

STORM WATER MANAGEMENT

The City also installed approximately 25 new catch basins along The Strand designed with open bottoms to allow infiltration of dry and wet weather low flows into the underlying sandy soil. This is effectively another diversion which utilizes the natural sandy soil to divert and treat runoff which would otherwise discharge at beach outfalls near the shoreline.

Bacteria Control Measures

Manhattan Beach is subject to the bacteria total maximum daily load (TMDL) limitation set by the Regional Water Quality Control Board (Water Board). This TMDL requires the City to meet certain bacteria discharge limitations in dry-weather (May-November) storm water and urban runoff discharges. However, some exceedance violations are allowed in the winter rainy season. It is likely that these limits will be included in the new municipal NPDES permit

"A TMDL is a calculation of maximum amount of a pollutant that a water body can receive and still meet water quality standards." (EPA).

TMDLs are pollutant specific; the City of Manhattan Beach must comply with the bacteria TMDL.

to be issued in 2008. There is no single strategy that completely insulates the City from discharges to the ocean. Recognizing the need to minimize the potential for exceeding bacterial limits, the City has established a multi-faceted program that includes the efforts highlighted both above and below, including but not limited to flow diversions and infiltration, pollution control measures, and commercial business inspection programs.

Most strategies fall into one of two categories: 1) controlling pollution at or near the source, such as street sweeping, restaurant programs, retention/infiltration basins, and 2) end-of-pipe solutions, such as storm water diversions and CDS units. Storm water diversions, however, have obvious limits during high flow storm events because only low flows are permitted into the sanitary sewer system. More promising are the efforts being made to reduce flow by using and promoting infiltration techniques on both private and public property. Staff continues to explore opportunities to promote private, on-site infiltration, and has already initiated a pervious pavement project at eight municipal lots. Siting infiltration systems that can accommodate flows from larger watersheds will become an even great focus as we continue our efforts to meet the bacteria TMDL requirements.

Commercial Business Inspection Program

Restaurants have been identified as likely contributors to storm water pollution, particularly for bacteria or nutrients that feed the growth of bacteria, through improper cleaning practices or poor housekeeping that allow food particles, oil, grease, trash and cleaning products to flow into the street, gutter and/or storm drain system. Problematic activities include washing kitchen mats outside, not maintaining trash enclosures, leaving trash bins and grease receptacles uncovered, and dumping liquid waste into trash bins. Restaurants may also discharge excessive quantities of fats, oil and grease into the sanitary sewer system which can cause blockages and contribute to sewer overflows. New food establishments are required to construct covered trash enclosures to prevent trash and debris from entering the storm drain.

Restaurant Certification Program

In cooperation with the Santa Monica Bay Restoration Commission (SMBRC), Manhattan Beach, along with Hermosa Beach, Redondo Beach, and Torrance, has implemented the Clean Bay Restaurant Certification Program targeting food service establishments that have

the potential to impact storm water. The SMBRC developed a comprehensive 28-point storm water inspection checklist that requires 100% compliance in order to receive Clean Bay Restaurant Certification by the SMBRC; it far exceeds the minimum requirements of the municipal NPDES Permit. During 2006/07, the City of Manhattan Beach inspected all of its restaurants using the checklist and conducted follow up inspections for those that did not achieve certification during the first inspection. Seventy percent of Manhattan Beach's food service establishments earned this award in its first year of implementation. Restaurants achieving the certification are provided a Clean Bay Restaurant certificate and encouraged to post it in a highly visible location such as in a window near entrances. The SMBRC also publicizes the names and locations of Clean Bay certified restaurants on its website (www.santamonicabay.org) and through press releases.

The municipal NPDES permit requires that cities inspect restaurants twice within each five year period.

Illicit Discharges

The City strictly enforces the prohibition against illicit discharges, which are defined as any material other than storm water that gains entry into the storm drain system, unless the discharge is explicitly exempted under the municipal NPDES permit. Examples of illicit discharges include dirt and debris from construction projects, restaurant oil and grease disposed of outdoors, swimming pool water that is not properly dechlorinated, household hazardous waste (motor oil, paint) and dirty, soapy water. Manhattan Beach's Illicit Connections and Illicit Discharges Elimination (IC/ID) Program documents, tracks and reports all such reported cases. This allows the City to monitor trends in types and frequency of illicit discharges and to target public education activities toward problematic behaviors.

Public Works' inspectors typically inspect for and respond to illicit discharges entering the public rights-of-way, although such discharges may be reported by City employees or citizens. In the event of an illicit discharge, the responding officer, inspector or employee will give instructions to the violator to clean the spill by a specific time and will issue a warning notice or citation. If the clean up does not occur as requested, a citation and/or contact with the appropriate City department or agency is initiated for clean up assistance. The City identified 27 illicit discharges in FY 2006/07, eleven of which were issued Violation Warning Notices. All illicit discharges were cleaned up promptly.



City Facilities

The City's Public Works maintenance yard has two vehicle wash pads which direct low flow runoff to a clarifier for pretreatment to remove oil and grease, and then to the sanitary sewer. A second clarifier is combined with a CDS unit equipped with floating filters to capture hydrocarbons and debris from parking lot runoff.

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The City is also in the process of converting 130,000 square feet of impervious public parking lot space to pervious pavement which will effectively infiltrate rainfall without generating runoff. This project has been made possible by a \$900,000 grant from the State Water Resources Control Board awarded in 2006.

The City is currently designing a cover to be constructed over the upper portion of the Public Works maintenance yard where material stockpiles, trash and waste are stored until they are hauled off. Once completed, the cover will prevent the trash and waste from mixing with rainwater, effectively eliminating contaminated runoff from this site.

Lastly, Manhattan Beach provides 20 "mutt mitt" stations throughout its parks, dog runs, The Strand, and greenbelt to encourage pet owners to pick up after their pets. Pet waste (bacteria) is a significant contributor to storm water pollution if left on the ground and mixed with storm water or urban runoff.

Other Notable Programs

Pollution Control Measures

Street Sweeping

Many local cities have enhanced street sweeping programs, which include increased street sweeping frequency, more thorough coverage and additional focus on commercial districts. Additionally, other cities do not allow an opt-out program, thereby effectively sweeping every street near the curb where pollutants are likely to accumulate.

Catch Basins

Locally, catch basin inserts and catch basin screens/debris excluders of all types are among the most commonly installed municipal best management practices to control trash from entering the storm drain system. Cities subject to the trash Total Maximum Daily Load (TMDL) requirements are particularly compelled to install such devices for trash removal. For example:

- The City of Los Angeles has installed 9,970 catch basin inserts along with 7,278 catch basin screens.
- Santa Monica has installed 500 catch basin inserts.
- West Hollywood has installed 195 catch basin debris excluders along with 57 catch basin inserts.
- Hermosa Beach has installed 41 catch basin inserts in high priority areas (downtown near the ocean and the beach) to collect and dispose of trash. Monitoring of annual catch basin cleaning records assists in properly categorizing catch basins for priority and determine if they should be either promoted or demoted in terms of frequency of cleaning.
- Six other regional cities have installed between 5 and 70 catch basin inserts.
- The County of Los Angeles has installed a significant number of catch basin inserts in County-owned catch basins.



Pollutant Excluder Devices

A total of 105 gross pollutant separators (69 CDS units and 36 Stormceptor units) have been installed within the Santa Monica Bay-Ballona Creek watershed management area (including those installed in Manhattan Beach). Other cities in this watershed management area, as defined by the Regional Water Quality Control Board, include: Beverly Hills, Culver City, El Segundo, Hermosa Beach, Los Angeles (portion of), Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica and West Hollywood.

Flow Diversion & Infiltration

Many cities, including Manhattan Beach, have installed a variety of structures and devices to capture, infiltrate and/or divert urban runoff flows, including infiltration trenches, porous paving, bioretention facilities, biofilters, cisterns/dry wells, clarifiers, downspout filters, infiltration pits, synthetic turf, vegetated swales, wet ponds, and grease interceptors. The City of West Hollywood retrofitted one of its municipal parking lots with pervious pavement three years ago. The parking lot has since experienced heavy rains and has proven to be a successful project.

Commercial Businesses

Many cities have a fats, oil & grease (FOG) program (and related ordinances) to eliminate improper discharge of these contaminants to the sanitary system. They require grease control devices for restaurants and other food service establishments to reduce the discharge of FOG into the sanitary sewer system, thereby reducing the incidence of sanitary sewer blockages and overflows that may reach the storm drain system and ultimately the ocean. This FOG program will soon be required of all cities under new state requirements.

SUSMP Requirements

Under its Urban Runoff Pollution Ordinance, the City of Santa Monica has expanded its definition of the types of new and redevelopment projects that must implement the SUSMP requirements identified in the municipal NPDES permit. For sites less than one acre, SUSMP requirements now apply to:

1. A vacant site or a site where 50% or more of the square footage of the structures is removed prior to construction.
2. A site where the owner is making repairs, alterations or rehabilitation in an amount exceeding 50% of the replacement cost of the building or structure.
3. A project which will result in improvements to 50% or greater of the square footage of a building, creates or adds at least 5,000 square feet of impervious surfaces, or creates or adds 50% or more of impervious surfaces.
4. A City project which would not otherwise be required to comply with the urban runoff ordinance (via 1-3 above) but where runoff controls are feasible and economical.

This definition effectively requires all new single family homes, as well as any significantly re-modeled homes, to meet SUSMP standards.

New developments in Santa Monica are also strongly encouraged to incorporate design elements to maximize infiltration as part of compliance with the SUSMP treatment volume standards. These include maximizing permeable surfaces, redirecting runoff to permeable surfaces and/or storage containers, and removing or designing curbs, berms, etc. to provide access to permeable and landscaped areas.

Programs & Practices for Future Consideration

Pollution Control Measures

Ensure street sweeping signs are installed on all City streets

The City should consider eliminating its opt out petition program and make mandatory the posting of street sweeping signs on all public streets and alleys. This would result in cleaner streets and effectively reduce the amount of pollutants reaching the storm drain system and ultimately the beaches and ocean.

Cost: \$ Feasibility Rating: 3

In high priority areas of the City, install devices to reduce or eliminate trash from entering the storm drain system and/or reaching the ocean

Evaluate the maintenance needs of and consider the following: 1) placing trash excluders/screens over catch basin inlets, which are designed to remain closed during dry weather but are spring loaded to open under heavy rain conditions to prevent flooding; 2) installing filters on storm drains that discharge directly onto the beach; 3) installing CDS units near large outfalls where there is no dry weather diversion.

Cost: \$\$\$ Feasibility Rating: 1

Flow Diversion & Infiltration

Evaluate additional opportunities to divert contaminated dry weather flows

Although the City has constructed several dry weather diversions, there are additional locations where diverting flows to the sanitary sewer system are desirable. One example is the 1st Street storm drain, which discharges flows near the shoreline. Available sewer line capacity and accessibility are required elements for any diversion opportunity identified for consideration.

Cost: \$\$\$ Feasibility Rating: 1

Evaluate additional storm water infiltration opportunities

Where dry weather diversions are not feasible, consider appropriate locations to infiltrate dry weather and first flush storm flows. The sandy soils present in Manhattan Beach, particularly in areas west of the greenbelt, are optimal for such solutions. Also investigate the possibility of diverting low flows from CDS units to the sand for percolation.

