



REPORT TO COUNCIL

City of Sacramento

915 I Street, Sacramento, CA 95814-2604
[www. CityofSacramento.org](http://www.CityofSacramento.org)

STAFF REPORT
January 27, 2009

**Honorable Mayor and
Members of the City Council**

Title: 2009 Sustainability Implementation Plan

Location/Council District: Citywide

Recommendation: Adopt a **Resolution** approving the 2009 Sustainability Implementation Plan.

Contact: Yvette Rincon, Senior Management Analyst, (916) 808-5827

Presenter: Reina J. Schwartz, Director of General Services, (916) 808-7195

Department: General Services

Division: Facilities & Real Property Management

Organization No: 3289

Description/Analysis:

Issue: On December 18, 2007, Mayor and City Council adopted Resolution No. 2007-944, approving the Sustainability Master Plan – *Creating a Sustainable City* (Master Plan). And on February 12, 2008, the Mayor and City Council adopted Resolution No. 2008-091, approving the 2008 Sustainability Implementation Plan.

Staff is now bringing forward for adoption the 2009 Sustainability Implementation Plan (the Plan). This Plan identifies key initiatives that staff plans to implement in 2009 to move the City toward the goals and targets identified in the Master Plan. The Plan was developed by subject matter experts within the City and the community. The Plan does not fund new City programs, and given the City's budget, it largely continues the 2008 Plan actions with some exceptions. Staff will continue to pursue federal, state, and local grant opportunities as they become available. To date, through a multi-departmental and community effort, staff was awarded a \$400,000 U.S. Department of Energy Solar Initiative grant.

2008 Implementation Accomplishments

The 2008 Sustainability Implementation Plan was the City's first Citywide coordinated effort to capture past accomplishments and specific actions that would occur in 2008 to further sustainability. Some of the major accomplishments in 2008 include staff education, development of green policies, selection of a firm for performance contracting, and a Parks and Recreation Sustainability Plan.

The City's Steering Committee developed and successfully delivered the City's first Sustainability 101 course through City University. This course touched on the basics of sustainability, the City's Sustainability Master Plan, and what we as individuals can do to be more sustainable. This course will be taught regularly through City University. In 2008, the City selected a performance contracting firm to review its facilities and make recommendations on improvements that will increase energy efficiency and ultimately significantly reduce green house gas emissions from these facilities. As previously promised, staff will continue to explore the possibility of funding a position from the savings realized as a result of reduced energy costs. Staff will report back to Mayor and City Council on the feasibility of funding a dedicated sustainability position through this mechanism. In addition, staff drafted and will soon implement, citywide, a Sustainable Operations Administrative Policy Instruction (API) which implements a number of green policies that will reduce our use of electricity, increase recycling, and, overall, reduce the environmental impact of City operations. These policies include restricting the purchase of bottled water, keeping buildings two degrees warmer in the summer and cooler in the winter, copying and printing double-sided, turning off lights and computers when not in use, reducing the use of vehicle fuel, right-sizing vehicles, and challenging all City departments to obtain certification for City facilities through the Business Environmental Resource Center (BERC). Finally, the Parks and Recreation Department staff being proactive developed a Department (DPR) Sustainability Plan, which was adopted in August 2008. The Plan is consistent with the City Master Plan and has an initial timeframe of 2008-2015. This Plan is available on the DPR web site: <http://www.cityofsacramento.org/parksandrecreation/pdf/sustainability-plan-08.pdf> . Parks and Recreation's next focus on Sustainability will be an implementation program for this new Department Plan.

2009 Sustainability Implementation Plan

As mentioned above, the 2009 Plan largely continues the 2008 Plan with some exceptions and does not fund new programs. However, the Plan does incorporate the programs and policies that staff will complete for the 2030 General Plan that are consistent with and move the City towards the Sustainability Master Plan goals. The actions that have a reference number in parenthesis are the actions that are implementing the General Plan.

Some of the highlights of the 2009 Sustainability Implementation Plan include:

Performance contracting. In September 2008, through a competitive process, the City chose a performance contracting firm to review its facilities, make recommendations for energy efficiency improvements, and construct the improvements. This is a multi-year project that will be completed in phases. This year, staff plans to get the first set of facilities through all phases of the project and begin construction of the improvements.

Solar for City Buildings. The City is developing a Request for Proposals for Solar Photovoltaic Power Systems Installation. The City hopes to use a power purchasing mechanism to partner with a private company to install up to 5,000 kW of solar on City facilities.

State and Federal Grants. Staff will continue to monitor grant availability at the state and federal level. At this time, staff has indentified a grant opportunity with the California Energy Commission that would provide funding for a Renewable Energy Secure Communities grant. This grant provides funds to develop a roadmap on how to convert the region from a fossil fuel based economy to a renewable energy economy. Staff is also monitoring the Federal Energy Efficiency and Conservation Block Grant. If funded, this grant would provide the City with approximately \$2.5 million annually for five years.

Communitywide GHG Inventory. Staff is working with the county, incorporated cities, and SMUD to complete a communitywide greenhouse gas inventory. The inventory will provide greenhouse gas emissions by major sector. In addition, it will serve as the baseline for the City's Community Climate Action Plan.

Construction and Demolition Debris Recycling Ordinance. Staff will be bringing forward the Construction and Demolition Debris Recycling Ordinance for Mayor and Council adoption in early 2009. When this ordinance is fully implemented, diverting this material from the landfill to recycling will increase the City's recycling rate by 8-10 percent.

Environmentally Preferred Purchasing Policy. Staff began development of this policy in 2008 and will continue in 2009. This policy will set guidelines and possibly requirements for purchasing sustainable products for city operations.

Sustainable Transportation Modes. Staff will be working on a number of projects that will encourage the use of more sustainable modes of travel including an educational and promotional program to encourage more walking in Sacramento, a study to identify gaps in transit services and a strategy to fill the gaps, development of an ordinance for bicycle support facilities, and installation of an additional 150 converted parking meter poles into bike parking devices.

Countywide Green Building Program. Staff will coordinate with Sacramento County to establish a County-wide advisory committee to guide phase two of the Green Building Program.

Policy Considerations: The Plan identifies key policies or programs that staff will implement in 2009 within existing resources. Largely, staff is continuing implementation of the 2008 initiatives due to budget challenges and implementing 2030 General Plan policies/programs. These initiatives include continuing existing programs with existing resources, drafting needed policies, exploring new programs, and educating City employees and the public.

Committee/Commission Action: None

Environmental Considerations: The key initiatives in the Implementation Plan will have a positive impact on the environment.

Sustainability Considerations: All the actions proposed for 2009 are consistent with the Sustainability Master Plan and in fact are intended to move the City towards achievement of the long term goals identified in the Master Plan.

Rationale for Recommendation: As a major landowner, employer, building manager, fleet operator, utility owner and operator, consumer of goods and services, and service provider, the City of Sacramento has both the responsibility and opportunity to bring about significant improvements in environmental quality in and around the region through the Sustainability Implementation Plan.

Financial Considerations: The key initiatives will be implemented within existing budget resources. As additional budget reductions are made in 2009 there will be an evaluation of the Plan for any necessary adjustments

Emerging Small Business Development (ESBD): There are no ESBD considerations in this report.

Approved by: _____



Reina J. Schwartz

Director, Department of General Services

Recommendation Approved:


for Ray Kerridge
City Manager

Table of Contents:

	Report	Pg 1
Attachments		
1	Resolution	Pg 6
	Exhibit A - 2008 Sustainability Implementation Plan	Pg 7
2	Parks and Recreation Department Sustainability Master Plan	Pg 30

RESOLUTION NO. 2009-xxxx

Adopted by the Sacramento City Council

January 27, 2009

ADOPT THE 2009 SUSTAINABILITY IMPLEMENTATION PLAN

BACKGROUND

- A. As a major landowner, employer, building manager, fleet operator, utility owner and operator, consumer of goods and services, and service provider, the City of Sacramento has both the opportunity and the capacity to bring about significant improvements in environmental quality in and around the region through the 2008 Sustainability Implementation Plan.
- B. On December 18, 2007, Mayor and City Council adopted Resolution No. 2007-944 approving the Sustainability Master Plan – *Creating a Sustainable City*. The Sustainability Master Plan is meant to serve as a policy framework for the City of Sacramento to ensure that sustainability is incorporated into the City's decision making processes.
- C. The 2009 Sustainability Implementation Plan identifies key initiatives that staff plans to implement in 2009 to move the City toward the goals and targets identified in the Master Plan. The Implementation Plan was developed by subject matter experts within the City and the community. Given the state of the City's budget, the initiatives within the Plan can be implemented using existing resources.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

Section 1. The 2009 Sustainability Implementation Plan is approved.

Table of Contents:

Exhibit A – 2009 Sustainability Master Plan

Creating a Sustainable City: 2009 Implementation Plan

City of Sacramento



City of Sacramento
GENERAL SERVICES
"WOW!" the Customer



Mayor

Kevin Johnson, Mayor

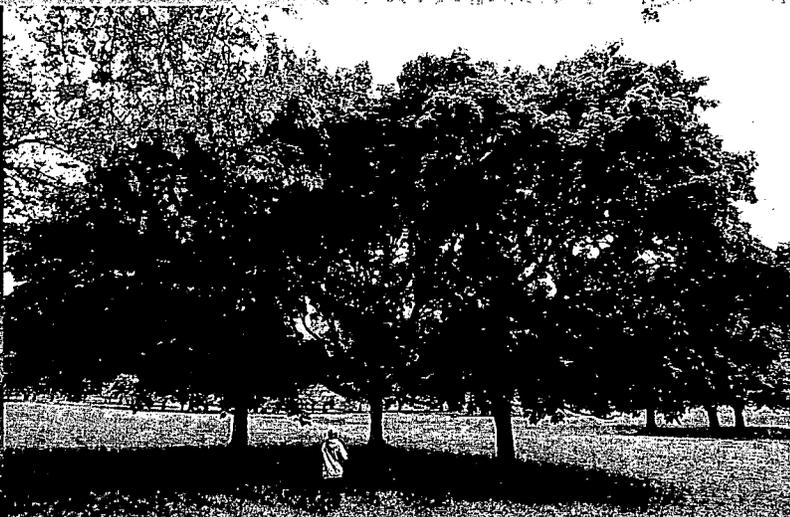
City Council

Raymond L. Tretheway III
Sandy Sheedy
Steve Cohn
Robert King Fong
Lauren Hammond
Kevin McCarty
Robbie Waters
Bonnie Pannell

District One
District Two
District Three
District Four
District Five
District Six
District Seven
District Eight

Table of Contents

Executive Summary & Highlights	3
Focus Area 1: Energy Independence	5
Focus Area 2: Climate Protection	7
Focus Area 3: Air Quality	9
Focus Area 4: Material Resources	10
Focus Area 5: Public Health and Nutrition	12
Focus Area 6: Urban Design, Land Use, Green Building and Transportation	13
Focus Area 7: Parks, Open Space, and Habitat Conservation	16
Focus Area 8: Water Resources and Flood Protection	18
Focus Area 9: Public Involvement and Personal Responsibility	21



Executive Summary

In December 2007, the Mayor and City Council adopted the City's first Sustainability Master Plan. This Plan is the City's road map to creating a sustainable City. It sets forth goals and long term targets that will guide the City and community towards reducing greenhouse gas emissions and a greener path of doing business and living.

The 2009 Implementation Plan is the City's plan over the next 12 months to move us towards our long term targets of sustainability. Also included in this document are the successes the City had in 2008. This document also contains the City's longer term intended actions for 2012 and 2030. Finally, because the City's 2030 General Plan contains many sustainability implementation items they were included in this Plan.

2009 Implementation Plan Highlights

Some of the major highlights of the implementation Plan include:

Performance contracting. In September 2008, through a competitive process, the City chose a performance contracting firm to review its facilities, make recommendations for energy efficiency improvements, and construct the improvements. This is a multi-year project that will be completed in phases. This year, staff plans to get the first set of facilities through all phases of the project and begin construction of the improvements.

Solar for City Buildings. The City is developing a Request for Proposals for Solar Photovoltaic Power Systems Installation. The City hopes to use a power purchasing mechanism to partner with a private company to install up to 5,000 kW of solar on City facilities.

Communitywide GHG Inventory. Staff is working with the county, incorporated cities, and SMUD to complete a communitywide greenhouse gas inventory. The inventory will provide greenhouse gas emissions by major sector. In addition, it will serve as the baseline for the City's Community Climate Action Plan.

Construction and Demolition Debris Recycling Ordinance. Staff will be bringing forward the Construction and Demolition Debris Recycling Ordinance for Mayor and Council adoption in early 2009. When this ordinance is fully implemented, diverting this material from the landfill to recycling will increase the City's recycling rate by 8-10 percent.

Sustainable Purchasing Policy. Staff began development of this policy in 2008 and will continue in 2009. This policy will set guidelines and possibly requirements for purchasing sustainable products for city operations.



