B	**Work with universities in the region to utilize student volunteer work to conduct Greener Glendale Plan studies** – This report lists several feasibility studies and inventories that need to be completed, such as a tree canopy inventory, recreational open space inventory, toxic removal inventory, and feasibility study projects such as rooftop garden installations.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy and assign staff to lead effort and coordinate with universities.

CC6 – Monitor the Progress of the Greener Glendale Plan and Revise as Needed

CC6 - A	**Monitor Glendale's progress in meeting the goals in the Beacon Award[11] Program, and apply for relevant awards when applicable.**
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff/intern. Plan, monitor, and assess progress in meeting the goals.

CC6 - B	**Assess Glendale's progress in meeting the UNUEA goals and apply for award status -** The City adopted the United Nations Urban Environmental Accords (UNUEAs) as the guiding framework for its sustainability efforts and plans. The existing 21 Accords (Appendix B) were provided as goals for cities to strive to reach by year 2012. Progress by Glendale should be evaluated and reported to the agency administering the program. The City should apply for award status and update its plan based on the evaluation.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff/intern, and coordinate with UNUEA administrating agency to determine requirements, assess Glendale's efforts, and submit application.

CC6 – C.1	**Monitor and report progress annually -** The five-milestone approach used to develop the Greener Glendale Plan (described in the "Introduction: Process" section of this document) involves monitoring implementation progress, reporting results, and revising the plan as needed. Monitoring progress and revising for increased effectiveness is a critical component to the long-term success of the Greener Glendale Plan.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff/contractor/intern, and coordinate with City departments and the community to obtain updates, assemble into report, and publish online.

CC6 – C.2	**Develop "sustainability indicators" to use for annual monitoring and reporting -** The City conducted an extensive community outreach effort in the mid-2000's to develop strategic goals to guide the City's Long Range Financial Plan. The City's "Annual Report" is organized according to these goals[12], and reports on a variety of performance measures (indicators) for each. These should be compared to the sustainability goals in the Greener Glendale Plan to determine if the sustainability goals are being tracked and to establish indicators for those that are not. Other cities who have developed sustainability indicators and against which Glendale can be compared are Seattle, WA and Santa Monica, CA.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff/contractor/intern, and coordinate with the City Manager's Office and other departments as needed.

[11] Local Government Commission climate change and sustainability award program. City Council authorized participation in this program on Nov 1, 2011.

[12] The Strategic Goal areas identified as presented in the Annual Report are: Informed & Engaged Community, Safe & Healthy Community, Economic Vibrancy & Fiscal Responsibility; Balanced, Quality Housing; Community Services & Facilities, Infrastructure & Mobility, Arts & Culture, and Sustainability.

CC6 - D	**Re-inventory Glendale's GHGs every five years and update the Greener Glendale Plan as needed -** The five-milestone approach used to develop the Greener Glendale Plan (described in the "Introduction: process" section of this document) involves monitoring implementation progress, reporting results, and revising the plan as needed. This would include updating the sustainability and GHG inventories at regular intervals (existing inventory years are at five-year increments). Monitoring progress and revising for increased effectiveness is a critical component to the long-term success of the Greener Glendale Plan.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff/contractor/intern. If it will be done in-house, ensure membership is current with ICLEI or other appropriate organization for support in conducting the GHG inventory. Review the methodology conducted for the 2004 and 2009 inventories to ensure consistency with the new inventory. Work with the community to update the Greener Glendale Plan as needed according to the GHG inventory findings.

CC6-E	**Conduct a lifecycle emissions inventory for Glendale and develop recommendations for reducing associated emissions –** As discussed in the "Waste" section, the GHG inventory does not account for all of the GHGs emitted throughout the lifetime of the products we use, including material extraction, manufacturing, delivery, use, and disposal. A true inventory of Glendale's GHGs would include this data. However, this data is not currently available.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff/contractor/intern, and work with the Environmental Protection Agency's West Coast Climate and Materials Management Forum, and City of Glendale Integrated Waste Division to determine the availability of data that can be used to conduct the inventory. Data availability may change depending on waste management system changes due to Zero Waste Plan implementations. If the data cannot be obtained at this time, determine the feasibility of building into current operations necessary data tracking.

CC7 – Develop Climate Adaptation Plan
The negative effects of climate change (see "Climate Change Adaptation" within the "Sustainability Focus Areas" chapter) will impact California. The State of California adopted the 2009 California Climate Adaptation Strategy and recommends that regional and local agencies assess climate change impacts and develop strategies to address them.

Economic Development

This section focuses on sustainability measures to help stimulate the economy, and to help ensure sustainable economic growth. The City of Glendale Economic Development Division's Strategic Direction, according to the City's Strategic Plan, is "to implement strategies and services that will create an environment in which business can develop and prosper." The Economic Development Division influences the direction of private sector investment toward opportunities that can lead to sustained economic growth. It does this by attracting new businesses, retaining existing businesses, and helping some of them expand. Economic Development also builds a strong economic base that provides the funding necessary to operate local government and provide quality services and programs to the community.

ED1 – Support a strong local economy	Y
ED2 – Encourage sustainable business practices	Y
ED3 – Support local businesses	Y
ED4 – Raise Glendale's profile as a forward thinking, "green" city	N
ED5 – Support green jobs training in Glendale	N

ED1 – Support a strong local economy
A strong local economy is one that is diverse, stable, and provides for the needs of the community.

ED 1 - A	**Encourage the economic activity and output of Glendale to be diversified among economic sectors** in order to better weather economic fluctuations.
Status: New	**Implementation Actions Needed:** Obtain funding for this effort and/or assign staff, coordinate with the Economic Development Division to assess existing sector distribution and make recommendations.

Status: Ongoing	

Status: New	

ED 2 – Encourage sustainable business practices

ED 2 - A	**Promote and encourage Glendale businesses to adopt sustainable business practices**
Status: New	**Implementation Actions Needed:** If funding becomes available, coordinate with Economic Development Division and GWP to implement. Coordinate this effort with ED4-B and CC2.

ED 2 - B	**Promote and encourage green businesses to locate in Glendale**
Status: New	**Implementation Actions Needed:** If funding becomes available, coordinate with the Economic Development Division to develop a promotional campaign and implementation strategies.

ED 2 - C	**Create environmentally beneficial jobs in low-income neighborhoods**
Status: New	**Implementation Actions Needed:** If funding becomes available, coordinate with the Economic Development Division and Verdugo Jobs Center to plan next steps.

ED 3 – Support local businesses

[13] "Jobs-housing balance" refers to the ratio of local jobs to local housing and implies that if there is a one-to-one ratio, people will live in the same city they work in. In practicality, people's choices about jobs and housing location are much more complex. However, ensuring availability of local affordable housing and encouraging businesses to hire local employees when possible does provide sustainability benefits.

Status: New	

Status: New	

Status: New	

Status: New	

ED 4 – Raise Glendale's profile as a forward thinking, "green" city

ED 4 - A	**Expand promotion of Glendale's sustainability initiative brand, "Greener Glendale"**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort. Coordinate with City departments and the community to develop a marketing and promotion plan.

ED 4 - B	**Promote green buildings (LEED, Green Point Rated, etc.) in the city –** GWP currently assists businesses to obtain LEED certification, and promotes and awards those who do. Efforts should be continued and expanded.
Status: Ongoing	**Implementation Actions Needed:** Obtain funding for this effort and assign staff. Work with GWP to determine how this program can be expanded.

Status: New	

Status: New	

Status: New	

Status: New	

ED5 – Support green jobs training in Glendale

ED 5 - A	**Coordinate with local schools, the college, and the Verdugo Jobs Center to encourage, promote, and support green jobs training in Glendale.**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort and assign staff, coordinate with the Economic Development Division to develop a plan of action.

Urban Design

This Urban Design section covers the arrangement and design of buildings, public spaces, and other components that make up urban spaces. Although trees and landscape are part of urban design, to avoid duplication and for document brevity, they are addressed in the Urban Nature section.

Buildings

Energy consumed in buildings accounts for 49% of Glendale's GHG inventory emissions. Improving the efficiency of our building stock will contribute significantly to achieving Glendale's greenhouse gas reduction target, while saving citizens money on utility bills and reducing the need for new infrastructure. This chapter focuses on opportunities to retrofit existing buildings, increase the quality of new construction, and ensure that future activities in these sectors are compatible with our community's sustainability goals. As a note, retrofitting existing buildings is of utmost importance because Glendale is a built-out city and relatively few new buildings are being added. Therefore, while it is important to ensure that new construction is sustainable, the greatest potential for reducing resource consumption by buildings is in retrofitting existing buildings.

On June 7, 2011, the City adopted a Green Building Standard with requirements exceeding. those in the State's mandatory CAL Green Code. These requirements include:

- Projects must exceed California Energy Code requirements by 15%
- Projects must reduce baseline water usage by 20%
- Radiant roof barriers shall be installed
- Gas-fired tankless water heaters shall have an energy factor of at least .80
- Gas-fired storage-tank type water heaters shall have an energy factor of at least 0.61
- Buildings shall be "solar ready"
- 20% permeable paving required
- High-efficiency gas-fired space heating equipment required
- High-efficiency air conditioning equipment required
- Increased natural lighting and ventilation required
- Increased green building standards for homes larger than 5,000 square feet

Glendale Water and Power provides the Green Building Program, which supports green building training opportunities for GWP customers, area contractors, and city employees. It also provides incentives for various green building efforts such as green building certification, rating, and technical assistance.

For four years, the City Housing Department has developed affordable housing projects exceeding energy efficiency requirements by at least 15%. The City's new Green Building Standard now makes this mandatory.

The Community Services & Parks Department applies numerous sustainability approaches to development projects, including mixed-use, water conservation measures, energy conservation, and use of renewable energy. Recent projects have been built to conservation standards exceeding those in the building code.

Urban Places

In 2004, the City made changes to the Zoning Code to encourage mixed-use development (mixing building and land uses, e.g. jobs, housing, commercial activities; to reduce transportation and infrastructure needs and increase street activity and interest).

In 2006, the City created the Downtown Specific Plan (DSP), which focuses development in the downtown area along transit corridors and existing public service infrastructure. This supports State and regional agency regulations and efforts to focus urban growth in existing developed areas. Doing so reduces environmental impacts by decreasing dependence on vehicular transportation, reducing demand for provision of new infrastructure, and preserving natural resources and open space. The DSP also encourages "mixed-use" development.

The City has other policies in place to encourage infill, including large scale purchasing of open space to encourage infill on existing urbanized land, and provision of lot consolidation incentives.

The City is currently updating its General Plan by creating community plans for various neighborhoods within Glendale. The City completed the North Glendale Community Plan and envisions additional community plans that will eventually address all areas of the city. These plans incorporate green urban design concepts such as "Complete Streets" (streets designed for all users) and mixed-use development. The plans apply general city principles to specific neighborhood conditions.

The following objectives will help enable Glendale to have sustainable buildings and sustainable urban places.

UD1 – Incorporate green building practices into community sustainability outreach and education	Y
UD2 – Continue existing efforts to encourage affordable housing development projects to exceed Glendale's Green Building Standards, such as by utilizing additional measures in the Green Point Rated and LEED for Homes checklists.	Y
UD3 – Consider expansion of the City's Green Building Standards	Y
UD4 – Continue to implement Southern California Association of Governments (SCAG) Compass Blueprint strategies in Glendale to coordinate with regional efforts to increase sustainability and livable environments.	Y
UD5 – Incorporate sustainability concepts from the Greener Glendale Plan into Community Plans and other General Plan documents	Y

Objective UD1 – Incorporate green building practices into community sustainability outreach and education

Strategy UD1-A	**Provide information about green building practices to property owners and managers via City departments (e.g. the Building & Safety Division), the Greener Glendale website, etc.** – The Building & Safety Division and GWP currently provide this information. This effort should be continued and expanded.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts. Obtain funding for program expansion. Assign staff and coordinate with existing efforts to determine next steps.

Strategy UD1-B	**Encourage GEM Awards for properties with environmentally responsible features such as native landscaping, renewable energy, etc. –**The GEM Award is a City-sponsored, citizen elected award for well-maintained properties. Winning projects are promoted for their unique features, including environmentally responsible features when present. Because the awards are citizen-elected, citizens should be encouraged to look for and appreciate these types of projects, and nominate them for the GEM Award. There may also be an opportunity to incorporate recognition for environmentally responsible design into other existing City recognition programs, such as the Glendale Urban Design Awards, administered by the Planning Division.
Status: New	**Implementation Actions Needed:** Obtain funding or incorporate into other existing marketing and outreach efforts.

Objective UD2 – Continue existing efforts to encourage affordable housing development projects to exceed Glendale's Green Building Standards

Strategy UD2-A	Complete Geneva Habitat for Humanity Affordable Housing Project (5 units) to Green Point Rated standards
Status: Completed	**Implementation Actions Needed:** None; this has been completed.

Strategy UD2-B	Complete Doran Gardens Affordable Housing Project (60 units) to Green Point Rated standards
Status: Completed	**Implementation Actions Needed:** None; this has been completed.

Status: Completed	

Strategy UD2-D	Complete Gardens on Garfield Affordable Housing Project (30 units) to Green Point Rated standards
Status: Completed	**Implementation Actions Needed:** None; this has been completed.

Strategy UD2-E	Complete Glendale City Lights Affordable Housing Project (68 units) to Green Point Rated standards – project includes solar panels
Status: Completed	**Implementation Actions Needed:** None; this has been completed.

Objective UD3 – Consider expansion of the City's Green Building Standards
CAL Green provides for cities to adopt a wide range of green building standards in addition to the state requirement. In 2011, Glendale adopted twelve standards it considered feasible. The City has the option to update further its Green Building Standards in 3 years. Once the City has been able to see how well the recently adopted standards have worked in practice, it should consider whether to expand the standards. Following are some particular suggestions for consideration.

Strategy UD3-A	Expand Green Building Standards to exceed the minimum requirements as set forth in the California Green Building Code (CAL Green)
Status: Completed	**Implementation Actions Needed:** None. This has been completed. See details listed in the introduction to this chapter.

Strategy UD3-B	Increase requirements for provision of shade trees
Status: New	**Implementation Actions Needed:** See description in "Objective UD3."

Strategy UD3-C	Increase requirements for utilization of cool paving and cool roofing
Status: New	**Implementation Actions Needed:** See description in "Objective UD3."

Strategy UD3-D	Increase requirements for utilization of permeable and natural landscaping.
Status: New	**Implementation Actions Needed:** See description in "Objective UD3."

Strategy UD3-E	Identify and provide ways to encourage the use of alternative building construction methods
Status: New	**Implementation Actions Needed:** See description in "Objective UD3."

Strategy UD3-F	**Identify and provide ways to encourage the use of green walls** (A wall, either free-standing or part of a building, that is partially or completely covered with vegetation and, in some cases, soil or an inorganic growing medium.)
Status: New	**Implementation Actions Needed:** See description in "Objective UD3."

The City has implemented SCAG Compass Blueprint strategies since 2003, including protecting open space (2003), focusing growth downtown through the Downtown Specific Plan (2006), getting people out of their cars through the Downtown Mobility Plan (2007) and Bikeway Master Plan (1995, currently being revised as the Bicycle Transportation Plan), providing housing for all through the Housing Element (2009), promoting public health through the Glendale Safe & Healthy Streets Plan (2011), strengthening neighborhoods through the Adams Square Revitalization (2008), focusing on community planning through the North Glendale Community Plan (2011), and translating policy into practice through the Community Development Department's Urban Design Studio (2006). These efforts should be continued and expanded to include participation in SCAG's Sustainable Communities Strategy (SB 375).

Strategy UD4-A	**Implement zone changes that encourage infill and mixed use development**
Status: Completed	**Implementation Actions Needed:** None. This has been completed through the Downtown Specific Plan and San Fernando Road Corridor zoning changes.

Strategy UD4-B	**Complete Community Plans for all areas of Glendale, incorporating the principles from the following objective (UD5)**
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Strategy UD4-C	**Complete updating and implement strategies from the Bicycle Transportation Plan**
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Strategy UD4-D	**Implement strategies from the Safe & Healthy Streets Plan**
Status: New	**Implementation Actions Needed:** Obtain funding, for example State/Federal grants, identify priority projects for implementation, work with appropriate departments and organizations (e.g. LA County Bicycle Coalition) to implement.

Strategy UD4-E	**Incorporate "Complete Streets" strategies into Public Works projects**
Status: New	**Implementation Actions Needed:** Continue existing efforts to implement "Complete Streets" policies through design and construction where appropriate and as funding becomes available.

Objective UD5 – Incorporate Greener Glendale sustainability concepts into Community Plans and other General Plan documents.

Concepts to be incorporated into the General Plan

The following sustainability concepts should be incorporated into the General Plan as Elements are amended, and as funding becomes available.

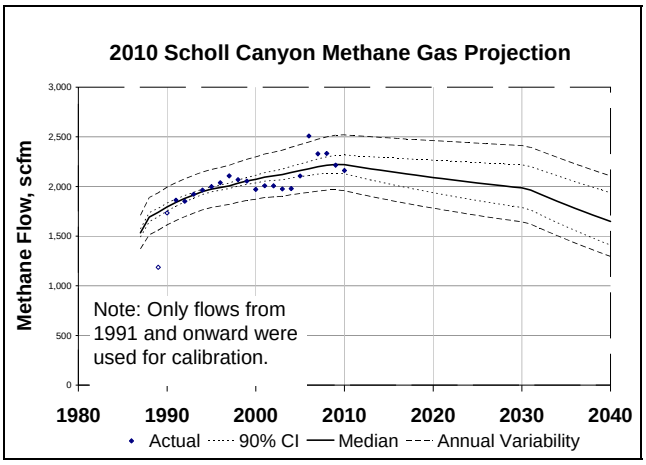
1. Utilize natural, local, renewable resources for energy, water, and environmental management processes when possible and cost effective.
2. Plan and build infrastructure for alternative forms of transportation such as walking, biking, and public transit, in accordance with strategies to ensure streets are designed for all users ("Complete Streets").
3. Plan and build infrastructure for alternative fueled vehicles.
4. Encourage the retrofit of existing development to increase energy and water efficiency, reduce waste, reduce use of toxics, and increase the use of natural landscaping including native trees and plants. Encourage new development to build to these standards.
5. Install public works conservation demonstration projects within the community.
6. Work toward achieving Zero Waste in the community.
7. Develop economically successful streets that act as destination centers in Glendale.
8. Facilitate permitting and construction of alternative building structures, materials, and site location.

Waste

Glendale contains the Scholl Canyon Landfill (SCLF), consisting of inactive and active sites. The inactive site is operated by the City of Glendale. The active site is operated by Los Angeles County Sanitation Districts and accepts disposal from a variety of cities including Glendale, La Canada Flintridge, Pasadena, San Marino, Sierra Madre, and several other unincorporated areas within the County of Los Angeles. Both sites are included in the GHG inventory.

Although the inactive part of SCLF is closed (no new waste is being added to the landfill), the existing waste is still actively decaying. The landfill has a comprehensive gas collection system, which collects methane gas (a powerful GHG) generated by decaying trash and routes it to the local utility for use in electricity production. However, a small percent of the gas escapes this collection system. These "fugitive" emissions are included in the GHG inventory. SCLF's gas collection efficiency is estimated at 95%. See Appendix J for further information.

Although the landfill is closed, its gas emissions fluctuate due to numerous factors, including temperature, moisture, irrigation, rainfall, collection system failure or upgrades, soil cover cracking, and more. Despite these fluctuations, the methane emissions are on a long-term downtrend. The same is true for the active site.



Source: LA County Sanitation Districts

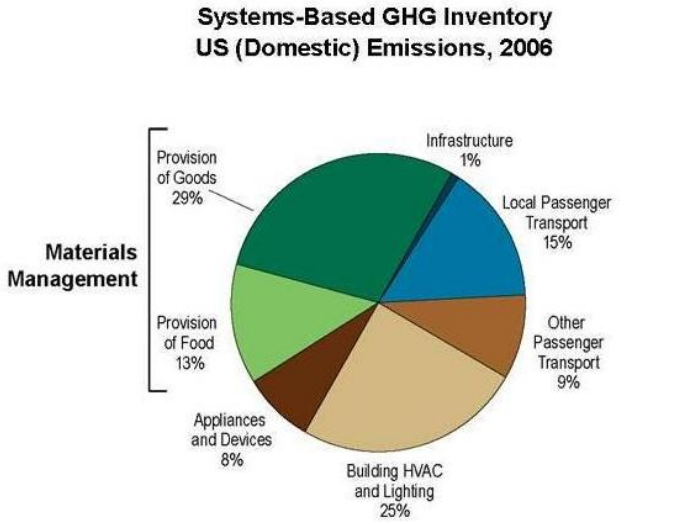
The City also operates a landfill at Brand Park, which is not open to the public. This landfill contains inert material (not more than 5% live material) so does not produce significant emissions. Currently, the City uses the landfill to recycle inert material into crushed miscellaneous base for reuse in Public Works projects.

In addition to landfill gas emissions, the GHG inventory includes estimated emissions due to citywide generated waste. Although that waste has not yet begun to decay and emit methane gas, the inventory includes an estimate of what those emissions would be.

A third important but generally unaccounted for type of waste emission is the “embodied” energy in products consumed. The goods we consume are associated with GHG emissions well before they end up in the landfill. Throughout their lifecycle, from raw material acquisition, to manufacturing and transport, to waste management, GHG emissions are being released into the atmosphere. Even the choices made about how goods are used or consumed affect how much GHGs end up in the air. When goods are reused or recycled, it prevents the need to extract new raw materials and manufacture new goods, and can even prevent the need to transport those new goods, thereby preventing new GHG emissions.

The technology and data availability to calculate the lifecycle emissions from the products consumed are still in their developmental stages. The GHG calculations used for this inventory are based on community waste generation totals, and include emissions from waste management only. They do not account for the embodied energy of the products the community consumed.

The Greener Glendale Plan GHG inventory shows Glendale’s waste generated GHGs accounting for less than 2% of total emissions. If the life-cycle emissions inventory approach were used instead, product creation, delivery, consumption, and waste management would account for closer to 42% (see pie chart), or 49% if emissions from goods created overseas were included.



Source: United States Environmental Protection Agency, Region 10 (Pacific Northwest) West Coast Climate & Materials Management Forum

In future Glendale GHG inventories, life-cycle emissions from goods consumption may be included.

The City’s Construction and Demolition Debris Recycling Ordinance requires significant projects to have their waste processed at certified recycled facilities that have a minimum recycling rate of 67%.

Glendale’s current recycling rate is 60%. The City provides a strong recycling program (see Appendix K for details) to its citizens, as well as a free composting class with free or discounted compost bins, depending on the bin type. The City administers a curbside used motor oil collection and recycling program, and numerous household hazardous waste collection events each year to prevent these materials from ending up in the landfill.

The City Community Services and Parks Department reuses tree trimmings as mulch, which it also gives away free to the community.

California's AB 341 (2011) establishes mandatory commercial and multi-family recycling, which will be implemented in the near future and will include composting of organics.

On December 6, 2011, Glendale City Council adopted a Zero Waste Goal to achieve a 90% landfill diversion rate by 2030. The following objectives and strategies are ways in which we can work to achieve Zero Waste.

WS1 – Promote Zero Waste through community education and outreach	N
WS2 – Reduce use of disposable, non-renewable product	N
WS3 – Improve commercial waste diversion	N
WS4 – Expand waste diversion services	N

Objective WS1 – Promote Zero Waste through community education and outreach

Status: New	

Strategy WS1-B	**Promote "deconstruction"/salvaging of materials in all remodeling projects** -The City currently gives credit in the Construction & Demolition program for deconstruction and encourages it as much as possible. Look at ways to promote further this idea.
Status: New	**Implementation Actions Needed:** Obtain funding for staff time or determine if this effort can be absorbed into other Integrated Waste (IW) outreach efforts. Work with IW to identify additional ways to support this idea.

Strategy WS1-C	**Work with developers and builders to incorporate materials and furnishings made from recycled content**
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff, Integrate this effort with UD5-B, provide resources and information about recycled material availability and vendors to builders via the website, Building & Safety Division, and other appropriate locations/media.

Strategy WS1-D	**Increase education to residents on the 4 R's -- Refusing (to accept disposable products), Reducing, Reusing, and correctly Recycling.**
Status: New	**Implementation Actions Needed:** Determine if this can be incorporated into Zero Waste Plan education and outreach efforts. If not, obtain funding, assign staff, and develop a promotion program.

Strategy WS1-E	**Promote waste reduction and Zero Waste through campaigns, award programs, and demonstration sites.**
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff, identify any existing efforts with which this can be integrated (e.g. Zero Waste Plan), identify potential demonstration sites, conduct promotion and outreach, and encourage residents and businesses to emulate Zero Waste practices.

Strategy WS1-F	**Work with schools to: 1) Reduce waste, educate students, and support "green teams"; 2) eliminate use of disposable, single-use plastic/dishware; and 3) Utilize and engage students in a composting program.** Glendale Unified School District and Glendale Community College contract with private waste management companies, not City of Glendale, to manage their recycling and composting. However, the City of Glendale, through the Junior Ambassador Program, works with schools to promote recycling and student green teams. This program is active in Roosevelt and Wilson middle schools, with a goal to expand to all middle schools in Glendale. The City provides to GUSD schools some bins for recycling beverage containers and compost. All of these efforts should be continued and expanded.
Status: Ongoing	**Implementation Actions Needed:** Obtain funding for staff effort. Work with Neighborhood Services and the Public Works Recycling Manager. Contact GUSD and the GCC Sustainability Manager, coordinate and develop next steps.

Status: New	

Status: New	

Strategy WS1-I	**Provide information on the waste management and recycling process**, such as what happens to the waste and recyclables, how the recycled products are used to fund the recycling program, etc**.**
Status: New	**Implementation Actions Needed:** Post this information on the City and Greener Glendale websites.

Strategy WS1-J	**Improve availability of information about locations that accept bottle-recycling reimbursement** – The State assigns the locations in accordance with accessibility goals. Supermarkets are required to have a drop off center within a certain distance. Stores have a posted sign and users can call 1-800-RECYCLE for a center near them. Glendale has 5-6 centers.
Status: New	**Implementation Actions Needed:** Post this information on the City and Greener Glendale websites.

Strategy WS1-K	**Improve availability of information about where to recycle batteries** – Batteries are available for drop off at City Recycling centers, at community household hazardous waste collection events, and at numerous private stores throughout the city, including Radio Shack, Staples, Home Depot, and others.
Status: New	**Implementation Actions Needed:** Post this information on the City and Greener Glendale websites. Post links to Earth911.com and other resources for updated information on locations that accept batteries for recycling.

Status: New	

Objective WS2 – Reduce use of disposable, non-renewable product

Strategy WS2 -A	**Institute a junk mail opt-out program such as that offered by Catalog Choice**[14]
Status: New	**Implementation Actions Needed:** Obtain funding for the program and assign staff, establish a program, oversee its progress and outcomes.

Strategy WS2 -B	**Adopt an ordinance banning the use of single-use plastic carryout bags and imposing a charge on recyclable paper bags–** The City is currently preparing and addendum to Los Angeles County's Environmental Impact Report (EIR). Once the EIR is complete and certified, the ordinance will be presented to City Council for adoption.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Strategy WS2 -C	**Explore a ban on Styrofoam take-out containers –** Styrofoam is a non-biodegradable material that tends to break up into very small pieces and disperse widely due to its lightweight nature. The material is often used for take-out containers, but cannot be recycled once contaminated with food.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff/contractor, and conduct feasibility study.

[14] Catalog Choice is the nation's largest independent mail preference service. They offer a comprehensive public promotion, marketing, education, outreach, and measurement tool. They can develop and maintain a Glendale website for mail-opt out, where Glendale participation statistics and waste reduction results can be tracked. The cost per year is $5,000 (negotiable). Currently, 914 Glendale households are using this service. The cities of Santa Monica and Pasadena participate in this program.

Status: New	

Status: Ongoing	

Objective WS3 – Improve commercial waste diversion

Strategy WS3 -A	**Implement mandatory commercial recycling -** This was adopted on Dec 6, 2011 as part of the Zero Waste Goal.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Strategy WS3 -B	**Implement the Commercial Waste Reduction Initiative -** This was explored as part of the Zero Waste Plan and would include education and outreach, waste audits and technical assistance, recognition of model programs, and landscaping for zero waste.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Objective WS4 - Expand waste diversion services

Strategy WS4-A	Increase the availability of public place recycling
Status: New	**Implementation Actions Needed:** Obtain funding. Integrated Waste Management staff to implement.