Cost: \$\$\$ Feasibility Rating: 1

Commercial Business Inspections

Enhance the City's current business inspection program for key sectors

Consider enhancing publicity, public awareness and understanding of the City's Clean Bay Restaurant Certification program and give restaurant owners and managers greater incentive to participate. Also consider enhancing the program to address fats, oil & grease (FOG) by requiring control devices for restaurants and other food service establishments to reduce FOG discharges into the sanitary sewer system. This would reduce the likelihood of sanitary sewer blockages and overflows that can occur when FOGs are inappropriately discarded, and also reduce the maintenance resources required by the City to inspect the adjacent sewer pipes. An enhanced FOG program

is part of the Sewer System Management Plan being developed for the City under a separate regulatory program for sanitary sewer collection systems.

Cost: \$\$\$ Feasibility Rating: 1

Illicit Discharges

Increase enforcement and monitoring to reduce illicit discharges

Consider enhancing public education about what constitutes illicit discharges and focusing on those sectors most often violating the City's illicit discharge ordinance.

Cost: \$\$ Feasibility Rating: 2

City Facilities

Evaluate opportunities to upgrade City facilities and/or operations to reduce contaminated runoff

At a minimum, consider installing or implementing the following at City-owned facilities: 1) installing a re-circulating car wash system at the maintenance yard to save water and filter/reuse it prior to discharge to the sanitary sewer; 2) installing underground storage tanks or injection wells to catch runoff and allow water to percolate (or be pumped) into the soil; 3) developing site-specific percolation basins to catch and infiltrate storm water runoff; 4) retrofitting more parking lots with pervious pavements and other pollutant capturing devices.

Cost: \$\$\$\$ Feasibility Rating: 1

Municipal & Building Code Requirements

Consider further modifications to municipal and building code requirements that effectively target pollutants of concern

Areas for consideration include: 1) enhancing trash enclosure requirements, 2) maximizing retention of storm water on-site to reduce contaminated runoff, and 3) imposing administrative penalties for SUSMP violations.

Cost: \$\$\$ Feasibility Rating: 3

Consider establishing a revenue stream to support the implementation of storm water pollution control requirements

Approximately every five or six years, the municipal storm water NPDES permit is readopted. With each cycle, the Los Angeles Regional Water Quality Control Board modifies and adds additional storm water pollution control requirements that cities must comply with to control storm water and urban runoff pollution.

The City's capital and operations needs, as well ensuring compliance with the municipal NPDES regulations, are rapidly exceeding the City's financial ability to fund other much-needed improvements. Compounding the problem, any storm drain fee increase must be approved by residents under Proposition 218 guidelines, thus limiting our ability to increase fees as an additional revenue stream. Absent a rate increase, other funding sources should be evaluated to create a long-term viable source for storm water NPDES compliance.

Cost: \$\$ Feasibility Rating: 3

PROCUREMENT

Policies

Procurement is often one of the most overlooked aspects of preserving our environment. Yet, manufacturers will always respond to consumer demands. If large consumers such as federal, state, and local governments demand environmentally-friendly products, production of such items will increase, and as a result, prices will decrease.

City Programs & Policies

The City of Manhattan Beach purchases millions of dollars of goods and services each year. The Finance Department is responsible for the purchasing cycle, which includes acquisition, and in some cases, disposal of products at the end of useful life. While the City does not currently have explicit policies regarding the procurement of environmentally friendly products and services, or for environmental product disposal, steps have been taken informally in number of areas. These include purchasing recycled goods and materials, using more eco-friendly products, and implementing energy conservation measures (see side bar on opposite page). Additionally, the City consistently looks for opportunities to further its green purchasing portfolio.

Other Notable Programs

Clearly, environmentally friendly purchasing has grown from simply buying recycled products to addressing other environmental concerns. A growing number of public agencies have adopted policies that encourage selecting products that conserve natural resources, are less hazardous, more energy and water efficient, and less toxic. Further, the federal government has defined "procurement best practices" as those that typically involve identification of environmentally preferable products (EPP) and services which have a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose. The product or service comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation maintenance or disposal.

Today, there are a growing number of organizations dedicated to assisting the public in green product specification and selection, and green policy development. For example, the North American Green Purchasing Initiative (NAGPI - www.cec.org) has developed a self-assessment tool that provides information on how other organizations are implementing environmental purchasing, and highlights areas

where we can improve our own current practices. The self assessment tool includes questions such as:

- Is your office equipment Energy Star (or equivalent) certified?
- Have you implemented ways of greening day-to-day activities (i.e. use of ceramic cups instead of Styrofoam)?
- Do employees practice paper-conserving activities (i.e. reuse of scrap paper or defaulting office printer to double-sided printing)?

The State of California Department of General Services (www.green.ca.gov) has developed a number of eco-friendly specifications and resource lists in response to environmental purchasing laws applicable to state procurement. The City may "piggyback" on those contracts and obtain quantity discounts on the selected items. The state's website includes listings of vendors who provide the environmentally friendly products, as well as copies of the specifications, costing information, and performance data.

Responsible Purchasing Network (RPN) (www.ResponsiblePurchasing.org) is a national network of procurement-related professionals dedicated to socially responsible and environmentally sustainable purchasing. Its website includes best practices, cost-benefit calculators, and buying guides.

Environmental Certifications & Labels

The complexities of product content vis-à-vis environmental impacts require the ability to parse data and often analyze competing impacts. This can make product specification development complex, labor intensive, and in some cases, costly. As a result, many cities and public agencies have adopted policies and practices that rely on third party environmental certifications and labels to assist in their purchasing decisions. The following are examples of such certifications:

Electronic Product Environmental Assessment Tool (EPEAT) www.epeat.net

EPEAT is a system in which electronics manufacturers declare their products' conformance to a comprehensive set of environmental criteria in eight environmental performance categories such as energy star rating, packaging, materials selection, etc.

Green Seal - www.greenseal.org

Green Seal provides science-based environmental certification standards for a variety of products including paints and coatings, floor care products, and paper products.

Recycled & Environmentally Preferable Products Used in the City

- Recycled tire stops (for parking spaces)
- Refurbished modular furniture
- Recycled rubber matting for City playgrounds
- Recycled copier paper
- Recycled hand towels
- Recycled tissue paper
- Recycled office products (e.g., post-it notes, file folders)
- Reusable canvas bags for weekly Council packet deliveries
- Pre-cast concrete refuse and recycling containers
- Lead-free primers in law enforcement ammunition purchases
- Paint with low Volatile Organic Compounds (VOCs)
- Alternative-fuel vehicles (see also the Vehicle Fleet and Fuel Usage section)

Energy & Resource Conservation Measures

- Sharing computer printers
- Installing Waterless urinals
- Purchasing/subsidizing public transit passes for students, older adults, and the disabled
- Using Energy Star compliant monitors and low mercury fluorescent lamps

Proper Resource Disposal

- Recycling empty laser toner cartridges
- Recycling scrap metal (iron, brass, etc.)
- Recycling mercury vapor lamps
- Properly disposing of electronic and universal wastes (E-waste and U-waste)

PROCUREMENT POLICIES

Chlorine Free Products Association

www.chlorinefreeproducts.org

The Chlorine Free Products Association is an independent not-for-profit accreditation and standard setting organization. The primary purpose of the association is to promote total chlorine-free policies, programs, and technologies throughout the world. They publish a list of acceptable paper products.

Greenguard Environmental Institute (GEI)

www.greenguard.org

GEI establishes acceptable indoor air standards for indoor products, environments, and buildings. GEI's mission is to improve public health and quality of life through programs that improve indoor air. Product certifications range from furniture and paints to office equipment and sealants.

The use of these certifications simplifies the procurement process by allowing the City to purchase EPP without having to perform complex analyses. Additionally, because some manufacturers may label their products green when in reality they are not, these certifications give buyers assurance that they are actually making a difference with their purchases.

Many environmentally preferable products are defined by the following characteristics:

- Recyclable, biodegradable, or compostable
- Containing high recycled content
- Made from renewable materials
- Bio-based
- Resource efficient, pollution & waste reducing
- Refurbished, reusable or repairable
- Containing low volatile organic compounds (VOC's)
- Low toxicity, chlorofluorocarbon (CFC)-free
- Heavy metal free (lead, mercury, cadmium)
- Carcinogen-free
- Use of alternative energy source

While these are important attributes, many policies go on to state that the products may be used only if there is no reduction in safety, quality, or effectiveness.



Programs & Practices for Future Consideration

While we have made progress toward our goal of being environmentally smart with our purchasing dollars, there are a number of actions we can take to enhance our "green" purchasing.

Develop environmentally friendly procurement policies

Consider developing procurement policies that evaluate the environmental impacts of the goods and services we utilize. The procurement policy should consider the following alternative approaches:

1. Evaluate the price differential between environmentally preferable products and standard products

Consider establishing a premium offset rate, whereby the prices for eco-products are considered equal for bidding purposes if they are within a set percentage above the standard product pricing. Such a policy can be implemented selectively by

commodity to address current market conditions (ex: 6% preference for paper, 15% for vehicles, etc.). A similar preference system has been applied in other circumstances by the government in promoting a particular program or purpose (e.g., "buy local" and disadvantaged business enterprise preferences). While this approach levels the playing field for higher priced eco-products, it may also have the unintended consequence of encouraging suppliers to keep prices higher for eco-products knowing that there is a built-in price advantage.

Of course, there are also examples of environmental products that actually cost less than their non-eco counterparts, including recycled toner cartridges and re-treaded tires. But for the most part, environmentally preferable products typically carry a higher price tag. As a result, some public agencies have developed policies to address the economic impact of going green, while also addressing the need to remain fiscally responsible.

Cost: \$\$ Feasibility Rating: 1

Cost Differences in Products

There is often a cost differential between standard products and "green" products. For example:

- Recycled copy/print paper costs 6% to 30% more than virgin paper.
- Biodiesel costs approximately two to forty cents more per gallon than standard diesel fuel, depending upon the blend rate.
- A gasoline-electric hybrid vehicle carries a price premium of nearly \$5,000, or 30% over the non-hybrid version.
- Compact fluorescent lamps (CFL) typically have an initial cost up to seven times more than an incandescent light bulb.

2. Consider environmentally friendly products with cost as a secondary criterion

Consider selecting products based primarily on the environmental preference, giving less regard to the cost differential. The City could specify products based upon their environmental impacts, and accept bids based upon competing products only of similar eco-friendly design/content. For example, we know that hybrid-powered vehicles are more expensive to purchase than similar gasoline-only powered vehicles. But because we prefer the environmentally friendly hybrid, we specify the more costly vehicle despite the availability of lower priced alternatives.

Cost: \$\$ Feasibility Rating: 1

3. Consider pricing preference, whereby all products compete on price or value

Consider the impacts of treating eco-friendly and standard products as equal, as long as the competing products meet the required minimum specifications. If a bid for an environmentally friendly product is received, the product will be selected only if it is the best value, environmental impacts notwithstanding.