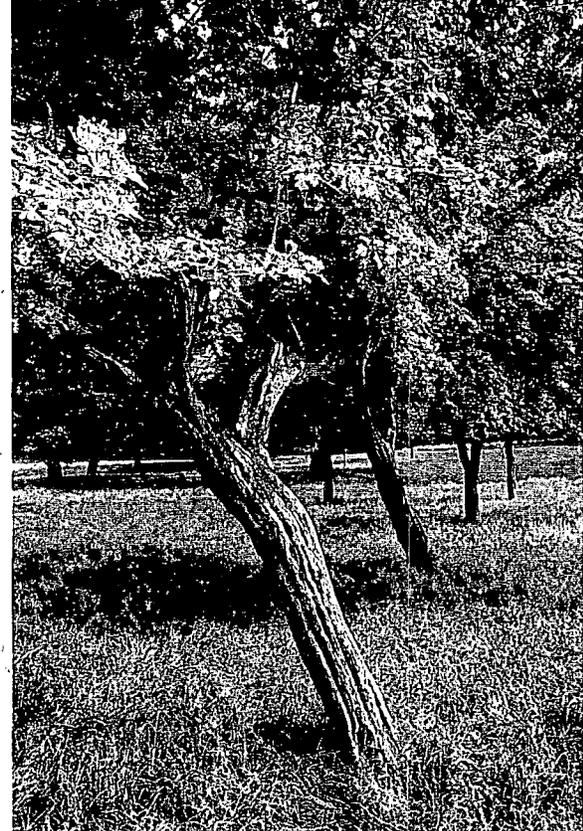
Sustainable Transportation Modes. Staff will conduct studies and prepare new standards, guidelines and ordinances to implement new 2030 General Plan mobility goals and policies, and will work on a number of projects to encourage the use of more sustainable modes of travel. These include a study to identify gaps in transit services and a strategy to fill the gaps, development of an ordinance for bicycle support facilities, and installation of an additional 150 converted parking meter poles into bike parking devices.

Countywide Green Building Program. Staff will coordinate with Sacramento County to establish a County-wide advisory committee to guide phase two of the Green Building Program.

How to Read This Document

The 2009 Sustainability Implementation Plan is a compilation of the key initiatives the City is committing to take on or continue to provide in 2008. Due to budget challenges the initiatives are limited to what we can do within existing resources. As additional budget reductions are made in 2009, there will be an evaluation of the Plan for any necessary adjustments.

Like the Sustainability Master Plan, the Implementation Plan is separated into nine focus areas. Within each focus area are the stated goals, 2008 accomplishments, the 2009 Implementation Plan, and longer term targets for 2012 and 2030. The key initiatives identified in the Implementation Plan for each focus area are linked to the Sustainability Master Plan targets, meaning everything planned for 2009 moves us towards the long term targets identified in the Master Plan. In addition, some of the action items have references (e.g. GPIP 4-6-20); this reference is to a General Plan implementation action. A number of the General Plan Implementation measures address core sustainability issues. Including them in this Implementation Plan helps to focus staff efforts and resources, and consolidates them in a format which highlights their progress.



1. Energy Independence

Goals: To significantly reduce the use of fossil fuels, improve the availability of locally and regionally produced renewable energy, replace or renovate obsolete energy or resource inefficient infrastructure (buildings, facilities, systems, etc.) and encourage and recruit green technology companies to locate in the City.

2008 Accomplishments

- **Department of Energy Solar Grant:** The City was awarded a \$400,000 grant by the Department of Energy; the goal of the grant is to: (1) install up to 5,000 kW of solar on city owned buildings by the end of 2010; (2) create awareness and assist SMUD in its goal of installing 16,000 kW annually through 2017 (and beyond); (3) develop a strategy to bring solar manufacturers to the City; (4) work with community colleges to increase the green collar work force.
- **Performance Contracting:** The City issued a Request for Proposals in July 2008 and selected a firm to review the City's facilities for energy efficiency improvements and construct the improvements. Work on this project will continue for the next 2-3 years.
- **Sustainability Preference Pilot:** The City is operating a pilot project that provides preferences for firms that show they operate in a sustainable fashion. Preferences are provided if firms meet certain energy independence criteria.
- **Citywide Policies.** Staff drafted and soon will implement, a Sustainable Operations Administrative Policy Instruction (API) that includes policies requiring City facility temperature set point be two degrees warmer in the spring and cooler in the winter and turning off lights and computers when not in use.

2009 Implementation Plan

Long-Term Target: *Work to maximize local and regional renewable energy production with the goal that fifty percent of the energy (electricity, natural gas, motor fuels) consumed within the SACOG region be produced within the SACOG region.*

2009 Actions:

- **Solar for City Buildings:** The City is developing a Request for Proposals for Solar Photovoltaic Power Systems Installation. The City hopes to install up to 5,000 kW of solar on City facilities.
- **Renewable Energy Secure Communities Grant- Exploratory Grant:** The City will explore applying for a California Energy Commission grant for \$200,000 to assist in developing a road map on how to convert the region from a fossil fuel based economy to a renewable energy economy.
- **Renewable Energy Secure Communities Grant- Pilot and Project Grants:** The City will explore applying for a California Energy Commission pilot and project grants to assist in buying down the cost of installing up to 5,000 kW of solar photovoltaic electricity on city owned buildings.
- Staff will continue to evaluate the feasibility of commercial and residential solar installation programs such as the Berkeley First Model.

Long-Term Target: *By 2030, energy consumption (electricity, natural gas, motor fuels) of City facilities on a unit basis will be 25 percent less than the baseline year of 2005.*

2009 Action:

- **Solar for City Buildings:** The City is developing a Request for Proposals for Solar Photovoltaic Power Systems Installation. The City hopes to work with a third party to install up to 5,000 kW of solar on City facilities.

2009 Implementation Plan (Cont.)

- **Performance Contracting:** This is a multi-year project that will be completed in phases. In 2009, staff plans to get the first set of facilities through all phases and begin construction.
- **Renewable Energy Secure Communities Grant- Project Grant:** The City will explore applying for a California Energy Commission grant for \$2,000,000 to assist in buying down the cost of installing up to 5,000 kW of solar photovoltaic electricity on city owned buildings.
- **Business Environment Resource Center (BERC) Certification.** Staff will continue to pursue BERC Certification for the Convention Center, Natomas Community Center, and Pannell Community Center.
- **LEED Certification.** North Natomas Library, Valley Hi Library, Pocket Library, Oak Park Community Center Expansion, and George Sim Community Center are all on track to be LEED Silver Certified for new construction.

Long-Term Target: *By 2015, provide leadership in the SACOG region to complete an energy surety plan.*

2009 Action:

- **Renewable Energy Secure Communities Grant- Exploratory Grant:** The City will explore applying for a California Energy Commission grant for \$200,000 to assist in developing a road map on how to convert the region from a fossil fuel based economy to a renewable energy economy.

Implementation Plan for 2012

- Increase the purchase of renewable energy to meet 10 percent of the City's operations annual electricity energy usage, above and beyond SMUD's Renewable Portfolio Standard goals.
- Increase the purchase of renewable energy to meet 10 percent of the City's operations annual fleet fuel requirements.
- Reduce energy consumption (electricity, natural gas) of City facilities on a unit basis to be 10 percent less than the baseline year of 2005.
- Reduce per capita fleet fuel consumption by 15 percent relative to baseline year of 2003.
- Reduce City Operations peak electric load to 25 MW (based on 2004 peak load of 28 MW) through energy efficiency, shifting the timing of energy demands and conservation measures.

Implementation Plan for 2030

- Per the California Energy Commission regulation, all new construction within City limits will be carbon neutral.
- Achieve carbon neutral fossil fuel energy use within City limits (electricity, natural gas, motor fuels).

2. Climate Protection

Goals: To meet the intent of the Global Warming Solutions Act (AB32) (or subsequent laws) for City operations, the community of Sacramento, and the SACOG region by working with community partners. Also, to develop a climate adaptation plan for the region by working with community partners.

2008 Accomplishments

- **Elected Officials Climate Discussion:** The City participated in a multi-jurisdictional development of an educational seminar for elected officials. Over 200 elected officials from the 6 county SACOG planning region were invited to the January 30, 2008 seminar.
- **Community Wide Greenhouse Gas Inventory:** The City is participating in a county wide greenhouse gas inventory; as part of the inventory, the 7 incorporated cities and the unincorporated part of the county are being studied. The City expects to have government and communitywide greenhouse gas inventories completed in early 2009.
- **Internal Operations Greenhouse Gas Inventory 2006:** The City's 2006 greenhouse gas emissions have been verified by an independent third party. The City now has 3 complete years of inventories, 2004 through 2006.
- **Internal Operations Greenhouse Gas Inventory 2007:** The City has hired a verifier to review the City's 2007 greenhouse gas inventory. Work on this project will continue in 2009.
- **AB32 Scoping Plan:** In an effort to assist the State in developing regulations for the implementation of AB32, the City provided comments to the California Air Resources Board draft scoping plan in August 2008. Staff will continue to monitor and comment on State regulations that will be drafted over the next 2 years.
- **Department of Energy Solar Grant:** The City was awarded a \$400,000 grant by the Department of Energy; the goal of the grant is to: (1) install up to 5,000 kW of solar on city owned buildings by the end of 2010; (2) create awareness and assist SMUD in its goal of installing 16,000 kW annually through 2017 (and beyond); (3) develop a strategy to bring solar manufacturers to the City; (4) work with community colleges to increase the green collar work force.
- **Performance Contracting:** The City issued a Request for Proposals in July 2008 and selected a firm to review the City's facilities for energy efficiency improvements and construct the improvements. Work on this project will continue for the next 2-3 years.
- **Sustainability Preference Pilot:** The City is operating a pilot project that provides preferences for firms that show they operate in a sustainable fashion. Preferences are provided if firms meet certain climate action criteria.

2009 Implementation Plan

Long-Term Target: *By 2020, City operations will have reduced carbon dioxide emissions to 54,000 metric tons (equal to 1990 levels).*

2009 Actions:

- **Renewable Energy Secure Communities Grant- Exploratory Grant:** The City will explore applying for a California Energy Commission grant for \$200,000 to assist in developing a road map on how to convert the region from a fossil fuel based economy to a renewable energy economy.
- **Renewable Energy Secure Communities Grant- Project Grant:** The City will explore applying for a California Energy Commission grant for \$2,000,000 to assist in buying down the cost of installing up to 5,000 kW of solar photovoltaic electricity on city owned buildings.
- **Internal Operations Greenhouse Gas Inventory 2007:** Work on this project will continue in 2009.
- **Draft Internal Operations Climate Action Plan:** Staff will continue to develop a Climate Action Plan for Internal Operations.
- **Performance Contracting:** The City issued a Request for Proposals in July 2008 and selected a firm to review the City's facilities for energy efficiency improvements and construct the improvements. Work on this project will continue for the next 2-3 years.
- **Solar for City Buildings:** The City is developing a Request for Proposals for a Solar Photovoltaic Power Systems Installation Project. The City hopes to work with a third party to install up to 5,000 kW of solar on City facilities.

Long-Term Target: *By 2020, the SACOG planning region will have reduced carbon dioxide emissions to 1990 levels.*

2009 Actions:

- **Renewable Energy Secure Communities Grant- Exploratory Grant:** The City will explore applying for a California Energy Commission grant for \$200,000 to assist in developing a road map on how to convert the region from a fossil fuel based economy to a renewable energy economy.
- **Community Wide Greenhouse Gas Inventory:** The City is participating in a county wide greenhouse gas inventory; as part of the inventory, the 7 incorporated cities and the unincorporated part of the county are being studied. The City expects to have government and communitywide greenhouse gas inventories completed in early 2009.
- **AB32 Scoping Plan:** Staff will continue to monitor and comment on State regulations related to the implementation of AB 32 in the SACOG region.

Implementation Plan for 2012

- Carbon neutral services will be available to all water and solid waste customers.
- City operations will have reduced carbon dioxide emissions to less than 66,000 metric tons (equal to 2,000 levels) through improved energy efficiency and purchase of renewable energy.
- Efforts will continue to meet 2020 reduction target for internal operations and community.

Implementation Plan for 2030

- Efforts will continue to meet 2050 reduction target for internal operations and community.

3. Air Quality

Goals: Continue to partner with Sacramento Metropolitan Air Quality Management District (SMAQMD) to provide assistance in meeting and maintaining air quality standards and encourage City Employees to drive less and engage in clean air practices.

2008 Accomplishments

- Established new citywide air quality policies in the 2030 General Plan on improving air quality and reducing greenhouse gas emissions, these policies will taken to the Mayor and City Council for adoption in early January 2009.
- Accela system in place for tracking the monitoring and enforcement of CEQA air quality mitigation measures.

2009 Implementation Plan

Long Term Target: *Work with community partners to reduce the number of "unhealthy," or "hazardous," air quality days by 10 percent based on an established baseline year.*

- Begin implementation of the new citywide air quality policies of the 2030 General Plan.
- Regulate development and build transportation infrastructure consistent with the 2030 General Plan.
- Recommend and develop new processes to improve monitoring and enforcement of all CEQA mitigation measures, including air quality measures.
- Explore ways to enforce existing City ordinance that limits idling of diesel vehicles used in construction projects.
- Develop a public information program to encourage use of alternative modes of transportation (e.g. public transit, carpool, walking, biking) to get to work.
- Continue to participate and partner with Sacramento Air Quality Management District programs such as Sacramento Emergency Clean Air & Transportation (SECAT) Program, Spare the Air Program and the implementation of the 2030 General Plan.

Implementation Plan for 2012

- Continue to implement the citywide air quality policies of the 2030 General Plan.
- Continue to regulate development and build transportation infrastructure consistent with the 2030 General Plan.

Implementation Plan for 2030

- Long-Term Target: Through implementation of the 2030 General Plan, achieve commute trip reductions and the reduction in household vehicle miles traveled commensurate with those modeled in the Blueprint preferred scenario.
- Continue to implement the General Plan through 2030 for multiple environmental and public benefits including improved air quality, reduced energy requirements, and greenhouse gas emissions per capita.