Strategy WS4-B	Recover energy and compost from organic discards
Status: New	**Implementation Actions Needed:** Obtain funding. Integrated Waste Management staff to implement.

Energy

Building energy consumption (electricity and natural gas) within Glendale accounts for 49% of Glendale's GHG emissions. Energy is a priority area of concern for conservation programs because it has significant potential to reduce GHGs, in addition to other benefits such as cost savings and energy independence.

Glendale Water and Power (GWP) is working hard to increase the percentage of electricity generated from renewable sources. Renewable sources are those that are not depleted by use the way fossil fuels are (e.g. coal and oil). Examples of renewable sources are wind and solar power. By end of year 2010, 21% of the energy portfolio was from renewable sources. GWP is currently working to attain 33% by 2020.

GWP administered numerous public benefit energy efficiency programs throughout the past two decades, including:

- Community outreach to promote and encourage water and energy efficiency
- "Business Energy Solutions Incentive" program (for large and medium sized businesses)
- Provision of home energy reports to residential customers
- "Smart Home Energy Surveys" program providing free in-home energy assessments
- "Smart Home Energy Savings Rebates" program providing rebates for energy upgrades
- "Smart Home Peak Hogs" energy efficiency upgrade incentive program for owners of multi-family residential buildings
- "Living Wise" program (conservation education for 6th grade students)
- "Cool Care" low-income refrigerator replacement program
- "Smart Home Refrigerator Recycling" program which offers incentives to GWP customers for replacing old refrigerators with more energy-efficient models
- "Smart AC Tune-Ups" program that provides low-cost tune ups for HVACs
- "Smart Business Energy Savings Upgrades" program that provides up to $2,000 to small businesses for energy upgrades
- Solar energy rebate program providing incentives for installation and rebates for permitting
- City of Glendale constructed a 261 KW photovoltaic system at Glendale Community College.

- 100 old, energy in-efficient refrigerators throughout Glendale Unified School District were replaced with new ENERGY STAR rated models.

Each year, GWP evaluates the public benefit programs and revises them as needed to ensure the highest cost-effectiveness. For current information about PBC programs, visit the GWP website at GlendaleWaterandPower.com.

Despite the tremendous increase in the use of electronic devices and demand for electricity, Glendale's electricity consumption increased by just 1% during the years inventoried for this report. However, it is currently decreasing at a rate of 1% per year. This may be due to the variety of GWP community programs but could also be due to the economic downturn.

The community is doing well in curbing growth of electricity consumption, but significant reductions are needed to affect GHGs. The two focal areas for this effort are increasing renewable energy, and reducing energy consumption.

E1 – Increase the use of renewable energy citywide	Y
E2 – Reduce citywide energy consumption through promotion, education, and outreach	Y
E3 – Reduce citywide energy consumption by facilitating and coordinating community energy efficiency projects	Y
E4 – Encourage the reduction of citywide energy consumption through City municipal codes and policies	Y

Objective E1 – Increase the use of renewable energy citywide

Strategy E1-A	**Ensure at least ten percent of the City's peak electric load is met by renewable energy**
Status: Existing	**Implementation Actions Needed:** This has been completed. Depending on the performance of our wind and hydro energy sources, they meet between 12% to 15% of our peak energy demand.

Status: Ongoing	

Strategy E1-C	**Increase community education and outreach to encourage investment and use of renewable energy** – this should include providing standard drawing specifications, available rebates, relevant code issues, and other information for alternative energy technology. Information should be provided on the City and Greener Glendale websites.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy. Assign staff, gather information and resources, post on the City and Greener Glendale websites, and find other ways to make the information available to the public.

Objective E2 – Reduce city energy consumption through promotion, education, and outreach

Strategy E2-A	**Launch an award program to recognize the most energy efficient buildings in Glendale –** GWP currently issues award certificates to large businesses that obtain LEED certification for their building. This award program should be expanded to include other types of GWP customers.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff, and work with GWP to coordinate effort. Coordinate this strategy with CC2, ED4-B, and UD1.

Strategy E2-B	**Promote to and educate the public about "buy local" and local food sources and options -** Local food is generally defined as food that is sold not more than an eight-hour drive from its source.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff, identify community contacts, identify information and resources and make available to the public.

Strategy E2-C	**Promote and provide education to the public about low-carbon foods –** Low carbon foods are those that use less fossil fuel based energy for their production, packaging, processing, delivery, preparation, and waste management.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff, identify information and resources, and make available to the public.

Status: New	

Status: Ongoing	

Status: Ongoing	

Objective E3 – Reduce city energy consumption by facilitating and coordinating community energy efficiency projects

Strategy E3-A	**Work with schools and businesses to cover blacktops with solar panel shade structures, trees, etc.**
Status: New	**Implementation Actions Needed:** Obtain funding for staff effort, coordinate with Glendale Unified School District's Energy Conservation Coordinator and other schools in the city.

[15] PACE (Property Assessed Clean Energy) is a financing system for solar panel installations or energy upgrades whereby the city offers citizen loans that are paid back through property taxes over 15-20 years. Regulatory issues are still being worked out with this program so it is not yet implemented in Glendale.

Status: New	

Strategy E3-C	**Encourage installation of rooftop gardens on major developments within the city** – As a note, rooftop garden retrofits are more practical on large commercial buildings because these buildings are more likely to have sufficient structural support. Information should be provided to building owners regarding applications, and the benefits of installing rooftop gardens.
Status: New	**Implementation Actions Needed:** Obtain funding and assign staff. Coordinate with the Building & Safety Division to provide information to building owners, work with building owners to identify potential projects.

Status: New	

Strategy E3-E	**Reduce dependence on imported water and thereby reduce the energy consumed to transport it to Glendale –** GWP is working to develop two local groundwater wells, one on Foothill Boulevard and the other at the Rockhaven Sanitarium site.
Status: Ongoing	**Implementation Actions Needed:** The Foothill Boulevard project is completed. Continue existing efforts on the Rockhaven project.

Objective E4 – Encourage the reduction of energy consumption through City municipal codes and policies

Strategy E4-A	Encourage or require energy efficiency audits and upgrades at the time of building sale
Status: New	**Implementation Actions Needed:** Obtain funding, assign staff, conduct feasibility study, provide recommendations, pursue as determined appropriate.

Strategy E4-B	Encourage use of passive heating and cooling
Status: Ongoing	**Implementation Actions Needed:** Obtain funding to train staff in promoting passive heating and cooling through site plan review. State law currently requires this for new subdivisions and development.

Strategy E4-C	Facilitate permitting and construction of alternative building structures, materials, and site locations
Status: New	**Implementation Actions Needed:** Obtain funding, assign staff, conduct feasibility study, provide recommendations, pursue as appropriate.

Measures for Future Consideration

- Solar panels on bus shelters – A study needs to be conducted to determine the physical feasibility of installing solar panels on bus shelters in Glendale. Funding (e.g. grant funds) would need to be obtained to pursue this measure. As a note, most bus shelters are operated and maintained by a private company.

Urban Nature

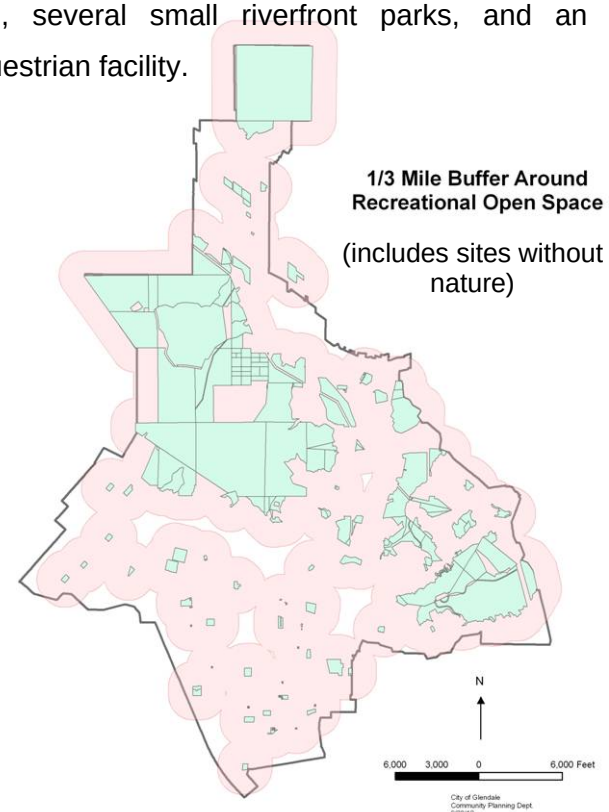
Cities are not independent of the natural environment; they are integrated with it. Because of the inter-connectedness and interdependency of humans and nature, it is important to preserve and enhance natural areas both within and outside of the city limits. It is also important to ensure humans have access to nature and understanding of it.

Climate change threatens the environment for both humans and nature. In California, climate change is expected to result in increased temperatures and wildfires, and reduced water availability. While this threatens habitat for wildlife, it can also be mitigated by wildlife. For example, urban nature such as trees and plants help to reduce ground and air temperatures.

The City supports urban nature primarily through the preservation of open space, provision of park space, and programs to connect people to nature. For decades, the City has proactively purchased large tracts of undeveloped land in hillside areas for public open space purposes. This has resulted in preservation of wildlife corridors, wildlife habitat, and areas for groundwater recharge. The City also protects indigenous trees through the Indigenous Tree Ordinance (GMC 12.44).

The City continuously develops park space in Glendale, and currently provides 43 public parks, as well as public school yards that are open to the public after hours, and open space trails in the Verdugo Mountains, San Rafael Hills, and San Gabriel Mountains (Deukmejian Wilderness Park).

Glendale is also committed to using 100% of its LA riverfront as a recreational amenity. The riverfront will provide nearly a mile of multi-use trail, several small riverfront parks, and an equestrian facility.



The City's Municipal Code has numerous provisions to ensure development projects include nature and open space. The Zoning

Code limits the percentage of lot coverage allowed and requires a minimum percent of live natural landscaping. Multifamily structures are required to have both public and private open space.

The City also requires live landscape plans for new development, and planting of shade trees in parking lots. The Fire Department reviews development project plans to ensure fire-safe planting practices that will minimize the spread of fire across the urban-wildland interface, in order to protect our urban nature resources.

The City Community Services and Parks Department operates programs to connect the community of Glendale to nature, including educational programs and workdays at Deukmejian Park to remove invasive species and restore indigenous species.

GWP administers the Tree Power Program that provides residents up to three free shade trees and arborist services to ensure the trees are planted correctly. This program has resulted in over 2,000 trees planted since July 2004.

Trees are a key component of urban nature. They provide wildlife habitat, and provide many benefits to humans, including beauty, shade, fresh air, and support for the groundwater system. Trees, especially once they mature, are a defining character of design and aesthetic in neighborhoods. They are even associated with higher property values.[16]

Modern development consists of large amounts of heat absorbing surfaces, such as dark rooftops, parking lots, and streets. This has been associated with increases in downtown temperatures of nearly 1ºF per decade.[16] This in turn increases energy demands for cooling (and subsequent greenhouse gas emissions), and municipal water demand, smog, and human discomfort and disease.

Neighborhoods with well-shaded streets can be up to 10ºF cooler than neighborhoods without street trees. Three well-placed trees around a building can lower air conditioning bills by up to 30%, and windbreak trees can save up to 25% on winter heating costs.[16] Shaded streets and sidewalks encourage walking and bicycling activities that may be curtailed otherwise because of heat and glare.

Trees also remove significant amounts of pollutants from the air, and help capture rainwater, redistributing it back into the groundwater system. The ability of trees to support a cooler environment, protect our water sources, and clean the air makes them an important factor in how well we will be able to adapt to climate change.

Trees provide wildlife habitat and nature for humans, but so can gardens and landscaping. To the degree gardens and landscapes support native wildlife, they are an important part of supporting the natural environment with which the city is integrated.

[16] *Livable Communities and Urban Forests.* Local Government Commission, 2008.

Objective	Supports Climate Change Adaptation
UN1 – Update the Urban Forest Management Plan	Y
UN2 – Increase Glendale's tree canopy coverage by 20,000 trees by 2035	Y
UN3 – Implement programs to increase biodiversity in Glendale	Y
UN4 – Ensure there is accessible park and recreational open space to serve residents	Y

Objective UN1 – Update the Urban Forest Management Plan
Public Works plans to update the Urban Forest Management Plan within the next couple of years. This plan will formalize policies regarding tree-care standards, planned strategies for diversity in tree species and age, density objectives and site appropriateness, strict criteria for tree removal, criteria for tree species designation and inclusion in the Designated Street Tree List for all city streets, guidelines for dealing with tree and hardscape conflict and construction management, and the inventory administration process.

Objective UN2 – Increase Glendale's tree canopy coverage by 20,000 trees by 2035
Increasing the urban tree canopy should include preserving existing trees and planting new trees. Planting efforts should use trees with diverse species and growth rates to ensure a healthy, dynamic, and resilient urban forest. The following strategies are based upon tree-planting projections using existing rates. The Community Services and Parks and Public Works Departments currently conduct annual tree plantings on a regular schedule. These trees will be planted as part of ongoing efforts. The average number of trees planted per year under the GWP Tree Power Program is 345 (average taken over five years). Separate strategies are listed below for tree planting efforts through year 2020 and from year 2020 to 2035. This was done to facilitate GHG reduction accounting according to the GHG reduction target years.

Strategy UN2 - A	**Explore ways to encourage residents to preserve existing trees** – this may include a Heritage Tree Program, which recognizes trees with value due to size, form, rarity, species, historic value, etc. Other ideas should also be explored to encourage preservation of Glendale's existing tree canopy.
Status: New	**Implementation Actions Needed:** Obtain funding and assign staff. This should be coordinated through the Community Development Department.

Strategy UN2 - B	**Conduct a tree canopy coverage assessment and make recommendations for improvements. Ensure trees are planted in at least 50% of all sidewalk planting sites.**
Status: New	**Implementation Actions Needed:** Obtain funding or volunteer intern, work with the Information Services Department to update the current street tree inventory and include current canopy projections utilizing electronic technology (e.g. aerial photography and GIS), work with the Public Works Maintenance Services Division to analyze findings and make recommendations.

Strategy UN2 - C	**Public Works Department - Plant 2,500 trees by 2020.**
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Strategy UN2 - D	**Public Works Department - Plant 300 indigenous trees by 2020.** In addition to regular tree plantings, the City funded annual planting of indigenous trees. Public Works anticipates being able to plant from 30 - 50 trees per year.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts

Strategy UN2 - E	**Community Services and Parks Department - Plant 900 trees by 2020.** Community Services and Parks plants approximately 100 trees annually on Arbor Day.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts

Strategy UN2 - F	**Public Works Department - Plant an additional 6,250 trees by 2035** (in addition to UN2-A and UN2-B)
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts

Strategy UN2 - G	**Public Works Department - Plant 450 indigenous trees by 2035** (in addition to UN2-B)
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts

Status: Ongoing	

Status: Ongoing	

Strategy UN2 - J	**Plant 5,175 additional trees by 2035 through the GWP Tree Power Program**
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts

Objective UN3– Implement programs to increase biodiversity in Glendale

Strategy UN3 - A	**Educate about non-native, invasive species using local media, libraries, and electronic technology.**
Status: New	**Implementation Actions Needed:** Obtain funding and assign staff, incorporate this effort into other sustainability outreach efforts if possible, coordinate with Public Works.

Strategy UN3 - B	**Encourage and promote diverse landscaping palettes instead of monoculture**
Status: New	**Implementation Actions Needed:** Obtain funding and assign staff, incorporate this effort into other sustainability outreach efforts, such as those relating to green building and low maintenance landscaping, find other ways to promote this measure.

Strategy UN3 - C	**Update the city's Blueline Stream Study to map seasonal streams**
Status: New	**Implementation Actions Needed:** Obtain funding for this measure. Planning and Engineering Divisions to conduct an update to the biology report prepared to establish the city's blueline stream policy. Revise maps as appropriate to delineate streams with habitat value to be preserved.

Status: New	

Status: New	

Objective UN4 – Ensure there is accessible park and recreational open space to serve residents

Strategy UN4 - A	**Identify those areas not within 1/3 mile of recreational open space, and develop strategies to provide parks or recreational open space in those areas.**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort, assign staff/intern, obtain map data of recreational open space from neighboring cities, and coordinate with the GIS operator to identify areas in the city not within 1/3 mile of recreational open space. Coordinate with the Community Services and Parks Department regarding the long-term strategy for park development, and develop strategies for accommodating those areas identified as needing recreational open space.

Strategy UN4 - B	**Take advantage of opportunities to provide parks and open space through greenways and green streets, particularly in areas where park space is not available.**
Status: New	**Implementation Actions Needed:** Obtain funding for this measure, assign staff, and coordinate with Community Services and Parks Department and Public Works Engineering and Forestry. Coordinate this effort with street paving projects to determine opportunities.

[17] "Wildlife habitat" is defined by the National Wildlife Federation as habitat that provides shelter, food, water, and a chemical free environment for wild animals. Wildlife corridors allow a continuous natural path for animals to travel, particularly ones that roam by nature. Native wildlife habitat in Glendale includes oak woodlands, chaparral, and coastal sage scrub.

Strategy UN4 - C	Continue to maintain and develop recreational trails
Status: Ongoing	**Implementation Actions Needed:** Obtain funding for this measure. Assign staff, and coordinate with Community Services and Parks Department.

Strategy UN4 - D	Develop dog parks
Status: New	**Implementation Actions Needed:** Obtain funding for this measure. Assign staff, and coordinate with Community Services and Parks Department as well as Neighborhood Services (Pet Waste Station program) to identify potential sites, conduct feasibility study.

Strategy UN4 - E	Expand promotion to encourage the use of local parks by residents
Status: Existing	**Implementation Actions Needed:** Obtain funding for this measure, assign staff, coordinate with Community Services and Parks regarding existing efforts, and identify ways to expand on those efforts.

Measures for Future Consideration

- Green roofs – please see the discussion in the Energy section (E3-C).

Water

Water supply and water quality has become an increasingly important component of sustainability efforts. California's water supply is already under stress from drought, increased demand from population growth, and demand in areas with drier climates.[18]

Additionally, climate change is profoundly affecting California's water resources, as evidenced by changes in snow pack, sea level, and river flows. These changes are expected to continue into the future. More of our precipitation will likely fall as rain instead of snow. This potential change in weather patterns will exacerbate flood risks and add additional challenges for water supply reliability.[18]

Because the city's water supply is sensitive to these environmental changes, it is critical that Glendale reduce its dependence on water, particularly from remote sources.

It is also important to reduce the city's water consumption because of the energy associated with its supply, treatment, and end-use (heating, cooling, etc.), which is significant. For urban uses, it amounts to 14% of California's total electricity use (11% due to end uses, 3% due to water supply and treatment), and 31% of California's total natural gas use (30% due to end uses, less than 1% due to water supply and treatment).[19]

The Greener Glendale GHG inventory attributes 2% of Glendale's total GHGs to the supply and distribution of water to and within Glendale. This number does not include the energy use associated with wastewater treatment (which is not significant) since the treatment plant is located outside of Glendale's jurisdictional boundaries. In addition, the number does not include the energy used by GWP customers to heat and cool water, which is accounted for in the community energy consumption part of the GHG inventory.

The Glendale 2010 Urban Water Management Plan describes efforts to increase reliance on local water sources, and some of these measures are included in the "Energy" section of this report (because they reduce energy use from water transport).

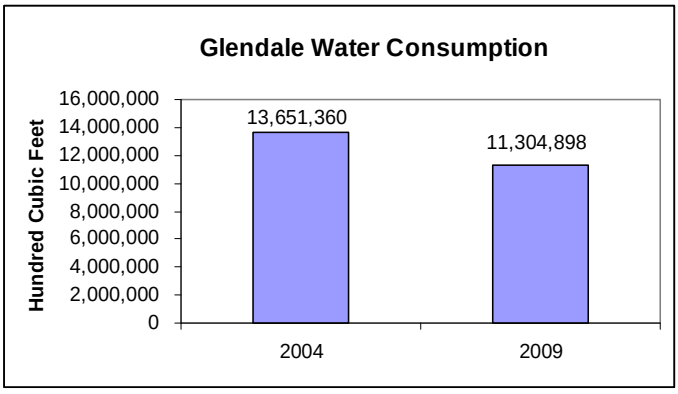
[18] *20x2020 Water Conservation Plan*. California Department of Water Resources, et al., 2010

[19] *California's Water-Energy Relationship*, California Energy Commission (2005)

In 1990, the City took numerous steps to promote water conservation in Glendale, including:

- Implementing a "No Water Waste Policy"
- Requiring commercial high rise development to provide dual plumbing (for recycled water use)
- Implementing a mandatory water conservation plan that regulates water usage for landscaping according to a phasing plan
- Development of a recycled water piping system (purple pipe) throughout the city

Currently, recycled water accounts for 6% of Glendale's total water consumption. Between the years inventoried Glendale achieved a 17% reduction in water consumption.

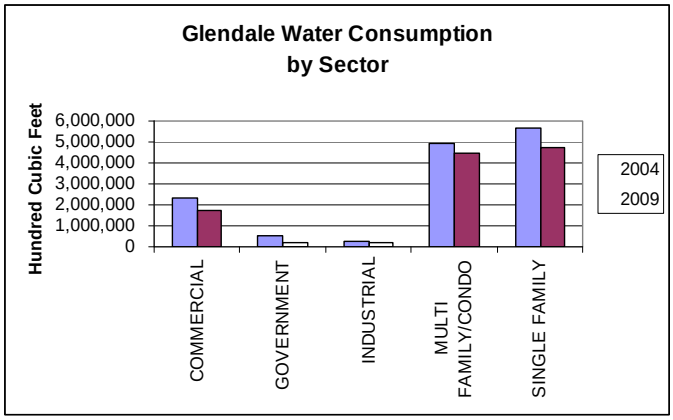


GWP implemented a variety of public benefit water conservation programs, including:

- Community outreach to promote and encourage water efficiency by residents
- "Smart Home Water Savings Rebate" program offering rebates for water upgrades
- "Smart Home Water Surveys" program providing free in-home water use assessments

In late 2009, mandatory water conservation went into effect for Glendale. Lawn watering was restricted to three times per week. By early 2011, Glendale had achieved an 18% reduction in water consumption, and the water restrictions were lifted.

The majority of residential water consumption is attributed to outdoor irrigation. Single-family residences typically use 60% of their water for landscape irrigation. Therefore, reducing landscape-related water consumption is a key strategy.



GWP's transition to the Smart Grid enables residents to monitor their water consumption on a real-time basis, and therefore will enable them to better conserve this resource.

The City's Community Services and Parks Department implemented a wide variety of water conservation measures in its community facilities and parks, particularly related to landscaping. Other City Departments also implemented water conservation measures.

In addition to water supply, local water quality and the impact of Glendale's water discharges on larger water bodies is of ongoing concern.

The City is in compliance with the United States Environmental Protection Agency National Pollution Discharge Elimination System Program, which prohibits pollution from entering the storm drain system and which includes a variety of program elements including public information and participation, and measures to control runoff and prevent illicit discharges.

Several City of Glendale Departments administer programs to support the NPDES Program. These programs include public education and outreach, a stormwater ordinance in the Glendale Municipal Code, requirements that certain types of development projects prepare a Stormwater Mitigation Plan, and provisions in the Stormwater Management Plan to address illicit connections and discharges.

The City is also working to improve water quality in Glendale's local groundwater supplies. GWP is conducting a water quality survey for the Verdugo Groundwater Basin, and invested in a 5,200 gallon per minute treatment plant to remove pollutants from water in the San Fernando Basin. In addition, all wells and reservoirs managed by GWP are enclosed and protected from contamination, as well as inspected daily for any intrusions.

This chapter focuses on how we can continue our successes in water conservation and water quality protection, and lists some ideas for how we may be able to expand on these efforts.

WT1 - Reduce community water consumption through promotion, education, and outreach campaigns	Y
WT2- Reduce community water consumption through incentive and rebate programs	Y
WT3 – Encourage or require water efficiency upgrades at the time of building sale	Y
WT4 – Facilitate and coordinate community water conservation projects	Y
WT5- Implement stormwater management practices to protect water quality and replenish local groundwater sources	Y

WT1- Reduce community water consumption through promotion, education, and outreach campaigns

Strategy WT1-A	**Launch award program to recognize Glendale's most water efficient buildings and landscapes** GWP currently issues award certificates to large businesses that obtain LEED certification for their building. This award program should be expanded to include other types of GWP customers.
Status: New	**Implementation Actions Needed:** Obtain funding for this strategy, assign staff, and work with GWP to coordinate effort. Coordinate this strategy with CC2, ED4-B, and UD1.

Strategy WT1-B	**Encourage natural, low-water use landscaping in yards and parkways –** natural landscape supports urban nature, reduces urban heat island effect, helps clean water runoff, and has a cleaner life-cycle (e.g. reduced or no fossil fuel based energy or materials to produce, does not emit artificial toxins, creates a biodegradable waste product, etc.) than artificial landscaping.
Status: New	**Implementation Actions Needed:** Obtain funding for this effort. Assign GWP staff, coordinate with other City departments to incorporate this strategy into existing public communication channels and sustainability education and outreach efforts.

Strategy WT1-C	**Educate citizens to turn off sprinklers on rainy days –** The City's No Water Waste Policy prohibits irrigation when it is raining. GWP promotes turning off sprinklers while its raining via Twitter, Facebook, and the Source newsletter, which gets mailed to GWP customers.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Strategy WT1-D	**Provide interactive water saving tool on GWP and Greener Glendale websites** GWP provides this tool on their website. It should be linked to the Greener Glendale website.
Status: Ongoing	**Implementation Actions Needed:** Obtain funding for this effort, assign staff, link tool to Greener Glendale website.

Strategy WT1-E	**Provide education and outreach about water saving – and find other ways to encourage water saving – to those who are not able to see directly the cost of their water consumption (e.g. those who do not have their own water meter, such as apartment renters).** – GWP currently reaches out to all GWP customers, including renters, to provide this information and encourage conservation.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Status: Ongoing	

Status: New	

Status: Ongoing	

WT2- Reduce community water consumption through incentive and rebate programs

Strategy WT2-A	**Provide rebates for replacement of turf with native/drought tolerant plants**
Status: Ongoing	**Implementation Actions Needed:** GWP is currently working on a turf replacement rebate proposal. Continue existing efforts.

[20] "Overseed" is defined as sowing seeds in an area, where other plants are already growing, to promote new growth or fill gaps in the existing vegetation.

Status: Ongoing	

WT3 - Encourage or require water efficiency upgrades at the time of building sale

Status: New	

WT4- Facilitate and coordinate community water conservation projects

Strategy WT4-A	**Replace lawns in any public parkways (parkways adjacent to private property are the responsibility of the property owner) with native and low-water use plants –** The Community Development and Public Works Departments are drafting a parkway maintenance ordinance amendment that would require low water use plants or alternative landscaping (e.g. xeriscaping[21]) in parkways. Once the ordinance is in place, it would apply to all parkways in the City, including City-maintained property.
Status: New	**Implementation Actions Needed:** Obtain funding, coordinate with Community Services and Parks to expand to parkways existing efforts to replace lawns with low-water use plants.

Strategy WT4-B	**Utilize low-water use landscaping in public works projects and on public rights-of-way**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort. Assign staff, coordinate with Public Works to incorporate this strategy into departmental plan review policy.

Strategy WT4-C	**Provide community gray water demonstration projects**

[21] An environmentally friendly form of landscaping that uses indigenous and drought-tolerant plants, shrubs, and ground covers in order to use a limited amount of water, promoting water conservation.

Status: New	**Implementation Actions Needed:** Obtain funding for this effort. Assign staff, work with Glendale Water and Power and Community Services & Parks to conduct a feasibility study and identify potential sites.

Status: Ongoing	

WT5- Implement stormwater runoff management practices to protect water quality and replenish local groundwater supplies – The following measures also have the potential to reduce greenhouse gas emissions by reducing the energy required to import water and by increasing urban nature (which absorbs GHGs and reduces heat).

Note: The City currently preserves parkways, adds tree wells where feasible, and takes advantage of clear opportunities to utilize landscaping and permeable surfaces. However, to implement a significant number of projects like these would require special studies to determine feasibility, and address certain technical issues such as limited availability of space in public rights-of-way. The City currently has several storm water catch basins and hillside debris basins; however, exploratory feasibility studies would need to be conducted to determine whether the water could be reused.