Cost: \$ Feasibility Rating: 1

4. Consider lifecycle cost analysis to assist in selecting goods and services

Consider lifecycle costs as the primary criterion. The product's lifecycle cost is a useful tool when comparing products; it takes into account not only the initial purchase price of the product, but also the operational costs, maintenance costs and salvage value at the product's end of useful life.

For example, using the purchase of a Honda Civic gasoline-electric hybrid; while the total initial cost shows a \$5,000 price premium, there are clearly reduced operating costs from better fuel economy, and a higher resale value. However, maintenance costs are also higher than with the standard gas model. Using the calculator provided on the Responsible Purchasing Network website (www.ResponsiblePurchasing.org), the true total cost of this hybrid over its useful life is only \$2,174 or 13% above the cost of the gasoline-only version. Given this information, if a policy was in place that alternative fuel vehicles were to be given a 15% pricing preference, this lifecycle cost analysis would allow for the purchase of the vehicle within policy.

Similar comparisons can be made for products such as compact fluorescent lamps (CFL), which initially cost as much as seven times more than the cost of an incandescent lamp, but are much more energy efficient and longer lasting. As a result, the lifecycle cost of operating a CFL is actually approximately one-fifth of the cost of the incandescent lamp.

Cost: \$ Feasibility Rating: 1

Ultimately, the City's procurement practices should continue to allow the maximum amount of flexibility and should encourage expanded procurement of green products and services where opportunities exist. A rigid pricing policy is not necessary. Additionally, existing environmental labeling and certification programs can help guide our purchasing decisions. These labels and certifications (Energy Star, Green Seal, etc.) simplify the procurement process by allowing the City to purchase eco-products without having to perform complex analyses. Finally, because some manufacturers may label their products green when in reality they are not, these certifications provide assurance that we are actually making a difference with our purchases.

Evaluate additional environmentally friendly products and services

Examine the following categories and types of products as we continue to enhance our green product portfolio:

Supplies

- Recycled copy paper from 100% post consumer waste (use 35% currently)
- Remanufactured laser toner cartridges
- Rechargeable batteries
- Biodegradable food service plates, utensils, and refuse bags
- Eliminate individual-serving bottled water
- Eliminate the use of Styrofoam products

Fleet

- Biodiesel (see also the Transportation and Parking section)
- Retreaded/recycled tires
- Re-refined motor oils and coolants
- Vehicles that have the capability to accept alternative, blended fuels for future use

Infrastructure

- Rubberized asphalt or other recycled street materials
- Wood products that are certified to be sustainably harvested

Facilities

- Air hand dryers for restroom use in lieu of paper towels
- Low-polluting office equipment such as printers
- Standardize on Green computer workstations

Landscape Products

- Environmentally friendly pesticides
- Drought-tolerant plants

Supplier Relations

- Encourage suppliers to take back and reuse packaging materials
- Require suppliers to take back equipment for reuse, refurbishment or recycling
- Require printed materials to be on recycled paper and labeled accordingly
- Require bids and proposals to be submitted in electronic format, when practical; or, require any written materials to be printed double-sided.

Many of the products and services listed above can be implemented at low to moderate costs, although further cost-benefit analyses will need to be performed to fully understand the financial impacts to the City.

Cost: \$ Feasibility Rating: 1



COMMUNITY

Involvement

Developing a Structure for Implementation

As part of this report, the Green Team was tasked with developing models of community involvement for our future "green" initiatives. As documented throughout this report, the responsibility for implementing comprehensive environmental improvements, which range from energy conservation to green procurement, currently spans across all City departments and will, in the future, require the continued and coordinated support of these departments, the private sector, and residents. The ultimate success of the City's green initiatives is not solely dependent on our municipal efforts, but will necessitate involving the private sector and effectively educating our community about the collective impact of individual citizen and business actions.

Due to the broad range of issues and the complex political and practical considerations required for achieving our environmental goals, the Green Team recommends that City Council create a formal commission as one of the first steps toward managing and providing focus to this multifaceted effort. As envisioned, the environmental commission would:

- Advise Council on environmental policies and programs
- Recommend priority areas for "green" improvements
- Guide creation of a Climate Action Plan as a part of an overall Environmental City Plan
- Review status and progress reports related to the environmental plans
- Guide development of further roles for community involvement

Other Notable Programs

Many cities across the country have formed city-supported environmental groups as an important step to involve and engage their communities. During our research for this report, we found the two primary models of city-supported environmental groups are: 1) commissions, which are usually more formal, have defined membership, serve as an advisory body for a broad range of issues and have standing meeting schedules, and 2) committees, which are usually less formal, have memberships that may fluctuate, address more narrowly-focused issues and have ad-hoc meeting schedules.

Our research indicates that the more formal commission model is best suited for serving as an advisory body and is especially appropriate if the assigned responsibility will cover a broad range of issues. The committee

model is best suited for guiding research and making recommendations related to narrowly defined issues and program specific actions. Due to the comprehensive and ongoing nature of the environmental initiatives the City of Manhattan Beach will be addressing, staff recommends establishing a new permanent environmental commission.

Commissions

An example of a formal and permanent environmental commission is the City of Santa Monica's Task Force on the Environment (this group has the qualities of a commission as described above, but has "task force" as a descriptive name). Established in 1991 by the Santa Monica City Council, the Task Force was created to advise the City Council on environmental programs and policy issues and was the driving force behind the development of Santa Monica's Sustainable City Plan. The Task Force, which meets monthly, is composed of seven members, selected by the City Council, with expertise in specific environmental areas including energy, water, transportation, storm water, waste reduction, land use and public education.



Another example of a formal environmental commission is the Green Ribbon Commission appointed by the Mayor of Seattle, Washington. Mayor Nickels initiated a national effort to tackle climate disruption by spearheading the U.S. Mayors Climate Protection Agreement, with the goal of reducing global warming pollution to seven percent below 1990 levels by 2012. To meet that goal in Seattle, the Green Ribbon Commission, which includes 18 leaders from Seattle's business, labor, non-profit, government and academic communities, was charged with developing local solutions to global climate disruption and guiding the development of a Climate Action Plan. The Commission issued its report and recommendations to Mayor Nickels in March 2006.

Committees

An example of a less-formal environmental committee is the "building" committee in Hermosa Beach. The committee does not have a formal, designated name or appointed members, but has been effective in making sound recommendations regarding a number of "green" building guidelines for development in Hermosa Beach. This committee grew out of the interest and efforts of a handful of energetic and forward thinking architects and builders that are also residents of Hermosa Beach. They began meeting this past spring and gained the support of several Councilmembers and the City Manager. The committee's goal is to generate ideas for specific building guidelines that would be practical and feasible for immediate implementation. The group set a self-imposed sunset term of approximately eight months for their work. Given their goals and short timeframe, they have served as an effective committee focused specifically on building issues, as opposed to a long-term advisory commission.



Programs & Practices for Future Consideration

Consider one of three alternative structures for City and community involvement

Staff has identified three alternative structures for City Council to consider as we move forward with the first step for community involvement.

1. Assign environmental responsibilities to an existing commission

Manhattan Beach currently has five active Commissions – Cultural Arts, Library, Parking and Public Improvements, Parks and Recreation, and Planning. One possibility is that the environmental responsibilities could be incorporated into the role of one or more of the established Commissions. The benefit of utilizing established commissions is that members and staff liaisons are already in place.

2. Establish an "Environmental Committee"

The City Council could direct creation of an environmental committee, comprised of interested community members, through announcements and general advertisements. This group would be open to anyone from the community who was interested in working on environmental issues; the group would not likely have a formal advisory role.

3. Establish a permanent "Environmental Commission"

The City Council could create an Environmental Commission. The commission would serve as an ongoing advisory body to Council on environmental programs and policy issues. Staff believes that there would be several benefits in forming a new permanent commission. Specifically, this action would highlight the importance of environmental issues, allow for a highly visible format for reviewing progress, help keep the community informed of key programs and opportunities, and help maintain momentum and motivation.

Should Council select this structure, several aspects of the commission would need to be determined, including its size and composition, its formal charge, and area of responsibility and meeting frequency. It should be noted that the commission would require a dedicated staff liaison to communicate between staff and commission members, to conduct research, prepare information and implement program and policy directions.

Once City Council has established a structure for the City's future environmental programs, practices, and community involvement, we recommend that the following actions be considered by that group:

Create an Environmental City Plan to include a Local Climate Action Plan

The goal of the Environmental City Plan would be to provide a road map with specific, measurable goals that will help Manhattan Beach improve and expand upon our current best management practices in all environmental areas. Many cities have had comprehensive environmental plans in place for several years, including Pasadena, San Francisco, Santa Barbara and Santa Monica. Many other cities are in the midst of creating Local Climate Action Plans, as described in the introduction, to achieve greenhouse gas reduction goals.

Define further opportunities for community involvement

Staff recommends that City Council consider charging a newly formed environmental commission with guiding development of specific options for the most effective and productive community involvement in Manhattan Beach.

The Green Team found many examples of business and residential community involvement ranging from a consortium of business leaders in Austin, Texas that call themselves the Clean Energy Incubator and are devoted to helping eight young clean-energy companies succeed, to a Community Gardens Initiative led by a residential horticultural committee in Philadelphia, Pennsylvania. In addition to examples from across the country, we have also identified many opportunities for the City to expand education and outreach efforts to our business and residential communities to help inform and involve them in implementing individual environmental best management practices (see Sustainable Development, Transportation and Parking, Water Usage and Conservation, Urban Forests and Beaches, Solid Waste and Recyclables, and Storm Water Management sections for more information).

With so many options and environmental areas to choose from, our efforts at first may need to be prioritized and, perhaps, focused on those actions with the biggest impact that can take advantage of current, available resources. We recommend holding a City Council Study Session as soon as practical. Council will have an opportunity to review these initiatives in more detail and consider establishing priorities. Specifically, the establishment of a commission and the hiring of staff should be considered early on because of the lead time they will take to get started and their importance to our overall environmental efforts.

CONCLUSION

AND

Future Actions

Where do we go from here?

When the US Mayor's Climate Protection Agreement was brought to the attention of the City Council, it was meant to be more than just a "feel good" item. Embracing the Agreement would require forward thinking and courageous leadership, as well as a lot of hard work by everyone.

In taking that first step to endorse the US Mayor's Climate Protection Agreement, the City Council truly embraced the concept of "thinking globally and acting locally" by going far beyond any one environmental concern such as global warming. Instead, the City Council asked to learn about the breadth of measures we can take now to save our environment and eliminate the practices that pollute our ocean and beaches and destroy our limited natural resources.

Over the past six months, City staff met regularly and compiled information about the City's past and current environmentally- friendly practices in the areas of global warming, energy use, waste reduction, storm water management, transportation, water conservation, procurement, community involvement and sustainable buildings.

While the City's current environmental practices will continue, we can certainly do more. The results of this study will set the stage for the City to not only to track its past and current practices, but also our future efforts. Further, it will also allow us to set goals and be held accountable for our actions such that we can truly make a positive environmental impact in the future.

This project has also allowed City staff to meet and work with many other entities in and around the South Bay who are also working on a brighter and cleaner tomorrow. The energy, passion and optimism of this growing movement is contagious, as it is sweeping not only the South Bay, but also the County, State and Nation as well.

The Green Team is proud to be part of what will undoubtedly become the City's great environmental legacy for future generations.