4. Material Resources

Goals: To reduce consumption, encourage the reuse and local recycling of materials, and reduce the use of pesticides and other toxic materials.

2008 Accomplishments

- Implementation of the March 2007 Business Recycling Ordinance. Achieved 20 percent diversion by commercial waste generators.
- Implementation of weekly curb side recycling has reduced residential disposal by approximately 20 percent.
- Continued outreach and education has made the public more sensitive to the purchase of toxic pesticides and other toxic materials.
- Increased curb side recycling from 12 tons/year (tpy) to over 36 tpy by converting from a three bin system to single stream recycling.
- Through outreach and education the public is more aware of the need to reduce consumption and recycle more.
- Implemented door to door universal waste pick up program.
- Began Investigation of Waste to energy program.

2009 Implementation Plan

Long-Term Target: *Implement an Environmentally Preferred Purchasing (EPP) policy which may include bid preferences to suppliers that meet minimum sustainability criteria as defined by The City of Sacramento.*

2009 Actions:

- Continue development of an EPP policy and prepare the policy for council approval.

Long-Term Target: *Reduce the use of pesticides in City parks and facilities relative to an established baseline year.*

2009 Actions:

- Continue development and implementation of the City's Intergrated Pest Management (IPM) program as described in the City's Pesticide Plan:
 - Provide at least one IPM training class for City applicators.
 - Develop IPM strategies for City's landscape maintenance contract services.
 - Develop pest fact sheets describing general IPM strategies for pests commonly managed by the City.
- Document quantities of pesticides used from Use Reports.
 - Begin collecting pesticide use data from facilities that have begun implementing a facility specific IPM program.
 - Continue collecting pesticide use data from Parks, Drainage, and Golf.

Long-Term Target: *Develop, implement and enforce a construction and demolition waste ordinance.*

2009 Actions:

- Bring the construction and demolition waste ordinance for approval by the Mayor and City Council in early 2009 (to be coordinated with SWA).
- Train City plan check staff on the implementation of the construction and demolition waste ordinance. (GPIP 4-7-18, 4-7-19)

2009 Implementation Plan (Cont.)

Long-Term Target: *Work with stakeholders to maximize landfill diversion given reasonable cost effectiveness constraints.*

2009 Actions:

- Increase the Franchise Hauler diversion from waste stream to 25 percent for 2009.
- Implement ongoing media campaign targeting recycling, household hazardous waste and oil recycling.
- Continue negotiations on implementation of waste to energy program. (GPIP 4-7-18)

Long-Term Target: *Increase efficiency of solid waste collection effort.*

2009 Actions:

- Continue to investigate an alternative landfill disposal site.
- Implement Route Smart software.
- Begin implementation of take back partnerships for universal waste. (GPIP 4-7-18)

Implementation Plan for 2012

- Continue implementation of the Environmental Purchasing Policy.
- 60 percent-65 percent total diversion from waste stream.

Implementation Plan for 2030

- 70 percent total diversion from waste stream.

5. Public Health and Nutrition

Goals: To improve the health of residents through access to a diverse mix of wellness activities and locally produced food, promote "greening" and gardening within the City, and create "healthy urban environments" through Restorative Redevelopment.

2008 Accomplishments

Promoting Public Health

- The City (through a County program) provides daily lunches to school children; some of the food provided is organic.

Promoting the Production and Purchase of Local Food

- Farmer's Markets are operated on a daily basis throughout Sacramento for approximately seven months per year.

2009 Implementation Plan

Long-Term Target: Promoting Community Gardening and the Localization of Food.

2009 Actions:

- Develop master plans for two pilot project Demonstration Landscapes (one ornamental, one food production) as tools to educate the public on how to garden and grow their own food.
- Work with community partners to encourage the purchase of locally produced food.

Long-Term Target: Cleanup, Redevelop, and Reuse of Brownfield Sites.

2009 Actions:

- The City will continue to evaluate purchase possibilities of key contaminated sites for reuse and redevelopment. Staff will focus its efforts on clean-up of contaminated sites, most of which is paid for through State and Federal grants. Remediation of blighted and under utilized sites is critical towards attracting new development and protecting public health.

Long-Term Target: Acquire land for additional public green space in underserved neighborhoods and infill development target areas.

2009 Actions:

- Finalize City land acquisition strategy, including financing, for adoption.

Implementation Plan for 2012

- Identify funding for and implement a regional demonstration garden and training center for public education.

Implementation Plan for 2030

- Achieve accessible park or recreational open space within 1/2 mile of all residences.

6. Urban Design, Land Use, Green Building and Transportation

Goals: To establish and continuously improve "green" building standards for both residential and commercial development – new and remodeled, reduce dependence on the private automobile by working with community partners to provide efficient and accessible public transit and transit supportive land uses, and reduce long commutes by providing a wide array of transportation and housing choices near jobs for a balanced, healthy City.

2008 Accomplishments

- Established new policies in the 2030 General Plan on urban design, land use, green building, and transportation, for adoption in January 2009.
- Established both LEED and Build It Green as rating systems for the City's Green Building Program.
- Completed new bikeways for Downtown and H Street in East Sacramento.
- Completed Ninos Parkway Trail.
- Converted 100 parking meter poles into bike parking devices.
- Incorporated a list of high priority projects derived from the Pedestrian Master Plan into the Transportation Programming Guide.
- Adopted the Housing Element of the General Plan which includes a goal to develop and rehabilitate housing and neighborhoods to be environmentally sustainable.

2009 Implementation Plan

Long-Term Target: *Work with community partners and adopt a LEED/BIG (Build It Green) type rating program for, new and retrofit, commercial and residential single family, multi-family and neighborhood development.*

2009 Actions:

- Coordinate with Sacramento County to establish a County-wide advisory committee to guide phase two of the Green Building Program. Complete a green building task force report to including but not limited to recommendations on:
 - Thresholds for minimum mandatory (versus voluntary) green building standards for new buildings and remodels, including procedures for implementation.
 - The feasibility of developing and implementing an energy and water retrofit ordinance for existing development.
 - Specific considerations for improving energy efficiency of residential rentals, in conjunction with the residential inspection program.
 - Upgrades for all existing housing units to be required at point of sale.
 - Incentives for private residential and commercial development to become either LEED or GreenPoint Rated projects.
- Develop amendments to the zoning code to establish additional standards for sustainable building and site design, including building and site design to minimize heat gain.

Long-Term Target: *Work with community partners to aggressively implement the City's General Plan, which is consistent with the SACOG Blueprint.*

2009 Actions:

- Implement new General Plan policies on urban design, land use, green building, and transportation, through regulation and review of development projects.

2009 Implementation Plan (Cont.)

- Develop and implement a green neighborhood design checklist to evaluate the sustainability of large-scale residential development in new growth areas.
- Develop and implement a program to promote sustainable development through regular regional coordination meetings that include local government representatives and other applicable agencies.
- Prepare a comprehensive update of the Infill Strategy, including integration of the City's Commercial Corridor Revitalization.
- Amend zoning code to create designations to support urban infill.
- Create a livability index to measure the success of the 2030 General Plan. Many of the indicators that will be used are common indicators used for sustainability (e.g. energy, waste, greenhouse gas emissions, VMT, mode split, infill development, equity, etc.).
- Adopt new Multi-family Principles that encourage SHRA funded new construction multi-family projects to exceed Title 24 standards.
- Update City's Traffic Impact Analysis guidelines to reflect the Level of Service (LOS) policies standards in the General Plan. (GPIP 4-6-2)
- Conduct a study to identify major barriers to connectivity and appropriate means and locations for overcoming those barriers, including potential river crossings. (GPIP 4-6-5)
- The City shall update and enhance its Transportation Systems Management Program consistent with the policies of the General Plan. (GPIP 4-6-7)
- Conduct a study to identify economic incentives for private transportation partners seeking to enhance mobility in the Central City, centers, corridors, employment centers, and other high-intensity districts in the city. (GPIP 4-6-8)
- Conduct a study to identify appropriate routes and roadway markings/signage for Neighborhood Electric Vehicles (NEVs) within the Central City and between urban centers and corridors. (GPIP 4-6-9)
- Work with walking advocates, such as WalkSacramento, to develop a comprehensive educational and promotional package for pedestrians. (GPIP 4-6-12)
- Review and update the Bikeway Master Plan every 3 years. (GPIP 4-6-14)
- Conduct a study to identify gaps in transit service provided within the city and strategies to fill them. (GPIP 4-6-16)
- Conduct a study of the existing street network to identify streets that can be more complete based upon adopted design standards and the policies in the General Plan. (GPIP 4-6-18)
- Develop and adopt an ordinance for bicycle support facilities (e.g., bicycle racks, personal lockers, showers, and other bicycle support facilities). (GPIP 4-6-20)
- Conduct a study of current parking requirements in the Central City and urban centers to evaluate options for dedicated parking spaces for car-sharing and incentives. (GPIP 4-6-21)
- Prepare and adopt a citywide transportation development impact fee program to support the development of all travel modes needed for new development. (GPIP 4-6-24)

Long-Term Target: Implement Bikeway Master Plan and Pedestrian Master Plan facilities to achieve an annual expansion of 5 percent of the existing system.

2009 Actions:

- Install an additional 150 converted parking meter poles into bike parking devices.
- Institute new public bike parking program for the public right-of-way.
- Continue to convert selected streets to two-way operation to make them more bicycle and pedestrian friendly.
- Institute a sidewalk grinding option for sidewalk maintenance, if feasible.

Implementation Plan for 2012

- Continue to implement the land use, transportation, and green building measures of the 2030 General Plan, including annual implementation reviews and five-year updates. Monitor energy usage and CO2 emissions reductions and adaptively manage development and transportation patterns to meet targets of Climate Action Plan.
- Update 2030 General Plan every 5 years (beginning 2013) to keep the plan current and relevant.
- Achieve 30 percent LEED-type certification of new construction within the City.
- Monitor and adaptively manage transportation development impact fee program and progress in filling transit gaps.
- Implement Bikeway Master Plan and Pedestrian Master Plan facilities to achieve an annual expansion of 1 percent of the existing system.
- Implement the policy requiring LEED (Leadership in Energy and Environmental Design) Silver certification for all new City owned buildings.
- Support the development of the South Line Phase II extension of the Sacramento Regional Transit System.
- Prepare and adopt multi-modal design standards that include all modes and vary the standards by facility type to imply a preference for selected modes based on the context. (GPIP 4-6-1)
- Identify options for informing transit riders of the availability and timing (e.g., headways) of public transit. (GPIP 4-6-4)
- Review and update the Bikeway Master Plan every 3 years. (GPIP 4-6-14)
- Conduct a study to analyze bike and pedestrian facilities on existing bridges to identify deficiencies and feasible improvements. (GPIP 4-6-17)
- Conduct a study to identify underused rights-of-way, such as street lanes, drainage canals, and railroad corridors to convert to bikeways and/or pedestrianways. (GPIP 4-6-19)

Implementation Plan for 2030

- Continue to implement the General Plan through 2030 for multiple environmental and public benefits including improved air quality, reduced energy requirements, and greenhouse gas emissions per capita.
- Achieve 80 percent LEED-type certification of new construction within the City.
- Support the development of the Downtown Natomas Airport extension of the Light Rail Transit system.
- Create a comprehensive bicycle and pedestrian network as outlined in the Bikeway Master Plan and Pedestrian Master Plan.
- Review and update the Bikeway Master Plan every 3 years. (GPIP 4-6-14)
- Review and update the Pedestrian Master Plan every 10 years. (GPIP 4-6-10)

7. Parks, Open Space, and Habitat Conservation

Goals: To increase the amount of publicly accessible and protected green space and riparian corridors, expand the urban forest, preserve farmland and habitat resources, and expand "green" design and maintenance practices in the City's system of parks, open space and golf courses.

2008 Accomplishments

- Included supportive policies and implementation mechanisms in the 2030 General Plan.
- Completed a Citywide park acreage inventory and a deficiency analysis by community planning area.
- Developed and adopted first Department of Parks and Recreation Sustainability Plan (2008-2015).
- Updated the 2005-2010 Parks and Recreation Master Plan to support City Sustainability agenda.
- Adopted Operational policy for Integrated Pest and Vegetation Management.
- Planted 400 new street and park trees.
- Implemented a modernized enterprise-wide asset management system for Urban Forest Services.
- Completed a GIS-based database of all publicly owned trees.
- Completed partial certifications by Audubon International of City golf courses (Haggin Oaks, Bing Maloney and Bartley Cavanaugh).

2009 Implementation Plan

Long-Term Target: *Adopt and implement guidelines to protect and preserve open space, prime farmland and key habitat, including wildlife and riparian corridors.*

2009 Actions:

- Implement 2030 General Plan Goals (LU 9: Open Space, Parks and Recreation and ERC 2: Parks and Recreation) and Policies (LU 9.1.1, LU 9.1.2, ERC 2.1.1, ERC 2.4.2).
- Develop Implementation program for 2008-2015 Parks and Recreation Sustainability Plan.

Long-Term Target: *Acquire land for additional public green space in underserved neighborhoods and infill development target areas.*

2009 Actions:

- Finalize citywide land acquisition strategy, including financing, for adoption.