Strategy WT5-A	**Adopt an ordinance requiring the use of "Low-Impact Development" (LID)[22]-** Note: The City is evaluating enactment of an ordinance requiring use of LID in City and community projects. The City's Municipal Stormwater Permit[23] will be renewed in 2012 and will likely include LID provisions. If not, the City plans to adopt its own.
Status: New	**Implementation Actions Needed:** Draft ordinance, gain support from City Council, adopt.

[22] LID is an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product (www.EPA.gov).

[23] The Municipal Storm Water Permitting Program regulates storm water discharges from "municipal separate storm sewer systems" ("MS4s"). The permits require the discharger to develop and implement a Storm Water Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable (www.SWRCB.ca.gov).

Status: New	

Status: New	

Strategy WT5-D	**Change Municipal Code to allow underground cisterns within the front setback**
Status: New	**Implementation Actions Needed:** Obtain funding. Coordinate with the Community Development Department to determine feasibility and next steps.

Strategy WT5-E	**Explore design of recreation areas that can hold runoff**
Status: New	**Implementation Actions Needed:** Obtain funding. Coordinate with Public Works and Community Services and Parks to explore the feasibility of retaining stormwater in recreation areas.

Notes on Related Measures

The following strategies address energy use due to water consumption and can be found in the respective chapters:

- Reduce dependence on imported water and the related energy cost of transporting it to Glendale (Energy: Strategy E3-E: Develop groundwater wells on Foothill Boulevard and at the Rockhaven Sanitarium site).

Measures for Future Consideration

- Incentives for rain barrels and cisterns are not cost- effective at this time (the cost of the water saved would not justify the cost of the barrel).

- Green roofs – please see discussion in the Energy section.

Transportation

Transportation is a fundamental part of the activity of the city. It also requires great amounts of energy. Much of the city's transportation is currently accomplished through the use of fossil fueled vehicles. Fossil fuels[24] emit greenhouse gases and produce a host of other air pollutants when combusted, reducing local air quality and affecting human health. Transportation related emissions account for 45% of Glendale's GHG inventory.

The community can reduce transportation related emissions by relying less on fossil-fuel burning vehicles, especially when they are occupied by a single person[25]. Two primary ways to do this are to use alternative modes of transportation and alternative fueled vehicles. In both cases, existing infrastructure could better support these changes. This should be a priority focus area by the community.

Glendale has excellent access to affordable public transit services (see map in Appendix L), provided by the regional bus service (Metro), the paratransit service for seniors and the disabled (Dial-a-Ride), and the local Beeline buses.

The City of Glendale participates in LA County's Long Range Transportation Planning (LRTP) process. Included in the LRTP is deployment of Metro Rapid[26] bus service. Appendix L includes a map of existing Metro Rapid lines, two of which service Glendale.

In order to expand Beeline transit, additional transit revenues would need to be identified (they are currently funded entirely through local sales tax). The City evaluates bus service on an ongoing basis for any unmet needs.

The City is working to upgrade bus stops and improve availability of bus service information. Real time bus service information is currently available via the web and text message. Public transit is a primary form of alternative transportation. To reduce GHGs and increase sustainability, it is important to support, sustain, and expand public transit options within the community.

The City is providing pedestrian and bicycle infrastructure in its street projects, and has provided five miles of bike lanes and 4.7 miles of

[24] Coal, natural gas, and petroleum products (such as oil) formed from the decayed bodies of animals and plants that died millions of years ago. A non-renewable source of energy.

[25] Vehicles occupied by one person move less people than carpools, vans, or buses, and are therefore less fuel-efficient, less space-efficient (contribute more to road congestion) and cause more air pollution per person.

[26] Metro Rapid is a regional bus line with frequent service, fewer stops, traffic signal priority, and other features that reduce travel time by as much as 29 percent.

shared roadway markings in the past three years. These efforts are ongoing.

The City adopted the Safe & Healthy Streets Plan to promote walking and bicycling in Glendale, and is currently updating the Bicycle Transportation Plan.

The City is systematically replacing all of its local diesel buses with Compressed Natural Gas (CNG) vehicles. CNG is still a fossil fuel, but it emits less of certain air pollutants than diesel and the fuel source is usually from within the United States. The City of Glendale and Clean Energy Fuels Corporation operate a public CNG fueling station at the Glendale Transportation Center.

This chapter recommends a variety of measures that may help the community rely less on fossil-fuel based transportation, and thereby reduce its transportation related GHGs.

T1 – Facilitate the provision of alternative transportation infrastructure	Y
T2 – Promote and encourage the use of alternative forms of transportation	Y
T3 – Facilitate the provision of alternative fuel transportation infrastructure	Y
T4 – Promote and encourage the use of alternative fuel transportation options	Y

T1 – Facilitate the provision of alternative transportation infrastructure

T1-A	**Incentivize community provision and funding of public transit and bicycle, pedestrian, and multi-modal infrastructure, such as in renovations and new development projects.**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort, assign staff, coordinate with the Traffic & Transportation and Planning Divisions to determine potential incentives.

T1-B	**Adopt a comprehensive parking policy to encourage the use of carpooling and alternative modes of transportation** – In March 2011, the City adopted parking standards in the Downtown Specific Plan area to implement this idea. Implementation efforts should be monitored for success and expanded as appropriate.
Status: Ongoing	**Implementation Actions Needed:** Obtain funding for this effort or assign staff, coordinate with the Planning Division and Public Works Department regarding implementation success of the existing program and feasibility of its expansion.

Status: Ongoing	

Status: Ongoing	

T1-E	**Ensure bicycle travel ways are continuous and not interrupted by freeway on and off ramps** – This is being addressed in the Bicycle Transportation Plan and should continue to be addressed when other opportunities arise.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Status: Completed	

Status: New	

T2 – Promote and encourage the use of alternative forms of transportation

Status: New	

Status: New	

Status: New	

T2-D	**Continue to improve existing "Parking Cash Out" programs so they are effective in encouraging the use of alternative forms of transportation** – In the past, some program participants accepted the incentive for not driving their car to work but still drove and parked on residential streets. Existing policy in the Downtown Mobility Study supports preferential parking in adjacent residential areas to limit parking spill over.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

T3 – Facilitate the provision of alternative fuel transportation infrastructure

T3 – A	**Administer a program to help establish public electric vehicle charging stations**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort or assign staff, coordinate with GWP, the Traffic & Transportation Division, and the LAEDC EVWG (see T3-C) to determine feasibility and next steps.

Status: New	

Status: New	

T4 – Promote and encourage the use of alternative fuel transportation options

T4-A	**Administer a promotion and education campaign to encourage citizens to purchase and use alternative fuels such as hybrid, electric, biodiesel, CNG, etc.**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort or assign staff, coordinate with the Los Angeles Economic Development Corporation's Electric Vehicle Working Group (LAEDC EVWG), the Traffic & Transportation Division, Glendale Water and Power, and other community groups such as dealerships to establish best communication channels for the outreach effort; obtain funding for promotion (e.g. via grants), and develop outreach plan and implement.

T4-B	**Provide information to the public about converting diesel fuel engines to bio-fuels**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort. Assign staff, gather the relevant information, make it available on the Greener Glendale and other City websites, and coordinate with the City and community to identify additional education, outreach, and promotion opportunities.

T4-C	**Initiate a public promotion and education campaign that educates citizens on how to get better vehicle fuel efficiency –** The U.S. Department of Energy administers a fuel efficiency public education program. Existing materials from this program should be used and promoted in Glendale.
Status: New	**Implementation Actions Needed:** Obtain funding for effort. Assign staff, identify community communication channels (e.g. community groups, local gas stations, automobile service centers, automobile parts retailers, etc.) to develop a comprehensive education and outreach program.

Measures for Future Consideration

Existing models for fuel-efficient vehicles (e.g. scooters) for parking enforcement are not sufficiently safe to protect parking enforcement officers from vehicle traffic accidents. As technology improves, it may become a viable option for a future iteration of the Greener Glendale Plan.

Environmental Health

This category addresses the environment as it relates to human health, including issues such as air pollutants that affect breathing (versus greenhouse gases), toxics, and healthful food. Some toxics, such as volatile organic compounds, emit greenhouse gases. Shipping food over long distances also creates significant amounts of greenhouse gas emissions. The categories discussed in this chapter primarily affect human health, but do overlap with greenhouse gas emissions. At this time, the inventory does not include corresponding GHG emissions for these categories due to lack of data availability.

However, it is widely understood that reducing pollutants in the environment is beneficial to both humans and ecosystems, and ensures better sustainability.

To address air quality, the City of Glendale adopted a Fresh Air Ordinance that limits cigarette smoking in public areas. The City is also working to implement the Southern California Association of Government's Compass Blueprint strategies, which encourage reduced dependence on automobile travel. This in turn leads to decreased automobile air pollution emissions and increased physical activity, positively affecting public health.

The Fire Department regulates the use of hazardous chemicals by businesses in order to decrease the risk of exposure and to disincentive their use.

Locally grown, organic food is made accessible in Glendale through four community gardens (Verdugo, Palmer, Monterey East and West), three weekly Farmers' Markets (Montrose Shopping Park, The Americana, and Downtown Glendale), and at local grocery stores.

Following are some additional actions Glendale can pursue to improve environmental health for the community.

Objective	Supports Climate Change Adaptation
EH1 – Reduce the use of toxics citywide	N
EH2 – Improve air quality	Y
EH3 – Promote the use of locally grown, organic foods	Y
EH4 – Strengthen anti-litter efforts	N

Identify toxic products for removal or replacement with environmentally friendly alternatives

Status: New	

Status: New	

Status: Ongoing	

EH1 - D	**Encourage businesses to generate less hazardous waste from their daily operations and activities** - The Fire Department's hazardous waste annual permit fees are based on total quantities of toxics generated by a business on an annual basis. Businesses are encouraged to use waste minimization and reduction techniques in order to reduce their permit fees.
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

EH2 – Improve air quality

EH2 - A	**Maintain the City's Fresh Air Ordinance and continue education and enforcement efforts to improve local air quality.**
Status: Ongoing	**Implementation Actions Needed:** Continue existing efforts.

Status: New	

Status: New	

Status: New	

EH3 – Promote the use of locally grown, organic food ("locally grown" is commonly defined as grown within an eight-hour drive of the selling location).

EH3 – A	**Promote, educate, and outreach to the public on the benefits of buying locally grown, organic food, and where it can be obtained.**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort. Assign staff, gather and make the information available on the Greener Glendale website and coordinate with other City departments and community groups to identify other appropriate communication channels by which to make the information available.

[27] Exhaust pollution, excessive noise, dust generation, and trash being blown into the street and stormdrains

Status: Ongoing	

Glendale has an active anti-litter campaign that includes regular community cleanups, an annual litter survey and litter index report, and an educational outreach program for children. These programs are administered by the Committee for a Clean & Beautiful Glendale, with support from City staff. The following strategies include potential programs that could strengthen anti-litter efforts. These programs are not funded under existing staff work programs and would require additional funding.

EH4 – A	**Administer a robust social media campaign to educate about and promote litter reduction.**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort and/or assign staff, coordinate with Neighborhood Services to identify next steps.

EH4 – B	**Increase street maintenance services and removal of weeds, dump, and other blight that lead to increased litter.**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort and/or assign staff, coordinate with Neighborhood Services to identify next steps. Coordinate with Cal Trans on their litter clean up program and explore opportunities to join efforts.

EH4 – C	**Provide public place receptacles at transition points where people must discard commonly littered items before proceeding (such as cigarettes or drinks before entering a bus).**
Status: New	**Implementation Actions Needed:** Obtain funding for this effort and/or assign staff, coordinate with Neighborhood Services to identify next steps. Coordinate this with any Zero Waste Plan efforts to provide public place recycling bins.

Note Regarding Display of Farmers' Market Certificates

Community input included a request that the Greener Glendale Plan address farmers displaying their certificates at Glendale Farmers' Markets. Farmers are required to obtain certification from the California Department of Food and Agriculture (CDFA) to sell their products at Farmers' Markets. The certification verifies the location where the produce is grown and what is grown. Farmers may also obtain certification that their food is grown "organically" (although the food is not required to be grown organically, and lack of certification does not necessarily mean the food is not grown organically). They are required to display their certificates at the market. The CDFA conducts regular inspections and the Farmers' Market and managers also ensure the certificates are displayed. Because this is outside of the jurisdiction and control of the City, is has not been listed as a program within the Greener Glendale Plan.

Next Steps

For decades, the City has sought new ways to help Glendale conserve resources and create less of an impact on the environment, including implementing municipal projects and a variety of community-benefit conservation programs. The City monitors and keeps current with sustainability related laws and monitors technology for viable community infrastructure upgrade opportunities.

The City will continue existing efforts and will continue to seek funding to pursue additional sustainability measures, including those recommended in this report.

As described in the “Introduction” chapter, the Greener Glendale Plan process follows a five-step model: inventory existing conditions, set targets, develop a plan to meet those targets, implement, then monitor and revise as needed.

The priority list on page 9 should direct future implementation of the Greener Glendale Plan, beginning with Objective CC3 in the “Cross Cutting” section. CC3-A and CC3-B involve establishing staff and community sustainability representatives, and CC3-C involves establishing a comprehensive sustainability outreach program, which is listed first on the priority list.

A staff person could be assigned to coordinate and facilitate implementation of the Greener Glendale Plan, if funding becomes available. This person’s duties should also include monitoring and reporting progress annually, as well as re-inventorying and updating the Greener Glendale Plan after five years (see “Cross-Cutting Approaches” chapter).
Due to an extended hiring freeze and recent budget cuts, this may only be possible by securing grant funding, utilizing the help of volunteer interns, or assigning the duties to one or more existing staff persons. Another option may be to incorporate the Greener Glendale Plan measures into each City departments’ strategic planning process.

Forming a community sustainability team is important to successful implementation of this Plan. Staff should work closely with the team to share information, determine plans of action, set priorities, make recommendations to City Commissions and Council, and accomplish sustainable practices within all areas of the community.

Appendix A Environmental and Policy Context in Glendale

This section provides a rough overview of Glendale's environmental context, with references on where to find further information. Each section lists references to related policy documents.

Community Profile

2004 Census population count: 194,620

2009 Census population count: 195,876

Area: 31.5 square miles

Climate zone: Warm-Dry (Semiarid Middle Latitude/Arid Subtropical/Highlands)

Heating and Cooling Degree Days: HDD and CDD describe how many degrees above or below a comfort threshold (65 degrees in the U.S.) the climate is in an area per day, used for indicating how much cooling and heating is needed. For example, if Glendale were five degrees hotter than the threshold for one day, that would correspond to five cooling degree days. If it were five degrees colder than the threshold for one day, that would correspond to five heating degree days.

Heating and Cooling Degree Days Glendale, CA		
Year	2004	2009
HDD	2008	2038
CDD	915	991

This information is provided to show what the energy needs were during the years inventoried, as context to our energy consumption and consequent GHGs. At this time, insufficient data is available to analyze the relationship between the HDD/CDD and global climate change. It is important to consider the fact that climate change is *global* and specific local changes are unpredictable.

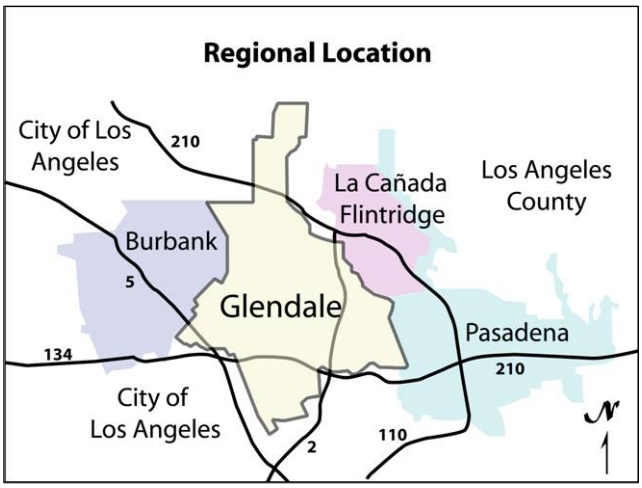
Related Document:

Glendale, California: 2010-2011 Annual Report[28]

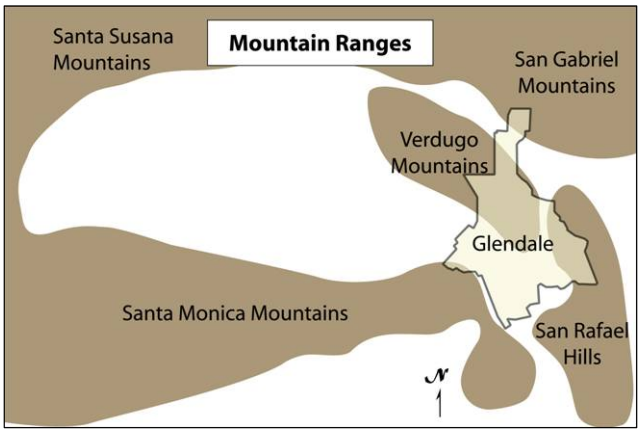
Topography

Glendale is adjacent to the cities of Pasadena, Burbank, La Canada Flintridge, City of Los Angeles, and County of Los Angeles. It is intersected by four freeways (see map below).

[28] http://www.ci.glendale.ca.us/admin-svcs/2011-2012_AnnualReport/2011-2012_AnnualReport.pdf



Glendale has three major physiographical features: the San Gabriel Mountains, the San Rafael Hills, and the Verdugo Mountains. These contain the primary habitat for Glendale's wildlife.



Glendale has preserved a large portion of its hillside and mountain ranges as recreational open space. The zoning map[29] indicates these areas in bright green (see map in next column).

Related Policy Documents:

General Plan Open Space and Conservation Element

General Plan Land Use Element

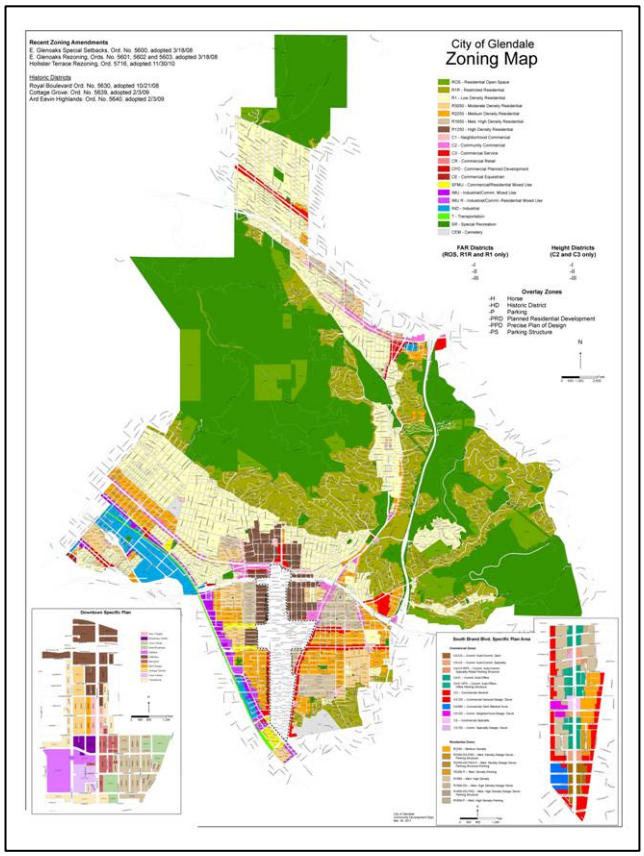
General Plan Circulation Element

Downtown Specific Plan Mobility Study[30]

San Fernando Road Rezoning Program[31]

Glendale Safe and Healthy Streets Plan[32]

Bicycle Master Plan[33]



Watershed

Glendale is part of the Los Angeles River Watershed. Glendale's water flows down the Verdugo Wash and into the Los Angeles River. The Los Angeles River flows south through the Southern California Basin to San Pedro Bay. Glendale's water supply comes from three sources: imported water from Metropolitan Water District (59% of water supply), groundwater basins (35% of water supply;

[29] http://www.ci.glendale.ca.us/maps.asp

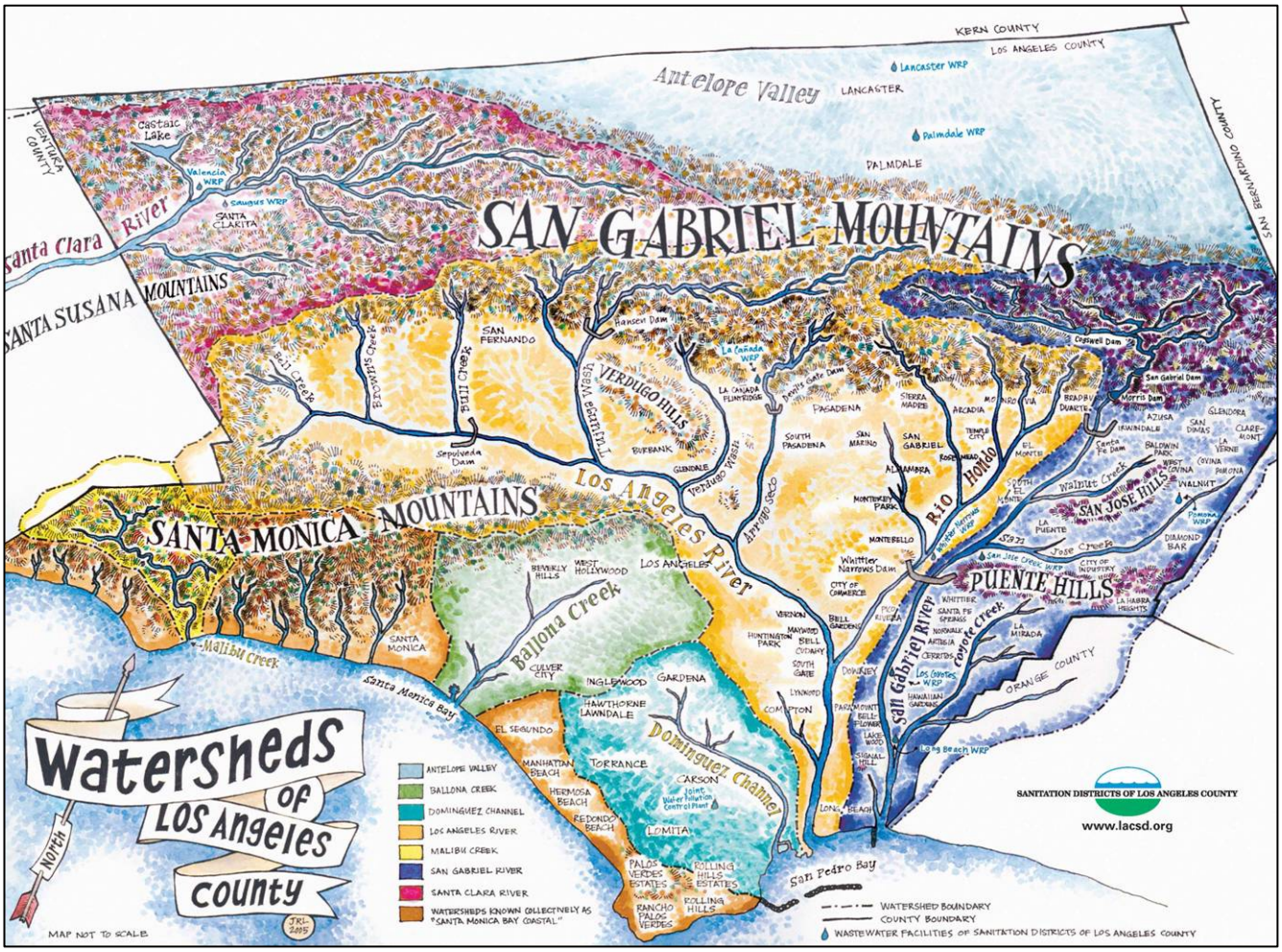
[30] http://www.ci.glendale.ca.us/planning/mobility.asp

[31] http://www.ci.glendale.ca.us/planning/san_fernando_rezoning.asp

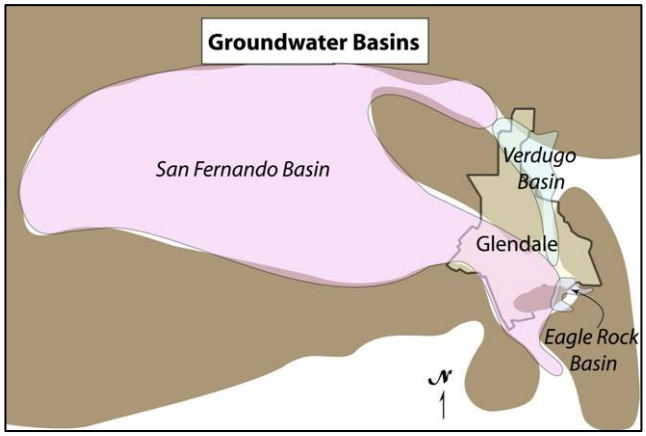
[32] http://www.ci.glendale.ca.us/planning/safeandhealthystreets.asp

[33] http://www.ci.glendale.ca.us/public_works/GlendaleBicycleMasterPlan.asp

27.5% from the San Fernando Basin, and 7.4% from the Verdugo Basin), and recycled water (6% in 2010-2011).[26]



Glendale contains year round and seasonal streams, which are detailed in the Hydrology section of the General Plan Open Space and Conservation Element.



Related Policy Documents:

Glendale 2010 Urban Water Management Plan[34]

Glendale Water & Power Strategic Plan[29]

Air Basin

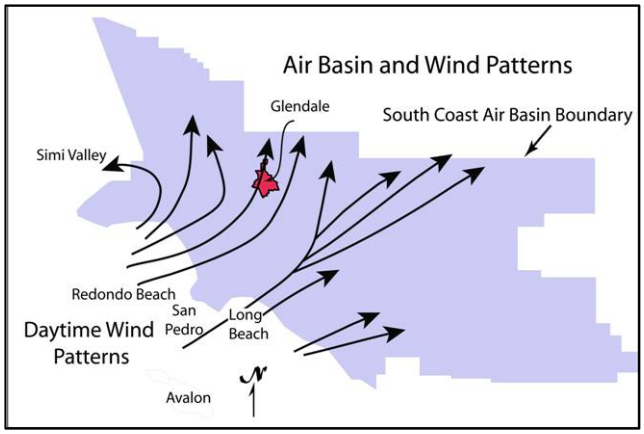
Glendale is part of the South Coast Air Basin, managed by the South Coast Air Quality Management District (SCAQMD). See map on following page.

Related Policy Documents:

General Plan Air Quality Element

SCQAMD Air Quality Management Plan

[34]http://www.glendalewaterandpower.com/reports/2010_Urban_Water_Management_Plan.aspx



Flora and Fauna

The hillside areas of Glendale contain seven native plant communities including chaparral, southern oak woodland, southern oak riparian woodland, coastal sage, alluvial scrub, walnut woodland, and big cone spruce.

Wildlife in Glendale observed directly or indirectly include Audubon's cottontail, coyotes, deer, woodrats, westerns whiptails, San Diego horned lizards, western fence lizards, side-blotch lizards, gopher snakes, and western toad tadpoles. Wildlife expected but not observed include mammals such as raccoons, skunks, opossums, bobcats, mountain lions, San Diego pocket mouse, brush mouse, deermouse, Pacific kangaroo rat, a variety of birds, southern Pacific rattlesnake, common kingsnake, striped racer, the southern alligator lizard, and amphibians such as the Pacific tree frog.

To maintain genetic diversity in plant and animal communities, habitat areas must be connected with larger expanses of open space.