So, as City Council ponders the question, "Where do we go from here", staff has identified a variety of "programs and practices for future consideration," along with some preliminary cost indicators and our perception of the difficulties associated with implementation. The list is in no way exhaustive; through innovative thinking, there are so many more ideas to consider. However, it is important to keep in mind that what is a best practice in some cities may not be an appropriate best practice in Manhattan Beach. Additionally, the costs relative to the environmental improvements gained must be weighed for each action considered.

In the nearly six months it took to generate this report, the Green Team and City staff have worked countless hours compiling data while delaying other work assignments.

Clearly, this document identifies the broadness and complexities of the issues involved and the need for community support. For the City's future efforts to be effectively tracked and evaluated, and for best practices to be studied and brought back to City Council for consideration, staff strongly recommends:

1) the formation of a commission/committee, and 2) a full-time environmental administrator position be created. This person would also be responsible for:

- Producing an Annual Environmental Report
- Formulating a Local Climate Action Plan and/or Environment Strategic Plan
- Coordinating all City department environmental efforts
- Acting as the staff liaison with other internal and external entities, such as a Council appointed commission and community interest groups
- Coordinating an environmental bulletin board in City Hall
- Creating and maintaining an environmental City webpage
- Writing a regular "green" article in the quarterly City newsletter

As the environmental issues and future actions identified in this first report are brought forth to City Council in more detail, one thing to keep in mind is that the City has already pledged to develop a local action plan to reduce the City's greenhouse gas emissions to 7% below 1990 levels by the year 2012 (under the US Mayor's Climate Protection Agreement and the Climate Protection Campaign, and as outlined in the Kyoto Protocol).

In a more global fashion, City Council may also direct staff to create an environmental strategic plan, one which addresses all aspects of our environment rather than only the City's greenhouse gas reduction commitment. Given the complexities of all the issues identified in this report, it is likely that each environmental topic presented here will have to be thoroughly evaluated to fully understand costs, benefits, conflicts, support, and potential for implementation.

The Green Team hopes that this report provides City Council a comprehensive summary of the efforts the City has taken to become more environmentally friendly, as well as provide a glimpse of what the future may hold for a greater and greener Manhattan Beach. Clearly, there will be many difficult decisions and a lot of hard work ahead of us. On that note, we leave you with a quote regarding our feathered friends in the sky:

"There is nothing in which the birds differ more from man than the way in which they can build and yet leave a landscape as it was before."

~ Robert Wilson Lynd

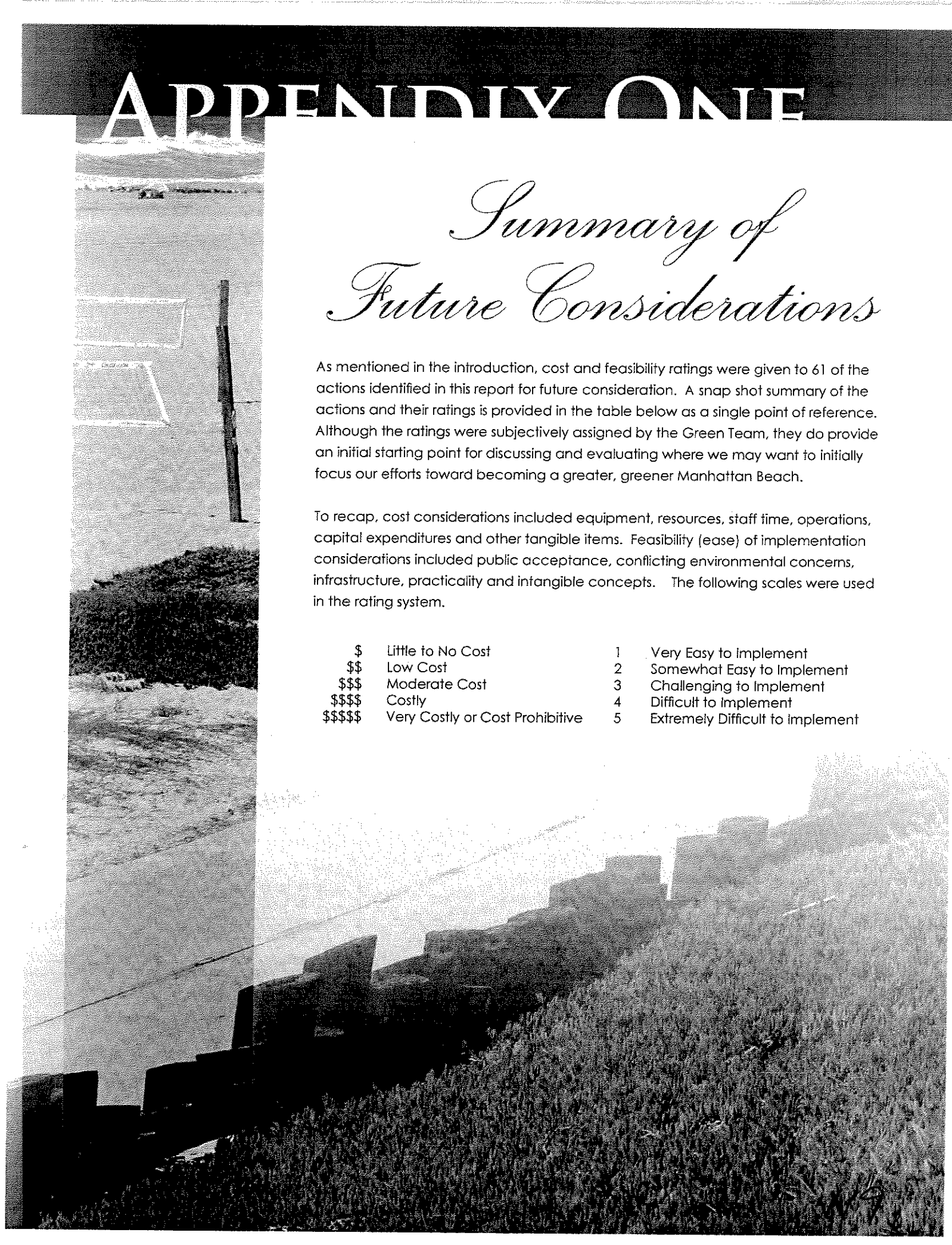
APPENDIX ONE

Summary of Future Considerations

As mentioned in the introduction, cost and feasibility ratings were given to 61 of the actions identified in this report for future consideration. A snap shot summary of the actions and their ratings is provided in the table below as a single point of reference. Although the ratings were subjectively assigned by the Green Team, they do provide an initial starting point for discussing and evaluating where we may want to initially focus our efforts toward becoming a greater, greener Manhattan Beach.

To recap, cost considerations included equipment, resources, staff time, operations, capital expenditures and other tangible items. Feasibility (ease) of implementation considerations included public acceptance, conflicting environmental concerns, infrastructure, practicality and intangible concepts. The following scales were used in the rating system.

\$	Little to No Cost	1	Very Easy to Implement
\$\$	Low Cost	2	Somewhat Easy to Implement
\$\$\$	Moderate Cost	3	Challenging to Implement
\$\$\$\$	Costly	4	Difficult to Implement
\$\$\$\$\$	Very Costly or Cost Prohibitive	5	Extremely Difficult to Implement



APPENDIX ONE

	COST	FEASIBILITY
ENERGY USE AT CITY FACILITIES		
1. Increase use of energy-efficient lighting	\$\$	1
2. Install daylighting controls and occupancy sensors	\$\$	1
3. Improve central building management and monitoring	\$\$\$	2
4. Reduce energy consumption from appliances and other electronic devices	\$	2
5. Consider solar power applications	\$\$\$\$	1
6. Consider supporting the development of green sources of energy	\$\$	1
VEHICLE FLEET AND FUEL USAGE		
1. Continue to replace traditional vehicles with alternative fuel types	\$\$	1
2. Consider more stringent requirements than those identified in SCAQMD Rule 1193	\$\$	1
3. Create a regional alternative fueling station	\$\$\$\$\$	4
4. Consider using bio-diesel in City fleet vehicles with unmodified diesel engines	\$\$	1
TRAFFIC CONTROLS AND STREETLIGHTS		
1. Upgrade all traffic signals with LED lighting or equivalent types	\$\$	3
2. Expand the Intelligent Traffic Corridor Program	\$\$\$	2
3. Reassess City street lighting needs	\$\$	1
4. Explore lighting alternatives for the Gas Lamp District	\$\$	4
SUSTAINABLE DEVELOPMENT		
1. Embrace sustainable construction practices of public facilities	\$\$\$	1
2. Consider a three-pronged program to promote sustainable development		
a) Utilize appropriate educational opportunities	\$\$\$	1
• Implement outreach programs		
• Promote residential and commercial sustainable building techniques		
b) Evaluate and adopt appropriate incentives	\$\$\$	3
c) Legislate compliance	\$\$\$	3
3. Promote residential use of gray water systems	\$\$\$\$	4
4. Promote the capture and use of rainwater for commercial landscape irrigation	\$\$\$\$	3
TRANSPORTATION AND PARKING		
1. Encourage parking for fuel efficient vehicles	\$\$	2
2. Consider implementing an alternative work schedule	\$	3
3. Increase parking fees	\$	4
4. Prohibit drive-thrus	\$	3
5. Promote pedestrian walking program	\$\$	1
6. Expand transit services	\$\$\$\$	2
7. Review stop sign criteria	\$	4
WATER USAGE AND CONSERVATION		
1. Reduce potable water demands	\$\$	3
2. Increase reclaimed water usage	\$\$\$\$	1
3. Adopt water conservation measures		
a) Revise the City's Water Use and Conservation Ordinance	\$\$\$	2
b) Adopt a tiered rate structure	\$	3
c) Expand City services regarding education and financial incentives	\$\$\$	1
d) Convert the City's high use, water-intensive, athletic fields to synthetic turf	\$\$\$\$\$	1

	COST	FEASIBILITY
URBAN FORESTS AND BEACHES		
1. Perform a water audit; consider contracting water management services	\$\$\$	1
2. Select more drought tolerant plants	\$	3
3. Consider a public awareness campaign promoting natural, sustainable landscapes	\$\$\$	1
SOLID WASTE AND RECYCLABLES		
1. Consider adopting a fee-based structure for solid waste collection	\$\$	3
2. Implement a Styrofoam waste reduction program	\$\$\$	2
3. Prohibit the use of plastic bags in grocery stores	\$\$	4
4. Improve community recycling and waste reduction efforts	\$\$\$	1
5. Enhance multi-family dwelling recycling efforts	\$\$\$	1
6. Improve the amount of construction waste recycled	\$\$\$\$	2
7. Promote recycled goods	\$\$\$	1
8. Promote business "Green Management Plans"	\$\$\$	1
9. Enhance green waste programs	\$\$\$	1
10. Enhance household hazardous waste programs	\$\$\$	1
11. Enhance education programs	\$\$\$	1
STORM WATER MANAGEMENT		
1. Ensure street sweeping signs are installed on all City streets	\$	3
2. In high priority areas of the City, install devices to reduce or eliminate trash from entering the storm drain system and/or reaching the ocean.	\$\$\$	1
3. Evaluate additional opportunities to divert contaminated dry weather flows	\$\$\$	1
4. Evaluate additional storm water infiltration opportunities	\$\$\$	1
5. Enhance the City's current business inspection program for key sectors	\$\$\$	1
6. Increase enforcement and monitoring to reduce illicit discharges	\$\$	2
7. Evaluate opportunities to upgrade City facilities and/or operations to reduce contaminated runoff	\$\$\$\$	1
8. Consider further modifications to municipal and building code requirements that effectively target pollutants of concern	\$\$\$	3
9. Consider establishing a revenue stream to support the implementation of storm water pollution control requirements	\$\$	3
PROCUREMENT POLICIES		
1. Develop environmentally friendly procurement policies		
a) Evaluate the price differential between environmentally preferable products and standard products.	\$\$	1
b) Consider environmentally friendly products with cost as a secondary criterion	\$\$	1
c) Consider pricing preference, whereby all products compete on price or value	\$	1
d) Consider lifecycle cost analysis to assist in selecting goods and services	\$	1
2. Evaluate additional environmentally friendly products and services	\$	1

APPENDIX TWO

Emissions Data

Calculation of the City's total greenhouse gas emissions is a critical first step toward understanding how our municipal government operations contribute to global warming and what measures we can take to reduce our overall CO₂ emissions.