Long-Term Target: *Develop restoration and management plans for natural open space areas in City parks system.*

2009 Actions:

- Develop plans for up to 4 pilot project sites. Incorporate "lessons learned" into City Park and Recreation Facility Design and Development Standards.
- Complete detailed mapping of all natural areas in the City park system, including those with formal protection status.

2009 Implementation Plan (Cont.)

Long-Term Target: *Develop an implementation plan to incorporate sustainable principles and practices into golf course and park design and maintenance, including public education and funding sources.*

2009 Actions:

- Develop Implementation program for 2008-2015 Parks and Recreation Sustainability Master Plan.
- Develop master plans for 2 pilot project Sustainable Demonstration Landscapes (one ornamental, one food production) as tools for public education.
- Complete full certification of all City golf courses as Audubon Cooperative Sanctuaries by Audubon International.
- Identify funding for and implement a new fully-automated, water efficient irrigation system at Bing Maloney Golf Course.

Long-Term Target: *Continue Implementation of Urban Forest Services Best Management Practices and ensure it is aligned with the Sacramento Tree Foundation Greenprint Initiative.*

2009 Actions:

- Continue tree planning and replacement programs with a goal of adding 1000 new trees annually.

Implementation Plan for 2012

Identify funding for and implement:

- Restoration and management plans for natural open space areas, and demonstration landscapes, at additional sites, including public education elements.
- Additional park acres across the spectrum of park types (pocket parks/urban plazas, neighborhood parks, community parks, regional parks, open space, parkways, trails/bikeways) for underserved neighborhoods and infill development target areas.
- Regional demonstration garden and training center for public education.
- Sustainable park design and maintenance citywide to achieve efficiencies, including water and energy use reductions.
- A street tree master plan for the central city area.

Implementation Plan for 2030

- Achieve accessible public park or recreational open space within 1/2 mile of all residences.
- Achieve restoration of and public access along all waterways and riparian corridors (Sacramento and American Rivers, urban creeks).
- Preserve all prime farmland and critical habitat resources.
- Achieve double the current canopy cover to meet the Greenprint goal of an average of 35 percent canopy cover.

8. Water Resources and Flood Protection

Goals: To Conserve the use and protect the sources of drinking water and work to provide exceptional flood protection.

2008 Accomplishments

- Flood control improvements at Folsom Dam were authorized and construction was initiated by the US Bureau of Reclamation.
- A new assessment was approved to fund SAFCA's share of 200 yr protection projects.
- SAFCA approved the Natomas Levee Improvement project and initiated construction. The project will ultimately provide 200 year flood protection for the Natomas area by the year 2013.
- Work continued on the South Sacramento County Streams Project with key portions of work on Florin and Unionhouse Creeks finished.
- Erosion control work was accomplished on the Natomas Sacramento River Levee.
- The planned number of water meters were installed.
- The City initiated a water conservation education and inspection program.
- In partnership with several water utilities, the City completed the American River watershed sanitary survey update.
- The "Keep Our Waters Clean" campaign continues to increase awareness among local recreationalists about drinking water sources and the use of pump outs and rest rooms. This program is run by the City of Sacramento Department of Utilities on behalf of a group of water utilities along the Sacramento and American Rivers.
- Coordinated development of Plant Services spill notification web site, including GIS (geographical information system) spill locator tool and electronic database.
- In partnership with Carmichael Water District, developed river travel time tools to estimate the amount of time it will take for water to move downstream from selected locations on the rivers to the City's drinking water treatment plant intakes.
- Led drinking water stakeholder efforts on rice pesticides, which supported the resulting low and non-detection of rice pesticides molinate and thiobencarb in the Sacramento River. Developed approach for tracking new and increased use pesticides, and identified a short list of pesticides for tracking or collection of additional.
- Achieved 5.7 percent water savings citywide, equates to 3 million gallons saved, valued at an energy savings of \$247,000 dollars.
- Residential customers
 - 1,109 water waste calls completed
 - 196 water audits completed
 - 396 Hi-low meter reads conducted
- Commercial, Institutional customers
 - 114 Water Audits completed
- Residential and Commercial Toilet Rebate Program
 - 372 Ultra-low flush and High Efficiency Toilets have been retrofitted and rebated.
- Public Outreach
 - Attended 7 city-wide special events
 - Actively participated in regional water efficiency programs that focused on water conservation for landscape, public awareness, education and water saving devices.

2009 Implementation Plan

Long-Term Target: *Continuously protect the ecological integrity of The City of Sacramento's primary drinking water source.*

2009 Actions:

- Continue implementation of the City's NPDES Stormwater Discharge Permit. (GPIP 4-7-17)
- Complete planning for the Sacramento River Watershed Sanitary Survey 2010 Update, in partnership with five other water utilities.
- Provide ongoing support for the voluntary spill notification program for the City's water treatment plants, including participation and leadership in water utility partnerships.
- Continue Sacramento and American River ongoing source water protection efforts, based on follow-up to watershed sanitary survey recommendations. (GPIP 4-7-17)

Long-Term Target: *Achieve 200 year flood protection.*

2009 Actions:

- Work with SAFCA to implement:
 - a. North Natomas Levee Project Phases I and II
 - b. South Streams project
- Finish work on Elder Creek, Union House and Florin between Morrison Creek and Franklin Blvd.
- Bid and start construction on Union House between Franklin and Center.
- Continue design on East Morrison Creek Levee between Union Pacific rail line and Union House Creek.

Long-Term Target: *Flood Risk Reduction*

2009 Actions:

- Revise and begin implementation of the City of Sacramento Comprehensive Flood Management Plan.
- Investigate feasibility of achievement of the Community Rating System (CRS) level 4 designation.

Long-Term Target: *Implement The City's Water Conservation Program.*

2009 Actions:

- Develop an Urban Drought Program.
- Continue providing daily service, education and programs on conserving the use and protection of sources of water to residents, commercial, industrial and institutional customers.
- Evaluate and analyze the level of compliance associated with implementing the Water Forum and California Urban Water Conservation Council Best Management Practices.
- Fulfill requirements of regional grants for the Toilet Rebate Replacement program and Water Conservation Incentives Project.
- Continue to work with Parks and Recreation Department on implementing grant opportunities to save water usage in open spaces.
- Review the City's Water Ordinance on mandatory restrictions, penalties and violations.
- Update the Integrated Regional Management Plan. (GPIP 4-7-9, 4-7-10)

Long-Term Target: *Continue to reduce Sanitary Sewer Overflows.*

2009 Actions:

- Reduce SSOs by 3 percent.



Implementation Plan for 2012

- Continue to implement the City's NPDES Stormwater Discharge Permit.
- Continue regional approach for American and Sacramento River Watershed Sanitary Survey Updates.
- Continue Sacramento and American River ongoing source water protection efforts, based on follow-up to watershed sanitary survey recommendations, including support of watershed protection efforts such as Keep Our Waters Clean.
- Work with SAFCA to complete the North Natomas and South Sacramento Streams Group levee projects.
- Continue water meter retrofit program.
- Continue implementation of City's water conservation program.
- Continue to reduce SSOs by 3 percent annually measured from 2003 baseline.

Implementation Plan for 2030

- Continue to implement the City's NPDES Stormwater Discharge Permit.
- Continue regional approach for American and Sacramento River Watershed Sanitary Survey Updates.
- Continue Sacramento and American River ongoing source water protection efforts, based on follow-up to watershed sanitary survey recommendations, including support of watershed protection efforts such as Keep Our Waters Clean.
- Work with SAFCA to achieve 200 yr protection for all levees protecting the City of Sacramento.
- Work with SAFCA to achieve continuous levee improvements.
- Continue to reduce SSOs by 3 percent annually measured from 2003 baseline.
- Finish meter retrofit project.

9. Public Involvement and Personal Responsibility

Goals: Adopt an action plan to support a regional vision that fosters a collaboration of citizens, businesses and green-initiative groups to become engaged and contribute to a sustainable future, promote innovative programs to educate and capture the public's imagination of global change, commit to leading by example and foster behavioral change throughout the City, and promote an ethic of conservation and stewardship.

2008 Accomplishments

- The initial phase of the City's sustainability Web site has successfully been launched.
- Thirty community volunteers have distributed 750 compact fluorescent light bulbs to Sacramento residents.
- City of Sacramento employees Reina Schwartz and Bob Chase spoke at the 2008 Green California Summit and Exposition.

2009 Implementation Plan

Long-Term Target: *Develop and maintain a City sustainability Web site to provide a resource to the community.*

2009 Actions:

- Continue developing the City's sustainability Web site to promote community engagement in City sustainability resources and programs.
- Encourage City departments to address sustainability on their Web sites and to link to the City's main one.

Long-Term Target: *Work with community partners to incorporate sustainability in their daily operations.*

2009 Action:

- Continue building on the City's existing partnerships, such as with Sacramento County's Business Environmental Resource Center (BERC) and Sacramento Municipal Utility District (SMUD), to promote energy efficiency for the business community and for individuals.

Long-Term Target: *Develop a network of green-initiative groups to share resources, foster partnerships and unify education and outreach efforts.*

2009 Actions:

- Identify and work with existing groups, such as schools, neighborhood associations, and non profits, to identify issues and opportunities for engaging them in sustainability efforts.
- Continue identifying and contacting target audiences with program information and resources.

Long-Term Target: *Develop a myriad of public information material tailored for diverse audiences and applicable to Web site development, media campaigns, and educational initiatives.*

2009 Actions:

- Work with community partners to ensure that all possible segments of the community are included in the City's sustainability efforts and outreach.
- Collaborate with partners to prioritize potential sustainability actions by relevance, potential impacts, and feasibility, and develop outreach materials promoting the most important ones.
- Continue improving and promoting the City's sustainability Web site.

2009 Implementation Plan (Cont.)

Long-Term Target: Launch a "green neighborhood" program.

2009 Actions:

- Promote existing programs and the City's efforts, including the carbon footprint rating system which will be selected and promoted.

Long-Term Target: Organize opportunities to showcase Sacramento's environmental leadership through hosting conferences, workshops and events.

2009 Actions:

- Participate in the 2009 Green California Summit and Exposition by encouraging targeted City employees to attend and some to be speakers. Attending employees will identify ways to share and use this experience to benefit the City.
- Participate in Earth Week celebrations by promoting the City's sustainability efforts and by recruiting groups and individuals, including City employees, to join.

Long-Term Target: Encourage residential participation to expand usage of community gardens.

2009 Actions:

- Continue seeking funding and other resources for demonstration gardens in each Council District.
- Work with existing groups to promote gardens, including front-yard ones, to provide affordable, fresh, locally-grown, and culturally appropriate food that nourishes families and their communities.

Implementation Plan for 2012

Conduct Education and Outreach

- Partner with Sacramento's diverse communities to engage citizens in specific issues and actions.
- Continue to convene sustainability forums.
- Refine public outreach strategies and expand the concept of the City as a steward of public resources.
- Build on programs to foster individual movement off the "grid."

Develop and Implement an Environmental Justice statement

- Collaborate with city agencies, nonprofit organizations, neighborhoods groups and community organizations to promote the issues of air quality, food availability, renewable energy systems, sustainable land use and the reduction of greenhouse gases.

Develop Partnerships

- Build on existing interest in sustainability issues to maximize resources that engage citizens to take action.

Implementation Plan for 2030

Conduct Education and Outreach

- Introduce a Personal Responsibility component to City School District's curriculum.
- Have all education and outreach materials translated into the six most used languages to meet current and future population needs.

Develop and Implement Campaign to Make Green Routine

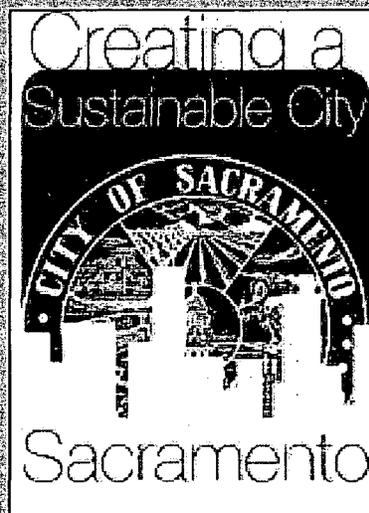
- Achieve "green" practices in residential households.

Develop Partnerships

- Expand existing partnerships with City agencies, educational institutions, neighborhood groups, businesses and community organizations to continue efforts to maintain the City's status as an environmental "green" leader.



**City of Sacramento, CA
Department of Parks & Recreation
Sustainability Plan 2008-2015**



James L. Combs, Director of Parks & Recreation
J.P. Tindell, Department Sustainability Leader

Table of Contents

Page No.

Executive Summary: "38-Point Plan"..... 4

The Issues..... 6

Why a Department (DPR) Sustainability Plan?..... 9

Focus Area 1: Energy Independence 11

Focus Area 2: Climate Protection..... 13

Focus Area 3: Air Quality..... 14

Focus Area 4: Material Resources 16

Focus Area 5: Public Health & Nutrition 19

Focus Area 6: Urban Design, Land Use & Green Building 21

Focus Area 7: Parks, Open Space & Habitat Conservation..... 23

Focus Area 8: Water Resources & Flood Protection 25

Focus Area 9: Public Involvement & Personal Responsibility..... 27

Implementation, Monitoring & Reporting..... 30

References..... 32

APPENDIX A: "Nature in the City" Program Ideas 33

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Adopted by Parks and Recreation Department and Commission on August 7, 2008

City of Sacramento, CA
Department of Parks & Recreation (DPR)
Sustainability Plan 2008-2015
Executive Summary: "38-Point Plan"

Following is a summary of the major targets of this Plan, to be achieved by 2015:

Focus Area 1: Energy Independence

1. Improve energy efficiencies in parks, community centers and daily administrative practices.
2. Expand the collection and use of solar power (e.g. farms, parking lots, roofs) and other renewable energy sources at parks and facilities (e.g. pools).
3. Replace or renovate obsolete energy or resource-inefficient infrastructure.
4. Comply with City's Administrative Policy Instructions (APIs) that promote sustainable city operations and energy efficiencies.