Related Policy Documents:

General Plan Open Space and Conservation Element

Other Relevant Policy Documents

Long Range Planning Public Input Findings[35]
North Glendale Community Plan[36]
General Plan Housing Element
General Plan Safety Element
General Plan Noise Element
Zero Waste Plan[37]
Glendale Water and Power Strategic Plan[38]
Glendale Police Department Strategic Plan[39]
Glendale Fire Department Strategic Plan[40]

[35] http://www.ci.glendale.ca.us/LRP_Findings.asp
[36] http://www.ci.glendale.ca.us/planning/northglendalecommunityplan.asp
[37] http://www.earthresource.org/zerowaste/GlendaleZeroWaste.html
[38] http://www.glendalewaterandpower.com/pdf/GWP_StrategicPlan.pdf
[39] http://www.ci.glendale.ca.us/police/strategic_plan/index.html
[40] http://fire.ci.glendale.ca.us/pdf/GlendaleStrategicPlan06-09-11FINAL.pdf

Appendix B
Sustainability Resolution & UN Accords

A Resolution of the City Council of the City of Glendale, California to Address Sustainability and Climate Change

WHEREAS, Sustainability means sustaining society in the long-term by meeting current environmental, social, and economic needs while ensuring future generations can meet theirs; and

WHEREAS, Glendale adopted a strategic goal in the City's Long Range Plan to lead the way toward a sustainable future, to promote a healthy and safe environment for all residents, and to be effective stewards of the community's natural resources; and

WHEREAS, Glendale wishes to integrate its environment, society, economy, and governance in ways that foster vibrant social and economic conditions and a healthy ecosystem and to that end commit ourselves to creating the conditions necessary for a sustainable future; and

WHEREAS, Glendale is committed to lead by demonstrating sustainable stewardship that will yield cost savings to taxpayers by reducing City operating costs, will protect, conserve, and enhance the city's resources, and will establish community standards of sustainable living practices; and

WHEREAS, the Department of Energy awarded the Energy Efficiency & Conservation Block Grant to the City of Glendale to fund the development of a Greener Glendale Plan to address energy efficiency, conservation, and greenhouse gas emission reductions; and

WHEREAS, local government actions taken to reduce greenhouse gas emissions and increase energy efficiency provide multiple local benefits by decreasing air pollution, creating jobs, reducing energy expenditures, and saving money for the local government, its businesses, and its residents; and

WHEREAS, AB 32, the Global Warming Solutions Act of 2006, mandates that cities reduce their greenhouse gas emissions to 1990 levels by 2020;

NOW THEREFORE, BE IT RESOLVED, that the City of Glendale, California commits to addressing sustainability and climate change and using the concept of sustainability to guide policy now and in the future.

Adopted by Glendale City Council on November 9, 2010.

Urban Environmental Accords

Signed on the occasion of United Nations Environment Programme World Environment Day
June 5th, 2005 in San Francisco, California

Green Cities Declaration

RECOGNIZING for the first time in history, the majority of the planet's population now lives in cities and that continued urbanization will result in one million people moving to cities each week, thus creating a new set of environmental challenges and opportunities; and

BELIEVING that as Mayors of cities around the globe, we have a unique opportunity to provide leadership to develop truly sustainable urban centers based on culturally and economically appropriate local actions; and

RECALLING that in 1945 the leaders of 50 nations gathered in San Francisco to develop and sign the Charter of the United Nations; and

ACKNOWLEDGING the importance of the obligations and spirit of the 1972 Stockholm Conference on the Human Environment, the 1992 Rio Earth Summit (UNCED), the 1996 Istanbul Conference on Human Settlements, the 2000 Millennium Development Goals, and the 2002 Johannesburg World Summit on Sustainable Development, we see the Urban Environmental Accords described below as a synergistic extension of the efforts to advance sustainability, foster vibrant economies, promote social equity, and protect the planet's natural systems.

THEREFORE, BE IT RESOLVED, today on World Environment Day 2005 in San Francisco, we the signatory Mayors have come together to write a new chapter in the history of global cooperation. We commit to promote this collaborative platform and to build an ecologically sustainable, economically dynamic, and socially equitable future for our urban citizens; and

BE IT FURTHER RESOLVED that we call to action our fellow Mayors around the world to sign the Urban Environmental Accords and collaborate with us to implement the Accords; and

BE IT FURTHER RESOLVED that by signing these Urban Environmental Accords, we commit to encourage our City governments to adopt these Accords and commit our best efforts to achieve the Actions stated within. By implementing the Urban Environmental Accords, we aim to realize the right to a clean, healthy, and safe environment for all members of our society.

Implementation & Recognition

THE 21 ACTIONS that comprise the Urban Environmental Accords are organized by urban themes. They are proven first steps toward environmental sustainability. However, to achieve long-term sustainability, cities will have to progressively improve performance in all thematic areas.

Implementing the Urban Environmental Accords will require an open, transparent, and participatory dialogue between government, community groups, businesses, academic institutions, and other key partners. Accords implementation will benefit where decisions are made on the basis of a careful assessment of available alternatives using the best available science.

The call to action set forth in the Accords will most often result in cost savings as a result of diminished resource consumption and improvements in the health and general well-being of city residents. Implementation of the Accords can leverage each city's purchasing power to promote and even require responsible environmental, labor and human rights practices from vendors.

Between now and the World Environment Day 2012, cities shall work to implement as many of the 21 Actions as possible. The ability of cities to enact local environmental laws and policies differs greatly. However, the success of the Accords will ultimately be judged on the basis of actions taken. Therefore, the Accords can be implemented though programs and activities even where cities lack the requisite legislative authority to adopt laws.

The goal is for cities to pick three actions to adopt each year. In order to recognize the progress of cities to implement the Accords, a *City Green Star Program* shall be created.

At the end of the seven years a city that has implemented:

19 – 21 Actions shall be recognized as a ★★★★ City
15 – 18 Actions shall be recognized as a ★★★ City
12 – 17 Actions shall be recognized as a ★★ City
8 – 11 Actions shall be recognized as a ★ City

For more information, visit:
www.GreenCitiesCalifornia.org/urban-environmental-accords

How the Greener Glendale Plan Addresses the 21 Actions of the UN Accords

	UN Accords Action	Addressed by the Following Greener Glendale Plan Strategies
1	**Renewable Energy:** Adopt and implement a policy to increase the use of renewable energy to meet ten percent of the city's peak electric load within seven years.	**DONE**. The city's renewable energy portfolio meets at least 12% of the city's peak electric load. Continued efforts are supported by E1.
2	**Reduce Energy Consumption**: Adopt and implement a policy to reduce the city's peak electric load by ten percent within seven years through energy efficiency, shifting the timing of energy demands, and conservation measures	CC1 – CC5, UD1-UD3, E2-E5,
3	**Greenhouse Gas Reductions:** Adopt a citywide GHG reduction plan that reduces the jurisdiction's emission by twenty-five percent by 2030, and which includes a system for accounting and auditing GHGs.	Adoption of this document will accomplish this Action. Continued efforts are supported by CC6.
4	**Achieve Zero Waste:** Establish a policy to achieve zero waste to landfills and incinerators by 2040.	WS1
5	**Reduce Use of Disposable, Non-Renewable Product:** Adopt a citywide law that reduces the use of disposable, toxic, or non-renewable product category by at least fifty percent in seven years.	WS2
6	**User-Friendly Recycling Programs:** Implement "user-friendly" recycling and composting programs, with the goal of reducing by twenty percent per capita solid waste disposal to landfill and incinerators in seven years.	**DONE**. The City has a strong recycling program and achieved a 26.6% reduction in citywide per capita solid waste disposal. Continued efforts are supported by WS1, WS3, and WS4.
7	**Green Building:** Adopt a policy that mandates a green building rating system standard that applies to all new municipal buildings.	All recently constructed City buildings have been to LEED or Green Point Rated standards. Continued efforts are supported by UD2 and UD3.
8	**Neighborhood Planning:** Adopt urban planning principles and practices that advance higher density, mixed use, walkable, bikeable, and disabled-accessible neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological reconstruction.	**DONE**. This has been accomplished via the City's mixed-use zoning, Downtown Specific Plan and Mobility Study, Safe & Healthy Streets Plan, Bike Master Plan, Pedestrian Safety Action Plan, and policies to promote infill development. Continued efforts are supported by UD4 and UD5.
9	**Green Jobs:** Adopt a policy or implement a program that creates environmentally beneficial jobs in slums and/or low-income neighborhoods.	**DONE**. GWP and the Verdugo Jobs Center are administering a Smart Grid jobs program (through Jan 2012) for people from low-income areas. Continued efforts are supported by ED2-C.
10	**Recreational Open Space:** Ensure there is accessible public park or recreational open space within ½ kilometer of every city resident by 2015.	UN4

11	**Canopy Coverage:** Conduct an inventory of existing canopy coverage in the city, then establish a goal based on ecological and community considerations to plant and maintain canopy coverage in not less than fifty percent of all available sidewalk planting sites.	An assessment should be conducted to see if we have already met the 50% goal. Strategy UN2-A supports this effort.
12	**Protecting Habitat:** Pass legislation that protects habitat corridors and other key habitat characteristics (e.g., water features, food-bearing plants, shelter for wildlife, use of native species, etc.) from unsustainable development.	**DONE**. The City has ordinances in place to protect certain native trees, blueline streams, and ridgelines. The Hillside Development Standards call for protection of natural hillsides, stream channels, habitat, and vegetation areas. Continued efforts are supported by UN3.
13	**Public Transportation:** Develop and implement a policy which expands affordable public transportation coverage to within 1/2 kilometer (1/3 mile) of all city residents in ten years.	**DONE**. The Beeline and Metro service provide transit access within 1/2 kilometer of all city residents located in a geographically accessible area. All city residents have access to public paratransit elderly and disabled service regardless of geographic location.
14	**Reduce Vehicle Air Pollution:** Pass a law or implement a program that eliminates leaded gasoline (where it is still used); phases down sulfur levels in diesel and gasoline fuels, concurrent with using advanced emission controls on all buses, taxis, and public fleets to reduce particulate matter and smog forming emissions from those fleets by fifty percent in seven years.	This particular Action is specific to the government vehicle fleet. Please refer to the Greener Glendale Plan for Municipal Operations for compliance details. Other measures in this document that support the same concept at the community scale are T3-T4.
15	**Reduce SOV Commute Trips:** Implement a policy to reduce the percentage of commute trips by single occupancy vehicles (SOVs) by ten percent in seven years.	T1 and T2
16	**Reduce Use of Toxics:** Every year, identify one product, chemical, or compound that is used within the city that represents the greatest risk to human health and adopt a law and provide incentives to reduce or eliminate its use by the municipal government.	EH1
17	**Locally Grown, Organic Foods:** Promote the public health and environmental benefits of supporting locally grown, organic foods. Ensure that twenty percent of all city facilities (including schools) serve locally grown and organic foods within seven years.	ED3 and EH3
18	**Air Quality Index:** Establish an Air Quality Index (AQI) to measure the level of air pollution and set the goal of reducing by ten percent in seven years the number of days categorized in the AQI range as “unhealthy” or “hazardous.”	The air quality index is set and managed by the SCAQMD. Glendale is in compliance with the SCAQMD regulations. Measures supporting this effort include T1-T4 and EH2.
19	**Water Accessibility and Reduced Consumption:** Develop policies to increase adequate access to safe drinking water. For cities with potable water consumption greater than 100	**DONE.** Safe drinking water is available to all Glendale residents and the city achieved a 17% water

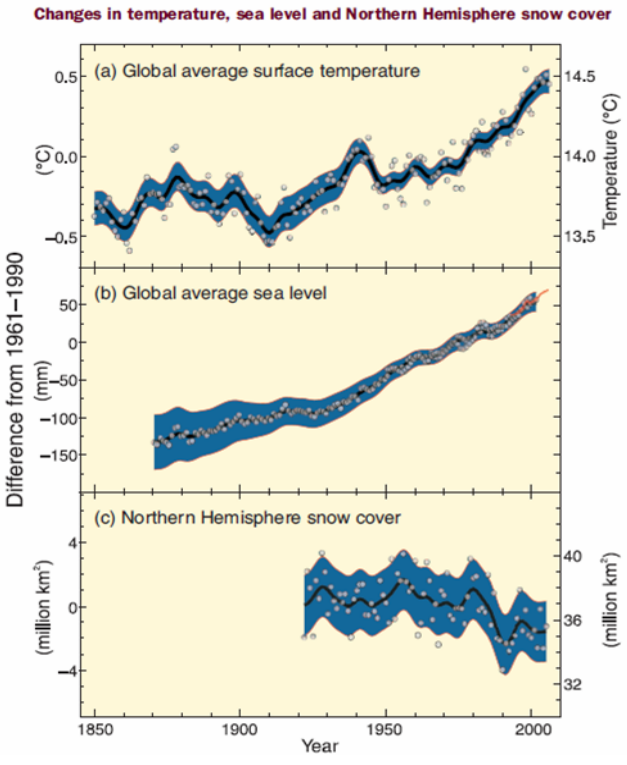
	liters (26.4 gallons) per capita per day, adopt and implement policies to reduce consumption by ten percent by 2015.	consumption decrease over the past few years. Continued efforts are supported by CC1 – CC5, UD1, UD3, and WT1-WT4.
20	**Protect Drinking Water Sources:** Protect the ecological integrity of the city's primary drinking water sources (i.e., aquifers, rivers, wetlands, and associated systems).	**DONE.** The City's Urban Water Management Plan identifies programs for protecting the water quality of Glendale's water sources, Glendale has a water treatment plant for the San Fernando Basin, GWP is conducting a Watershed Sanitary Survey for the Verdugo groundwater basin, and all wells and reservoirs managed by GWP are enclosed and protected from contamination and intrusions. Continued efforts are supported by WT5 and EH4.
21	**Reduce Wastewater Discharges:** Adopt municipal wastewater management guidelines and reduce the volume of untreated wastewater discharges by 10 percent in seven years through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participants of all affected communities and is based on sound economic, social, and environmental principles.	**DONE.** Glendale treats 100% of its wastewater to a very high level.

Appendix C
Climate Change Science

Climate Change

According to the Intergovernmental Panel on Climate Change (IPCC)'s Fourth Assessment Report, "warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level."[41] Researchers have made progress in their understanding of how the Earth's climate is changing in space and time through improvements and extensions of numerous datasets and data analyses, broader geographical coverage, better understanding of uncertainties and a wider variety of measurements.[42] These refinements expand upon the findings of previous IPCC Assessments – today, observational evidence from all continents and most oceans shows that "regional changes in temperature have had discernible impacts on physical and biological systems."[43]

The Fourth Assessment asserts that "most of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in



[41] IPCC, 2007: Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.

[42] IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[43] IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 7-22.

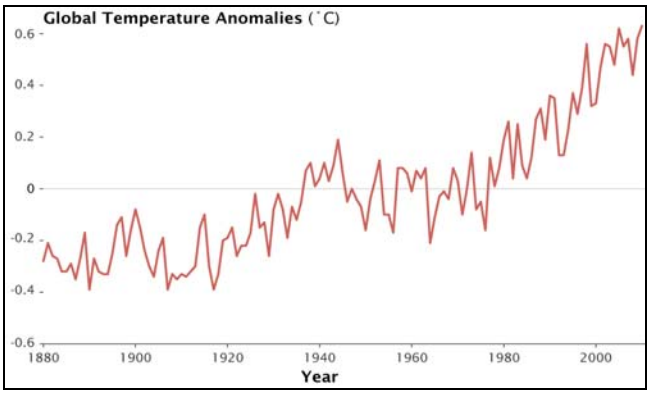
anthropogenic GHG concentrations. This is an advancement since the [Third Assessment Report]'s conclusion that 'most of the observed warming over the last 50 years is *likely* to have been due to the increase in GHG concentrations.'"

Put another way, "The observed widespread warming of the atmosphere and ocean, together with ice mass loss, support the conclusion that it is *extremely unlikely* that global climate change of the past 50 years can be explained without external forcing and *very likely* that it is not due to known natural causes alone. During this period, the sum of solar and volcanic forcings would *likely* have produced cooling, not warming. Warming of the climate system has been detected in changes in surface and atmospheric temperatures and in temperatures of the upper several hundred [meters] of the ocean. The observed pattern of tropospheric warming and stratospheric cooling is *very likely* due to the combined influences of GHG increases and stratospheric ozone depletion."[44]

In short, the Earth is already responding to climate change drivers introduced by mankind.

Temperatures are Rising Globally

Analysis released in January 2011 by NASA's Goddard Institute for Space Studies shows that global average surface temperatures in 2010 "tied" 2005 as the warmest on record (the difference is smaller than the uncertainty in comparing the temperatures of recent years).[45] The next hottest years, also with very close average temperatures, are 1998, 2002, 2003, 2006, 2007, and 2009. The period from January 2000 to December 2009 is the warmest decade on record, followed by the 1990's, then the 1980's respectively. These remarkable yearly and decadal trends, based on the Goddard Institute's global average surface temperature analysis, GISTEMP, are charted since 1880 and closely resemble the findings of other temperature records and analyses produced by the Hadley Centre and the National Oceanic and Atmospheric Administration (NOAA).[46]



The steady uptick in average temperatures is significant and expected to continue if action is not taken to manage climatic conditions.

Regional and Local Impacts

Because the impacts of climate change vary geographically, it is important to know what

[44] IPCC, 2007: Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.

[45] Goddard Institute for Space Studies, "Research Finds 2010 Tied for Warmest Year on Record," 2011, 18 Jan. 2011, <http://www.nasa.gov/topics/earth/features/2010-warmest-year.html>.

[46] Goddard Institute for Space Studies, "Despite Subtle Differences, Global Temperature Records in Close Agreement," 2011, 18 Jan. 2011. <http://www.giss.nasa.gov/research/news/20110113/>

effects are specifically expected for your corner of the globe. According to the U.S. Global Change Research Program, the Southwest region of the United States should expect the following impacts from climate change to occur in the coming years:

- Water supplies will become increasingly scarce, calling for trade-offs among competing uses, and potentially leading to conflict.
- Increasing temperature, drought, wildfire, and invasive species will accelerate transformation of the landscape.
- Increased frequency and altered timing of flooding will increase risks to people, ecosystems, and infrastructure.
- Tourism and recreation opportunities are likely to suffer.
- Cities and agriculture face increasing risks from a changing climate.[47]

In terms of California-specific impacts, the California Energy Commission (CEC) issued a report in 2006 detailing anticipated changes for the state. The report details specific impacts related to several sectors and finds that "climate change impacts will affect all of the sectors considered in this report: sea level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, and electricity demand and supply."[48] The report analyzed low, mid, and high emissions scenarios, noting that "all climate models show increases in temperature, with the aggregate of several model runs containing a range of warming from 2000 to 2100 from about +2ºC to about +6ºC (+3.6ºF to about +10.8 ºF). Increases in temperature alone would impact the California hydrological cycle, with consequences upon the state's water supply, hydroelectric power supply, agriculture, recreation, and ecosystems." Additionally, "Climate change could produce compounding impacts—for instance, in the San Francisco Bay Delta, heightened sea levels and high river inflows from warmer storms would place levee systems in greater jeopardy of flooding."

Greenhouse Gas Emissions Must be Reduced

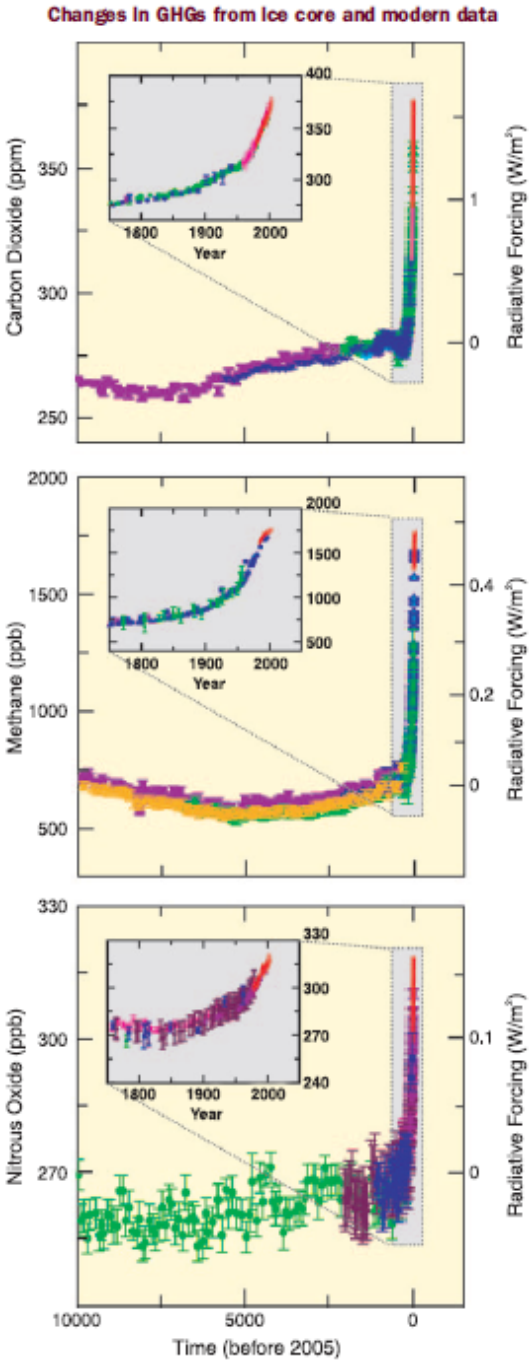
The figures included in the chart on the next page, from the IPCC Fourth Assessment, chart atmospheric concentrations of the three most common greenhouse gases over the 10,000 years prior to 2005 (and since 1750 in the inset panels).

The recent and massive buildup of greenhouse gases in our atmosphere is conceivably even more extraordinary than changes observed thus far regarding temperature, sea level, and snow cover in the Northern Hemisphere in that current levels greatly exceed recorded precedent going back much further than the modern temperature record. The latest monthly average atmospheric CO_2 concentration, for December 2010, as measured at Mauna Loa Observatory, Hawaii, was 389.69 parts per million (ppm).[49]

[47] Global Climate Change Impacts in the United States, Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009.
[48] Scenarios of Climate Change in California: An Overview. Dan Cayan, Amy Lynd Luers, Michael Hanemann, Guido Franco, Bart Croes, (eds.). <http://www.energy.ca.gov/2005publications/CEC-500-2005-186/CEC-500-2005-186-SF.PDF>.
[49] NOAA/ESRL, Dr. Pieter Tans. 2011, 18 Jan. <http://www.esrl.noaa.gov/gmd/ccgg/trends/>.

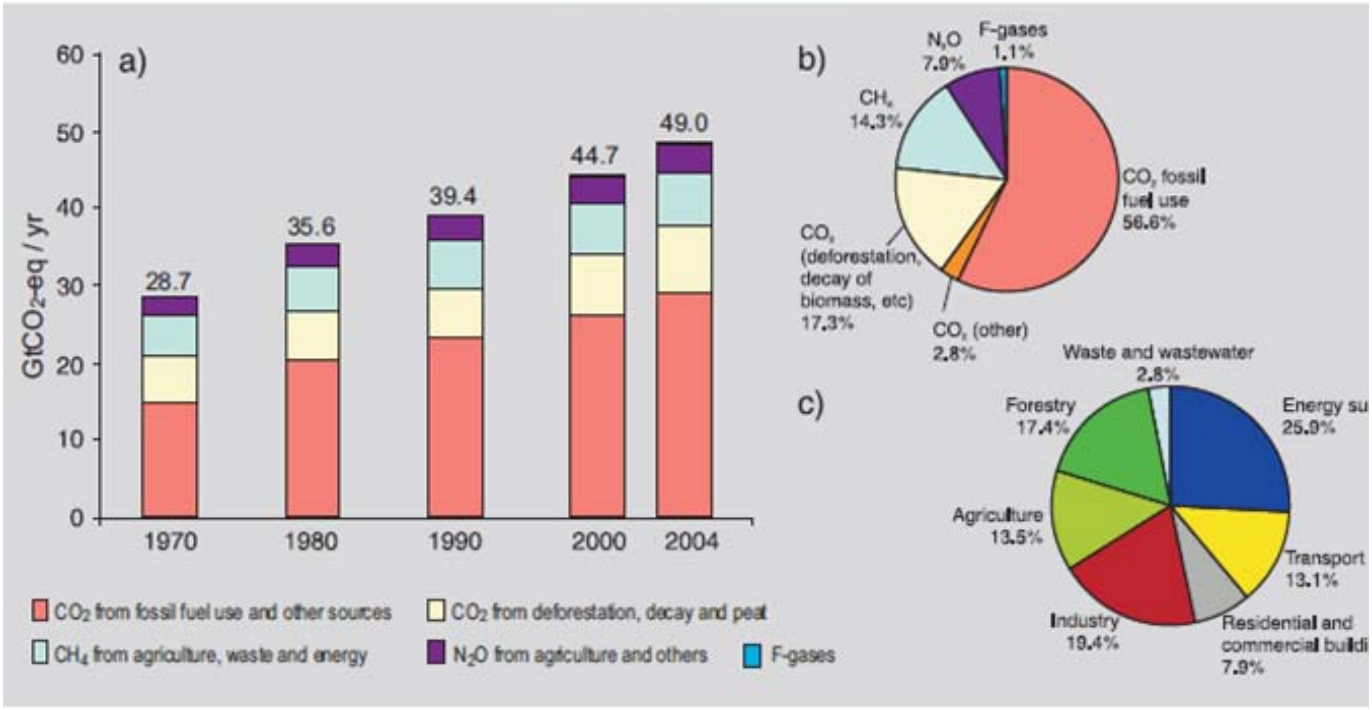
Global Greenhouse Gas Emissions

According to the Director of the Goddard Institute, Dr. James Hansen, "If the warming trend continues, as is expected, if greenhouse gases continue to increase, the 2010 [temperature] record will not stand for long."[50] In response to the problem of climate change, many communities in the United States are taking responsibility for addressing emissions at the local level. Since many of the major sources of greenhouse gas emissions are directly or indirectly controlled through local policies, local governments have a strong role to play in reducing greenhouse gas emissions within their boundaries. Through proactive measures around land use patterns, transportation demand management, energy efficiency, green building, and waste diversion, local governments can dramatically reduce emissions in their communities. In addition, local governments are primarily responsible for the provision of emergency services and the mitigation of natural disaster impacts. While this Plan is designed to reduce overall emissions levels, as the effects of climate change become more common and severe, local government adaptation policies will be fundamental in preserving the welfare of residents and businesses.



[50] Goddard Institute for Space Studies, "Research Finds 2010 Tied for Warmest Year on Record," 2011, 18 Jan. <http://www.nasa.gov/topics/earth/features/2010-warmest-year.html>.

Global anthropogenic GHG emissions



Appendix D
Utility Emissions

The following pages contain the GWP utility GHG emissions reports as reported to The Climate Registry. These emissions are due to the production and purchase of power by Glendale Water and Power (GWP) for community consumption.

The fleet related emissions are excluded in order to be consistent with current inventory reporting, which does not include them.

Total Emissions Summary Report

Glendale Water & Power

(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:13 pm PT

Report Revision #: 0

141 N. Glendale Ave., Level 4
Glendale, CA 91206 United States
www.glendalewaterandpower.com
818-548-4096
vpuffer@ci.glendale.ca.us

Contact: Valerie Puffer

Industry Type: Electric Power Producer

NAIC Code: 2211-Electric Power Generation, Transmission and Distribution

SIC Code: 4931-Electric and Other Services Combined

Description:

Primary Calculation Methodologies:

Organizational structure disclosure:

Legend
Blue = required
Orange = optional

673,499.49
Less 961 = 672,538

VERIFIED EMISSIONS INFORMATION

Reporting Year: **2004**

Reporting Scope: **CA and US**

Reporting Protocol: General Reporting Protocol, Version 1 (October 2002)

Reporting Boundaries:

Direct Baseline Year 2004

Indirect Baseline Year 2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**961.06**	961.06	0.00	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	**455,875.30**	455,875.30	0.00	0.00	0.00	0.00	0.00	metric ton
Process Emissions	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
Fugitive Emissions	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL DIRECT (Eqty Share)	**456,836.37**	456,836.37	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DIRECT (Mgmt Ctrl)	**16,501,339.13**	16,501,339.13	0.00	0.00	0.00	0.00	0.00	metric ton

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

Indirect Emissions	CO2e	CO2	CH4	N2O	Unit
Purchased Electricity	**216,663.12**	216,663.12	0.00	0.00	metric ton
Purchased Steam	**0.00**	0.00	0.00	0.00	-
Purchased Heating and Cooling	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT (Eqty Share)	**216,663.12**	216,663.12	0.00	0.00	metric ton
TOTAL INDIRECT (Mgmt Ctrl)	**216,663.12**	216,663.12	0.00	0.00	metric ton

De Minimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
None	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	metric ton

Percentage of Total Inventory: 0.00 %

This report includes emissions from US sources

Total Emissions Summary Report
Glendale Water & Power
(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:13 pm PT

Report Revision #: 0

Movement Report*

Factor	Details	Amount (CO2e)	Unit

*The Movement Report documents changes in the members inventory. This data is not verified but must be completed by the member to help track changes in emissions over time.