To calculate our municipal greenhouse gas emissions, City staff first collected 2005 utility and energy consumption data, such as the amount of electricity used in City facilities, the amount of fuel used in City Fleets and other operations, the number of miles employees commute to and from work, how much waste we generate that goes to landfills, etc. The year 2005 was chosen as the baseline year to maintain consistency with other local jurisdictions which have already completed an emissions inventory, as well as to allow for like comparison.

This data was then entered into a software program created by the International Council for Local Environmental Initiatives (ICLEI) and the Environmental Protection Agency, known as the Clean Air and Climate Protection Software. The program uses regionally specific factors to calculate/estimate greenhouse gas emissions based on the data entered.

While the software has the capability to calculate both government and community emissions, given our limited time and resources, staff evaluated only the impacts from government operations.

2005 Sources of Government Emissions, Summary

Sources of Emissions	Equiv CO ₂ (tons)	Equiv. CO ₂ (%)	Energy (MMBTU)
City-operated Facilities and Parks	1,680	26.9	12,194
Traffic Signals and Streetlights	904	14.5	4,660
Employee Commute	1,054	16.9	12,319
Water/Sewer Pump Stations	961	15.4	6,190
Vehicle Fleet Fuel Usage	1,646	26.3	19,276
2005 Government Emissions Total	6,245	100	54,638

APPENDIX TWO

2005 Sources of Government Emissions, by Top Producers of CO₂

Total Government Source	Type of Energy	Equly CO ₂ (tons)	Equly CO ₂ (%)	Energy (MMBtu)
Employee Commute	Gasoline	1,054	16.9	12,319
City Fleet (gasoline)	Gasoline	954	15.3	11,151
Water Pump Stations	Electricity	867	13.9	5,584
Streetlights (electric)	Electricity	607	9.7	3,911
City Hall	Electricity	424	6.8	2,730
Waste Management (diesel)	Diesel	262	4.2	3,018
City Fleet (diesel)	Diesel	205	3.3	2,366
Parking Garage - Metlox	Electricity	200	3.2	1,288
Streetlights (natural gas)	Natural Gas	180	2.9	0
City Buildings (natural gas)	Natural Gas	141	2.3	2,289
Traffic Control	Electricity	116	1.9	749
Pier	Electricity	103	1.7	666
Public Works Yard	Electricity	96	1.5	621
Tru Green (gasoline)	Gasoline	96	1.5	1,130
Live Oak Park	Electricity	84	1.3	541
Marine Avenue Sports Complex	Electricity	81	1.3	521
Clean Street (diesel)	Diesel	71	1.1	817
Sewer Pump Stations	Electricity	61	1.0	392
Joslyn Community Center	Electricity	59	0.9	379
Marine Avenue Park	Electricity	58	0.9	374
Irrigation Control	Electricity	55	0.9	353
Manhattan Heights	Electricity	54	0.9	347
Parking Lot 3	Electricity	54	0.9	344
Police Facility	Electricity	40	0.6	256
Polliwog Park	Electricity	33	0.5	210
Storm Water	Electricity	33	0.5	214
Post Office Annex / Chamber	Electricity	32	0.5	205
Mira Costa Tennis Courts	Electricity	27	0.4	173
City Fleet (compressed natural gas)	CNG	27	0.4	423
Creative Arts Center	Electricity	24	0.4	157
Fire Station 1	Electricity	22	0.4	143
Fire Station 2	Electricity	22	0.4	144
Manhattan Village Soccer Fields	Electricity	22	0.4	141
Tru Green (diesel)	Diesel	19	0.3	220
Begg Field Lights	Electricity	14	0.2	93
Parking Lot 4	Electricity	12	0.2	79
Sand Dune Park	Electricity	10	0.2	64
Clean Street Fleet (liquid propane gas)	LPG	9	0.1	124
Parking Lot 2	Electricity	5	0.1	30
Parking Lot - Other	Electricity	3	0.0	19
Parking Lot - El Porto	Electricity	3	0.0	16
Parks - Other	Electricity	2	0.0	11
Waste Management (compressed natural gas)	CNG	2	0.0	27

2005 Sources of Government Emissions, by Category

City Facilities and Parks	Type of Energy	Eqvly CO ₂ (tons)	Eqvly CO ₂ (%)	Energy (MMBtu)
Begg Field Lights	Electricity	14	0.2	93
City Hall - 1400 Highland Ave	Electricity	424	6.8	2,730
Creative Arts Center	Electricity	24	0.4	157
Fire Station 1	Electricity	22	0.4	143
Fire Station 2	Electricity	22	0.4	144
Irrigation	Electricity	55	0.9	353
Joslyn Community Center	Electricity	59	0.9	379
Live Oak Park	Electricity	84	1.3	541
Manhattan Heights	Electricity	54	0.9	347
Manhattan Village Soccer Fields	Electricity	22	0.4	141
Marine Avenue Park	Electricity	58	0.9	374
Marine Avenue Sports Complex	Electricity	81	1.3	521
Mira Costa Tennis Courts	Electricity	27	0.4	173
Parking - Other	Electricity	3	0.0	19
Parking Garage - Metlox	Electricity	200	3.2	1,288
Parking Lot - El Porto	Electricity	3	0.0	16
Parking Lot 2	Electricity	5	0.1	30
Parking Lot 3	Electricity	54	0.9	344
Parking Lot 4	Electricity	12	0.2	79
Parks - Other	Electricity	2	0.0	11
Pier	Electricity	103	1.7	666
Police Facility	Electricity	40	0.6	256
Polliwog Park	Electricity	33	0.5	210
Post Office Annex / Chamber	Electricity	32	0.5	205
Public Works Yard - 3621 Bell	Electricity	96	1.5	621
Sand Dune Park	Electricity	10	0.2	64
Natural Gas - All City buildings	Natural Gas	141	2.3	2,289
SUBTOTAL:		1,680	26.9	12,194

Note: Data obtained from our local electricity and natural gas providers.

The City's top contributors to greenhouse gas emissions in 2005 were operational facilities, which included City administration buildings, recreation facilities, parking lots, and parks. Combined, they generated 27% of the City's total CO₂ emissions.

APPENDIX TWO

Traffic Controls and Streetlights	Type of Energy	Equiv CO ₂ (tons)	Equiv CO ₂ (%)	Energy (MMBtu)
Traffic Controls/Signals	Electricity	116	1.9	749
Streetlights (electricity)	Electricity	607	9.7	3,911
Streetlights (natural gas)	Natural Gas	180	2.9	0
SUBTOTAL:		904	14.5	4,660

Note: Data obtained from our local electricity and natural gas providers.

Employee Commute	Type of Energy	Equiv CO ₂ (tons)	Equiv CO ₂ (%)	Energy (MMBtu)
City Employee Commute Miles	Gasoline	1,054	16.9	12,319
SUBTOTAL:		1,054	16.9	12,319

Note: Data obtained through Employee Commute Survey distributed to full and part time City employees.

Water & Sewer Pump Stations	Type of Energy	Equiv CO ₂ (tons)	Equiv CO ₂ (%)	Energy (MMBtu)
Water	Electricity	867	13.9	5,584
Storm Water	Electricity	33	0.5	214
Sewer	Electricity	61	1.0	392
SUBTOTAL:		961	15.4	6,190

Note: Data obtained from our local electricity and natural gas providers.



Fuel Usage	Type of Energy	Equiv CO ₂ (tons)	Equiv CO ₂ (%)	Energy (MMBtu)
City Fleet	Gasoline	954	15.4	11,151
	Compressed Natural Gas	27	0.4	423
	Diesel	205	3.3	2,366
Waste Management Fleet	Compressed Natural Gas	2	0	27
	Diesel	262	4.2	3,018
CleanStreet Fleet	Diesel	71	1.1	817
	LPG	9	0.1	124
Tru Green Fleet	Gasoline	96	1.5	1,130
	Diesel	19	0.3	220
SUBTOTAL:		1,646	26.3	19,276

Notes: City fleet fuel usage was provided by the City's Department of Public Works. Our contract service providers, Waste Management, CleanStreet and Tru Green provided the data above, respectively.

A note about solid waste generation / landfilling

Another relevant category in the ICLEI software included the emissions generated from solid waste produced by City employees at City facilities. This was included in the study because landfills release methane into the atmosphere. Although the waste collected within the City is disposed of at landfills located outside the community, Manhattan Beach is still the initial waste generator. However, the City's 2005 waste emissions were negligible because the recipient landfill captured approximately 50% of the methane released and converted it into new, usable energy. Based on the software calculations, the positive energy generated by the methane capture negates the negative CO₂ emissions, resulting in a net zero value for waste emissions.