Focus Area 2: Climate Protection

5. Add additional trees to parks, track park tree loss and gain, and maintain trees for 100+ year permanence as an opportunity to offset the Department's carbon footprint.

Focus Area 3: Air Quality

6. Reduce carbon emissions from fleet vehicles and maintenance equipment via more efficient vehicles and equipment.
7. Achieve less driving on the part of DPR staff.
8. Increase bike trail access to DPR facilities and throughout the City to provide transportation alternatives.

Focus Area 4: Material Resources

9. Increase the reuse and recycling of materials (including "e-waste") in all facilities and operations.
10. Maximize composting of green waste within the park system.
11. Reduce consumption of material resources (e.g. reduced paper use and increased "green" purchasing).
12. Reduce the production of food waste by composting systemwide and providing public food waste composting drop off sites.
13. Develop and implement a department Integrated Pest Management (IPM) Policy and Plan for parks and minimize use of non-organics in landscape maintenance.
14. Comply with the City's Administrative Policy Instructions (APIs) that promote sustainable City Operations and waste reduction.

Focus Area 5: Public Health & Nutrition

15. Increase community gardens on parks and other City properties.
16. Increase supply of locally grown and organic foods available at DPR facilities.
17. Implement "edible landscape" demonstration gardens at select parks.
18. Increase opportunities for public education on gardening and nutrition.

Focus Area 6: Urban Design, Land Use & Green Building

19. Obtain LEED Silver certifications all new buildings, and pursue BERC certification for all existing community facilities and operations.
20. Improve sustainability guidelines for park design (improved water efficiency and recharge, renewable energy sources, recycled materials, native/low water use plants).

Focus Area 7: Parks, Open Space & Habitat Conservation

21. Develop management plans and staff expertise to manage and maintain undeveloped and natural areas in the parks system.
22. Increase the ratio of parks and open space area to City population, particularly in underserved neighborhoods.
23. Increase natural habitat protection and restoration efforts in the parks system.
24. Establish a "Nature in the City" Program to increase "wildness" within the Parks system and expand human access to and intimacy with nature.

Focus Area 8: Water Resources & Flood Protection

25. Reduce overall percentage of turf in the parks system.
26. Reduce water use for irrigation, targeting sites based on water audits on all parks/recreation facilities. Get all Parks facilities on the Centralized Irrigation System to maximize water use efficiency.
27. Increase the use of permeable pavements in parking lots.
28. Develop a master plan for a pilot ornamental "demonstration landscape" project as a tool to educate the public on how to landscape using native and low-water use plants.

Focus Area 9: Public Involvement & Personal Responsibility

29. Expand nature and sustainability education/interpretation opportunities (via programs/classes, signage, volunteer opportunities, other media).
30. Serve as a provider of educational information for all users of Parks facilities on "going greener" in all aspects of life, including the development and delivery of an organized public education/media campaign.
31. Require all users of Parks facilities and community centers to comply with sustainable practices, including the recycling program.
32. Develop incentives for public and staff participation in sustainable practices.

Implementation

33. **Staffing:** Determine additional staffing needs for Plan implementation.
34. **Financing:** Determine additional funding needed for Plan implementation and potential sources.
35. **City Reports:** Provide Sustainability Considerations information in all Parks and Recreation Commission and City Council Reports.
36. **Department Ranking:** Establish criteria/indicators and evaluate how "green" DPR is among other parks and recreation municipal organizations in the state of California.
37. **Policy:** Formally adopt the National Recreation & Park Association Environmental Stewardship Ethic and California Children's Outdoor Bill of Rights.
38. **Legislation:** Actively support state and federal legislation.

The Issues

From concerns over climate change, to drought-related water shortages, to air quality, society faces serious environmental issues locally, regionally, nationally and globally. These issues will affect the quality of life today and for generations to come. There is a growing body of evidence that a major shift in human behavior is necessary to overcome destructive tides of over-consumption and environmental degradation; and work for a better future for ourselves, our children and the numerous species that share our planet. Our existing economic systems, agricultural systems and automobile-oriented infrastructure are inherently unsustainable.

DEPENDENCE ON NON-RENEWABLE RESOURCES

Our economy and lifestyle is dependent on vast supplies of non-renewable resources, primarily derived from fossil fuels. As these resources are consumed, they will become increasingly scarce and more expensive. We must prepare for this eventuality to prevent a crisis in supply vs. demand. In addition, reducing our dependence on non-renewable fossil fuels reduces climate changing greenhouse gases and gives us greater energy independence.

OVER & EXCESSIVE USE OF NATURAL RESOURCES

We are using some renewable resources faster than nature can replenish them. Examples of this are consumption of water, lumber, wood and paper products, over fishing and soil depletion. Over-consumption of some renewable resources will cause damage and collapse of many ecosystems.

POLLUTION

Unintended by-products of manufacturing, consumption, and combustion of resources end up in our air, water, soil, and food. Many of these by-products are toxic. Material from consumption is left over as "waste" and buried in landfills. This leads to numerous negative impacts, including consumption of valuable land for landfills, pollution of that land and associated lands and waters with potentially toxic materials, and removal of resources (such as carbon and nitrogen) from natural cycles.

Our existing economic systems, built environments and cultures are inherently unsustainable. Achieving sustainability in contemporary times will require a major paradigm shift, essentially reversing long-standing trends of consumption and traditional development, and changing our philosophies and behaviors.

What is Sustainability?

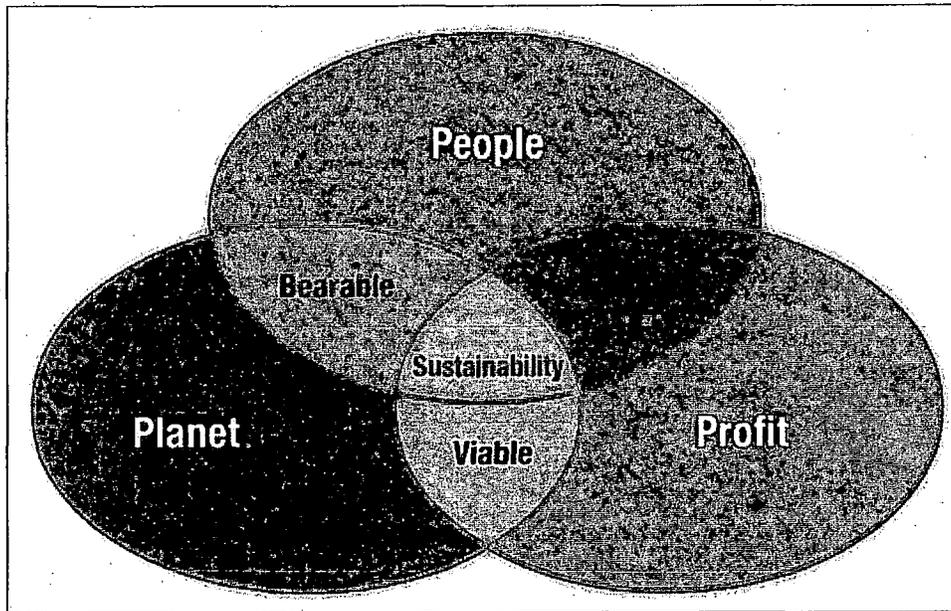
Sustainability is a broad term that generally means that a person or society lives within the means of what the Earth can provide over a long term. When a process is sustainable, it can be carried out over and over without negative effects on the environment or high costs. The definition of sustainability for the purposes of this *Plan* is:

“Sustainability meets the needs of the present without compromising the ability of future generations to meet their own needs.”

-- United Nations World Commission on Environment and Development

A sustainable society does not rely extensively on non-renewable resources as a basis for its economy. A sustainable society reduces consumption of renewable resources to levels that can be replenished by nature.

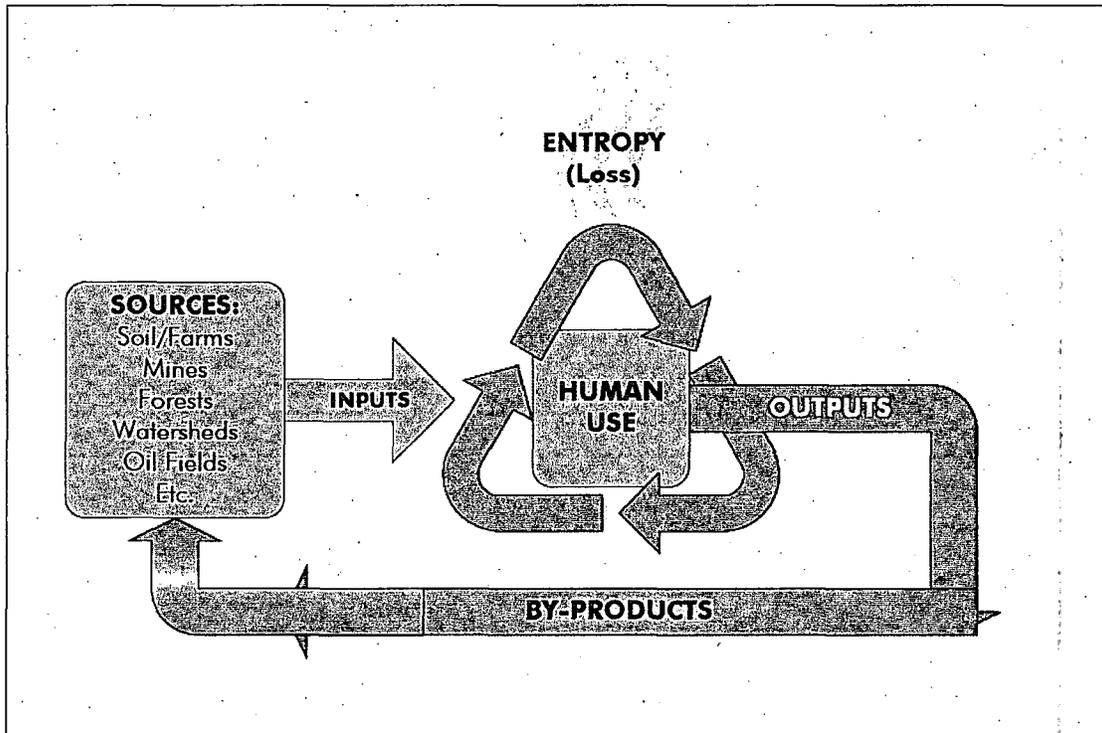
The “Triple Bottom Line” is a common theme for decision-making in a sustainable society. The Triple Bottom Line refers to the consideration of economic stability, environmental sustainability and social equity aspects of a particular decision.



Green Innovation, 2007

A sustainable society uses non-toxic and/or biodegradable materials and products and develops “cradle-to-cradle” processes to replace “cradle-to-grave” conventional processes of post-industrial society. In a “cradle-to-grave” process, materials are moved in a linear fashion rather than through one of nature’s endless cycling and recycling processes. The linear process moves materials that support life from their sources through human consumption that ultimately pollute the sinks (atmosphere, rivers, lakes, ocean, and landscape). Eventually, this one-way process also depletes and destroys the natural landscape on which it depends. A sustainable or “cradle-to-cradle” process is one that is

continually self-renewing. Linear one-way processes must be replaced by cyclic flows, continually regenerating materials that support life.



City of Sacramento, December 2007

Why a Department (DPR) Sustainability Plan?

On December 18, 2007, the Mayor and City Council adopted the City's first *Sustainability Master Plan (SMP)*. The *SMP* is meant to serve as a policy framework for the City of Sacramento to ensure that sustainability concerns are incorporated into the City's decisionmaking processes and daily activities/operations. The *SMP* is intended to be a means, and not an end, for creating a Sustainable City, and to serve as a tool for future operational and policy decisions. To proceed in a sensible way to change long-standing environmental practices, the *SMP* has nine focus areas, with associated goals and targets.

On February 12, 2008, the Mayor and City Council adopted the *2008 Sustainability Implementation Plan (SIP)*. This is a companion document to the *SMP*. It identifies key initiatives that staff plans to implement in 2008 to move the City towards the goals and targets identified in the *SMP*. The *SIP* was developed by subject matter experts on the City staff and the community. While it does not fund new City programs, the initiatives within the *SIP* will have a great impact on reducing energy usage by City facilities and will begin to educate City employees and the public on how to work and live more sustainably. The City will report on and adopt a new *SIP* annually.

The Department should be a major contributor to these citywide sustainability efforts. DPR manages approximately 3,300 acres of land and 351,000 sq. ft. of indoor facilities. It should be a leader and example in sustainability as the managers of the substantial physical assets of the City's public parks, open space, recreation and community facilities system.

In 2007, DPR generated 7% of City Operations' carbon footprint (Roberts, 2008). A carbon footprint is a measure of the impact human activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide (Carbon Footprint, 2008). The Department's contribution to the City Operations carbon footprint includes:

- Electricity consumption equivalent to 1,670 tons of carbon dioxide
- Natural gas consumption equivalent to 500 tons of carbon dioxide
- Fuel consumption equivalent to 1,370 tons of carbon dioxide

In an effort to be proactive and a leader in local environmental and resource stewardship, DPR developed this departmental level *Sustainability Plan* (the first City department to do so). Moving DPR towards increased sustainability will require a new consciousness and commitment to do things differently than they have been. It will require all staff and users of City parks and recreation services to:

- develop new and/or change existing programs,
- establish new priorities and change behavior,
- commit resources to sustainable causes, and
- collaborate with others to function sustainably.