VERIFICATION INFORMATION

Verification Company: Ryerson, Master & Associates, Inc.

Verifier Name: Ryerson, Master and Associates, Inc.

Lead Verifier Name: Ivor John

Basis of Verification Opinion: Ryerson, Master and Associates, Inc. (RMA) completed a thorough review and evaluation of the Glendale Water & Power (GWP) Greenhouse Gas Emissions Inventory for Year 2004 against the General Reporting Protocol (GRP) (Version 1, July 2003) using the certification procedures outlined in the Registry's Certification Protocol (July 2003). RMA verified the emissions estimates for each source category included in the inventory, and verified that the methodologies were consistent with the specified protocols. The certification covered carbon dioxide only. RMA visited 5 sites during this certification review. RMA's findings were summarized in a confidential Certification Report to GWP which was issued on February 14, 2006. Only a small number of immaterial misstatements were identified during the certification review, so RMA issued a favorable Certification Opinion on March 1, 2006.

Date Submitted:
03/01/06 06:07 am

Verifier Comments:

OPTIONAL INFORMATION

Information in this section is voluntarily provided by the participant for public information, but is not required and thus, not verified under California Registry protocols.

Optional Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Energy Exports	**614,403.40**	614,403.40	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL OPTIONAL (Eqty Share)	**614,403.40**	614,403.40	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL OPTIONAL (Mgmt Ctrl)	**614,403.40**	614,403.40	0.00	0.00	0.00	0.00	0.00	metric ton

Emissions Efficiency metric:

Emissions Management Programs:

Emissions Reduction Projects:

Emissions Reduction Goals:

REFERENCE DOCUMENTS

Title	Author	Document Status	Publish Date
Certification Activities Checklist, Glendale Wate	Ivor John	Private	03/01/2006 12:00:00AM

This report includes emissions from US sources

Total Emissions Summary Report
Glendale Water & Power
(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:13 pm PT

Report Revision #: 0

FACILITY INFORMATION

Facility Name	**Grayson**
Facility ID	
ReportingYear	2004
Facility Address	Glendale, CA 91206, United States
Facility PO Box	
Facility Contact Person	Valerie Puffer
Facility Contact Phone	818-548-4096
Facility Contact Email	vpuffer@ci.glendale.ca.us
Facility Description	
SIC Code	4931-Electric and Other Services Combined
NAIC Code	2211-Electric Power Generation, Transmission and Distribution
Industry Type	Electric Power Producer

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
Stationary Combustion	**89,577.25**	89,577.25	0.00	0.00	0.00	0.00	0.00	metric tor
Process Emissions	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
Fugitive Emissions	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL DIRECT (Eqty Share)	**89,577.25**	89,577.25	0.00	0.00	0.00	0.00	0.00	metric tor
TOTAL DIRECT (Mgmt Ctrl)	**89,577.25**	89,577.25	0.00	0.00	0.00	0.00	0.00	metric tor

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

Indirect Emissions	CO2e	CO2	CH4	N2O	Unit
Purchased Electricity	**0.00**	0.00	0.00	0.00	-
Purchased Steam	**0.00**	0.00	0.00	0.00	-
Purchased Heating and Cooling	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT (Eqty Share)	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT (Mgmt Ctrl)	**0.00**	0.00	0.00	0.00	-

De Minimis Detail	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Percentage of Total Inventory:								

Optional Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL OPTIONAL (Eqty Share)	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL OPTIONAL (Mgmt Ctrl)	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-

Facility Emission Reduction Goals:

Environmental Programs/Policies:

Other Public Information:

Primary Calculation Methodologies:

Equity Share: 100.00

This report includes emissions from US sources

Total Emissions Summary Report

Glendale Water & Power

(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:13 pm PT

Report Revision #: 0

Source	Emission Category	Calc Method	Fuel Name	Fuel/ Mileage	Emission Factor	Fract. Oxid.	GHG	Amount	Unit	Methodol./ Source	General Info
Unit 3	Stationary Combustion	CARROT	Natural Gas	73125 MMBtu	52.79 kg/MMBtu	100	CO2	3,859.90	metric ton		73,125 mmbtus of natura gas consumed in power production during 2004 a verified by CEC-1304 - Schedule 2, Part A report.
Unit 4	Stationary Combustion	CARROT	Natural Gas	489341 MMBtu	52.79 kg/MMBtu	100	CO2	25,829.86	metric ton		489,341 mmbtus of natural gas consumed in power production during 2004 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 5	Stationary Combustion	CARROT	Natural Gas	460569 MMBtu	52.79 kg/MMBtu	100	CO2	24,311.13	metric ton		460,569 mmbtus of natural gas consumed in power production during 2004 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 8A	Stationary Combustion	CARROT	Natural Gas	107774 MMBtu	52.79 kg/MMBtu	100	CO2	5,688.85	metric ton		107,774 mmbtus of natural gas consumed in power production during 2004 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 8BC	Stationary Combustion	CARROT	Natural Gas	152860 MMBtu	52.79 kg/MMBtu	100	CO2	8,068.72	metric ton		152,860 mmbtus of natural gas consumed in power production during 2004 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 9	Stationary Combustion	CARROT	Natural Gas	413352 MMBtu	52.79 kg/MMBtu	100	CO2	21,818.79	metric ton		413,352 mmbtus of natural gas consumed in power production during 2004 as verified by CEC-1304 - Schedule 2, Part A report.

This report includes emissions from US sources

Total Emissions Summary Report

Glendale Water & Power

(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:11 pm PT

Report Revision #: 7

141 N. Glendale Ave., Level 4
Glendale, CA 91206 United States
www.glendalewaterandpower.com
818-548-4096
vpuffer@ci.glendale.ca.us

Legend
Blue = required
Orange = optional

Contact:	Valerie Puffer
Industry Type:	Electric Power Producer
NAIC Code:	2211-Electric Power Generation, Transmission and Distribution
SIC Code:	4931-Electric and Other Services Combined
Description:	Municipal utility owned by the City of Glendale. GWP has a mixed portfoliio with local generation, long term energy contracts and increasing renewable resources.
Primary Calculation Methodologies:	GWP primarily used existing Carrot emission factors and methodologies.
Organizational structure disclosure:	City of Glendale Water & Power - Power Management

VERIFIED EMISSIONS INFORMATION

less 1199.67
= 553942.9

Reporting Year:	**2009**
Reporting Scope:	**CA and US**
Reporting Protocol:	General Reporting Protocol, Version 3.1, (January 2009); Power/Utility Reporting Protocol, Version 1.1 (May 2009)
Reporting Boundaries:	Equity Share
Direct Baseline Year	2004
Indirect Baseline Year	2004

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**1,199.67**	1,199.20	0.02	0.00	0.00	0.00	0.00	metric ton
Stationary Combustion	**532,724.17**	530,584.94	7.02	6.42	0.00	0.00	0.00	metric ton
Process Emissions	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
Fugitive Emissions	**233.03**	0.00	0.00	0.00	0.00	0.00	0.01	metric ton
TOTAL DIRECT	**534,156.86**	531,784.15	7.05	6.42	0.00	0.00	0.01	metric ton

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

Indirect Emissions	CO2e	CO2	CH4	N2O	Unit
Purchased Electricity	**9,645.00**	9,645.00	0.00	0.00	metric ton
Purchased Steam	**0.00**	0.00	0.00	0.00	-
Purchased Heating and Cooling	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT	**9,645.00**	9,645.00	0.00	0.00	metric ton

This report includes emissions from US sources

Total Emissions Summary Report

Glendale Water & Power

(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:11 pm PT

Report Revision #: 7

De Minimis Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Acid Gas Scrubbers	**1,055.73**	1,055.73	0.00	0.00	0.00	0.00	0.00	metric ton
Coal Storage and Handling	**2,446.50**	0.00	116.50	0.00	0.00	0.00	0.00	metric ton
Refrigerants from Buildings	**169.00**	0.00	0.00	0.00	0.13	0.00	0.00	metric ton
Refrigerants from Vehicles	**185.90**	0.00	0.00	0.00	0.14	0.00	0.00	metric ton
GWP Electric Purchases	**5,033.09**	5,033.09	0.00	0.00	0.00	0.00	0.00	metric ton
GWP Electricity Mix	**20.07**	0.00	0.07	0.06	0.00	0.00	0.00	metric ton
Purchased GWP power mix	**211.20**	0.00	1.20	0.60	0.00	0.00	0.00	metric ton
Propane Vehicles	**2.32**	0.00	0.00	0.01	0.00	0.00	0.00	metric ton
Ultra-Low Sulfur Diesel	**0.34**	0.00	0.00	0.00	0.00	0.00	0.00	metric ton
Ultra-Low Sulfur Vehicles	**0.02**	0.00	0.00	0.00	0.00	0.00	0.00	metric ton
Unleaded Heavy Duty Vehicles	**12.89**	0.00	0.00	0.04	0.00	0.00	0.00	metric ton
Unleaded Light Duty Vehicles	**7.90**	0.00	0.02	0.02	0.00	0.00	0.00	metric ton
Unleaded Passenger Vehicles	**1.47**	0.00	0.00	0.00	0.00	0.00	0.00	metric ton
Acid Gas Scrubbers	**737.00**	737.00	0.00	0.00	0.00	0.00	0.00	metric ton
Landfill Gas Units- 3/4/5	**33.77**	0.00	0.00	0.11	0.00	0.00	0.00	metric ton
Landfill Gas- Units 3/4/5 Only	**22.88**	0.00	1.09	0.00	0.00	0.00	0.00	metric ton
Natural Gas	**0.62**	0.00	0.01	0.00	0.00	0.00	0.00	metric ton
Small combustion sources- generator	**100.00**	100.00	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**10,040.71**	6,925.82	118.90	0.85	0.27	0.00	0.00	metric ton
Percentage of Total Inventory:	1.81 %							

Movement Report*

Factor	Details	Amount (CO2e)	Unit
No Change	No change	0.00	metric ton
Increase in Production	San Juan Production was way down in 2008 making 2009 look off. Reporting all 6 GHGs from 2006.	27,000.00	metric ton

*The Movement Report documents changes in the members inventory. This data is not verified but must be completed by the member to help track changes in emissions over time.

VERIFICATION INFORMATION

Verification Company:	Ryerson, Master & Associates, Inc.
Verifier Name:	Derek Markolf
Lead Verifier Name:	Ryan Schauland
Basis of Verification Opinion:	Glendale Water and Power (GWP) submitted their Year 2009 Greenhouse Gas Emissions Inventory Report to Ryerson, Master and Associates, Inc. (RMA) for review and verification against the California Registry's General Reporting Protocol, Version 3.1, and Power Generation/Electric Utility Reporting Protocol, Version 1.1. RMA followed the procedures outlined in the California Registry's General Verification Protocol, Version 3.0, and Power Generation/Electric Utility Verification Protocol, Version 1.1 to complete the verification process. The verification activities were conducted during August 2010 through January 2011. On January 27, 2011, RMA issued a Verification Report to GWP documenting the verification activities, and the material and immaterial misstatements in the GWP inventory. GWP made revisions in CARROT to address the RMA findings. RMA verified the revised inventory and on January 31, 2011 issued a Verification Opinion and Verification Activity Log to GWP. RMA completed the verification in CARROT on January 31, 2011.

This report includes emissions from US sources

Total Emissions Summary Report

Glendale Water & Power

(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:11 pm PT

Report Revision #: 7

Date Submitted:
01/31/11 08:49 pm

Verifier Comments:

OPTIONAL INFORMATION

Information in this section is voluntarily provided by the participant for public information, but is not required and thus, not verified under California Registry protocols.

Optional Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL OPTIONAL	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-

Emissions Efficiency metric:

Emissions Management Programs: Bringing in more zero emissions renewable energy to meet RPS standards

Emissions Reduction Projects: 20% renewables by 2017 - and any regulatory mandates that might come along

Emissions Reduction Goals:

REFERENCE DOCUMENTS

Title	Author	Document Status	Publish Date
Glendale PUP Emissions EY 2009	Valerie Puffer	Public	01/31/2011 12:00:00AM
Verification Activities Log	Ryan Schauland	Private	01/31/2011 12:00:00AM

This report includes emissions from US sources

Total Emissions Summary Report

Glendale Water & Power

(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:11 pm PT

Report Revision #: 7

FACILITY INFORMATION

Facility Name	**Grayson**
Facility ID	
ReportingYear	2009
Facility Address	Glendale, CA 91206, United States
Facility PO Box	
Facility Contact Person	Valerie Puffer
Facility Contact Phone	818-548-4096
Facility Contact Email	vpuffer@ci.glendale.ca.us
Facility Description	
SIC Code	4931-Electric and Other Services Combined
NAIC Code	2211-Electric Power Generation, Transmission and Distribution
Industry Type	Electric Power Producer

Direct Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Mobile Combustion	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
Stationary Combustion	**70,536.24**	70,467.18	1.33	0.13	0.00	0.00	0.00	metric ton
Process Emissions	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-
Fugitive Emissions	**233.03**	0.00	0.00	0.00	0.00	0.00	0.01	metric ton
TOTAL DIRECT	**70,769.27**	70,467.18	1.33	0.13	0.00	0.00	0.01	metric ton

* HFCs and PFCs are classes of greenhouse gases that include many compounds. These columns may reflect the total emissions of multiple HFC and PFC compounds, each of which has a unique Global Warming Potential (GWP). Emissions of each gas are first multiplied by their respective GWP and then summed in the total CO2-equivalent column.

Indirect Emissions	CO2e	CO2	CH4	N2O	Unit
Purchased Electricity	**0.00**	0.00	0.00	0.00	-
Purchased Steam	**0.00**	0.00	0.00	0.00	-
Purchased Heating and Cooling	**0.00**	0.00	0.00	0.00	-
TOTAL INDIRECT	**0.00**	0.00	0.00	0.00	-

De Minimis Detail	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
Refrigerants from Buildings	**169.00**	0.00	0.00	0.00	0.13	0.00	0.00	metric ton
Landfill Gas Units- 3/4/5	**33.77**	0.00	0.00	0.11	0.00	0.00	0.00	metric ton
Landfill Gas- Units 3/4/5 Only	**22.88**	0.00	1.09	0.00	0.00	0.00	0.00	metric ton
Small combustion sources- gener	**100.00**	100.00	0.00	0.00	0.00	0.00	0.00	metric ton
TOTAL DEMINIMIS	**325.65**	100.00	1.09	0.11	0.13	0.00	0.00	metric ton
Percentage of Total Inventory:	0.46%							

Optional Emissions	CO2e	CO2	CH4	N2O	HFCs*	PFCs*	SF6	Unit
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
TOTAL OPTIONAL	**0.00**	0.00	0.00	0.00	0.00	0.00	0.00	-

Facility Emission Reduction Goals:

Environmental Programs/Policies:

Other Public Information:

Primary Calculation Methodologies:

Equity Share: 100.00

This report includes emissions from US sources

Total Emissions Summary Report
Glendale Water & Power
(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:11 pm PT

Report Revision #: 7

Source	Emission Category	Calc Method	Fuel Name	Fuel/ Mileage	Emission Factor	Fract. Oxid.	GHG	Amount	Unit	Methodol./ Source	General Info
Landfill Gas Units- 3/4/5	Stationary Combustion	CARROT		1089495 MMBtu	0.00 kg/MMBtu		N2O	0.11	metric ton		Would not let me use LFG as a source - used Natural Gas
Landfill Gas- Units 3/4/5 Only	Stationary Combustion	CARROT		1089495 MMBtu	0.00 kg/MMBtu		CH4	1.09	metric ton		Would not let me use LFG as a source - used natural gas
Refrigerants from Buildings	Fugitive Emissions	Pre-Calc					HFC-134a	0.13	metric ton	Estimated usage at 100 kg 	
Small combustion sources- generators	Stationary Combustion	Pre-Calc					CO2	100.00	metric ton	100 MTCO2 per generator 1 back-up generator 	
Transmission/ Distribution Equipment	Fugitive Emissions	Pre-Calc					SF6	0.01	metric ton	Estimated 9.75 kg of emission due to inventory differences provided by GWP engineering staff. 	
Unit 3	Stationary Combustion	CARROT	Natural Gas	49234 MMBtu	53.06 kg/MMBtu	100	CO2	2,612.36	metric ton		49,234 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 3	Stationary Combustion	CARROT		49234 MMBtu	0.00 kg/MMBtu		CH4	0.05	metric ton		49,234 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 3	Stationary Combustion	CARROT		49234 MMBtu	0.00 kg/MMBtu		N2O	0.00	metric ton		49,234 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 4	Stationary Combustion	CARROT	Natural Gas	379767 MMBtu	53.06 kg/MMBtu	100	CO2	20,150.44	metric ton		379,767 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 4	Stationary Combustion	CARROT		379767 MMBtu	0.00 kg/MMBtu		CH4	0.38	metric ton		379,767 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 4	Stationary Combustion	CARROT		379767 MMBtu	0.00 kg/MMBtu		N2O	0.04	metric ton		379,767 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 5	Stationary Combustion	CARROT	Natural Gas	534178 MMBtu	53.06 kg/MMBtu	100	CO2	28,343.48	metric ton		534,178 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 5	Stationary Combustion	CARROT		534178 MMBtu	0.00 kg/MMBtu		CH4	0.53	metric ton		534,178 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 5	Stationary Combustion	CARROT		534178 MMBtu	0.00 kg/MMBtu		N2O	0.05	metric ton		534,178 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.

This report includes emissions from US sources

Total Emissions Summary Report

Glendale Water & Power

(Emissions from CA and US operations)

Report Generated On: 05/02/2011 06:11 pm PT

Report Revision #: 7

Unit 8A	Stationary Combustion	CARROT	Natural Gas	47039 MMBtu	53.06 kg/MMBtu	100	CO2	2,495.89	metric ton	47,039 mmbtus of natura gas consumed in power production during 2009 a verified by CEC-1304 - Schedule 2, Part A report.
Unit 8A	Stationary Combustion	CARROT		47039 MMBtu	0.00 kg/MMBtu		CH4	0.05	metric ton	47,039 mmbtus of natura gas consumed in power production during 2009 a verified by CEC-1304 - Schedule 2, Part A report.
Unit 8A	Stationary Combustion	CARROT		47039 MMBtu	0.00 kg/MMBtu		N2O	0.00	metric ton	47,039 mmbtus of natura gas consumed in power production during 2009 a verified by CEC-1304 - Schedule 2, Part A report.
Unit 8BC	Stationary Combustion	CARROT	Natural Gas	122913 MMBtu	53.06 kg/MMBtu	100	CO2	6,521.76	metric ton	122,913 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 8BC	Stationary Combustion	CARROT		122913 MMBtu	0.00 kg/MMBtu		CH4	0.12	metric ton	122,913 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 8BC	Stationary Combustion	CARROT		122913 MMBtu	0.00 kg/MMBtu		N2O	0.01	metric ton	122,913 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 9	Stationary Combustion	CARROT	Natural Gas	194935 MMBtu	53.06 kg/MMBtu	100	CO2	10,343.25	metric ton	194,935 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 9	Stationary Combustion	CARROT		194935 MMBtu	0.00 kg/MMBtu		CH4	0.19	metric ton	194,935 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.
Unit 9	Stationary Combustion	CARROT		194935 MMBtu	0.00 kg/MMBtu		N2O	0.02	metric ton	194,935 mmbtus of natural gas consumed in power production during 2009 as verified by CEC-1304 - Schedule 2, Part A report.

This report includes emissions from US sources

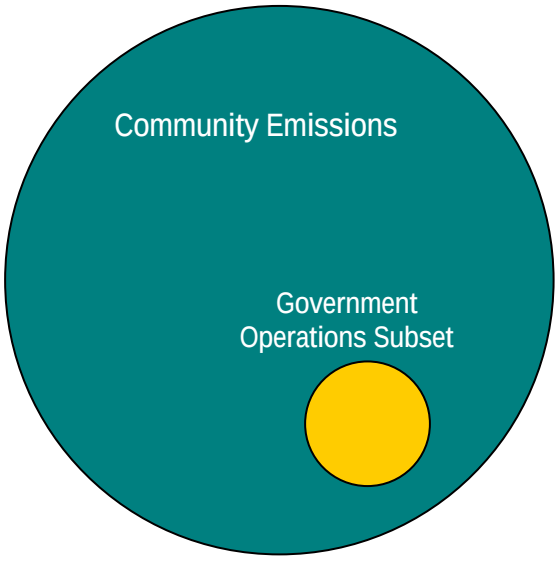
Appendix E
GHG Inventory Methodology

Understanding a Greenhouse Gas Emissions Inventory

The first step toward achieving tangible greenhouse gas emission reductions requires identifying baseline levels and sources of emissions in the community. As local governments have continued to join the climate protection movement, the need for a standardized approach to quantify GHG emissions has proven essential. Standard processes of accounting for emissions have been developed to which this inventory adheres.

Glendale staff used the International Local Government GHG Emissions Analysis Protocol (IEAP) to inventory Glendale's community emissions and the Local Government Operations Protocol (LGOP) to inventory GHG emissions from the City of Glendale's internal operations and activities.

The government operations inventory is a subset of the community inventory; for example, data on commercial energy use by the community includes energy consumed by municipal buildings, and community vehicle-miles-traveled estimates include miles driven by municipal fleet vehicles. The government operations inventory is in this way a subset of the community-scale inventory. By analyzing emissions in this manner, Glendale's local government is enabled to understand its own impact within the community and lead by example to reduce its impact on climate change. The government operations inventory was presented in the Greener Glendale Plan for Municipal Operations, adopted by Glendale's City Council on Nov 1, 2011.



International Local Government GHG Emissions Analysis Protocol (IEAP)

Building on 17 years of experience through the Cities for Climate Protection Campaign, ICLEI developed the first version of the International Local Government GHG Emissions Analysis Protocol (IEAP) that follows principles of the Local Government Operations GHG Protocol.

The IEAP consists of the general principles and philosophy that any local government, regardless of location, should adhere to when inventorying GHGs from its government operations and community as a whole. City of Glendale staff used this protocol to conduct the community emissions inventory portion of Glendale's GHG inventory.

Quantifying Greenhouse Gas Emissions

Establishing a Base Year

A primary aspect of the GHG emissions inventory process is the requirement to select a base year with which to compare current emissions. The criteria used to select Glendale's base year was the earliest year for which complete data was available and which was representative of average energy consumption. Because statewide GHG reduction efforts involve reducing GHGs to 1990 levels, year 1990 is the ideal year to use as a baseline. However, the level of data detail needed to conduct a quality GHG inventory for that year is simply not available. Staff chose year 2004 as the GHG inventory baseline year because that is the earliest year for which complete data was available, and which was an average year for energy consumption.

Establishing Boundaries

According to the IEAP, the community-scale analysis must include all greenhouse gas emissions associated with activities occurring within the local government's geopolitical boundary. Activities that occur within the community boundary can be controlled or influenced by the implementation of policies, the provision of rebates or auditing services, educational programs and the choice of services offered to the community in areas such as waste management. Although some local governments may have only limited influence over the level of emissions from some activities, it is important that every effort be made to compile a complete analysis of all activities that result in the emission of greenhouse gases.

While the first criterion for consideration in community inventories is geopolitical boundaries, in some cases it is important to consider emissions that occur outside of the geopolitical boundaries of the community as a result of decisions or actions taken within the community.

Emission Types

The IEAP and LGOP recommend assessing emissions from the six internationally recognized greenhouse gases regulated under the Kyoto Protocol as listed in the table below.

Greenhouse gas emissions are commonly aggregated and reported in terms of equivalent carbon dioxide units, or CO_2e. This standard is based on the Global Warming Potential (GWP) of each gas, which is a measure of the amount of warming a greenhouse gas may cause, measured against the amount of warming caused by carbon dioxide. Converting all emissions to equivalent carbon dioxide units allows for the consideration of different greenhouse gases in comparable terms. For

example, methane is twenty-one times more powerful than carbon dioxide on a per weight basis in its capacity to trap heat, so one metric ton (MT) of methane emissions is equal to 21 MTCO2e. The following table lists the GWPs of the commonly occurring greenhouse gases.

Greenhouse Gases and CO2e

Greenhouse Gas	Chemical Formula	Global Warming Potential
Carbon Dioxide	CO_2	1
Methane	CH_4	21
Nitrous Oxide	N_2O	310
Hydrofluorocarbons	Various	43-11,700
Perfluorocarbons	Various	6,500-9,000
Sulfur Hexafluoride	SF_6	23,900

Quantification Methods

Greenhouse gas emissions can be quantified in the following two ways.

- Measurement-based methodologies refer to the direct measurement of greenhouse gas emissions (from a monitoring system) emitted from a flue of a power plant, wastewater treatment plant, landfill, or industrial facility.

- Calculation-based methodologies calculate emissions using activity data and emission factors. To calculate emissions accordingly, the basic equation is used: *Activity Data x Emission Factor = Emissions*

Activity data refer to the relevant measurement of energy use or other greenhouse gas-generating processes such as fuel consumption by fuel type, metered annual electricity consumption, and annual vehicle miles traveled. Activity data used in composing this inventory are listed within Appendix F and starting on page 112.

Known emission factors are used to convert energy usage or other activity data into associated quantities of emissions. Emissions factors are usually expressed in terms of emissions per unit of activity data (e.g. lbs CO_2/kWh of electricity). The following table demonstrates an example of common emission calculations that use this formula. This inventory was conducted utilizing ICLEI's Clean Air and Climate Protection Software (2009) v. 2.2.1b and all default emissions factors within that software (except the utility fuel emissions factors, see "GHG Inventory Calculation Notes" on page 116 for more information).

Basic Greenhouse Gas Emissions Calculations

Activity Data	Emissions Factor	Emissions
Electricity Consumption (kWh)	CO2 emitted/kWh	CO2 emitted
Natural Gas Consumption (therms)	CO2 emitted/therm	CO2 emitted
Gasoline/Diesel Consumption (gallons)	CO2 emitted /gallon	CO2 emitted
Vehicle Miles Traveled	CH4, N2O emitted/mile	CH4, N20 emitted

Clean Air and Climate Protection 2009 (CACP 2009) Software

To facilitate community efforts to reduce greenhouse gas emissions, ICLEI developed the Clean Air and Climate Protection 2009 (CACP 2009) software package in partnership with the National Association of Clean Air Agencies (NACAA) and the U.S. Environmental Protection Agency (EPA). CACP 2009 is designed for compatibility with the LGOP and determines emissions by combining activity data (energy consumption, waste generation, etc.) with verified emission factors.

The CACP software has been and continues to be used by over 600 U.S. local governments to reduce their greenhouse gas emissions. However, it is worth noting that, although the software provides governments with a sophisticated and useful tool, calculating emissions from energy use with precision is difficult. Calculating GHG emissions depends upon numerous assumptions, and it is limited by the quantity and quality of available data. With this in mind, it is useful to think of any specific number generated by the CACP 2009 software as an approximation of reality, rather than an exact value.

Evaluating Greenhouse Gas Emissions

Greenhouse Gas Emissions by Scope

Emissions sources are categorized relative to the operational boundaries of the government. Emissions sources are categorized as direct or indirect emissions – Scope 1, Scope 2, or Scope 3. The prevention of double counting for major categories such as electricity use and waste disposal is one of the most important reasons for using the scopes framework for reporting greenhouse gas emissions at the local level.

The community-scale operations scopes are divided into four main categories:

Scope 1: All direct emission sources located within the geopolitical boundary of the local government. For example, emissions from burning fuels for energy, such as natural gas or gasoline.

Scope 2: Indirect emissions that result as a consequence of activity within the jurisdiction's geopolitical boundary limited to electricity, district heating, steam and cooling consumption. For example, emissions from energy produced outside the geopolitical boundaries of the city but purchased by the city.

Scope 3: All other indirect and embodied emissions that occur as a result of activity within the geopolitical boundary. For example, emissions from solid waste generated within the community but sent for decomposition to an external landfill.

Information Items: Biogenic emissions and other indicators which may be relevant to a complete understanding of a community's energy use and climate impact, but which are not conventionally included in greenhouse gas accounting. For example, biogenic emissions such as electricity generated from solar photovoltaic panels.

At a minimum, local governments should always report the total Scope 1 emissions and the total Scope 2 emissions.

As a note, some Scope 1 emissions of one local government may be the Scope 2 emissions of another local government.

Greenhouse Gas Emissions by Sector

In addition to categorizing GHG emissions by scope, this inventory examines emissions by sector. Many local governments find a sector-based analysis more relevant to policymaking and project management, as it assists in formulating sector-specific GHG reduction measures and climate action plan components. This inventory evaluates community emissions by the sectors listed in the table below.