REFERENCES & A

Local and National Organizations

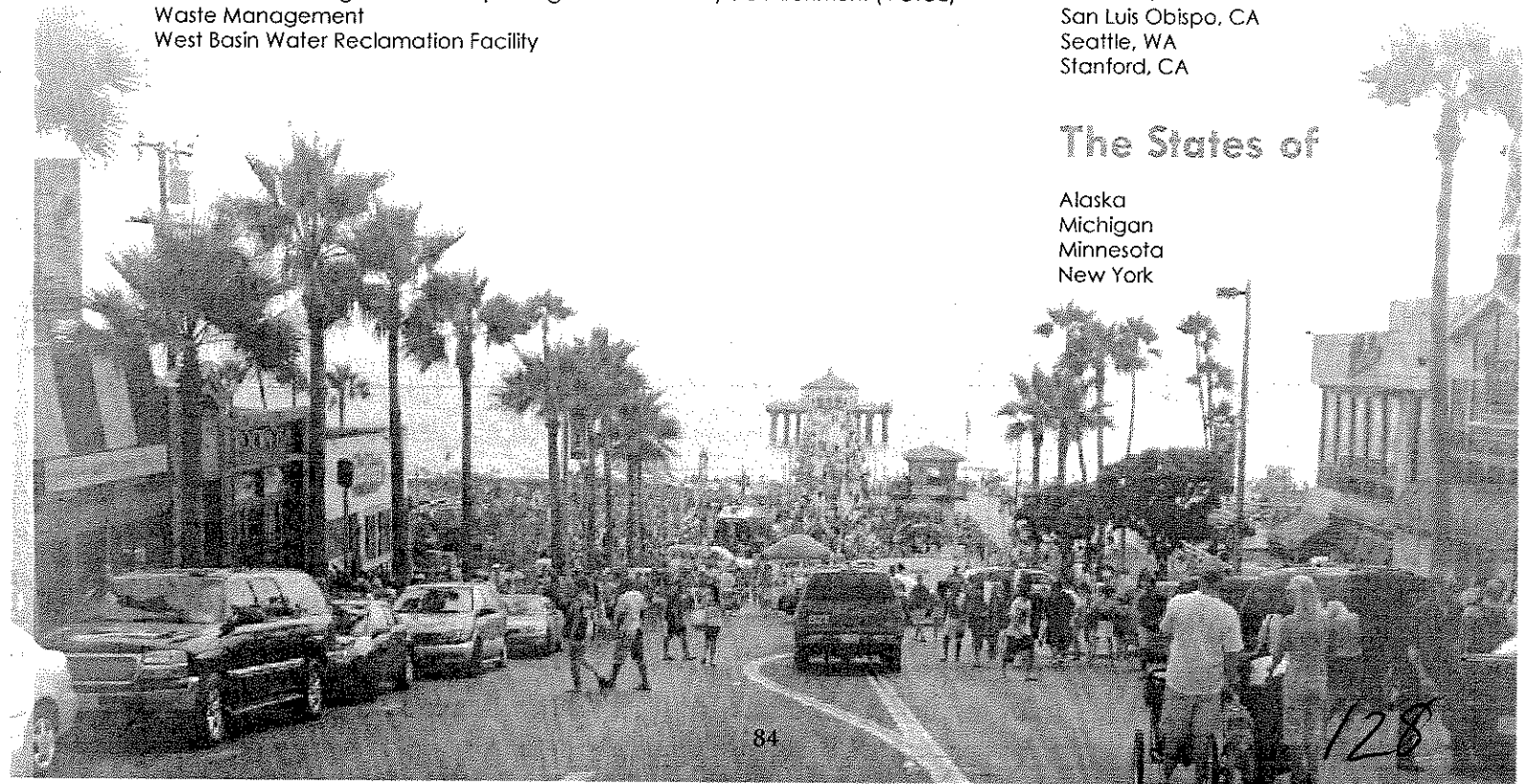
Build It Green
California Department of General Services
California Integrated Waste Management Board
California State Department of Conservation
CDS Technologies
Chlorine-free Products Association
Clean Street
Climb Theaters
County of Los Angeles
Electronic Product Environmental Assessment
Green Seal
Greenguard Environmental Institute
HOK Architecture
International Council of Local Environmental Initiatives
Lean Architects
Los Angeles County Department of Public Works
Los Angeles County Fire Department, Lifeguard Division
Los Angeles County Sanitation District
Manhattan Beach School District
Metropolitan Water District
Natural Resource Defense Council
North American Green Purchasing Initiative
Regional Water Quality Control Board
Responsible Purchasing Network
Santa Monica Bay Restoration Commission
South Coast Air Quality Management District (SCAQMD)
Southern California Edison
The Gas Company
Tru Green
United States Department of Ecology
Volunteers and Organizations Improving the Community's Environment (VOICE)
Waste Management
West Basin Water Reclamation Facility

Municipalities

Beverly Hills, CA
Brentwood, CA
Burbank, CA
Carlsbad, CA
Culver City, CA
Davis, CA
Downey, CA
Elk Grove, CA
El Segundo, CA
Hermosa Beach, CA
Inglewood, CA
Kirkland, WA
Long Beach, CA
Los Angeles, CA
Mariposa, CA
Menlo Park, CA
Monterey, CA
Norco, CA
Palos Verdes Estates, CA
Pasadena, CA
Palo Alto, CA
Rancho Palos Verdes, CA
Redondo Beach, CA
Rohnert Park, CA
Rolling Hills Estates, CA
Santa Monica, CA
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San Francisco, CA
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San Luis Obispo, CA
Seattle, WA
Stanford, CA

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Michigan
Minnesota
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KNOWLEDGEMENTS



City Council

Mayor
Jim Aldinger

Mayor Pro Tem
Richard Montgomery

City Council Member
Nicholas W. Tell, Jr.

City Council Member
Portia P. Cohen

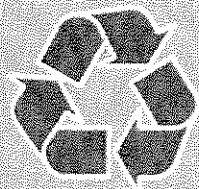
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PASADENA
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PASADENA

THINK GREEN

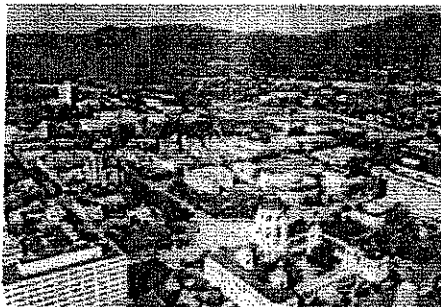
Welcome to Pasadena's Green City homepage!

Within this site you will find convenient access to information, services and programs that support the City's commitment to become a sustainable and green community. The City is committed to addressing urban growth issues impacting energy, waste reduction, urban design, urban nature, transportation, environmental health, and water.

[What is a green and sustainable city?](#)[Why become a green and sustainable city?](#)[How will Pasadena become a green city?](#)[Environmental Charter](#)[2006 United Nations Green Cities Declaration and Urban Environmental
Accords](#)[US Conference of Mayor's Climate Protection Agreement](#)[Green City Action Plan](#)[Environmental Advisory Commission](#)

WHAT IS A GREEN AND SUSTAINABLE CITY?

THINK GREEN



A green and sustainable city is a community of residents, neighbors, workers, and visitors who strive together to balance ecological, economic, and social needs to ensure a clean, healthy and safe environment for all members of society and for generations to come.

WHY BECOME A GREEN AND SUSTAINABLE CITY?

THINK GREEN



To ensure a viable future, the City must take a leadership role and address the impacts placed on the environment by urbanization and a growing populace. These impacts include air and water pollution, climate change, and habitat loss.

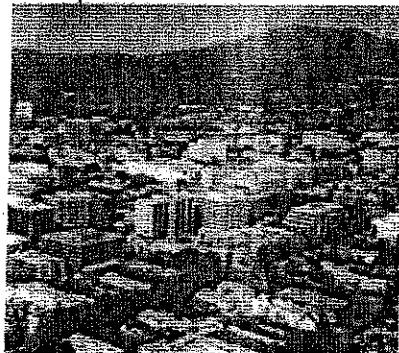


HOW WILL PASADENA BECOME A GREEN CITY?

THINK GREEN



The City has taken a number of significant actions to become a green city. Recent examples include:



- Adoption of an Environmental Charter
- Endorsement of the United Nations Green Cities Declaration and Urban Environmental Accords
- Endorsement of the US Conference of Mayors Climate Protection Agreement
- Adoption of a Green City Action Plan
- Adoption of ordinance creating an Environmental Advisory Commission
- Adoption of a Green Building Program

ENVIRONMENTAL CHARTER

THINK GREEN



The City of Pasadena elects to be an environmental advocate and a leader in environmental compliance and protection. The City shall cultivate superior environmental standards that will provide for sustainable municipal development.

The City recognizes that growth and opportunity cannot be conducted at the expense of environmental protection and enhancement, and that growth and environmental stewardship are intimately related.

The City believes that the implementation of an environmental ethic need not interfere with economic development, and that practicing such environmental ethic can ultimately be expected to enhance economic affairs and provide for responsible, farsighted development.



The City believes that the protection of the urban and natural environments is a social responsibility and a fundamental obligation of a democratic government, and that an ecologically impoverished and polluted environment adversely impacts human health.

The City is striving to become a model for environmental excellence and a prevailing force in environmental protection. To accomplish these goals, the City shall establish policies that will incorporate environmental responsibility into its daily management of urban and industrial growth, education, energy and water

use, air quality, transportation, waste reduction, economic development, and open space and natural habitats.

2006 UNITED NATIONS GREEN CITIES DECLARATION AND URBAN ENVIRONMENTAL ACCORDS

THINK GREEN



The United Nations Green Cities Declaration is a collaborative platform and a call to action for cities across the globe to take in recognition that a majority of the world's population now reside in cities, and that cities consume 75% of the world's natural resources creating environmental challenges. The Urban Environmental Accords contain 21 action items that lay the groundwork for addressing universal urban environmental issues on energy, waste reduction, urban design, urban nature, transportation, environmental health, water issues.

More information on the United Nations Green Cities Declaration and Urban Environmental Accords can be found on the World Environment day website at <http://www.wed2005.org/3.1.php>

You can also read the Pasadena Proclamation in support of the United Nations Green Cities Declaration and Urban Environmental Accords

US CONFERENCE OF MAYOR'S CLIMATE PROTECTION AGREEMENT

THINK GREEN



The US Conference of Mayor's Climate Protection Agreement seeks for cities across the United States to commit to reducing global warming pollution levels to 7 percent below 1990 levels by 2012 in accordance with the Kyoto Protocol. In order to achieve this goal, cities are asked to take actions in their own operations and communities. The Agreement offers twelve measures for cities to take that that will contribute to reducing greenhouse gas emissions (GHG). The goals are compatible with the Urban Environmental Accords although the focus is directed towards reducing global warming.

More information on the agreement can be found at <http://www.seattle.gov/mayor/climate/>

You can also read the Pasadena Proclamation in support of US Conference of Mayor's Climate Protection Agreement

GREEN CITY ACTION PLAN

THINK GREEN



Approved by the City Council on September 18, 2006 (staff report) the Green City Action Plan is a progressive list of environmental initiatives for the City to take in its quest to become a sustainable and green community and follows the framework of the United Nations Green Cities Declaration and Urban Environmental Accords. The initiatives contained in the plan include developing a green fleet of city vehicles, using only environmentally friendly cleaning products in City buildings, and buying "green" goods where possible.



GREEN CITY ACTION PLAN

ENVIRONMENTAL ADVISORY COMMISSION

THINK GREEN



Effective January 22, 2007 - The Environmental Advisory Commission consists of nine Pasadena residents who advise the City Council and make policy recommendations in support of the goals and objectives of the City's Environmental Charter and monitor and guide the Green City Action Plan. This commission holds monthly open meetings to the public and serves as a forum for the discussion of environmental issues with local, regional, and global impacts. To view agendas for the any meetings, [click here](#).



THINK GREEN

Last Updated 11/20/2007

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GREEN CITY ACTION PLAN 2006



PASADENA

THINK GREEN



FOR GENERATIONS
TO COME

GREEN CITY ACTION PLAN 2006

INTRODUCTION

How can Pasadena protect its distinctive quality of life when faced with the demands of growth and global impacts on natural resources?

To help address this concern, Pasadena is launching a comprehensive environmental action plan that will guide the City towards sustainability and which will accelerate the City's environmental commitment.

At the end of the seven years a city that has successfully implemented actions will be recognized by the United Nations as a Green City with a ranking determined by the number of actions completed.