The strategy for moving the Department toward sustainability focuses first on changes it has control over within the City's parks, open space areas, recreation and community facilities, and DPR offices. The *City Parks & Recreation Master Plan 2005-2010* details specific policies that protect natural resources, open space, water corridors and parkways. During the 2008 *Parks & Recreation Master Plan* update process, additional policies are being added that support sustainability. The *DPR Sustainability Plan* will function as a supplement to the *Parks & Recreation Master Plan*, providing added focus on sustainability of the Department. This *DPR Sustainability Plan* is also consistent with proposed new sustainability policies in the *City General Plan 2030*.

The *DPR Sustainability Plan* will support the citywide efforts, and will touch every department facility, operation, employee and user. To facilitate integration with and information transfer into the larger citywide effort, this document has been laid out in the same nine Focus Areas as the City's *SMP*:

1. Energy Independence
2. Climate Protection
3. Air Quality
4. Material Resources
5. Public Health & Nutrition
6. Urban Design, Land Use, Green Building & Transportation
7. Parks, Open Space & Habitat Conservation
8. Water Resources & Flood Protection
9. Public Involvement & Personal Responsibility

Within each of these focus areas, the goals found in the *DPR Sustainability Plan* were chosen to work within the scope and realm of influence of the Department, and to also further the goals and targets of the City *SMP*.

As a formal "kick off" to the effort to "go greener" in Sacramento Parks and Recreation Services, the Department held a Sustainability Workshop for approximately 100 key staff and appointed officials (Youth and Parks & Recreation Commissioners). The Workshop served to:

- educate on the key environmental issues of our times
- inform on the City's *Sustainability Master Plan and Implementation Plan*
- share practical applications for every day
- collect data on current practices ("what are we already doing?")
- brainstorm ideas on how to "go greener" on our work places and services
- recruit a Department "Green Team" to work on development of this *Sustainability Plan*
- share the Vision for sustainability for City parks and recreation services as follows:

VISION:

The Sacramento Parks & Recreation Department will be one of the top three most sustainable municipal parks and recreation organizations in California by 2015.

Focus Area 1: Energy Independence

The United States is dependent on foreign oil; the country imports 60% of its supply and that percentage increases each year (City of Sacramento, December 2007). World demand for oil continues to increase each year. Oil supplies are finite and at some point will decline. These facts could eventually translate into a worldwide shortage of gasoline and diesel fuels, negatively affecting the federal trade deficit, harming local job creation, and increasing national security concerns. In addition, the use of carbon-based fossil fuels creates greenhouse gas emissions.

It is estimated that it will take many years to transition from a fossil fuel economy to a renewable fuels economy. This time lag between the demands and supply of fuel technology and availability could create challenging market conditions. A gradual transition towards renewable energy is prudent.

DPR must continue to practice energy efficiency and pursue the expanded use of renewable energy sources. During the 2007 baseline year, the Department produced 1,670 tons of greenhouse gases as a result of electricity usage and 500 tons as a result of natural gas consumption. As electricity rates continue to increase, so do incentives to utilize solar energy.

Goals:

- 1.1 Improve energy efficiencies in parks and in daily administrative practices.
- 1.2 Expand the collection and use of solar power in parks and community centers.
- 1.3 Replace or renovate obsolete energy or resource-inefficient infrastructure.

Accomplishments:

1.1 Renewable Energy

- 1.1.1 Two solar water circulation pumps have been installed in Southside and Granite Ponds to prevent excessive algae growth. The energy savings from these two units is the equivalent to about 440,000 kW hrs per year (as compared to electric units). This equates to the annual energy used by about 40 homes or 50 passenger cars, thereby reducing equivalent carbon dioxide emissions (the leading greenhouse gas) by about 300 tons per year.
- 1.1.2 A pool cover is used at the city's only heated pool at the Sam Pannell Aquatic Center. This cover reduces heat loss from evaporation and radiation, thereby reducing energy used for heating. During swimming season, a pool tends to gain heat from the sun during the day, then lose it at night through heat radiation as well as evaporation. If a pool is heated, covering it at night will reduce heat loss, resulting in not only warmer temperatures but an energy savings over the course of a year. Almost all of a pool's heat loss—about 95 percent—occurs at the surface, mostly through evaporation to the air and radiation to the sky (USDOE, 2000). A pool cover is an effective means to keep heat (and water) in a pool by reducing evaporation of water from the pool when it is not in use, and reduces radiant heat losses.

- 1.1.3 Currently use solar power for the announcement billboard at Granite Park (dog park area).

1.2 Energy Efficiency

- 1.2.1 At Hart Senior Center, E. Moore Community Center and Belle Coolegge Community Center, staff monitor and adjust exterior and parking lot lighting to compensate for changes in daylight savings time. These lights are on timers set by daylight hours or on photocells.
- 1.2.2 In new community centers, buildings are designed to maximize natural lighting (e.g. windows and sky lights) and rooms have been supplied with automatic light sensors that turn lights off when rooms are not in use.
- 1.2.3 Some older community centers have been retrofitted with automatic light sensors, and when this has not been possible, center staff are conscientious to turn lights off when a room is not in use.
- 1.2.4 Many administrative buildings have programmable thermostats or energy management systems to control heating and air conditioning units.

Implementation Targets:

- 1.1 Improve energy efficiencies in daily administrative activities.
 - 1.1.1 Assist with development and implementation of the City's Administrative Policy Instructions (API) that promote sustainable City Operations and energy efficiencies through:
 1. Optimizing temperature settings in office and community centers, and
 2. Ensuring lights, computers and other equipment are turned off or in sleep mode when not in use.
 - 1.1.2 Upon adoption of the sustainable operations API, inform and train staff to comply with all sustainable practices. Post information on sustainable administrative practices on Department intranet and in City facilities.
- 1.2 Analyze feasibility and implement solar energy sources in park designs for exterior building lighting, parking lot lighting, restrooms, irrigation controllers, etc.
- 1.3 Install solar water circulation pumps in other park ponds that have difficulties with excessive algal growth.

Focus Area 2: Climate Protection

Human activities are altering Earth's climate by emitting greenhouse gases such as carbon dioxide into the earth's atmosphere. It is estimated over the next 95 years that the earth's average temperature will increase between 2° F and 10° F (City of Sacramento, December 2007). Predicted local impacts include, but are not limited to, the following:

- Heat waves will be more intense, will occur more frequently, and will be sustained for longer periods.
- In Sacramento, the number of days per year over 95° F will increase from an average of 18 days/year to as many as 110 days/year.
- Sierra snow pack will be reduced by up to 90%.
- Since more precipitation will fall as rain rather than snow, the risk of winter flooding may increase.
- Since much of our water storage in California depends on snow pack, water shortages in the summer will increase.
- Rising sea levels will cause increased salt-water intrusion into the Sacramento-San Joaquin Delta, potentially putting two-thirds of California's water supply in jeopardy. (City of Sacramento, December 2007)

The City's open space and park system provides areas for tree planting. Trees sequester atmospheric carbon as part of the process of photosynthesis. Through this process, carbon dioxide is converted into stored carbon, and this is why trees are sometimes referred to as 'carbon sinks'. By taking this carbon dioxide from the atmosphere, trees clean the air and offset pollution. Each tree planted offsets your environmental impact by utilizing about 0.8 tons of carbon dioxide emissions over its lifetime of 100 years (Carbon Footprint, 2008). In fact, if the Department can plant 800 trees per year, those trees would utilize enough carbon dioxide to offset the greenhouse gases produced by DPR's vehicle and equipment fleet (Roberts, 2008).

Goals:

- 2.1 Support the City's efforts to protect the climate through participation in the *SMP*.
- 2.2 Utilize tree planting as an opportunity to offset the Department's carbon footprint.

Accomplishments:

- 2.1 Continued support and participation in the City-wide planning efforts to protect the climate.

Implementation Targets:

- 2.1 Plant trees in new and existing parks to offset the Department's carbon footprint.
- 2.2 Participate in the City's climate action efforts in the following ways:
 - 2.2.1 Specify Energy Star, EPEAT Silver office equipment for purchase by City staff.
 - 2.2.2 Continue vehicle "right-sizing" program.
 - 2.2.3 Develop and make climate change presentations for community centers' staff and users. (Source: City *SMP*)

Focus Area 3: Air Quality

Air quality is a major environmental health issue for Sacramento, particularly in the summer when an inversion layer traps pollutants close to the ground. Vehicles and other mobile sources powered by combustion (such as lawnmowers) cause 70% of our air pollution (City of Sacramento, December 2007). The Sacramento region has been designated as a severe ozone non-attainment area by the U.S. Environmental Protection Agency (US EPA). In the summer, the Sacramento area fails to meet both state and federal standards for ozone. Although ozone in the upper atmosphere protects us from harmful ultraviolet rays, at the ground level it is an irritant that causes the eyes to burn, and it can damage lung tissue. Other problematic air pollutants include carbon monoxide, hydrocarbons, sulfur dioxide, and oxides of nitrogen (NOx).

The air quality in the Sacramento region has actually improved in the last decade due to cleaner cars, smog check requirements, reformulated gasoline, vapor recovery systems on gasoline dispensers, and state and federal regulations for solvents in paints and other consumer products. However, in the future the combined impact of more people, more cars, and more hot days due to global warming will make meeting air quality standards a greater challenge.

The Sacramento Area Council of Governments (SACOG) has estimated that there will be 1.7 million more people in the Sacramento Region in 2050 than there were in 2000, which will bring the number of residents to over 3.6 million. If present trends are continued, residents will drive many more miles annually and spend more time in their cars, which will have a negative effect on air quality. In addition, the increase in energy demand accompanying projected population increases will create the demand for additional power plants; this will further threaten our air quality.

The DPR maintenance vehicle and equipment fleet produced 1,370 tons of greenhouse gases in 2007. Consideration will be given to how to minimize this impact on the region's air quality.

Goals:

- 3.1 Encourage DPR employees to drive less.
- 3.2 Reduce department fleet and equipment emissions.
- 3.3 Increase bicycle/pedestrian friendliness and public transportation access to DPR facilities.

Accomplishments:

- 3.1 Maintenance routes have been re-organized to minimize vehicle travel time.
- 3.2 DPR staff currently walk or carpool to meetings when feasible. Some staff also utilize conference calls to reduce commuting time.
- 3.3 Allow staff to have flex schedules or telecommute.
- 3.4 The City fleet has a policy of owning a vehicle for 10 years or 100,000 miles and these vehicles are well maintained and smog checked.

Implementation Targets:

- 3.1 Update fleet to more fuel-efficient vehicles as technology improves for pick-up trucks. The City fleet is presenting alternatives for hybrid vehicles; however, Parks & Recreation currently does not have any hybrids. Almost all of Parks fleet vehicles are pick-up trucks; hybrid pick-up trucks are just starting to be developed and are limited in how much they can tow.
- 3.2 Reduce car travel time for Departmental meetings. For larger Departmental meetings, provide incentives for those that walk, bike, take public transportation or carpool to the meeting. For smaller meetings, encourage conference calls.
- 3.3 Reduce emissions from landscape maintenance equipment. Small gasoline-powered engines can significantly impact air quality, primarily because the air pollution reducing technology that has been adapted for large vehicle engines has not been adapted for smaller equipment. The emissions from gas-powered mowers and blowers account for as much as 5% of our reactive organic gases and carbon monoxide, according to the California Air Resources Board.
 - 3.3.1 Newly purchased equipment should meet the highest available standards for emissions reductions.
 - 3.3.2 The use of small landscape equipment will be reduced on "Spare the Air" days. Pertinent maintenance staff will be required to sign up for Air Alert on www.sparetheair.com (check the box to get the Daily Air Quality Forecast sent to you by e-mail). A Spare The Air advisory will be issued when the forecast is for 150 AQI or higher, and on these days use of small landscape maintenance equipment will be prohibited.
- 3.4 Focus grant and development efforts on promotion and completion of a regional trail system that can be used as a commuter route and a transportation alternative.
- 3.5 Use low or no-VOC building materials and furnishings in all DPR facilities (such as paints, finishes, furniture and carpeting).

Focus Area 4: Material Resources

Landfills have historically been the lowest cost alternative for eliminating waste; however, many factors are causing this traditional method to become less attractive:

- *Global warming:* Decomposing organic waste emits carbon dioxide and methane from landfills, both negatively affect global warming.
- *Diminishing resources:* Many useable, valuable resources are now buried in existing landfills.
- *Overuse of non-renewable resources:* Improved recycling can reduce stress on renewable resources and increase the life of existing landfills.
- *Land values:* Landfills consume valuable land and diminish surrounding land values.
- *Transportation costs:* Increased regulation and land values combine to cause many cities to ship their waste to landfills hundreds of miles away.
- *Energy production:* The energy content from a typical residential waste stream could possibly provide 25 to 50% of a home's energy needs.
- *Water quality:* Rain and landfills combine to create leachates, which can cause local groundwater contamination.