Community Sectors
Residential Energy
Commercial & Industrial Energy
Water Transport
Transportation
Waste Generation
Landfill

Appendix F
GHG Inventory Results

This section details the greenhouse gas inventory results for year 2004, the baseline year. Glendale's landfill, energy, and transportation related emissions are included in the inventory. The wastewater treatment plants that Glendale uses are not located within the geographical boundaries of Glendale, nor are operated by the City of Glendale. Glendale-specific flow data is also not available. Therefore, emissions from the wastewater treatment plants are not included in this inventory.

Greenhouse Gas Emissions by Scope

Including all scopes, Glendale emitted approximately 1,734,867 metric tons[51] of CO_2e (MTCO2e) in the year 2004. Many inventories report only Scope 1 and Scope 2 emissions; for Glendale these would represent 1,644,714 MTCO2e.

GHG Emissions by Scope
(excluding HFCs, PFCs, and SF_6, as they were not tracked)

	CO_2e (tonnes)	CO_2 (tonnes)	CH_4 (kg)	N_2O (kg)
SCOPE 1	992,242	951,706	1,155,903	52,462
SCOPE 2	672,471	672,471	0	0
SCOPE 3	70,153	32,262	1,804,341	0
TOTAL	**1,734,867**	**1,656,438**	**2,960,243**	**52,463**

[51] All emissions estimated using ICLEI's CACP 2009 Software.

The following GHG emissions are due to the combustion of biomass or biomass-based fuels, which are tracked separately because the carbon biomass is of a biogenic origin – meaning that it was recently contained in living organic matter – while the carbon in fossil fuels has been trapped in geologic formations for millennia.

- Landfill gas consumption – 99,094 MTCO2e

Greenhouse Gas Emissions by Sector & Source

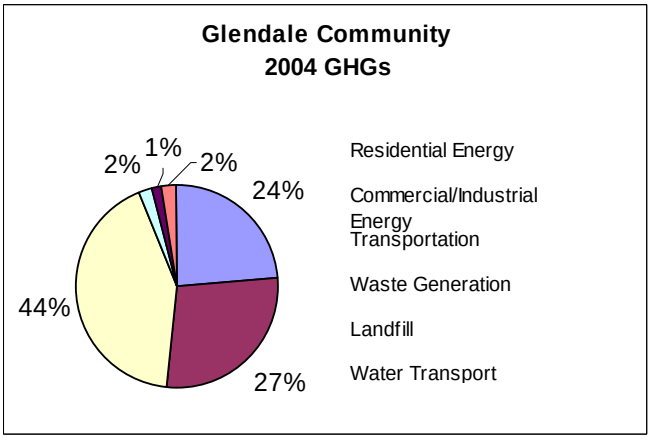
GHG emissions from community activities are produced by a variety of source types, which are categorized into the sectors below.

Greenhouse Gas Emissions by Sector

GHG Emissions by Sector

Sector	MT CO_2e
Residential Energy	413,938
Commercial & Industrial Energy	477,000
Water Transport	43,292
Transportation	739,829
Waste Generation	37,891
Landfill	22,917
Totals	**1,734,867**

Note: Please see the "Waste" section for more information on landfill and waste related emissions.

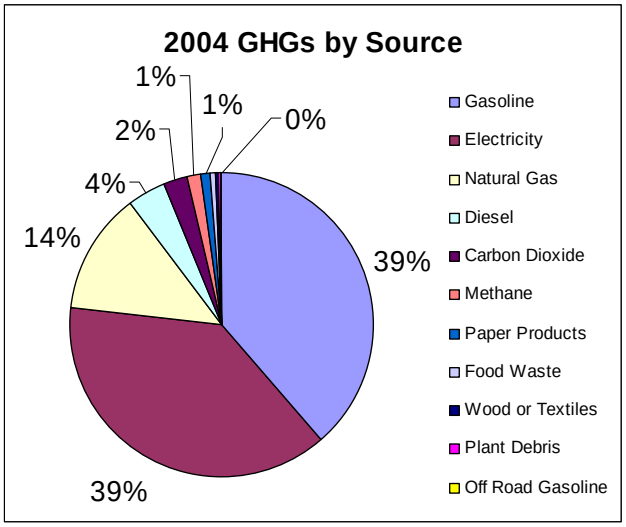


Greenhouse Gas Emissions by Source

The following table lists the sources of the greenhouse gas emissions accounted for under the community inventory.

GHG Emissions by Source

Source	$MTCO_2e$
Diesel	70,632
Electricity	704,733
Food Waste	8,299
Gasoline	667,730
Methane	22,917
Natural Gas	229,497
Off Road Gasoline	1,467
Paper Products	21,151
Plant Debris	2,227
Wood or Textiles	6,214
Totals	**1,734,867**



Residential and Commercial Energy Use

These sectors include energy consumption from electricity (provided by Glendale Water and Power) and natural gasoline (provided by Southern California Gas). Only electricity from non-renewable sources is included. Non-renewable[52] electricity is produced at power plants by burning natural gasoline, or other fossil fuels. Renewable energy sources do not emit greenhouse gases so are not included. The GHGs for GWP Residential and Commercial & Industrial categories were determined by distributing proportionally, according to sector energy consumption data, the total GHGs reported by GWP to The Climate Action Registry.

Residential Energy Use

Source	MT CO_2e
Electricity	245,207
Natural Gas	168,731
Totals	**413,938**

Commercial & Industrial Energy Use

Source	MT CO_2e
Electricity	416,234
Natural Gas	60,766
Totals	**477,000**

Water Transport

This sector includes emissions resulting from the energy used to provide water to Glendale, including transport from the source (State Water Project, Colorado River Aqueduct, and local groundwater wells), water treatment, and distribution to end-users.

[52] Renewable energy is energy derived from the wind, the sun, the tides and other sources that, for all practical purposes, cannot be depleted (unlike fossil fuels, for example).

Statewide studies estimate water related energy use to cause at least 20% of the total GHG emissions for California.[53] Urban uses account for 14% of California's total electricity use (11% due to end uses, 3% due to water supply and treatment), and 31% of California's total natural gas use (30% due to end uses, less than 1% due to water supply and treatment).

The Greener Glendale GHG inventory attributes 2% of Glendale's total GHGs to the supply and distribution of water ("Water Transport") to and within Glendale. However, this does not include the energy used by customers (end users) to heat and cool water, which is accounted for in the "Residential & Commercial Energy Use" category. The energy use associated with wastewater treatment (which is not significant) is not included in the inventory since the treatment plant is located outside of Glendale's jurisdictional boundaries.

The GHG inventory data includes water related energy use from both the Metropolitan Water District (providing water via the State Water Project and Colorado River Aqueduct), and Glendale Water and Power (treating and distributing that water, as well as collecting, treating, and distributing water from local groundwater wells).

Water Transport, Treatment, and Delivery

Source	MT CO_2e
Glendale Water & Power	11,030
Metropolitan Water District	32,262
Totals	**43,292**

In addition to the use of local groundwater wells, Glendale also utilizes recycled water. In 2004, recycled water use accounted for 5% of the total community water consumption.

Transportation

Direct energy consumption data for the transportation sector is not available through a utility or other service provider. To estimate GHGs from the transportation sector, a complex computer modeling software is used to estimate what the total vehicle miles traveled (VMT) are in the community.

Various factors are taken into consideration, including population, housing, employment activity in the city, and land use. The data is compared to average distributions of various vehicle types in California. The resulting activity data is a calculated estimate, rather than a direct measurement of activity data, as with the other categories. The activity data is multiplied by fuel emissions factors to determine the total GHGs.

In this case, the total estimated annual VMT are 1.15 billion, distributed proportionally among vehicle and fuel type according to regional data (53% passenger gasoline vehicle, 39% gasoline light trucks, 3% gasoline heavy duty vehicles, 4% diesel heavy duty vehicles, <1% diesel light duty trucks, <1% diesel heavy duty vehicles, 5% other vehicles such as motorcycles).

Transportation

Source	MT CO_2e
Diesel	70,632
Gasoline	667,731
Off-road Gasoline	1,467
Totals	**739,829**

[53] *California's Water-Energy Relationship*, California Energy Commission (2005)

Community-Generated Solid Waste

Emissions from this category are based on calculations from statewide waste generation rates, applied to our community (for details, see "GHG Inventory Calculation Notes" at the end of this chapter). The data is not based on direct measurements of community-generated waste; such data is not available because the landfill processes waste from many cities and does not track each separately.

Waste Generation

Source	MT CO_2e
Food Waste	8,299
Paper Products	21,151
Plant Debris	2,227
Wood or Textiles	6,214
Totals	**37,891**

Typical sources of waste generated within communities are paper and food waste from buildings, construction waste from development activities, and plant debris from landscape maintenance. Organic materials (including paper, food scraps, plant debris, textiles, wood waste, etc.) generate methane as they decay in the anaerobic environment of a landfill. Emissions from the waste sector are an estimate of methane generation that will result from the anaerobic decomposition of all organic waste sent to landfill in the base year. It is important to note that although these emissions are attributed to the inventory year in which the waste is generated, the emissions themselves will occur over the 100+ year timeframe that the waste will decompose.

Estimated GHG emissions from community waste generation are 37,891 MTCO2e. Glendale recycles more than 60% of its waste.

Landfill

The most prominent source of greenhouse gas emissions from solid waste facilities is fugitive methane released by the decomposition of organic waste over time in landfills. The scale of these emissions depends upon the size and type of the landfill and the presence of a landfill gas collection system.

Glendale contains the Scholl Canyon Landfill. The City of Glendale operates the inactive part of the landfill. Los Angeles County Sanitation Districts operates the active part. Emissions from both sites are included in this inventory, since they are both located within the geopolitical boundaries of Glendale. Because the landfill has a comprehensive landfill gas-to-energy collection system, the only emissions included in this inventory are the estimated gases that escaped the collection system. Brand Park Landfill consists of inert material only so does not release significant emissions.

The total fugitive methane emissions from the landfill are estimated at 22,917 MTCO2e. See Appendix J for details on calculations.

Community GHG Emissions Forecast

The GHG emissions forecast was derived by projecting the 2009 emissions into the future (it would remain the same if consumption levels and existing programs continued but new programs were not introduced) and factoring in expected reductions in landfill emissions.

Note: The energy unit is MWh. To convert to kWh, multiply by 1,000. To convert to other units such as gallons, use a conversion tool such as those found on the internet.

Glendale

Community Greenhouse Gas Emissions in 2004

Report by Subsector

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (MWh)
Residential						
Scope 1						
Glendale, CA						
Utility Gas	168,300	317	15,859	168,731	9.7	929,359
Subtotal	168,300	317	15,859	168,731	9.7	929,359
Scope 2						
Glendale, CA						
Utility Electricity	245,207	0	0	245,207	14.1	0
Subtotal	245,207	0	0	245,207	14.1	0
Subtotal Residential	413,507	317	15,859	413,938	23.9	929,359
Commercial						
Scope 1						
Glendale, CA						
Utility Gas-Comm+Indust	60,611	114	5,712	60,766	3.5	334,696
Subtotal	60,611	114	5,712	60,766	3.5	334,696
Scope 2						
Glendale, CA						
Utility Electricity-Commercial	184,074	0	0	184,074	10.6	0
Utility Electricity-Industrial	232,160	0	0	232,160	13.4	0
Subtotal	416,234	0	0	416,234	24.0	0
Subtotal Commercial	476,845	114	5,712	477,000	27.5	334,696

Glendale

Community Greenhouse Gas Emissions in 2004

Report by Subsector

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MWh)
Transportation						
Scope 1						
Glendale, CA						
Local Roads & Highways	722,795	52,031	43,032	739,828	42.6	2,978,797
Subtotal	722,795	52,031	43,032	739,828	42.6	2,978,797
Subtotal Transportation	722,795	52,031	43,032	739,828	42.6	2,978,797
Waste						
Scope 3						
Glendale, CA						
Waste Generation	0	0	1,804,341	37,891	2.2	
Subtotal	0	0	1,804,341	37,891	2.2	
Subtotal Waste	0	0	1,804,341	37,891	2.2	
Other						
Scope 1						
Glendale, CA						
Scholl Canyon	0	0	1,091,300	22,917	1.3	
Subtotal	0	0	1,091,300	22,917	1.3	
Scope 2						
Glendale, CA						
Water Transport (Glendale)	11,030	0	0	11,030	0.6	
Subtotal	11,030	0	0	11,030	0.6	
Scope 3						
Glendale, CA						
Water Transport (MWD)	32,262	0	0	32,262	1.9	
Subtotal	32,262	0	0	32,262	1.9	
Subtotal Other	43,292	0	1,091,300	66,209	3.8	
Total	1,656,438	52,463	2,960,243	1,734,867	100.0	4,242,852

Glendale

Community Greenhouse Gas Emissions in 2009

Report by Subsector

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (MWh)
Residential						
Scope 1						
Glendale, CA						
Utility Gas	150,386	283	14,171	150,771	9.3	830,439
Subtotal	150,386	283	14,171	150,771	9.3	830,439
Scope 2						
Glendale, CA						
Utility Electricity	204,975	0	0	204,975	12.7	0
Subtotal	204,975	0	0	204,975	12.7	0
Subtotal Residential	355,361	283	14,171	355,747	22.0	830,439
Commercial						
Scope 1						
Glendale, CA						
Utility Gas - Comm+Indust	52,828	100	4,978	52,963	3.3	291,718
Subtotal	52,828	100	4,978	52,963	3.3	291,718
Scope 2						
Glendale, CA						
Utility Electricity - Commerci	161,095	0	0	161,095	10.0	0
Utility Electricity - Industri	178,448	0	0	178,448	11.1	0
Subtotal	339,544	0	0	339,544	21.0	0
Subtotal Commercial	392,372	100	4,978	392,507	24.3	291,718

Glendale

Community Greenhouse Gas Emissions in 2009

Report by Subsector

	CO_2 (tonnes)	N_2O (kg)	CH_4 (kg)	Equiv CO_2 (tonnes)	(%)	Energy (MWh)
Transportation						
Scope 1						
Glendale, CA						
Local Roads & Highways	762,344	44,445	38,303	776,926	48.1	3,139,861
Subtotal	762,344	44,445	38,303	776,926	48.1	3,139,861
Subtotal Transportation	762,344	44,445	38,303	776,926	48.1	3,139,861
Waste						
Scope 3						
Glendale, CA						
Generated Waste	0	0	1,393,727	29,268	1.8	
Subtotal	0	0	1,393,727	29,268	1.8	
Subtotal Waste	0	0	1,393,727	29,268	1.8	
Other						
Scope 1						
Glendale, CA						
Scholl Canyon	0	0	1,296,030	27,217	1.7	
Subtotal	0	0	1,296,030	27,217	1.7	
Scope 2						
Glendale, CA						
Water Transport (Glendale)	8,069	0	0	8,069	0.5	
Subtotal	8,069	0	0	8,069	0.5	
Scope 3						
Glendale, CA						
Water Transport (MWD)	24,976	0	0	24,976	1.5	
Subtotal	24,976	0	0	24,976	1.5	
Subtotal Other	33,045	0	1,296,030	60,261	3.7	
Total	1,543,121	44,828	2,747,209	1,614,709	100.0	4,262,018

GHG Inventory Calculation Notes

1. The electricity related emissions were calculated by using the total GHGs as reported by GWP to The Climate Action Registry and third-party verified, and distributing them among sectors (e.g. Residential, Commercial) according to GWP meter consumption data.

   The reason utility emissions factors were not used is because there was no official utility-specific emissions factor for GWP for year 2004, and to use the substitute emissions factors or generalized emissions factors would not accurately reflect that the utility's renewable energy portfolio increased significantly (10%) during the two inventory years.

2. Generated Waste emissions were calculated using the CalRecycle Web site waste generation rate of 11.0/lbs/person/day. This was multiplied by the population to total 413,559 tons/year. A 51% diversion rate was used for 2004 and 61% for 2009.

Appendix G

Community Sustainability Contributions

Listed in alphabetical order by company name

Americana at Brand

A. Energy
    1. All offices are equipped with automatic switches to turn off lights when rooms are empty.
    2. All common area lighting circuits are monitored through a lighting control system, which switches on most lighting at dusk and off after midnight.
    3. Only minimal lighting is left on in the evening for safety where needed.
    4. Low-energy, fluorescent and LED lighting fixtures and bulbs are used where feasible.
    5. ENERGY STAR-rated HVAC systems installed in all residential units.
    6. Residential windows and glass doors are double-pane, which reduces energy consumption
    7. Dishwashers, refrigerators, washing machines and clothes dryers are ENERGY STAR-rated
B. Water
    1. Grease Interceptors are treated with enzymes in order to reduce the odors emitted when cleaning and further reduce grease from entering the sewer systems
    2. Low-flow toilet fixtures installed in all residential, management and public restrooms
    3. Low-flow faucets and showerheads installed in all residential, management and public restrooms
    4. Low-flow toilet fixtures installed in all residential, management and public restrooms
    5. All storm water primary roof drains pass through micro filter baskets prior to entering the storm system to remove contaminants
    6. All on-property catch basins drain to a filtration device prior to entering the county storm drain to remove contaminants
    7. The parking garage has clarifiers to catch contaminants from vehicles prior to entering the storm system
    8. Steam cleaning/pressure washing is done using recycled water
    9. Utilize re-claimed water for landscape irrigation

10. Mulch is recycled
11. Water efficient sprinkler nozzles
12. Water in the fountain is re-circulated
13. A wind speed sensor controls the height and velocity of water used during water shows to prevent overspray and the associated waste of water.

C. Waste
    1. All tenant trash is sorted prior to entering compactors
    2. All recyclables are placed in a “green” recycling compactor
    3. According to Glendale Department of Public Works, 4 tons of recyclables are diverted from landfills each month
    4. All other “wet” trash is placed in a non-recycling compactor that goes to a sorting facility prior to the landfill to remove any additional recyclables.
    5. All used common area light bulbs and lighting transformers are collected and packaged into certified lighting and electronic waste receptacles which are returned to the lighting suppliers
    6. All paper (for all departments and Management/Leasing Office is recycled).
    7. “E-Waste” is recycled.
    8. Grease waste from the restaurants is recycled for different uses including biodiesel.
    9. Terry cloth hand towels are use in the public and residential restrooms
    10. Green waste is recycled
    11. Inkjet cartridges are recycled
    12. Office paper is recycled
    13. All paper is made from recycled materials

D. Transportation
    1. The trolley is powered by clean lithium-ion batteries, thereby reducing potential greenhouse gas emissions.
    2. The parking garage is equipped with a helical ramp allowing direct access to any parking floor without the need to transit through intervening parking levels. In addition, the parking structure is equipped with monitors displaying to the customer the number of available parking spaces on each floor of the parking structure, thereby allowing them to drive directly to floors with open parking spaces. Both of these design features reduce potential greenhouse gas emissions associated with cars ‘hunting’ throughout the structure for open parking spaces.
    3. All residential hot water systems are supplied by a centralized water boiler, which operates in accordance with demand, thereby reducing energy consumption and potential greenhouse gas emissions associated with water heating during low-demand hours of the day.
    4. Convenient bicycle racks in order to encourage the use of bicycles and reduce emissions.
    5. Convenient accessibility to public transportation

E. Environmental Health

1. Uses green supplies through the Green Sweep program
2. Organic fertilizers
3. Car wash products are non-toxic, phosphate free, NPE-free, ozone-safe, VOC compliant, acid-free

Ariada Salon & Spa

A. Energy
   1. Reduced use of lighting
   2. Reduced A/C use
   3. Lights out at night policy
   4. Lower temperature of thermostat for gas heating
   5. Energy efficient lighting fixtures (CFLs)
B. Waste
   1. Purchase recycled paper towels
   2. Recycling program

CBRE (505 N. Brand)

This building is LEED Gold Certified with an ENERGY STAR Rating of 95 (its energy performance is better than 95% of similar buildings nationwide).

A. Energy
   1. Replaced lighting lamps and ballasts for increased energy efficiency (25 watt T8 lamps)
   2. Motion sensors on vending machines for energy savings
   3. Reduced schedule for lighting in main lobby
   4. Energy Management System with electronic scheduling for HVAC equipment and temperature monitoring and control according to outside conditions.
   5. Speed control devices (for energy efficiency) on HVAC and water pump equipment
   6. Adjusted all motion sensors for increased energy savings
   7. Request that tenants use Energy Star appliances
B. Water
   1. Upgraded water cooling towers for increased water efficiency
   2. Low water use faucets
   3. Low water use toilets
C. Waste
   1. Waste management policy and recycle all demolition materials
D. Environmental Health
   1. Parking structure carbon monoxide system that exhausts high levels of carbon monoxide, when detected, to the outside.
   2. Use green cleaning materials

550 N. Brand Owner's Corporation, CBRE (Property Manager)

This building is LEED Gold Certified with an ENERGY STAR Rating of 91 (its energy performance is better than 91% of similar buildings nationwide).

A. Energy
   1. Conducted an energy audit that analyzed uses, costs, and practical economic opportunities to reduce consumption (a major part of the audit focused on indoor air quality with the building considerably

exceeding the outside air intake requirements).

2. Installed a cool roof to help reflect the heat back up and away from the city
3. Refined the building automation systems for both chilled water and air handler optimization and on/off scheduling for drinking fountains, water heaters and exterior lighting
4. Low mercury lamps

B. Water
   1. Restroom retrofits that accomplished a 30% reduction in water use
   2. Changing the number of cycles of concentration on the cogeneration cooling tower make-up water which saved 2,121,000 gallons from 2010 thru 2011

C. Waste
   1. Collection events to reuse or recycle electronic waste and furniture

D. Environmental Health
   1. Green cleaning program that utilizes sustainable cleaning products, materials, and equipment
   2. Green pest management utilizing alternative options to eliminate pests before using any of the least toxic Tier III chemicals
   3. Low mercury lamps

CBRE (655 N. Central)

This building is LEED Silver Certified with an ENERGY STAR Rating of 92 (its energy performance is better than 92% of similar buildings nationwide).

Cushman & Wakefield Property Managers (400 N. Brand & 450 N. Brand)

Both properties are LEED Gold certified and have an ENERGY STAR rating of 96% and 97% respectively. This means the energy performance is better than 97% of similar buildings nationwide.

Fifteen tenants occupy these properties, all who participate fully in the conservation efforts.

1. Cushman & Wakefield of California, Inc.
2. Cigna Healthcare
3. DineEquity/IHOP
4. IBM
5. Neopets
6. Pacific Western Bank
7. HQ Global Workplaces
8. Prime Lending
9. Ameriprise Financial
10. Chase Home Loans
11. Black Diamond Ventures
12. Great Safaris
13. Michael Jedhian
14. Ryan Miller
15. Scott Lin

A. Energy
   1. Light occupancy sensors in building and parking garage
   2. Energy efficient light fixtures in building and parking garage
   3. Speed control devices (for energy efficiency) on all motors (e.g. HVAC)
   4. White roof to reflect heat and reduce cooling requirements
   5. State of the art energy management system installed in 2011
   6. Carbon dioxide sensors throughout the building to help outside air fan run more efficiently and to save energy
   7. Demand Management System to set energy demand targets, monitor

demand, and help prevent exceeding demand goals.

B. Water
    1. Low-flow water fixtures
    2. Automatic flush valve on all flush units
    3. Automatic faucets
    4. Waterless urinals
    5. Satellite-controlled landscape irrigation control system
    6. Drip irrigation system
    7. Water efficient sprinkler nozzles
    8. Cooling towers equipped with water flow meters
    9. Fountain water is re-circulated
C. Waste
    1. Comprehensive recycling program
    2. Organics program to recycle food
    3. Solar-powered trash compactor installed in 2011, all trash and recyclables are sorted prior to entering the compactor.
    4. All used common area light bulbs and lighting transformers are collected and packaged into certified receptacles which are returned to the lighting suppliers
    5. Electronic waste recycling program
    6. “Re-use Program” donating unwanted office supplies (e.g. pens, staplers, binders, etc.) to schools
    7. Printer ink cartridge recycling program
    8. On-site bailer compacts cardboard for binding and recycling
    9. Re-use grass and tree trimmings as mulch
D. Transportation
    1. Comprehensive alternative transportation program
    2. Convenient bicycle racks available to encourage the use of bicycles and reduce emissions
    3. Bus stop located in front of the building, providing convenient accessibility to public transportation.
E. Environmental Health
    1. Use of Green Seal (an independent, non-profit product certification) cleaning liquids and wax stripper and sealer, and restroom paper products
    2. Use of micro-fiber cleaning materials
    3. Use of organic fertilizers and pesticides
    4. High-end air filters (Minimum efficiency rating value of 14/16) used on all outside air fans
    5. Use of organic cooling tower chemicals (no acids)
    6. Exceed indoor air quality standards according to ASHRAE (American Society of Heating, Refrigerating and Air Conditioning) ratings
    7. Conduct annual indoor air quality inspection
    8. All 400 heat pumps have chemical pad packs to stop bacteria growh
    9. All new tenant improvements are required to use LEED/USGBC certified carpet, paint, and glue

Goals for the future: LEED Platinum rating, 100% recycling rate, phase out use of R-22 refrigerant (an ozone-depleting refrigerant used in HVAC systems).

Disney

A. Energy

1. Many offices are equipped with occupancy sensors to turn off lights when rooms and corridors are not in use
2. HVAC replacements and upgrades at many facilities have led to significant energy savings

B. Water

1. Sweep rather than using water for cleaning
2. Irrigate in the evening
3. Employ preventative maintenance and inspection of sprinkler heads
4. Utilize low flow irrigation systems
5. Use reclaimed water for irrigation at some sites. We are in the process of bringing reclaimed water to other facilities; inhibited by lack of availability
6. Use low-flow kitchen faucet nozzles
7. Currently implementing a restroom efficiency retrofit program to install low flow fixtures (low flow urinal and toilets, limited ultra low flow urinals)

C. Waste

1. Compost and recycling bins are used in commissaries (campus restaurants)
2. Recycle and divert construction and demolition debris, such as scrap metal and wood
3. Compost landscaping and yard waste

D. Transportation

1. Encourage employees to minimize driving alone to work by providing incentives to walk, bike, carpool, vanpool and use public transit
2. Provide shuttles between sites in Glendale and Burbank to reduce employees' car travel during the work day

B. Urban Design

The Glendale Childcare Center is LEED Gold certified.

Dreamworks

Sustainability Efforts since 2009:

A. Energy

1. 500 ton chiller replacement for energy efficiency
2. 200 ton chiller replacement for energy efficiency
3. Cooling tower replacement for energy efficiency
4. VFD installations – 15 units on various size motors
5. Building Management System energy upgrades
6. High efficiency motor replacements
7. Lighting retrofits

B. Water

1. Waterless urinals installed in all men's restrooms
2. Auto faucets – installed in all restrooms

C. Waste

1. Recycling program
2. Organic recycling program
3. Recycle e-waste and hazardous materials
4. Recycle toner cartridges
5. No paper products used for dishware or utensils

6. Re-use tree trimmings for mulch
7. Purchase of paper products that meet EPA guidelines and other initiatives

D. Transportation
1. Employee rideshare programs and Metrolink reimbursement
2. Food products purchased from local farmers when possible

E. Environmental Health
1. Use of Green cleaning products certified by USGB
2. Utilize organics recycling for landscape composting

Economy Office Supply

A. Energy
1. Installed energy saving lights and occupancy sensors in kitchen
2. Changing warehouse operation schedules to reduce energy consumption and retain employees.
3. Energy efficient computers
4. Automatic shut down of main copier when not in use

B. Water
1. Conserve water when cleaning delivery vehicles

C. Waste
1. Reuse boxes
2. Use reusable mugs instead of disposable cups
3. Reuse paper (double-sided printing, re-print on second side)
4. Recycle aluminum and plastic
5. Recycle inkjet and toner cartridges and pick up from customers
6. Use recycled toner cartridges
7. Recycle all packing materials
8. Reuse printed documents by printing on second side
9. Urge employees to print only when needed

Forest Lawn

A. Energy
1. T-5 fluorescent lighting upgrades
2. Use of LED lighting where practical
3. HVAC uses Puron (a non-ozone-depleting refrigerant), and upgraded equipment to 13 – 15.5 SEER (“SEER” is an efficiency rating)
4. R-11 wall insulation upgrades (“R” is a measure of thermal resistance)
5. R-30 ceiling and attic space insulation
6. Motion sensor light switches and dimmable light ballasts
7. ENERGY STAR appliances and windows
8. White reflective coatings on roofing
9. Remodel facilities over time for increased efficiency

B. Water
1. Recycled water irrigation since the early 1990s
2. Daily data collected by the California Irrigation Management Information System ensures irrigation with the least amount of water necessary.
3. Waterless urinals
4. Sensor activated faucets
5. Re-circulating fountain with a wind speed sensor to limit overspray

6. Best Management Practices for all construction projects minimize impact to the quality of stormwater runoff.

C. Waste
   1. Recycle paper and cardboard (since the mid-1990s)
   2. Recycle green waste
   3. Recycle batteries, lamps, fluorescent tubes, electronics, computers, and appliances
   4. Recycle fleet management wastes (waste oil, coolant, degreasers)
   5. Recycle printer toner, scrap metal, spent refrigerants, waste tires, and latex paint
   6. Purchase water bottles made from 100% RPET (reprocessed plastic)

D. Transportation
   1. Employee rideshare program to encourage employees to carpool or take public transportation.
   2. Replacing Tier 0 and Tier 1equipment with new Tier 4 Interim engines as part of commitment to clean off-road diesel fleet management “Tiers” are levels of federal emissions standards for engines, Tier 4 being the most stringent.
   3. Clean fuels program includes gasoline to LPG conversions for several types of rolling stock.