19-21	ACTIONS		CITY
16-18	ACTIONS		CITY
12-15	ACTIONS		CITY
8-11	ACTIONS		CITY

The framework for the goals contained within this Green City Action Plan follow the United Nations Urban Environmental Accords of 2005 which acknowledge the environmental challenges and opportunities facing urban areas across the globe. The Accords offers cities 21 specific goals to accomplish by World Environment Day 2012 with three goals assigned to each of the following urban sustainability thematic areas:

1. Energy
2. Waste Reduction
3. Urban Design
4. Urban Nature
5. Transportation
6. Environmental Health
7. Water

This Green City Action Plan contains a wide range of initiatives that form a strategy towards fulfilling the ambitions of the Urban Environmental Accords. Identified are means to conserve energy and water; reduce waste; address global warming; tailor urban design; protect natural habitats; improve transportation options and reduce risks to human health.

The good news is that Pasadena has achieved at least seven of the Accords actions through past efforts and on-going programs. Potentially, an additional two actions will be completed by the end of 2007 ensuring the City a minimum Green City Status. However, every effort will be made to achieve the highest Green City ranking possible.

But the City is striving to do more than just tally points - initiatives have been added to many of the achieved actions to further strengthen the City's commitment to sustainability.

With a history of environmental conservation and wealth of scientific achievement, Pasadena is uniquely situated to introduce innovative solutions to meet the goals set forth in the Urban Environmental Accords.

Successful implementation of this strategic action plan during the next six years will ensure Pasadena remains competitively poised for future growth while preserving the health of its environment for generations to come.

GREEN CITY ACTION PLAN ENERGY

ENERGY

ACTION 1

Increase the use of renewable energy to meet 10% of the city's peak electric load within seven years.

Pasadena is fortunate to have its own utility, Pasadena Water & Power, which has been in operation since 1906 and is committed to securing reliable renewable energy contracts with the goal of supplying residents with 10% renewable energy by 2010 and 20% by 2017. The Water and Power Department is studying the feasibility of phasing in 100% green power at City facilities, including City Hall, the Pasadena Conference Center, and the City's community centers. In order to reach this goal, an analysis of the costs of providing "green power" (energy derived from wind) at these facilities against the environmental benefits will be performed. The City will also investigate the feasibility of generating renewable energy by installing solar power equipment on city-owned facilities such as water reservoirs and parking structures.

DID YOU KNOW?

Renewable energy is energy derived from sustaining sources such as wind, geothermal (steam from underground magma), landfill gas (methane produced from trash), solar (sun) and hydroelectric facilities (dams).



ACTION 2

Reduce the city's peak electric load by 10% within seven years through energy efficiency, shifting the timing of energy demands and conserving resources.

The Pasadena Water & Power Department expects completion of an energy efficiency study by 2007 and incorporating experience with customer efficiency retrofit measures to design and implement future cost-effective energy efficiency programs including:

1. Requiring new commercial projects to achieve a minimum 10% energy efficiency over baseline by amending the Green Building Practices Ordinance.
2. Conducting a feasibility study for installing devices on municipal and private buildings that reduce the power required to operate equipment and for shifting the equipment usage to off-peak.
3. Creating a "time of use" billing rate that offers lower rates for electric usage during off-peak hours than during peak hours. Other possible rates to consider include tiered energy rates.
4. Replacing incandescent traffic signal lights with energy saving lights.

GREEN CITY ACTION PLAN WASTE REDUCTION

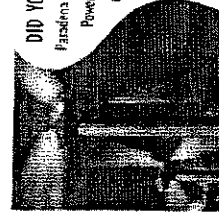
ACTION 3

Reduce greenhouse gas emissions by 25% by 2010, and include a system for accounting and reducing emissions.

The Pasadena Water & Power Department will complete a study calculating the amount of greenhouse gas emitted in Pasadena to use as a gauge to plan future reductions that meet or exceed the action goal.

DID YOU KNOW?

Pasadena Water & Power offers Green Power to residents. PWP is pleased to offer environmentally friendly "green power" to customers. Currently, 100% of PWP's green power comes from wind sources and is available for an extra energy charge. Customers can choose from three different options at incremental additional costs - a small price to pay for their cleaner energy sources.



If you have questions or want to learn more, please call PWP at (626) 744-4005 or (626) 744-6970 (PWP AnswerLine) for more information or visit the city's website at www.ci.pasadena.ca.us.

ACTION 4

Achieve zero waste to landfill and incineration by 2010.

This ambitious goal can be achieved with advancements in technology and by starting off with realistic first-steps as follows:

- Require new construction projects to divert 60% of their waste away from landfills
- Implement increased diversion requirements for franchises establishing a goal of reaching a 75% diversion rate (a 50% increase from the current requirement) for the collection of solid waste or pay liquidated damages
- Ensure development and construction of new structures has on-site recycling areas (in compliance with the Zoning Code Section 17.40.120)
- Request a plan from franchises outlining strategies to increase commercial recycling as a condition of license renewal
- Implement a Food Waste Recycling Program for restaurants within the City
- Establish a permanent electronic waste collection center in the City where residents can bring their electronic and universal waste to be recycled
- Work in collaboration with local grocery stores and supermarkets to set a reduction target of a given quantity of disposable grocery bags

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GREEN CITY ACTION PLAN WASTE REDUCTION

DID YOU KNOW?

- Each year, an estimated 500 billion to 1 trillion plastic bags are consumed worldwide.
- If Californians cut their plastic bag waste in half, it would save over two thousand barrels of oil a day (over 800,000 barrels a year) and keep 73,000 tons of rubbish out of our landfills.
- Some estimate a plastic bag takes one thousand years to decompose.
- Only 10 to 15 percent of paper bags and 1 to 3 percent of plastic bags are recycled.



ACTION 5

Reduce the use of a disposable, weak, or non-renewable product category by at least 50% in seven years.

Support statewide legislation and local initiatives requiring manufacturers to take responsibility for collecting and recycling their products at the end of their useful life.

ACTION 6

Implement "user-friendly" recycling and composting programs, such as the goal of reducing by 25% per capita solid waste disposal to landfill and incineration in seven years.

In 2004, 62% of Pasadena's waste was diverted from landfill through recycling and reuse. This accomplishment is a result of Pasadena's many user-friendly recycling and composting programs including curbside recycling, pay-as-you-throw, composting workshops, and outstanding recycler awards. These programs will continue to ensure the action goal is met.

To learn more about the City of Pasadena's Recycling and Reduction programs, visit the City of Pasadena Department of Public Works Recycling website at <http://www.ci.pasadena.ca.us/publicworks/srwmwml>.

DID YOU KNOW?

- Food waste alone accounts for 40% of the waste stream from residents and businesses in Pasadena.



URBAN DESIGN

ACTION 7

Pasadena a green building rating system standard that applies to all new municipal buildings.

This requirement has been met by the adoption of the Green Building Practices Ordinance which is a comprehensive program that promotes the construction and operation of environmentally sound buildings in the City. To continue advancing this initiative, in April 2008, the Pasadena City Council will evaluate the success of the Green Building Practices Ordinance and consider lowering the thresholds for projects and creating green standards for residential projects.

An important component of green building is the need to maintain healthy indoor air quality after the building has been constructed. To provide an example for Pasadena businesses, the City is developing practices for cleaning, maintenance, and operations of municipal facilities to further advance sustainability and eliminate the use of toxins. Maintenance staff will be trained, and purchasing staff will be required to purchase environmentally preferable cleaning products. Further, green specifications will be adopted for City remodeling projects, requiring low-emission and environmentally-friendly carpet, sealants, adhesives, paint, flooring, and office furnishings.

DID YOU KNOW?

While 90% of the average American's time is spent indoors, 30% of buildings have poor air quality.

In the United States, buildings account for:

- 12% of electricity use
- 30% of greenhouse gas emissions
- 30% of raw materials use
- 30% of waste output
- 12% of potable water consumption



ACTION 8

Advance higher density, mixed-use, walkable, bikeable and disabled accessible neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological restoration.

Since adopting the General Plan Land Use and Mobility Elements in 1994, Pasadena has embraced the concepts of high-density, mixed use, walkable, bikeable, and disabled-accessible neighborhoods and through these efforts has achieved this action. As new developments are introduced, the City will monitor plans to ensure that each new project enhances the pedestrian and transit environment.

Each new and amended planning document will contain objectives, policies and implementation measures that support the coordination of land use and transportation with open space systems for recreation and ecological restoration.

Pasadena supports the development of transit-oriented developments, and continues to seek local, state, and federal funding sources that provide funds for multi-modal transportation that better connect the community and disabled residents to the City's open space systems.

GREEN CITY ACTION PLAN URBAN DESIGN

ACTION 9

Create environmental and beneficial jobs in clean and/or brown-revolution, together with...

The Maintenance Assistance Services to Homeowners (MASH) Program provides housing rehabilitation and related services in needy areas of Northwest Pasadena. The MASH Program, in addition to mitigating blight, also serves as a job training mechanism for up to 70 low-income and at-risk individuals. The Water & Power Department works with MASH to install water and energy conserving fixtures in low-income neighborhoods. As the electronic waste and food compost pilot programs develop, MASH employees will be involved and assist with the logistics of the program.

In order to foster environmental stewardship through the education of area youth, Pasadena partners with community organizations to develop outdoor environmental education and vocational model programs at the City's local parks and open spaces.

The City will pursue forward thinking opportunities to promote and create "green collar" jobs.

URBAN NATURE

ACTION 10

Ensure that there is an accessible public park or recreational open space within 1/2 kilometer of all residences by 2015.

The City of Pasadena is amending the Recreation and Parks Master Plan and Green Space and Recreation Element of the General Plan to include the goal of providing an accessible public park or recreational open space exists within 1/2 mile of every resident.

Core Green Space principles include:

- All Pasadena neighborhoods shall have access to park, open spaces and recreation facilities that serve their unique needs
- All Pasadena residents shall live within reasonable walking distance of a park, open space, or recreation facility
- Pasadena will be a City that actively creates new green spaces by promoting creative partnerships with the Pasadena Unified School District and other agencies and private institutions to provide access to and development of non-traditional parks, cultural and recreational opportunities

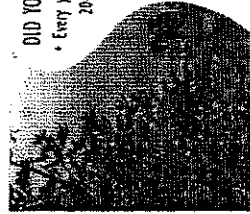
ACTION 11

Conduct an inventory of existing canopy coverage in the City and then establish a goal to increase and maintain canopy coverage to meet local goals and available sidewalk planting sites.

The City of Pasadena is conducting a tree canopy coverage survey which will provide information on the benefits provided by City trees and be used as a baseline to monitor the tree canopy coverage. The City will maintain the 62,000 public trees that grace the landscape with the goal of having no more than 5% vacancy in dedicated street planting areas at any given time.

DID YOU KNOW?

- Every year, deforestation contributes 20-25% of worldwide carbon dioxide emissions
- Trees help reduce stormwater runoff, erosion, add oxygen, provide shade, and increase property values



DID YOU KNOW?

- Pasadena has 23 parks
- 341 acres of parkland
- 62,000 public trees



ACTION 12

Protect critical habitat from development and encourage green sustainable development.