In addition, the use of toxic materials to meet the needs of citizens and businesses frequently causes unintended consequences; e.g. mercury in fish and DDT causing a decline in bird birth rates. Recycling and composting are more sustainable alternatives to landfills. Both reuse materials that would otherwise be wasted. Recycling is economical, saves energy, metals and forests.

Goals:

- 4.1 Increase the reuse and recycling of materials.
- 4.2 Maximize composting of green waste within parks.
- 4.3 Reduce consumption of material resources.
- 4.4 Reduce the use of pesticides and other toxic materials.
- 4.5 Reduce the production of food waste by composting.

Accomplishments:

4.1 Recycling and waste reduction

- 4.1.1 DPR directly participates in the City's recycling program for paper, containers, batteries and e-waste. Many of these citywide services offered to the public, such as battery drop-off locations, are provided at community centers. Also, three staff positions are funded through the Solid Waste Division to deal exclusively with recyclables in parks, seven days a week throughout the majority of the year. Wherever there is a trash can in a park, there is a recycling can next to it.
- 4.1.2 All computer equipment that is no longer in use is stored and made available as needed throughout the department or within community centers.
- 4.1.3 Where possible, the Department purchases recycled paper products.
- 4.1.4 In the beginning of 2008, the Department implemented the first City operations pilot worm composting program in City Hall offices.

Approximately 1/3 of Sacramento's solid waste stream is food waste, most of which could potentially be composted and turned into organic fertilizer.

- 4.1.5 Recreation Services commonly utilize recycled products for arts and crafts projects at community centers.
 - 4.1.6 New playground equipment and benches are primarily constructed out of recycled materials. These materials also tend to last longer and need to be replaced less frequently.
 - 4.1.7 In Fall 2007, maintenance staff began to either shred fallen leaves using mulching blades on mowers, or to move leaves into shrub beds. This reduces the amount of organic leaf material that ends up being disposed of in landfills.
 - 4.1.8 Completed construction of Two Rivers Trail (2-miles long) and Ueda Parkway Trail (4-miles long) out of rubberized asphalt which is made out of recycled tires and is an environmentally friendly alternative to traditional road paving. The California Waste Management Board estimates that a two-inch thick surfacing project uses over 2,000 scrap tires per mile.
- 4.2 Reduce chemical/pesticide use
- 4.2.1 When possible, community centers are utilizing environmentally friendly cleaning products.
 - 4.2.2 Pools are kept covered when they are not in use, which minimizes the need for chemicals. A cover helps keep the pool clean and extend the life of the chemicals in a pool (USDOE, 2000).
 - 4.2.3 In Fall 2007, maintenance staff began to either shred fallen leaves using mulching blades on mowers, or to move leaves into shrub beds. This mulch minimizes the need for fertilizer, as they slowly decompose and provide organic matter that helps keep the soil loose. This improves root growth, increases the infiltration of water, and also improves the water-holding capacity of the soil. Organic matter is a source of plant nutrients and provides an ideal environment for earthworms and other beneficial soil organisms.
 - 4.2.4 Two solar water circulation pumps have been installed in Southside and Granite Ponds to prevent excessive algae growth, thereby reducing the use of algaecides and herbicides.

Implementation Targets:

- 4.1 Reduce generated waste and material consumption in daily administrative and operational activities.
 - 4.1.1 Assist with development of and implement the City's Administrative Policy Instructions that promote sustainable City Operations and waste reduction through double-sided printing and copying, and recycling.
 - 4.1.2 Upon adoption of the sustainable API, inform and train staff to comply with all sustainable practices. Post information on sustainable administrative practices on Department intranet.
 - 4.1.3 Ensure that any newly purchased photocopying and printing equipment has the ability to do double-sided printing/copying when financially feasible.

- 4.2 Adopt policies to require that purchasing of goods and materials meets sustainability criteria.
 - 4.2.1 Assist with development of the City's Environmentally Preferred Purchasing (EPP) policy, which may include bid preferences to suppliers that meet minimum sustainability criteria as defined by the City of Sacramento. Upon adoption of this policy/API, ensure Department staff comply.
 - 4.2.2 Consider changing concrete specification for park construction to include more flyash instead of Portland cement while ensuring quality and performance of the products used.
(Flyash is a by-product of coal-fired electric generating plants which offers environmental advantages by diverting the material from the waste stream, reducing the energy investment in processing virgin materials, conserving virgin materials, and allaying pollution. The major component of Portland cement is quarried limestone. Mineral quarries can produce emissions of airborne pollution in the form of dust, gases, noise and vibration when operating machinery and during blasting in quarries, consumption of large quantities of fuel during manufacture, release of CO2 from the raw materials during manufacture, and damage to countryside from quarrying.)
- 4.3 Support adoption of a Citywide Integrated Pest Management (IPM) policy and plan; thereafter, develop and implement an IPM Plan for department maintenance and facility development and design activities. Identify opportunities to reduce use of pesticides, attend annual staff training in alternatives to pesticide use and IPM, and continually investigate new products/solutions. *(Source: City SMP)*
- 4.4 Implement a departmental food waste composting system by expanding the pilot worm composting program to other DPR offices. Provide public food waste composting drop off sites.
- 4.5 Install solar water circulation pumps in other park ponds that have difficulties with excessive algal growth.

Focus Area 5: Public Health & Nutrition

The City currently has wellness programs, school food programs, community gardens, trails and exercise facilities, many of which are managed by the Department of Parks & Recreation. By improving public health, health care costs can be reduced, thus assisting to improve City livability.

Goals:

- 5.1 Improve the health of residents through access to a diverse mix of wellness activities, education and healthy food.
- 5.2 Promote gardening within the City and locally produced food through more community gardens.
- 5.3 Promote the use of locally grown and organic food.

"Parks are essential to the health of individuals and communities. They offer recreation and renewal, promote exercise, reduce crime, revitalize neighborhoods, protect the environment, and bring communities together. Children without access to parks suffer higher levels of obesity, diabetes, asthma, anxiety, and depression."

Source: "A Healthier America? It's a Walk in the Park", Land & People, Trust for Public Land, Spring 2004

Accomplishments:

- 5.1 The mission of the Department's Recreation and Human Services organization is to build a viable community by ensuring opportunities for people to "Optimize the Experience of Living" by creating environments for engagement, relationship building, personal development and safety. The division has a number of units designed to provide a comprehensive range of recreation and human service programs through various delivery mechanisms. The Division also operates a variety of recreation facilities and is a leader in developing and fostering partnerships to maximize service delivery and meet the needs of a growing and diverse population.
- 5.2 DPR currently operates five permanent community gardens that allow residents to grow their own food:
 - Fremont Community Garden
 - J. Neely Johnson Park Community Garden
 - Danny Nunn Park Community Garden
 - Southside Park Community Garden
 - John Strauch Park Community Garden
- 5.3 Programs offered by Recreation and Human Services (Teen Services, 4th R, START, Older Adult Services, etc.) ensure that they serve healthy fruits and vegetables for snacks on a regular basis, affecting over 10,000 people each year. These programs also encourage field trips that are within walking distance.

Implementation Targets:

- 5.1 Develop a master plan for a pilot food production "demonstration landscape" project as a tool to educate the public on how to garden and grow their own food ("edible landscapes"). (Source: City SMP)

- 5.2 Develop more community gardens in City parks.
- 5.3 Increase supply of locally grown and organic foods available at Parks facilities.
- 5.4 Increase educational/recreational opportunities and programs on health, nutrition and gardening.

Focus Area 6: Urban Design, Land Use & Green Building

While standards exist for sustainable structures—"green buildings"—there are no standards to guide those who want to create sustainable landscapes as there are for green buildings. Yet landscapes have great potential to impact the environment. For example, the following information is from the American Society of Landscape Architects (ASLA) Sustainable Sites Initiative (SSI, 2007):

- *Greenhouse gas emissions.* Vegetation helps reduce the amount of carbon dioxide in the atmosphere, a greenhouse gas, by capturing and storing it for use in producing roots, leaves and bark. In the United States, urban trees capture up to 25 million tons of carbon each year.
- *Urban Climate.* Urban trees reduce the urban heat island effect and provide windbreaks. A study of five U.S. cities found that the presence of urban trees can result in substantial annual energy savings--\$553,000 per year in Berkeley, CA and \$187,000 in Cheyenne, WY.
- *Biodiversity.* Well-designed landscapes promote biodiversity with a mix of native species and ecologically appropriate non-native species. Approximately 85% of the invasive woody plant species in the U.S. were introduced for landscape or ornamental use, and approximately 5,000 plant species are estimated to have escaped to natural ecosystems.
- *Water waste.* Native plants and water-conserving landscapes reduce the use of scarce water resources.
- *Water pollution.* Careful plant selection and organic soil additions reduce the use of pesticides and fertilizers that can contaminate water. Good design and techniques like rain gardens or swales reduces runoff. 1995 EPA data showed that urban runoff contributed to damaging more than 26,000 river and stream miles.
- *Energy consumption.* Using local, sustainable materials takes less of a toll on our energy supply. The energy demands to produce and transport materials (embodied energy) can account for up to 15 percent of a building's energy use over its entire lifespan.

Goals:

- 6.1 Expand and implement "green" standards for new park and community center design projects.

Accomplishments:

- 6.1 The Parks & Recreation Department has 2 community center buildings that are soon to be LEED Registered:
 - Oak Park Community Center Expansion is a 10,000 SF single story structure attempting to achieve LEED Silver under the LEED New Construction program. This building is attempting to be 25% more energy efficient than a minimally code compliant building. Estimated completion date is February 2009.
 - George Sim Community Center Expansion is a 32,000 SF single story structure attempting to achieve LEED Silver under the LEED New Construction

- program. This building is attempting to be 15% more energy efficient than a minimally code compliant building. Estimated completion date is June 2009.
- 6.2 The Park Design and Development Standards for new parks outlines Sustainable Park Design Guidelines (Section III.D) that support a commitment to maintainable, sustainable park design and water conservation.

Implementation Targets:

- 6.1 Require LEED (Leadership in Energy and Environmental Design) Silver certification or an equivalent certification for all new community centers and recreation complexes (*Source: City SMP*). Pursue BERC certification for existing buildings.
- 6.2 Update the Sustainable Park Design Guidelines in the Park Design and Development Standards for maximum sustainability and ensure these guidelines are followed during the design process.
- 6.2.1 Ensure design guidelines are comprehensive, sustainable and maintainable. Consider sustainable design principles such as ground water recharge, solar power sources, composting or low flow restrooms, low water-use vegetation, and utilizing products made from recycled materials.
- 6.2.2 Develop a sustainable design “checklist” as a part of the design plan review process for new parks to serve as a reference for park designers to ensure incorporation of sustainable design principles.
- 6.3 Assist with the implementation of the Bikeway Master Plan and Pedestrian Master Plan facilities to achieve an annual expansion of 5 percent of the existing system. Complete construction of the Ninos Parkway Bike Trail and the North Natomas Regional Park Bike Trail by the end of 2008 (*Source: City SMP*).

Focus Area 7: Parks, Open Space & Habitat Conservation

A City's quality of life is greatly enhanced by extensive parks and open space areas. From small urban parks to large parkways, the presence of nature, open space and habitat areas are essential to human well-being and livability of our City. The preservation of open space and our rivers and creeks is essential to the health of our community. These areas provide opportunities for recreation, provide habitat for wildlife, and support alternative modes of travel. Parks and natural areas directly mitigate climate change by moderating temperatures from the urban heat island effect.

"... the ratio of parks to parking lots may be the best single indicator of the livability of a city..."
Lester R. Brown, Global Futurist

Goals:

- 7.1 Increase the amount of publicly accessible and protected parkland and green space.
- 7.2 Enhance, restore and protect existing natural resources including rivers, lakes/ponds, creeks, native vegetation, wildlife corridors and sensitive habitat.
- 7.3 Ensure compatible park and recreation uses adjacent to natural resources.

Accomplishments:

- 7.1 In 2004, City adopted the *Parks & Recreation Master Plan 2005-2010* that provides goals and policy for achieving a sustainable parks and recreation system and acreage goals for parks.
- 7.2 Enhances and restores wetlands or riparian habitat within parks. Recent projects include a vernal pool and native grassland restoration project completed at Del Paso Regional Park.
- 7.3 Plans and constructs low impact recreation trails for increased public access to riverfronts and revegetates riparian/urban stream corridors.
- 7.4 Re-develops Brownfield/closed landfill sites into parks.
- 7.5 Completed a draft inventory and restoration and management plan for the City's natural open spaces.