Forest Lawn always keeps alert for opportunities to recycle and conserve resources, such as during construction activities and remodeling.

Glendale Community College

A. Energy
   1. Photovoltaic panels were installed on both the roof of the parking structure and the Cimmatusti Science Center.
   2. All permanent structures are on a central plant with the exception of Arroyo Seco and part of the Verdugo Gym (Fitness Center).
   3. Energy Management System that turns systems on and off and monitors and minimizes times of peak usage
   4. Lights for new construction have sensors to shut off automatically if no activity.
   5. Staff have been instructed to turn off computers if possible at the end of the day.
   6. All lighting on campus is moving to electronic ballasts where possible.
   7. Installed sensors on vending machines to shut off power if no activity (food machines excluded).
   8. Installed ice energy storage on several buildings to reduce peak energy usage
   9. Conducted an energy efficiency audit and are working on recommendations
   10. Looking at replacing lights with energy efficient bulbs
   11. Looking at the feasibility of creating an IT policy for computer standby features

B. Water
   1. Installed waterless urinals campus wide
   2. Over 150 toilets on campus have been changed to the low flush models.
   3. Reclaimed water is used in toilets for all new buildings.

4. Almost all of the campus landscape is watered with reclaimed water (90%).
5. Installed artificial turf in the football field

Glendale Federal Credit Union

A. Energy
   1. Insulated walls, ceilings, and windows
   2. Solar panels
   3. Energy efficient lighting including motion activated lights
B. Water
   1. Low water fixtures
   2. Low maintenance landscaping
C. Waste
   1. Recycle 70% of all construction and demolition materials
   2. Utilized low-cost recyclable finish materials in construction
   3. 80% recycling rate
D. Transportation
   1. Used local subcontractors and labor forces for construction
E. Environmental Health
   1. Use non-toxic/organic cleaning products

Glendale Unified School District

<u>District wide efforts:</u>

A. Energy
   1. Lighting
      i. Shut off lights when rooms not in use
      ii. Many classrooms are equipped with automatic lights that turn off when the room is empty.
      iii. Minimal lighting left on in evening (for safety)
      iv. Many sites upgraded to energy efficient lighting (T8, T5, Induction, LED)
   2. Eliminated personal appliances at work stations
   3. Many sites have ENERGY STAR rated refrigerators.
   4. HVAC
      i. Many sites have a centralized HVAC energy control system
      ii. All HVAC replacements are rated 14 SEERS (an energy efficiency rating) or higher
      iii. Shut off A/C and heater when rooms not in use
      iv. Close doors and windows when running A/C and heater
   5. Researching and incorporating solar and renewable energy sources
   6. 29 sites are ENERGY STAR Rated
B. Water
   1. Many schools use reclaimed water for landscape irrigation
   2. All toilets are low-flow
   3. Some sites have synthetic turf which reduces water use, fertilizer use, and maintenance time required
   4. Turn off water when not in use
   5. Researching and incorporating low-flow urinals
C. Waste
   1. Recycling program including sorting of trash by material recovery facility, and recycling of inkjet cartridges, paper, and e-waste

2. Many sites conduct student-run recycling programs (see below)

D. Environmental Health
   1. Many sites maintain gardens for growing food (see below)

E. GUSD is continuing efforts to remodel facilities over time for increased energy efficiency and environmental friendliness

GUSD developed the "GUSD Conservation Guidelines" in 2008, which can be found at http://gusd.schoolwires.com/1579103201353583 77/lib/ 157910320135358377/ConservationGuidelines. pdf.

<u>School site-specific efforts:</u>

A. Hoover High School
   1. Two teachers are working on a garden at this school site.
   2. Another teacher runs a club called the *Green Spot*. Children participate in gardening on campus.

B. Wilson Middle School
   1. The Junior Ambassadors club, sponsored by the City of Glendale, works on various recycling projects at Wilson and in the city. It is run by a science teacher and includes more than 40 students.
   2. This school's 6th grade garden club grows various herbs, vegetables and fruits.
   3. Another teacher grows a variety of vegetables that are used in her food preparation classes.

C. Richard D. (R.D.) White Elementary School
   1. Runs *Adopt a Block* once a month on Saturday, when families and staff clean the perimeter of the school.
   2. The Student Council recycles plastic bottles. They have several large containers around the school.

D. Verdugo Woodlands Elementary School
   1. The "Go Green Recycling" team of parents oversee school wide recycling and campus beautification. They also helped to start a small garden about 2-3 years ago.

E. John Muir Elementary School
   1. Every spring, as part of teacher appreciation, parents donate funds so the student council can plant flowers, etc., on campus in honor of the teachers.
   2. Planted a beautiful garden area, where there was once only compacted dirt.
   3. The student council leaders collect and recycle paper on campus once a week.

F. Glenoaks Elementary School
   1. The student "Green Team" meets once a month after school in the Big Backyard of Glenoaks. Led by a parent, they work on one environmental issue each month, including a lesson and activity. They present via the bulletin board in the main hallway.
   2. A parent-led recycling program collects recyclables once per month to raise funds for classrooms. Students are encouraged to participate.

G. Roosevelt Middle School

1. *The Giving Tree Club*, a student volunteer group, helps the community, the school, and the environment. In 2010, the club's first year, they led fundraisers for international aid, and social outreach projects.

H. Daily High School
   1. The Associated Student Body collects and recycles bottles and cans at the school and the district office
   2. A staff member works with students to maintain the campus plants

I. Glendale High School
   1. Runs a *Go Green* website dedicated to environmental information and resources.
   2. Recycle school wide by placing recycle bins around campus. The money obtained by recycling is used to beautify the planters around campus with red bark.
   3. Through the *Our Bistro* program, the students grow produce from a school garden.
   4. The Red Cross club leads a beach clean up.
   5. The student-run environmental club meets during lunch.

J. Toll Middle School
   1. Toll makes a concerted effort to collect and recycle empty plastic water bottles. Grade levels compete for highest recycling rate.
   2. The school links the *Junior Ambassador* program with the City of Glendale, which raises awareness for the City's recycling program.
   3. Students participate in trash cleanup on campus.

K. Balboa Elementary School
   1. Recycles paper and makes sure all staff members practice energy efficiency behaviors such as turning off lights and A/C
   2. In process of involving the student council members in a more comprehensive recycling program.

L. Jefferson Elementary
   1. Just received four bottle/can recycling bins and will use them near vending machines and at school events

M. Thomas Edison
   1. Runs a 6th grade beautification project where students select and maintain a site on campus
   2. Runs a vegetable garden
   3. Decreased paper consumption school wide by 40% for school staff and 10% for parent communications
   4. Promotes a clean environment through the Excellent Eagle Awards
   5. Leading a school wide recycling program through Student Council
   6. Creating a parent organized committee for a Healthier Glendale

J's Maintenance

A. Energy
   1. Ten solar tubes used in office
   2. New energy efficient A/C units
   3. Solar panels

B. Water
    1. Low-flow toilets and faucets
C. Waste
    1. Comprehensive recycling program
    2. Use of re-used paper for faxing and printing
    3. Working with City to move toward zero waste
    4. Stopped using trash liners
    5. Recycle all shredded papers
    6. Donate newspapers for re-use
    7. Diverted 51 pieces of furniture, fixtures, and appliances from the landfill by giving them away instead of disposing of them
D. Transportation
    1. Moved to almost all 4-cylinder vehicles, plus 4 Toyota Prius'
E. Environmental Health
    1. Cleaning system using Green Seal Certified cleaning chemicals

JC Penney

A. Energy
    1. Upgraded lighting for energy efficiency (over last 4 years)
    2. A/C and lighting put on centralized control system
B. Water
    1. Upgraded to low flow sinks, faucets, toilets, valves (2 yrs ago)
C. Waste
    1. Implemented strict recycling program within last year

Nordstrom

A. Energy
    1. Lighting energy efficiency upgrades (2 years ago)
B. Waste
    1. Recycling program implemented 2 years ago
    2. 62% recycling rate, 75% goal

Piedmont Office Management

A. Energy
    1. Energy efficient HVAC equipment
    2. Energy Management System
    3. ENERGY STAR equipment
    4. Lighting retrofit (energy efficient ballasts/lamps)
    5. Window tinting with environmentally friendly product
    6. Working to obtain LEED certification
    7. Water pumps upgraded for energy efficiency
B. Water
    1. Water pumps upgraded for energy efficiency
    2. Low-flow restroom and kitchen fixtures
C. Waste
    1. Recycling program
D. Transportation
    1. Nestle administers an employee Rideshare program
E. Environmental Health
    1. Non-toxic janitorial products (both wet and dry)
    2. Renovated interiors with recycled/non-toxic products

Target

A. Energy
    1. LED lights
    2. Motion sensors
    3. Low-wattage fixtures
B. Water
    1. Water saving fixtures in restrooms
C. Waste
    1. Guest recycling program:
        i. E-waste
        ii. Cans/bottles/glass
        iii. Plastic bags
        iv. Food overstock
        v. Pet food overstock
    2. During store remodel, recycle:
        vi. Ceiling tiles
        vii. Light bulbs
        viii. Display shelving
    3. Provide variety of sustainable products and products using less packaging

Appendix H

Local Government Sustainability Contributions

The following chart is taken from the Greener Glendale Plan for Municipal Operations, adopted by City Council on November 1, 2011.

"Phase 1" indicates municipal projects and programs that have been completed since the 2009 inventory, are in-progress, or are planned for implementation in the near future. These are top priority in terms of feasibility.

"Phase 2" indicates projects or programs that have not been initiated but would not require significant additional funding. These are second priority in terms of feasibility.

"Phase 3" indicates projects or programs that would require funding to pursue. These are last priority in terms of feasibility.

"A" indicates the point at which an 8% reduction in GHGs* can be accomplished (2020 target)
"B" indicates the point at which a 13% reduction in GHGs* can be accomplished (2035 target)
"C" indicates the point at which a 30% reduction in GHGs* can be accomplished.

*Below 2004 levels

Phase	Sustainability Category	Measure	*Estimated* MTCO2e GHG Reduction	Cumulative GHG Reduction
PHASE 1	Energy	33% Renewable Energy Portfolio	3,256	3,256
	Urban Nature	Plant 3,400 trees by 2020	868	4,124
	Energy	Water transport facilities - energy mgmt system	443	4,567
	Energy	Develop two local water wells	355	4,922
	Energy	HVAC upgrades on 23 buildings	308	5,230
	Transportation	Retire underused/older vehicles	221	5,451
	Energy	Water transport facilities - efficiency tests/upgrades	152	5,603
	Energy	Improve water pumping efficiency	152	5,755
	Transportation	Downsizing vehicles	47	5,802
	Energy	Vending misers	41	5,843
	Energy	Brand Library remodel	24	5,867
	Water	Parks Department water efficiency efforts	20	5,887

Continued on next page

	Energy	Energy efficient computers	15	5,902	
PHASE 1	Transportation	Idle control policy	12	5,914	
	Energy	Central Library - ENERGY STAR computers	11	5,925	
	Energy	Utilize existing 12 exterior LED lights	5	5,930	
	Water	Low maintenance landscaping on City prop	2	5,932	
	Energy	Install LED exit signs	1	5,933	
	Cross-Cutting	Smart Grid applications within City operations	Not quantified	5,933	
	Transportation	Replaced underused/older vehicles	Not quantified	5,933	
	Urban Design	Green building for affordable housing projects	Not quantified	5,933	
	Urban Design	Green building for City projects	Not quantified	5,933	
	Waste	Reduce vehicle maintenance yard waste stream	Not quantified	5,933	
	Waste	Replace paper towels with blow dryers	Not quantified	5,933	
	Waste	Utilize recycle-in-place pavement	Not quantified	5,933	
	Waste	Re-use Parks green waste	Not quantified	5,933	
	Transportation	Adopt Green Fleet Policy	Not quantified	5,933	
PHASE 2	Transportation	Switch diesel to B10 biodiesel	765	6,698	←A
	Energy	Sustainability outreach/Smart Meter tech	1,018	7,716	
	Transportation	Installation of bike lanes and roadway markings	Not quantified	7,716	
	Energy	Facility natural gas energy audit and upgrades	Not quantified	7,716	
	Cross-Cutting	Green Purchasing Policy	Not quantified	7,716	
	Energy	Facility Energy Efficiency Policy	Not quantified	7,716	
PHASE 3	Waste	Implement Zero Waste Plan*	35	7,751	
	Transportation	Hybrid vehicles	83	7,834	
	Transportation	Rideshare increased incentives/outreach	119	7,953	
	Energy	Solar panels on 8 buildings	148	8,101	
	Energy	Reflective roofing	165	8,266	
	Transportation	Electric vehicles	222	8,488	
	Energy	Energy upgrades on 8 buildings	349	8,837	
	Transportation	Switch B10 biodiesel to B20 biodiesel	765	9,602	
	Energy	Additional facility energy efficiency upgrades	1,018	10,620	
	Energy	Additional sustainability outreach	1,018	11,638	←B
	Urban Nature	Plant additional 7,750 trees by 2035	1,978	13,616	
	Energy	LED street lights	2,507	16,123	
	Energy	Increased Renewable Energy Portfolio by 2035	1,556	17,679	←C
	Water	Power generator water efficiency upgrade	Not quantified	17,679	
	Urban Nature	Enhance wildlife habitats and corridors	Not quantified	17,679	
	Water	Stormwater management and Low Impact Development	Not quantified	17,679	
	Environ Health	Reduce use of toxics	Not quantified	17,679	
	Cross-Cutting	Climate Adaptation Plan	Not quantified	17,679	
	Environ Health	Employee patronizing of downtown farmers' market	Not quantified	17,679	

Appendix I
Greener Glendale Plan Outreach

General Outreach

The following list summarizes the community outreach conducted to invite participation by the community in the development of the Greener Glendale Plan for Community Activities:

- Oct 1, 2010 – Jan 1, 2011: Mass emails to the following, inviting them and their members to become involved in the Plan: All local Homeowners' Associations, GWP Smart-Grid workshop participants, Green Building Task Force participants, Zero-waste Workshop participants, Neighborhood Services community list, Safe & Healthy Streets Plan community list, Community Services & Parks community list, Glendale Community College Sustainability Coordinator, local Sierra Club branches, Montrose Shopping Park Association, Montrose-Verdugo Chamber of Commerce, Historical Society of Crescenta Valley, Glendale Historical Society, Architects, Developers, Non-Profits.
- Dec 13, 2010 – Feb 4, 2011: Open ended surveys conducted with key community contacts from Glendale including: Glendale Community College, Glendale Unified School District, Senator Carol Liu's Office, Jean Maluccio (CV Chamber of Commerce), Judy Kendall (Glendale Chamber of Commerce), Alex Woo (Korean community), Coalition for a Green Glendale, Aspet Davidian, Hank Scheetz, Bill Kane, Grace Hess-Quimbita, Colin Bogart (LA County Bicycle Coalition).
- Feb 12, 2011 – Greener Glendale booth at City of Glendale's Winter Wonderland Event. Conducted open-ended surveys and signed up people to the email list.
- Feb 15, 2011 – Greener Glendale Community Survey posted on www.GreenerGlendale.org website.
- March 2, 2011 – Greener Glendale link posted on City's Community Services & Parks Department webpage.
- March 4, 2011 – *Greener Glendale: 2010 Report* (brochure of existing City of Glendale sustainability programs) posted on www.GreenerGlendale.org website.
- March 4, 2011 –Request to fill out survey and to read brochure sent to Greener Glendale interest list of 70 people.
- March 7, 2011 Edition of City Views – article promoting Greener Glendale Plan with contact information to get involved.
- March 9, 2011 – Five daily calendars promoting the Greener Glendale Online

Community Survey posted at two GWP public counters, two library public counters, and the City Clerk public counter.

- March 16, 2011 – Announcements to fill out the Greener Glendale Online Community Survey posted via Neighborhood Services (newsletter, Facebook, and Twitter) and GTV6.
- March 18, 2011 – Survey announcement on GTV6's weekly show, "The Look Ahead" began airing. Announcement posted on the City's Twitter page.
- April 2001 – Survey announcement in Neighborhood Services' April online newsletter.

<u>Open House (Workshop) Outreach:</u>

- April 7, 2011 – Display ad published in Crescenta Valley Weekly newspaper
- April 7, 2011 – Armenian display ad published in Asbarez Armenian newspaper
- April 8, 2011 – Official event flier emailed to Greener Glendale email list of 75 people
- April 8, 2011 – Event flier emailed to Glendale Community College faculty and staff inviting them to encourage their students to attend as a class exercise
- April 9, 2011 – Outreach booth at Pacific Park Health Expo, targeted to low-income families including Armenian and Latino. Eighty children and their parents interacted with the booth. Online survey and Open House were promoted to participants.
- April 8, 2011 – Ads for Open House event posted on City's website (home page headline, "What's Hot" box (item #4), and Community Calendar.
- April 9, 2011 – Display ad published in Glendale News Press.
- April 13, 2011 – Outreach booth at Disney's 2011 Employee Fair, *Environment & Conservation and Crisis Management.* "2010 Report" brochures and flyers for the online survey distributed.
- April 14, 2011 – 11,250 event flyers distributed to GUSD elementary school parents
- April 14, 2011 – Outreach booth at City of Glendale's Employee Health Fair.
- April 14, 2011 – Event posted on Sunroom Desk community calendar
- April 15, 2011 – Outreach at Dunsmore Elementary Boy Scout Environment event
- April 16, 2011 – Outreach booth at La Crescenta Hometown County Fair
- April 17, 2011 – Outreach booth at GWP Coffee in the Park at Palmer Park
- April 29, 2011 – Email event invitation to GWP business contact list
- April 23, 2011 – Outreach booth at Earth Day Recycling Event
- April 26, 2011 – Outreach booth at Glendale Community College Earth Day Event
- April 27, 2011 – Greener Glendale Open House Event.
- May 6, 2011 – Rotary club presentation
- January 23, 2012 – Final Greener Glendale Open House Event

Open House #1 Results

The purpose of the Greener Glendale Open House was to get the community's ideas of what programs, within the seven UN Accords sustainability topic areas, should be addressed in the Greener Glendale Plan. The event consisted of stations for each of the seven UN Accords sustainability categories. A list of existing community sustainability programs related to the topic area were provided at each station, along with a list of suggested additional programs for consideration to be included in the Greener Glendale Plan. Participants voted on three programs they felt were priority, for each topic area. They also provided comments on a large notepad.

The following notes indicate the topic areas of each station, the number of votes received for each suggestion (the number to the left of each line), and additional comments provided by participants.

There were approximately thirty people who participated in voting at the workshop.

Energy

Votes

17 – Facilitate permitting and construction of alternative building structures, materials, and site location

14 – Education/outreach to promote increase in use of locally grown foods and local farmers' markets

12- Provision of website with clearinghouse of information on available funding alternatives for renewable projects, rates of return, and other information to support developers/builders and community members interested in pursuing renewable energy projects.

11 – Solar powered, LED street lighting

6 – Launch award program to recognize Glendale's most energy efficient buildings

5 – Encourage increased use of passive energy (e.g. natural lighting, cooling, heating) via the municipal code

5 – Encourage/require energy efficiency audits and upgrades at time of building sale

4 – Work with local lenders to encourage energy efficient mortgages and provide information about these to all buyers

2 – Launch an "energy efficiency challenge" campaign for community residents

Notes

1. Somehow compensate "pioneers" who may have been targeted for enforcement for installing energy/sustainability systems
2. Provide standard drawing for solar installations, i.e. solar electric, heating, attic fans, etc.
3. Contact "Open Neighborhoods" or similar groups that help individuals get discounts on solar energy systems
4. Schools w/big blacktop get solar panels → energy and shade
5. If it isn't already, outlaw smoking at farmers' markets
6. Enforce standards for vendors of Farmer's Markets regarding spray/no spray, similar to see LA [Los Angeles]

7. Share ideas resulting from tonight and the Greener Glendale Plan with the school districts.
8. Promote/educate on local food options
9. Is the City planning for increased electrical demands from adoption of electrical vehicles? [As a note, yes they are]

Transportation

Votes

18 – Provide development incentives for providing alternative fuel vehicle infrastructure

16 – Encourage businesses and schools to implement car-share, bike, and public transit programs for their employees/students

16 – Enforce state idling laws for commercial vehicles, including delivery and construction vehicles

12 – Impose (citywide) transit and multimodal impact fees on new developments to fund public transportation, bicycle, pedestrian, and other multi-modal infrastructure (a workshop participant added "citywide" to this item)

6 – Encourage businesses to provide telecommuting options to their employees

3 – Initiate public education/outreach program to educate residents on how to achieve better fuel efficiency

3 – Implement a no overnight street parking policy – *There was not sufficient support at this time to pursue this item. However, the City does periodically review the citywide parking policies.*

3 – Require large businesses of more than 50 employees to provide a Parking "Cash-out" program, but with measures to ensure those employees do not then park on residential streets

2 – Adopt a comprehensive parking policy to discourage private vehicle use and encourage use of alternative modes of transportation

Notes

1. Program helping businesses establish E.V. charging stations
2. Rebate for installation of E.V. charging stations
3. Providing information to public for converting diesel engines to biofuels
4. Safe bike lanes and places to secure bicycles at destination points
5. Interconnecting city's bike lanes, especially freeway crossings
6. Legitimize and celebrate the bus infrastructure so riders feel proud to ride.
7. Corporations such as Disney and DreamWorks at the Grand Central Creative Campus, for whom CalTrans and the city installed a costly new Fairmont "flyover" and other San Fernando Rd-area upgrades must do a better job of urging their commuting employees to "be good neighbors" and use the new (alternative) routes and avoid residential neighborhood cut-through thoroughfares – such as Victory, Sonora Ave, Riverside Dr., to and from the 134. *This comment has been forwarded to the Transportation Department.*

8. Narrow street lanes (to slow traffic) and build wider sidewalks and/or grade separated bikeways.
9. Companies to provide employees with gym memberships to encourage bike commuting
10. Make it easier to find information to ride the bus

Waste

Votes

25 – Work with residents to encourage use of biodegradable take-out materials and elimination of disposable/non-recyclable materials such as Styrofoam

14 – Plastic bag ban

14 – Increase availability of public place recycling

10 – Increase education/outreach to residents on Refusing, Reducing, Re-using, and correctly Recycling

9 – Implement tours/demonstration sites showcasing Zero Waste lifestyle

9 – Award program to businesses/households that achieve highest waste reduction

4 – Launch a “waste reduction” campaign for community residents

3 – Expand “Pay-as-you-throw” program to include even smaller discounted bins

2 – Strengthen community outreach/information provision on waste management services/centers available to community

Notes

1. Policy that non-recyclables (like Styrofoam/rigid plastic) be banned for take-out
2. Provide an open approach to reuse materials
3. Have City reuse materials
4. Allow restaurants to fill reusable containers that customers bring
5. Ask GUSD cafeterias to use dishwasher instead of one-way dishes and plastic cutlery (3 votes)
6. Require public gatherings, restaurants, parks to provide recycling containers/bins
7. Earth Day Recycling incentives and collection of non-traditional materials like polystyrene, electronics.
8. More PR to residents/businesses of available recycling options
9. Incorporate a composting program at schools for kids
10. Initiate a composting pilot program for residents
11. Need to have follow-up on the compost bin program to see if the bins are being used
12. Is there policing of recycling to confirm people are recycling?
13. Is there a City report that discloses what happens to recycled materials? Does the City gain revenue from recycled materials?
14. Work w/GUSD to reduce waste, educate students, support “Green Teams”
15. Need more recycling centers that reimburse bottle fees. Need stores to accept their own bottles sold for reimbursement of bottle fees.
16. Expand compost program to restaurants and schools
17. Need to make it easier to recycle batteries
18. Education for recycling policies so people do not sift through the recycles bins for others trash.

Water

Votes

24 – Provide rebates for reduction of turf (e.g. by replacing with native/drought tolerant plants, mulch, etc.)

22 – Amend municipal code to allow gray water piping (for washing machine to landscape)

17 – Install water-friendly landscaping community demonstration sites

15 – Allow underground cisterns within the front setback

5 – Launch a "water efficiency challenge" campaign for community residents

5 – Launch award program to recognize Glendale's most water efficient buildings

3 – Encourage/require water efficiency audits and upgrades at time of building sale

1 – Expand water tier rates (add additional tiers for further conservation incentives)

1 – Provide the highest 20% of water users with incentives/alternative household appliances that will result in less water consumption

Notes

1. Retroactive rebates for earlier fines regarding drought-tolerant landscape
2. Continue the "no water waste" restrictions
3. Incorporate bioswales/rain gardens in public right of way
4. Incentives for rain barrels and cisterns!
5. Demonstration gardens of low-water grasses and info on city website e.g. GWP
6. Remove all grass parkways, starting w/ the public ones
7. Discourage over-seeding lawns during winter
8. Incentives for low-flow sprinklers
9. Adjust watering policy to accommodate low-flow
10. Landscaping demo site at Brand Park
11. Find method to allow renters to better understand water consumption and conservation
12. Education re: turning automatic sprinklers off on rainy days and technology around this
13. Add interactive water-saving idea feature in GWP website
14. Drought tolerant right of way should be encouraged/allowed
15. Pursue grey water demonstrations (everybody has grey water)
16. Find ways to store our stormwater runoff
17. Have the city provide rain barrels and give residents a credit for the amount of rainwater collection, when the barrels are filled up

Urban Nature/Environmental Health

Votes

19 – Identify the most toxic products used in the city and adopt a plan to remove them

15 – Increase tree planting to shade buildings, bus stops, streets, etc.

14 – Education/outreach to stop use of toxic products in gardening/landscaping

10 – Develop strategies to provide parks within 1/3 mile of all residents

7 – Outreach program to encourage residents to visit parks, and to travel there via alternative modes of transportation

6 – Conduct a citywide tree canopy coverage inventory and analysis. Adopt a tree planting target and schedule for meeting the target.

4 – Develop dog parks

Notes

1. More parks in residential and commercial
2. Update the stream study to map seasonal streams based upon urban runoff (1 vote)
3. Drought tolerant right of way (1 vote)
4. More bicycle racks
5. Outlaw leaf blowers (10 votes)
6. Give GEM awards to homes that have native/perennial gardens
7. Plant low-water gardens tin public parks e.g. Brand Park as educational model for public interest
8. Encourage urban agriculture as part of parks/local food agenda (3 votes)
9. Porous paving (2 votes)
10. Area near Victory and Sonora needs to be made more bike/pedestrian friendly intersection (2 votes). *This comment has been forwarded to the Bicycle Transportation Plan Update team.*
11. Work with CalTrans on landscaping on/off ramps (1 vote). *This comment has been forwarded to Cal Trans. It is outside the jurisdiction of the City of Glendale.*
12. Diverse urban planting palette
13. No monoculture
14. Street-scape one of Glendale's major "gateways" – Sonora Ave. from Victory Blvd. to San Fernando Rd. (at least to Lake St.) with narrow landscaped median, left turn pockets, and bike lanes or "sharrows" (shared roadway markings). *This comment has been forwarded to the Bicycle Transportation Plan Update team.*
15. Legislate non-petroleum using landscape equip. (using electric or battery-powered) at residential locations! Fumes are worse than vehicles are!
16. Outlaw idling of vehicles! Including police vehicles when they are idling for no real reason.
17. Outlaw smoking in and near the recycling lines for example, at Replanet recycling center at Ralphs.
18. Build rooftop garden on top of Galleria and new Nordstroms
19. Do more to deal with littering

Urban Design

Votes

19 – Develop economically successful, pedestrian friendly streets that act as destination centers in Glendale

19 – Requirement for developments to include shade trees, cool paving/roofing, and increased permeable/natural landscaping

15 – Facilitate permitting and construction of alternative building structures, materials, and site location

14 – Further increase mixed-use zones with public uses on ground floors

13 – Identify and facilitate inclusion of complementary land uses not already present in zoning districts (e.g. supermarkets, parks, recreation, schools, residential uses in business districts, etc.)

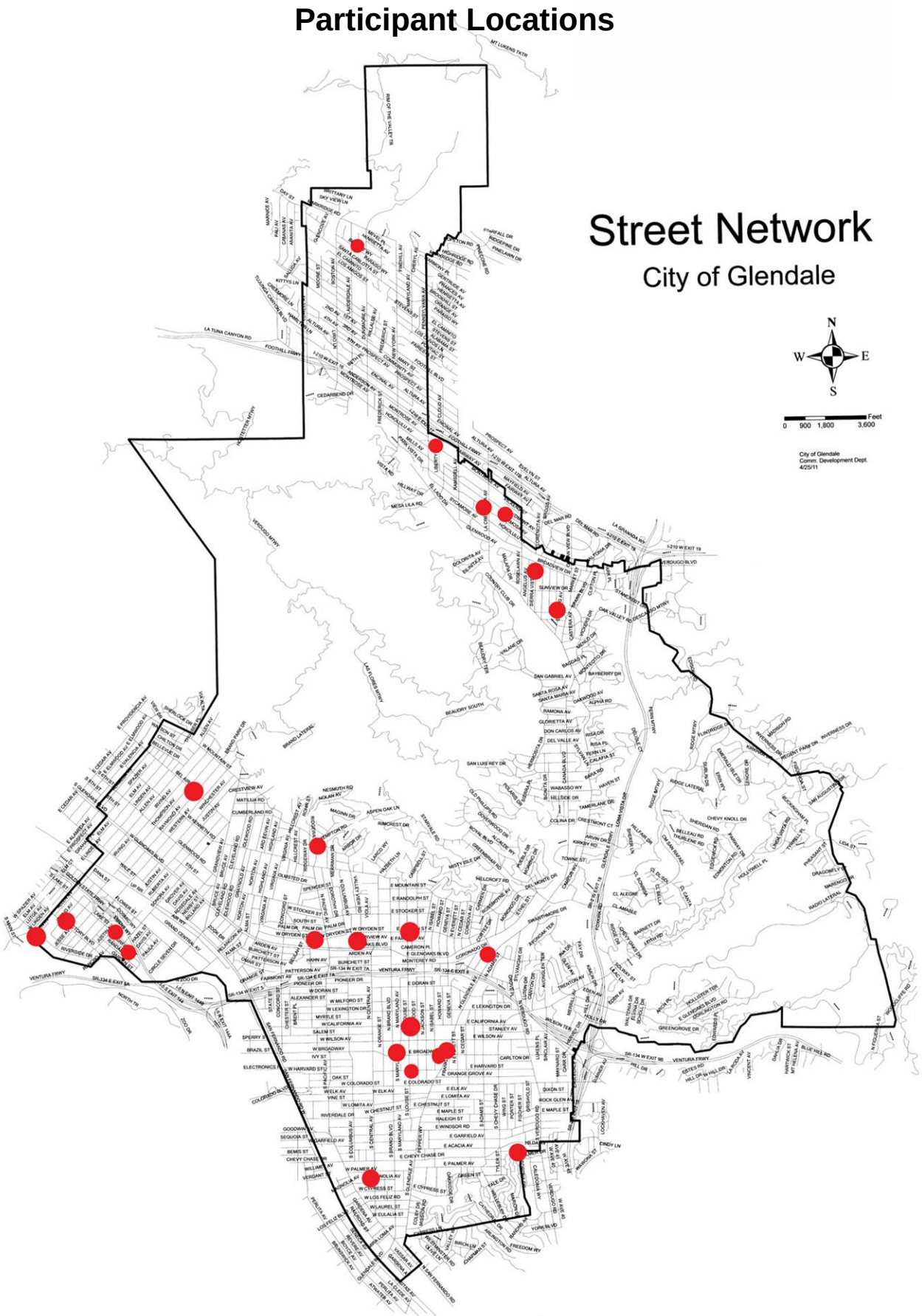
6 – Review fee structures and other opportunities to provide financial and administrative incentives to support desired land uses, development patterns, and alternative modes of transportation

5 – Work with Glendale Community College to train students in the green jobs sector

Notes

1. Cal Trans should provide better signage for 134/5 flyover to DreamWorks/Disney Campus *This comment has been forwarded to Cal Trans.*
2. Prioritize tree planting in residential neighborhoods and Do Not Remove existing and mature trees. *This already exists for City-maintained trees. This comment has been forwarded to Cal Trans.*
3. Discourage use of lawn in private development and public right of way
4. Encourage/promote green roofs . . . start with a municipal project!
5. Require native landscaping for City project and residential landscaping
6. Include requirements for solar/photovoltaic panels for owners of houses and multi-family
7. Support additional requirements for green buildings incentives for putting in electric vehicles
8. Improve communication and education by corporations about alternative routes and new 134 flyover. *This comment has been forwarded to the Transportation Department.*

Participant Locations



Note: This map represents a sample of the attendees and not every single attendee.

Open House #2 Results

The Greener Glendale Open House was held on January 23, 2012. The purpose of the open house was to hear community feedback on the programs proposed in the Draft Greener Glendale Plan for Community Activities and to aid the City Council in determining priorities. The event was conducted in the same format at the previous open house event.

The following notes indicate the topic areas of each station, the number of votes received for each suggestion (the number to the left of each line), and additional comments provided by participants.

There were an estimated twenty-four people who participated in voting at the workshop.

Economic Development

Votes

12 – Raise the City's profile as a forward thinking, "green" city
4 – Encourage sustainable business practices
3 – Support local businesses
1- Support a strong local economy
1 – Support green jobs training in Glendale

Notes

1. Support housing development close to employment centers

Water Conservation

Votes

6 – Reduce community water consumption through promotion, education, and outreach campaigns
6 – Implement stormwater management practices to protect water quality and replenish local groundwater sources
4 – Facilitate and coordinate community water conservation projects
2 – Reduce community water consumption through incentive and rebate programs
0 – Encourage or require water efficiency upgrades at the time of building sale

Notes

1. Water conservation should be City's top priority. I see a lot of water wasted in my neighborhood.

Energy Conservation

Votes

8 – Reduce citywide energy consumption by facilitating and coordinating community energy efficiency projects
5 – Increase the use of renewable energy citywide
5 – Reduce city energy consumption through promotion, education, and outreach
1 – Encourage the reduction of citywide energy consumption through City municipal codes and policies

Notes

None.

Waste Reduction

Votes

11 – Community education and outreach
7 – Reduce use of disposable, non-renewable product
1 – Commercial waste diversion
0 – Expand waste diversion services

Notes

1. Ban Styrofoam in Glendale.
2. Ditto!
3. Easily identifiable recycling bins throughout the city!

Environmental Health

Votes

7 – Promote the use of locally grown, organic foods

6 – Reduce use of toxics citywide

6 – Improve air quality

5 – Strengthen anti-litter efforts

Notes

1. Glad to see Glendale youth involved in community gardens
2. Ban on leaf blowers
3. Ban on leaf blowers! X2 x 3!!! Noise, fuel, off gassing, wasted energy. Also consider alternative fuel source.
4. Importance of identifying most toxic products used in the City of Glendale
5. Toxic cleaning products to be sold in hardware stores, not grocery stores
6. Stricter laws against smoking in apartments
7. Yes, ban "leaf" blowers in Glendale!
8. More recycling containers/bins on streets – outside coffee shops, fast food, etc.

Transportation

Votes

11 – Facilitate the provision of alternative transportation infrastructure

6 – Promote and encourage the use of alternative forms of transportation

2 – Promote and encourage the use of alternative fuel transportation

1 – Promote the provision of alternative fuel transportation infrastructure

Notes

1. Bicycle friendly city attracts commerce
2. Make city safer for pedestrians and cyclists

Urban Nature

Votes

11 – Ensure there is accessible park and recreational open space to serve residents

3 – Update the Urban Forest Management Plan

3 – Implement programs to increase biodiversity in Glendale

1 – Plant 20,000 trees by 2035 through the City's GWP Tree Power, Arbor Day, and Public Works tree planting efforts (ongoing)

Notes

None.

Urban Design

Votes

7 – Continue to implement regional urban planning strategies to increase sustainability and livable environments

4 – Incorporate sustainability concepts from the Greener Glendale Plan into Community Plans and other General Plan documents

2 – Continue existing efforts to encourage affordable housing development projects to exceed Glendale's Green Building Standards

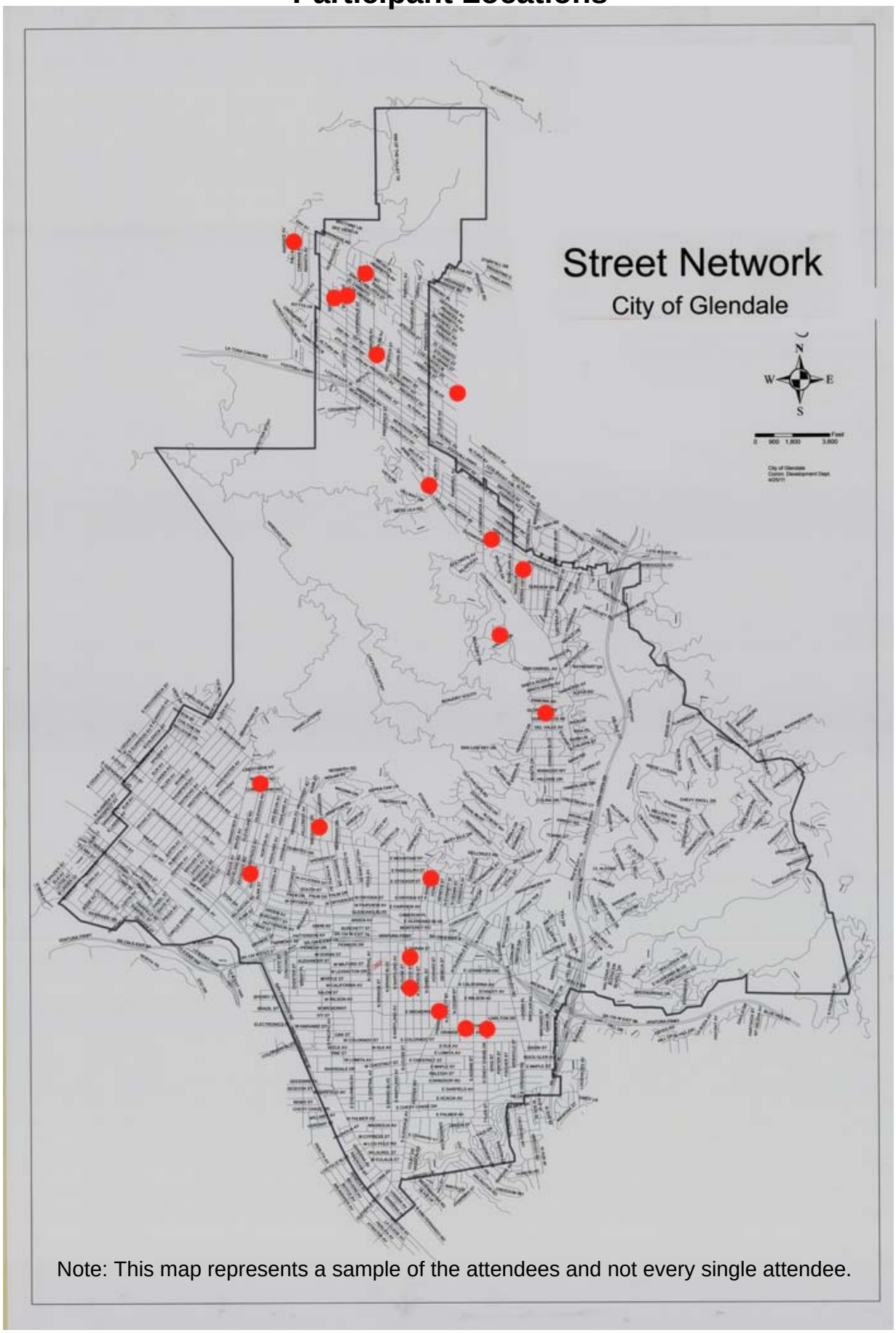
1 – Incorporate green building practices into community sustainability outreach and education

1 – Consider expansion of City's Green Building Standards


Urban Nature


Waste

Participant Locations



Note: This map represents a sample of the attendees and not every single attendee.

Other Surveys Conducted

Approximately 50 additional surveys were conducted online and at community events. The ideas from these surveys were incorporated into the open house workshop and the Greener Glendale Plan.

Comments from Parking Day LA Event

The following comments were contributed by the community at the Parking Day LA 2011 Glendale installation (9/16/2011 on Brand just south of Broadway). Five university students organized the event. The students asked participants to comment on their ideas for a "greener Glendale." Comments were posted on www.rediscover-glendale.tumblr.com and are reproduced here. The comments reinforce the ideas that came from the workshop and that are included in the Greener Glendale Plan.

Comments:

1. I want to skateboard in Glendale without worrying about getting a ticket
2. Healthy and clean environment
3. More parks
4. Ecologically clean city driving sustainability
5. A place that is eco friendly and has transformation throughout the whole city which provides growth and happiness for everyone
6. A place that there is more people walking & interacting, a place with less car & more public transportation
7. Humility and Education
8. More community oriented programs
9. More green space less regulation
10. More of a metro system
11. Make the Beeline free
12. More public transportation, bike friendly routes/streets, & cleaner streets
13. Sense of community in harmony with nature
14. Long time resident of Glendale I see all the vacant store fronts along Brand blvd what is the city council and redevelopment committee doing about this? No more banquet halls, jewelry and pawnshops! We need businesses that will attract people to the city. Take lesson from Pasadena lots of people shopping over there.
15. More bike and transit as the main mode of transportation in Glendale (and everywhere)
16. Community veggie garden/planting beds for neighbors to grow their own produce
17. More free space for parking or retail street vendor with permission in parking space
18. Stricter laws against voter fraud. No parking meters on Brand.
19. More recycling
20. More urban parks + playgrounds
21. Loving nature cherishing animals and keep earth healthy clean and strong and helping friends ad family stopping the pollution friends for change
22. Better transportation. Teleportation technology improvements and implementation.

23. More recycling, better public transportation.
24. More means of transit free bus fare, more parking, and more agriculture.
25. Less traffic, more bikes, mo money no problems
26. Taking “peak oil” seriously: more bike lanes, urban garden projects for school, less honking, more electric charging stations
27. Promoting a sustainable lifestyle for everyone in the community through education and outreach from the grassroots through to government
28. Needs handicapped space for people with back pain
29. More recycling, better public transportation, more parks
30. Green is good
31. More clear and blue skies! Less smog!
32. Environment-friendly vehicles mandatory
33. Health and stability
34. Subway or railway to beach, better marked parking areas, also maps of bus transportation
35. More spaces where people can go and do work in a place that has Wi-Fi other than Starbucks, where there are trees, like a park.
36. More trees. More brown bags instead of plastic.
37. More carpooling, better opportunities to lesson vehicular traffic – more public transportation and usage of bicycles. More individual investment in the environmental and social sustainability on Glendale by the Glendale residents and those from surrounding areas.
38. More walking, less cars, & none of those plastic bags, only papers. Love for everyone.
39. More trees, and parks and flowers and green scenery.
40. Need more open space, parks, particularly dog park
41. More bike parking. Wider bike lanes.
42. A city where more people can enjoy safety walking on the streets, breathing in the fresh air and evolving with technology and the Earth to a brighter, smarter future for all generations to come.
43. More of a community based environment, where people can preserve energy & make better use of our city.
44. A beautiful, friendly, family, fun city. I love you can walk the streets & enjoy the communities & its members.
45. More community gardens. Better recycling system. More education to younger generation about recycling. Alternative transportation and gardening.
46. A collective shift in consciousness and a redefinition of our current culture and what we hold as important aspects of life.
47. Changing our everyday lives in order to commit to a sustainable future.
48. More foot traffic, less cars. More green spaces to enjoy with family.
49. Less stress in my spare free time and more options for enjoyment, which includes interesting ways to appreciate

the true qualities of Southern California, even the urban centers of Glendale.

50. Being able to walk down a beautifully landscaped street in my stilettos
51. Cops that drive on the correct side of the road
52. More light rails
53. Helping keep it clean by not littering or helping on volunteer days to cleanup
54. More trees, less cars, more parks, more flowers.
55. An actual park (drawing of tree with grass)
56. This is an awesome idea by a bunch of young, smart, energetic and wonderful students who will be the leaders of tomorrow, leading us toward greener, better, and healthier communities and places to live.
57. "Come with me into the trees. We'll lay on the grass and let the hours pass." – DM
58. More bike lanes, more green space, take crappy busted buildings and make dog parks
59. Less cars, no traffic light cameras, more parks and places for everyone to hang out
60. Place recycling bins throughout the city's main streets, provide stations where people can rent bicycles daily to ride around Glendale, more bicycle lanes, add electric cars for public transportation, local businesses to offer free items for low gas, water, electric bills
61. Doggy park, bike trail, less use of car, community planting garden
62. I need more free parking
63. Diversity and greater acceptance
64. A community "clean day" once a month, the community can clean the streets by picking up trash or planting trees
65. _____ (illegible) to see more parks and wildlife centers
66. Glendale should have another park or two. In addition, it wouldn't hurt to put up one more dispensary.

Comments from the Coalition for a Green Glendale

The Coalition for a Green Glendale conducted a community workshop to gather ideas on what environmental issues they should focus on. These comments were submitted at the Planning Commission review of the *Greener Glendale Plan*. The numbers in parentheses represent the number of people supporting each comment.

Finalists

1. Early education sustainability and environmental awareness (elementary schools) (8)
2. Improving/modifying requirements for construction projects (7)
    a. Green materials
    b. Incentives for solar
    c. Permeable parking lots (stores water)
    d. LEED certification
    e. Green wall

3. Film series and discussions (6)
    a. “Vanishing Bees”
    b. “No Impact Man”
    c. “Food Inc.”
    d. “The Story of Stuff”
4. Native landscaping in front of public schools/spaces (5)
5. Residential and commercial materials recycling program (5)
6. Ban gas-powered blowers (4)
    a. Reduce gas, noise, and dust pollution
    b. Alternative: sweep/rake
    c. Alternative: promote electric blowers/mowers
7. Recycling incentives for non-home owners (2)
8. Restaurant oil/food waste recycle (0)

<u>Other Ideas</u>

1. Plastic bottle ban at municipal events
2. Cash for grass
3. Leaf blower ordinance
4. Establish a sustainability commission
5. Allocate funds to alternative transportation
6. Bicycle safety
7. Green award program (local businesses)
8. Bike co-op
9. Teaching people how to use gray water
10. L.A. River event (school event; show public where trash ends up)
11. Program to teach public rules for recycling
12. Landscape contractor programs: environmental options for landscaping non-fertilizers
13. Home care fertilizers/garden education program
14. Programs to offer healthy food for people without access
15. Seasonal/local food education
16. GMOs (Genetically Modified Organism) Program (what is happening to food source)
17. Fuel program: creating stations
18. Host Ciclovia in Glendale; bike awareness (drivers and bikers provide route from Glendale to LA)
19. Recycling center tour
20. Encourage drought tolerant gardens
21. Virtual net metering to transfer net power to other meters
22. Styrofoam ban, especially at fast food restaurants
    a. Alternative: compostable cups/utensils
23. Promoting greener construction, especially for public buildings, sidewalks and schools
    a. Permeable pavements
    b. Green wall
24. Promoting waste-to-energy plant at landfills
25. Community service requirements for students
    a. Certain number of hours students must dedicate to environmental projects (graduation requirement)

26. Separate trash bins and recycle bins at major parks, city events, etc. (make it mandatory)
27. Expanding recycled water pipes to residential neighborhoods, perhaps based on commercial expansion
28. School programs: sustainability and environmental awareness
29. Education outreach
30. Homegrown produce exchange
31. Food workshop (i.e., pickling, canning)
32. “Food not lawns” program
33. Rain barrel program
34. Parkway strips
35. Demonstration gardens and low water grasses
36. Weekly column in Glendale News Press on environmental education and awareness
37. Promote environmental living within homeowners association

.

Appendix J
Landfill Gas Emissions

The Environmental Protection Agency states that reported landfill collection efficiencies range between 60% - 85%, and that a value of 75% collection efficiency is most commonly used.[54] However, this is not a Southern-California-specific number and does not take into account local regulations and climate.

A recent study on this issue states that, "widely used default collection efficiency values such as 75% may grossly underestimate the true collection efficiency, particularly for landfills operated for emission control purposes (e.g., US EPA Municipal Solid Waste NSPS and SCAQMD Rule 1150.1)" [55]

The actual values for these types of landfills (e.g. Scholl Canyon), based on field-testing, were found to be 95%.[54]

A second study states that the assumed 75% collection efficiency is not based on test data, is somewhat dated, and does not take into account the dry California climate.[56]

Therefore, this inventory uses a 95% collection efficiency in the landfill GHG emissions calculations.

[54] EPA AP 42 Emission Factors, Solid Waste Disposal, pg 2, 4-6 (1998)

[55] *Field Comparison of Landfill Gas Collection Efficiency Measurements*. Huitric, et al. Solid Waste Association of North America 30th Annual Landfill Gas Symposium, Monterey, CA. (2007)

[56] *Current MSW Industry Position and State-of-the-Practice on LFG Collection Efficiency, Methane Oxidation, and Carbon Sequestration in Landfills,* SCS Engineers. (2007)

Appendix K
City Recycling Program

As of the writing of this report, the City accepts the following items for recycling. The list is constantly being expanded. Check the website[57] for the most up-to-date information.

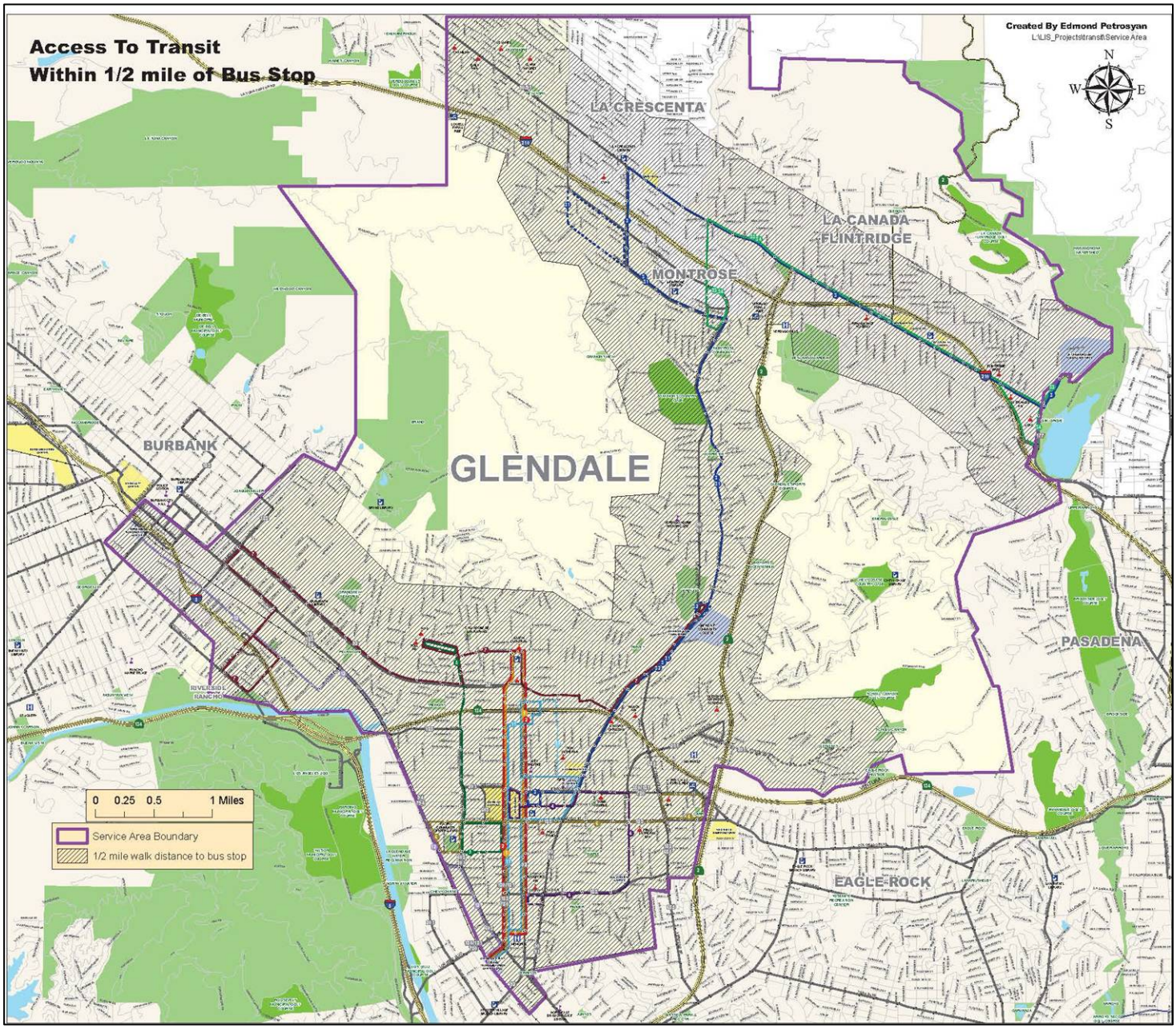
- **All Clean Paper**
  newspaper and inserts, junk mail, white and colored office paper, wrapping, art and craft paper, telephone books, paperback and hardback books, magazines, paper bags, catalogs, envelopes (including those with windows), shredded paper (in a closed paper bag/box or clear plastic bag), note cards, Post-it notes
- **All Cardboard Boxes and Chipboard**
  cereal boxes (liners removed), dry food, frozen food, shoe and detergent boxes, paper and toilet rolls, and corrugated boxes (flattened)
- **All Food and Beverage Cartons** (milk, juice, soup, etc.)
- **All Aluminum, Tin, Metal, Bi-Metal Cans and Scrap Metal**
  rinsed if possible, soda, juice, soup, vegetable, and pet food cans; pie tins; wire hangers
- **All Glass Bottles and Jars**
  rinsed if possible, soda, wine, and beer bottles, food jars
- **All Clean Plastic Bottles and Containers** (#1 through #7)
  soda, juice, detergent, bleach, shampoo, lotion, mouthwash, containers, milk jugs, tubs for margarine and yogurt, plastic planters
- **Clean Plastic Bags and Film Bags** (bundled in a tied bag), grocery and store bags, dry cleaner bags, newspaper bags
- **Miscellaneous Plastics**
  non-electric plastic toys, clean plastic eating utensils, plastic coat hangers, plastic swimming pools, plastic laundry baskets

57 http://www.ci.glendale.ca.us/public_works/guidelines_for_automated_collection.asp

- **CDs and DVDs** (without cases)
- **Other miscellaneous items accepted:**

- **Shredded paper**
  (place in clear plastic bags, paper bags or boxes)
- **Cracked plastic buckets**
- **Padded mailers, padded envelopes, plastic mailers padded with plastic bubbles or paper mailers padded with plastic bubbles**
- **"Plant" bottles**
  (certain water bottles and juice bottles now being manufactured by soft drink companies)
- **Small scrap metals such as cooking pans**
- **Plastic plant containers**
  (sold by nurseries or retail stores, normally black plastic)
- **Carpet and padding**
  (please schedule it as a bulky item pickup. Do not place carpet in recycling containers as carpet is recycled separately)
- **Metal beer caps or metal soft drink caps**
- **Six-pack plastic rings**
  Garden hoses provided that they are cut in 1 foot sections
  (please note that uncut garden hoses jam the mechanical conveyor belts at the Glendale Recycling Center)

Appendix L
Transit Access



Metro Rapid System