Implementation Targets:

- 7.1 Identify funding for the development of two maintenance specialty teams that focus on the maintenance and protection of natural open space areas (*Source: City SMP*). One team will be designated to the north area and one to the south area. Ensure that these teams are properly trained in:
 - Correct use of herbicides and pesticides in natural areas.
 - Endangered species protection.
 - Central Valley native plants and habitats.
- 7.2 Determine neighborhoods that are underserved for public green space and acquire land for additional public green space in underserved neighborhoods and infill development target areas. Complete analysis of additional acres needed and

develop implementation strategy, including financing options, relative to baseline year 2007. (Source: City SMP)

- 7.3 Seek grant funding to enhance or restore natural habitat in existing parks.
- 7.4 Ensure that new parks are designed to protect existing habitat, natural areas and waterways.
- 7.5 All new parks will be required to have 10% of their planted vegetation to be native to the Sacramento Valley. Small public, urban spaces will be exempt from this target.
- 7.6 Work with development community to identify sites in city parks that may be appropriate for habitat or tree mitigation. (Source: City SMP) Identify existing parks that would be able to sustain additional trees.
- 7.7 Establish a "Nature in the City" Program to increase "wildness" within the Parks system and increase human access to and intimacy with nature (see *Appendix A*), including a City sponsored public web site.
- 7.8 Develop plans for two restoration pilot project sites within the park system (Source: City SMP).
- 7.9 Develop and incorporate by reference into adopted Sacramento Parks and Recreation Master Plan:
 - Comprehensive sustainable park design goals, policies and guidelines.
 - Integrated Pest Management policy. (Source: City SMP)

"... the human child in nature may well be the most important indicator species of future sustainability."
Richard Louv, author, Last Child in the Woods

Focus Area 8: Water Resources & Flood Protection

Climate models indicate that California may experience an increased risk of summer water shortages in the future. On the other end of the spectrum, significant portions of the City are at risk from winter and spring catastrophic flooding. Flood protection in California is an intergovernmental challenge involving federal, state, local and special district governments, and private property owners. Existing City policy is to achieve 200-year flood protection. The Sacramento Area Flood Control Agency (SAFCA), sponsored in part by the City, has developed and has begun to implement a long term plan to achieve 200-year flood protection for the greater Sacramento area. The City will continue to support SAFCA's efforts in this area. DPR will contribute to these greater regional efforts when feasible.

Goals:

- 8.1 Conserve water and protect water quality.
- 8.2 Partner with local flood control entities to contribute to flood protection efforts.

Accomplishments:

8.1 Flood Protection

Worked closely with the Department of Utilities and SAFCA to allow joint use detention ponds in parks that can be utilized for water detention for flood control, water quality improvements, and recreation. Examples include Reichmuth Park, North Natomas Community Park, and Bahnfleth Park.

8.2 Water Conservation

- 8.2.1 Designed and installed centrally located irrigation systems in all new parks. Parks on this system can have their irrigation controlled from a main computer at the Corporation Yard. These systems can monitor current flow, check for breaks or leaks and turn off any offending zones or the main line. During periods of unexpected precipitation, maintenance staff also have the ability to shut down the irrigation to save water.
- 8.2.2 Maintenance staff have retrofitted irrigation systems in 55 existing parks to central irrigation (compared to 6 parks two years ago). This was done with grant funds that paid for additional booster pumps, new heads and new controllers at each park that utilize a repeater to communicate with the central system.
- 8.2.3 For parks not on the central irrigation system, the existing irrigation systems are regularly maintained by straightening heads, replacing broken heads, and ensuring heads are set to grade to minimize water use. Staff also ensure that each park has an appropriate irrigation schedule.
- 8.2.4 Maintained a standard in the design of new parks to use 20% less turf and more naturalized, drought-tolerant plant in park designs to minimize water use.
- 8.2.5 Pools are covered when not in use to minimize water evaporation. A pool cover can reduce water loss by 30 to 50 percent. (USDOE, 2000)
- 8.2.6 Installed one artificial turf ball fields (soccer) to reduce irrigation need.

8.3 Water Quality Protection

- 8.3.1 New parking lots are designed with grassy swales that filter overland run off to improve water quality.
- 8.3.2 As funding is available, dog park users are provided with dog waste sanitation bags and disposal receptacles to prevent bacterial contamination in overland runoff. Dog waste has been shown to contribute harmful bacteria to water as the waste is washed into urban creeks, ponds and lakes.

Implementation Targets:

- 8.1 Develop a master plan for a pilot ornamental “demonstration landscape” project as a tool to educate the public on how to landscape using native and low-water use plants. *(Source: City SMP)*
- 8.2 As a part of the park design process, landscape architects will develop water schedules specific for the plants, soils and topography at each individual park. This water schedule will then become the basis for the irrigation timing programmed into the central irrigation system for that park.
- 8.3 Landscape architects will maximize opportunities for ground water recharge in new park design.
- 8.4 Complete conversion of all old irrigation systems to be compatible with the central irrigation system. Out of 217 parks, 55 are currently on the centralized system.
- 8.5 Reduce “per acre” water use for irrigation by 20% over the 2007 baseline year.
- 8.6 Review irrigation schedules for existing parks to ensure that watering schedules are efficient and seasonally appropriate. Parks staff should make regular visual inspections to minimize wet and dry spots.
- 8.7 Ensure that all parks on the central irrigation system do not receive supplemental water during periods of precipitation, in the event that the precipitation provides sufficient water to the parks.
- 8.8 New parks will be required to have 10% of the vegetation to be drought-tolerant, low-water use plants.
- 8.9 A minimum of 10% of parking lot projects should be constructed of permeable pavement. Permeable paving allows rainwater to seep into the soil below the surface, filtering any associated pollutants and reducing storm water surges. Porous pavements also give urban trees the rooting space they need to grow to full size.
- 8.10 Apply principles of the Sacramento Stormwater Quality Partnership "River-Friendly Landscape Guidelines" and similar documents to park landscape design,

construction and maintenance. Provide opportunities for staff and public education on these principles.

8.11 Make use of recycled water for landscape irrigation should the City establish such a program.

Focus Area 9: Public Involvement & Personal Responsibility

Ultimately, sustainability effects every level and scale of organization, from the entire planet to local neighborhoods and individuals. In addressing the global and regional issues facing Sacramento, public involvement and personal responsibility is vital to effectively planning actions and implementing solutions. A central goal of this focus area is to facilitate communication, public outreach and civic engagement on sustainability – both within the Department and throughout the community.

Through a wide variety of programs and a broad-based network of partner organizations, — in schools, in parks, in community centers, and in neighborhoods — the Department of Parks & Recreation can promote an ethic of conservation and stewardship, and encourage and empower people to take actions that improve environmental quality and quality of life in and around their neighborhoods. The Department of Parks & Recreation also recognizes the value of training staff to be stewards themselves and examples for others.

Goals:

- 9.1 Provide training and incentives for Department staff to work in a sustainable manner.
- 9.2 Provide opportunities to the public to promote awareness of sustainability and natural resource protection.

Accomplishments:

- 9.1 On April 9, 2008, the Parks & Recreation Department kicked off their sustainability efforts by conducting a Sustainability Workshop. Approximately 100 staff participated in this event and learned about how they can be more sustainable in the workplace.
- 9.2 Community centers frequently provide educational materials to the public on sustainable practices such as recycling and energy conservation.
- 9.3 Recreation Services provide various curriculums and activities within their programs to educate the community on topics such as recycling and energy conservation.
- 9.4 The AmeriCorps program is currently teaching health, nutrition, and fitness curriculum to 2,400 students in an after school program. The curriculum is taught in 6-week sessions throughout the school year. Some of the curriculum that they are teaching involves gardening and recycling lessons. In terms of the gardening curriculum, the students get an opportunity to try different fruits and vegetables so that they become familiar with them, learn where/how they grow, as well as the varieties of fruits and vegetables. The AmeriCorps program has built 10 school based gardens while the rest of our AmeriCorps sites are growing their own fruits and vegetables on wheelbarrows.
- 9.5 Provides information in City publications on programs such as Recycling in Parks.
- 9.6 Developed several City University courses to educate Parks Maintenance staff on issues of sustainability. These courses include:

- Natural Resource Management in the City's Open Space Areas (35 City Employees trained to date)
 - Irrigation Management (over 75 City Employees trained to date)
 - Field Renovation (over 75 City Employees trained to date)
- 9.7 Used email and Department Intranet to disseminate information on sustainability.
- 9.8 Provided interpretive signage in nature areas to educate and encourage stewardship of natural resources. For example, an interpretive signage project has been recently completed at the Jacinto Creek Parkway.

Implementation Targets:

- 9.1 Develop a public relations strategy to educate and involve the public in the development and protection of the environment.
- 9.1.1 Use universal interpretive signage to educate the public and promote awareness of the natural resources found within the City's parks, which may be perceived as un-manicured and aesthetically displeasing.
 - 9.1.2 Promote volunteerism within parks to create opportunities for the public to be directly involved in the protection, maintenance, and enhancement of the natural and open space areas throughout the parks system.
 - 9.1.3 Serve as a provider of educational information for all users of Parks facilities on "going greener" in all aspects of life, including the development and delivery of an organized public education/media campaign.
 - 9.1.4 Require all users of Parks facilities and community centers to comply with sustainable practices, including compliance with the recycling program.
- 9.2 Develop and promote staff training for the protection and management of natural resources.
- 9.2.1 Develop a Green Team to promote sustainability throughout the Department.
 - 9.2.2 Hold an annual sustainability workshop to train and educate staff.
 - 9.2.3 Continue to offer City University course on Natural Resource Management.
 - 9.2.4 Utilize email lists and Department Intranet to inform staff on sustainability.
- 9.3 Develop incentives for public and staff participation in sustainable practices.
- 9.4 Expand recreational programming to include new educational programs that promote sustainability. Encourage participants of the 4th "R" Program to do a carbon "footprint" of their own household (*Source: City SMP*).

Implementation, Monitoring & Reporting

To adequately implement the goals and targets set forth in this *DPR Sustainability Plan*, tools must be provided to support ongoing monitoring and reporting. Initially, a matrix will be set-up for each target to help in this process. This matrix will include:

- What is the overall "cost-benefit" or impact of implementation of this target?
- What can be added to each targeted for it to be measurable? (e.g. how many new trees can be planted in parks during the timeframe of this *Sustainability Plan*?)
- What needs to be measured to determine success in meeting that target?
- Who is responsible within DPR to move the target forward and report on progress?
- Is there a cost associated with implementation of that target or can it be reached within the existing budget? Are there potential sources for additional funding?
- Is additional staffing needed to implement the target?
- Is this a target that can be reached within a short term (say, 2 years), or is a longer timeframe needed?
- Is there additional research that needs to be done before this target can be reached? (e.g. the cost vs. benefit of increased solar power installation? additional maintenance associated with permeable paving in parking lots?)

This matrix will be first completed during the Summer of 2008, and then will be reviewed and updated every six months, with a report made to the DPR Green Team and Executive Team. The information generated from this effort will also be reported quarterly and annually to the City's Sustainability Steering Committee to provide supportive information to their process. In the first few years, this *DPR Sustainability Plan* should also be reviewed annually to revise targets based on their feasibility and appropriateness.

Some procedural changes will also be made to ensure that planning efforts are sustainable. Staff will be required to provide Sustainability Considerations information in all Parks & Recreation Commission and City Council Reports. This will ensure that project managers review individual projects to give additional consideration to sustainable practices.

It is also recommended that the Department further promote sustainability efforts by adopting the National Recreation & Park Association (NRPA) Environmental Stewardship Ethic upon finalization by NRPA. The NRPA began development of this Environmental Stewardship Ethic at their May 2008 summit entitled "Environmental Stewardship For People, Parks and Public Lands". It provided a collaborative process for parks staff from across the country to begin constructing a framework for the ethical practices needed to sustain a national green agenda for parks and recreation.

DPR can also further its support of sustainability and public health by endorsing the California Children's Outdoor Bill of Rights. The California Roundtable on Recreation, Parks and Tourism – a volunteer group comprising public and private organizations from the federal, state and local levels – has created the Children's Outdoor Bill of Rights.

This Bill of Rights provides that every child between the ages of four and fourteen should have the opportunity to:

- Discover California's past
- Splash in the water
- Play in a safe place
- Camp under the stars
- Explore nature
- Learn to swim
- Play on a team
- Follow a trail
- Catch a fish
- Celebrate their heritage

The Bill of Rights has been endorsed by a variety of local and regional governments, including on a statewide level by Governor Schwarzenegger and locally by the Arcade Creek Recreation and Parks District.

The Department should also actively support any state and federal legislation that directly pertains to promoting sustainability in public parks and recreation services.

Finally, if the Sacramento Parks & Recreation Department maintains the vision to be one of the top three most sustainable municipal parks and recreation organizations in California by 2015, a list of criteria and indicators must be developed to evaluate how "green" the Department is among other parks and recreation municipal organizations throughout the state of California.

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APPENDIX A: IDEAS FOR COMPONENTS OF "NATURE IN THE CITY" PROGRAM

- ❖ Edible Landscapes
- ❖ Wildlife/Habitat Preserves, Natural Areas, Open Space Acquisition/Preservation
- ❖ Protection of biodiversity; connecting wildlands and watersheds
- ❖ Non-native/invasive plant species removal
- ❖ Nature Interpretation/Experiential Opportunities (programs, facilities) promoting human intimacy with nature
- ❖ Tree Planting
- ❖ Increasing "wildness" in regional City-County-Districts system of parks and open space
- ❖ Rooftop Gardens
- ❖ Community Gardens
- ❖ Urban Farms
- ❖ Environmental Stewardship Programs/Activities
- ❖ Publications on where to find Nature in Sacramento (maps, websites, hiking/biking/walking guides, etc.)
- ❖ Horticulture Programs/Facilities
- ❖ Enhanced and sustainable landscaping with private development
- ❖ City sponsored web site for "nature places" to visit locally

Publications

Dolan, Maria & Kathryn True. 2003. *Nature in the City Seattle*. The Mountaineers Books.

Louv, Richard. 2008. *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*. Algonquin Books of Chapel Hill.

Other Cities/Projects

www.natureinthecity.org: San Francisco, CA (...*"connecting urban people with nature where they live"*)

City of San Francisco, CA Recreation & Park Department Natural Areas Program:
<http://sfnap.org/>

Portland, OR Metro Council "Nature in Neighborhoods" Program:
<http://www.oregonmetro.gov/index.cfm/go/by.web/id=13745>