Pasadena values the beautiful Arroyo Seco and Eaton Canyon park lands and protection of the native animals who live in these habitats. Pasadena is proactively seeking funding for habitat restoration projects, which are planned in the Arroyo Seco Master Plan.

The City recently finished a study on the Arroyo Seco Watershed, in which measures were outlined that will restore the watershed. Implementation of the recommendations is actively being pursued.

GREEN CITY ACTION PLAN TRANSPORTATION

TRANSPORTATION

ACTION 13

Expand affordable public transportation coverage to within 1/2 mile of all city residents to one year.

The City of Pasadena is committed to improving transit service in order to stem increasing reliance on the automobile. The City has focused on this goal for the past decade with considerable success. Currently, Pasadena is served by more than 25 transit routes with 400 bus stops. The Metro Gold Line light-rail train has 7 major transit stations in the City, linking Pasadena to the regional transit network at Union Station in Los Angeles. With these systems in place, 89% of Pasadena residents live within 1/2 mile of either a train or bus stop. The City is continuing to expand the local transit service, Pasadena ARTS.

Pasadena is working to create incentives for using public transit, especially for housing located within 1/2 mile of transit stations, to support the City's Transit Oriented Development goals.

ACTION 14

Phase down sulfur levels in diesel and gasoline fuels, use advanced emission controls on all public fleets to reduce particulate matter and nitrogen dioxide emissions from those fleets by 40% in seven years.

The State of California regulates diesel and gasoline fuel and has some of the most stringent requirements in the nation.

Pasadena Public Works Department manages the City's vehicle fleet and is actively committed to the use of cleaner burning fuels and technologies in place of conventional diesel fuel. Bio-diesel fuel which is a blend of regular diesel and organically derived vegetable oil has recently been introduced for use by the City fleet.

The City seeks every opportunity to purchase alternate fuel cars and light-duty trucks, in particular hybrid powered vehicles and is in the process of creating standards for ensuring alternative fuel vehicles are purchased.

The City uses compressed natural gas (CNG) powered vehicles for many of its heavy duty needs, and is installing a CNG fueling facility at the City Yards to support an increasing need for CNG fuel.

ACTION 15

Implement a policy to reduce the percentage of construction trips by single occupancy vehicles by 10% in seven years.

The residents, commuters, and visitors in Pasadena have diverse mobility needs. In addressing these needs, the City has developed proactive policy goals and innovative programs to encourage the most efficient use of the City's existing transportation infrastructure through a balanced multi-modal approach.

The City has commissioned a comprehensive analysis of the City's transportation infrastructure which will offer traffic reduction strategies that consider economic development, accommodate future residential and employment growth, and address overall mobility and access.

The City actively works with new developments to install safe and convenient bicycle parking, encouraging all non-residential developments 25,000 square feet or larger to install showers in buildings to facilitate bicycling. Soon, the Green Building Practices Ordinance will be amended to require projects to not only install bike racks but to provide shower and changing facilities on site. This will increase the opportunities and convenience for bike riders.

GREEN CITY ACTION PLAN ENVIRONMENTAL HEALTH

ENVIRONMENTAL HEALTH

ACTION 16

Every year, identify one product, chemical or compound that is used within the city that represents the greatest risk to human health and require its replacement by the municipal government.

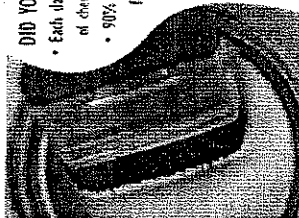
In response to dangers posed by chemical use, the city will consider banning the use in City facilities 1) aerosols, 2) floor polish, 3) standard volatile organic compound (VOC) emitting paint, 4) chemical paint strippers, 5) VOC emitting graffiti removers, 6) toxic chemical disinfectants, and 7) toxic pesticides.

Green procurement practices will be created to ensure that City government workers are not exposed to hazardous chemicals or materials, and that environmentally preferable products are favored in purchasing.

With the City's many parks and open landscaped public areas, pest control is a necessity. However, pesticides can be harmful to those who administer them, as well as the environment. Pasadena will create an integrated pest control management (IPM) plan for all City facilities and parks which will rely on commonsense practices and natural compounds to combat the negative effects of pests.

DID YOU KNOW?

- Each day, the U.S. produces 42 billion pounds of chemicals
- 90% of chemicals are created from fossil fuel
- Many of these commonly used products can cause blindness, burn skin, and, through the skin or inhalation, damage the kidneys, liver, developing fetuses, and the nervous system



- Six out of every 100 babies have lost-work time injuries each year, including eye injuries or irritations, skin irritation or burns, and respiratory problems resulting from the inhalation of chemical fumes

ACTION 17

Support the public health and environmental benefits of locally grown organic foods. Ensure that 20% of all city facilities (including schools) serve locally grown and organic food within seven years.

Acknowledging the importance of organic foods, Pasadena is investigating the feasibility of requiring City food vendors to provide 20% locally grown organic food for municipal functions. The City plans to educate and train owners of retail food markets and produce trucks about the availability of organic food products through the Public Health Department MAP Campaign. MAP's vision is for the greater Pasadena area to become a healthy, thriving community that values and promotes overall wellness.

Pasadena is also seeking opportunities to create more community gardens where local residents can grow their own vegetables free of pesticides.

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GREEN CITY ACTION PLAN ENVIRONMENTAL HEALTH

ACTION 18

Establish an Air Quality Index (AQI) to measure the level of air pollution and the goal of reducing by 10% in seven years the number of days that exceed the AQI range as "unhealthy" or "hazardous."

Pasadena is creating a plan for analyzing and developing recommendations to improve air quality in the City. Close attention will also be paid to the progress of California Senate Bill 44, which may require local cities to adopt an Air Quality Element as part of their General Plan.

WATER

ACTION 19

Develop policies to increase adequate access to safe drinking water, aiming at access for all by 2015. For areas with potable water concentrations greater than 150 liters per capita per day, adopt and implement policies to reduce consumption by 10% by 2015.

Over the last ten years, the implementation of aggressive conservation measures has contributed to a decrease in the City's water consumption by almost 75%. Pasadena will continue to offer these programs, and develop further innovations to decrease water consumption as follows:

Irrigation Efficiency: Focus City programs on outdoor water efficiencies, such as weather based irrigation controllers, drought tolerant landscaping and high water usage areas.

Time of Sale Replacement Program: Adopt an ordinance requiring replacement of inefficient plumbing fixtures (toilets, urinals, shower heads, etc.) when properties located in Pasadena change ownership.

Gray Water: Amend the code to allow use of gray water (untreated wastewater salvaged from baths, showers, and clothes washers) for use in irrigation of residential or other landscaping. **Dedicated Landscape Water Meter:** Develop a feasibility study for requiring a dedicated water meter for landscape irrigation on properties larger than 15,000 square feet.

Green Building Water Efficiency: Amend the Green Building Practices Ordinance to mandate all applicable projects achieve a water use reduction of 20% over baseline.

Emerging Technologies: Continue working with the Metropolitan Water District to research, develop, and implement existing and emerging water efficiency technologies and strategies that will accomplish the water conservation goals to reduce water consumption by 10% by 2015.

Water Deliveries: All City facilities which previously were provided with private vendor water deliveries are required to use potable water. In the long-term, the City should experience a substantial cost-savings; fewer resources devoted for the production of plastic water containers; and less global greenhouse gas emitted through the container production. Each delivery run reduction in Pasadena helps to reduce traffic congestion and improve air quality.

ACTION 20

Protect the ecological integrity of the city's primary drinking water sources (i.e., aquifers, rivers, lakes, wetlands and associated riparian zones).

The City of Pasadena obtains water from two sources: groundwater and imported water. Water supply consists of 40% groundwater and 60% imported water through the east

CONCLUSION

The Green City Action Plan outlines first steps towards achieving a green and sustainable community. To reinforce the City's commitment to environmental stewardship, the newly formed citizen's Environmental Advisory Commission will monitor the implementation of this plan and guide its progress. Public meetings held by the commission provide an opportunity for interested individuals and groups to express their ideas on related sustainability issues. Be on the lookout for more information in the Pasadena In Focus and at the City's Green City website at <http://www.ci.pasadena.ca.us>

DID YOU KNOW?

- A typical hose nozzle uses 8-18 gallons of water per minute compared to a pressurized water broom of 2-3 gallons per minute
- Typically 58% or more of household water is used for outdoor irrigation
- PWP customers use thirty-two million gallons of water each day



ACTION 21

Adopt municipal wastewater management guidelines and reduce the volume of untreated wastewater discharges by 10% in seven years through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participation of all affected communities and is based on sound economic, social and environmental principles.

The City considers recycled water as a viable water supply source and effective way to reduce the future need for imported water, and is creating a funding plan to implement the use of recycled water.

GREEN CITY ACTION PLAN

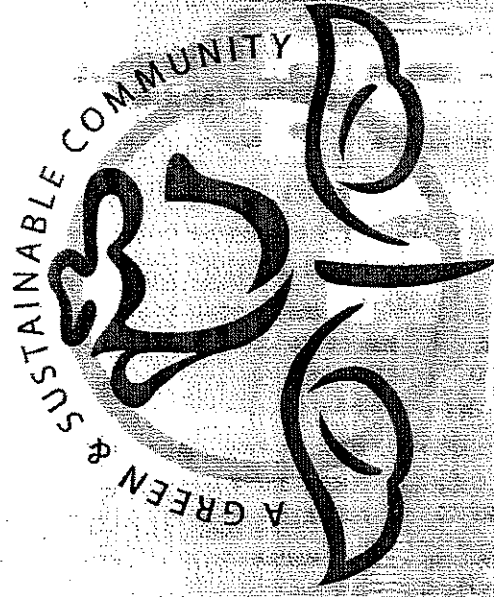
URBAN ENVIRONMENTAL ACCORDS

PASADENA GREEN CITY ACTION PLAN REPORT CARD JANUARY 2007

URBAN ENVIRONMENTAL ACCORD ACTION	ACHIEVED	LIKELY	UNDETERMINED
A. ENERGY			
1. Renewable Energy	✓		
2. Energy Efficiency			✓
3. Climate Change			✓
B. WASTE REDUCTION			
4. Zero Waste		✓	
5. Manufacturer Waste		✓	
6. Recycling	✓		
C. URBAN DESIGN			
7. Green Building	✓		
8. Urban Planning	✓		
9. Environmental Jobs	✓		
D. URBAN NATURE			
10. Green Space Access			✓
11. Tree Canopy		✓	
12. Habitat Protection	✓		
E. TRANSPORTATION			
13. Public Transportation	✓		
14. Clean Vehicles		✓	
15. Traffic Congestion		✓	
F. ENVIRONMENTAL HEALTH			
16. Toxics Reduction		✓	
17. Organic Foods		✓	
18. Air Quality			✓
G. WATER			
19. Potable Water Conservation		✓	
20. Water Source Protection		✓	
21. Wastewater Reduction		✓	
TOTALS	7	10	4

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United Nations Green Cities Declaration



PASADENA
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URBAN ENVIRONMENTAL ACCORDS

ACTION 11

Conduct an inventory of existing canopy coverage in the city; and, then establish a goal based on ecological and community considerations to plant and maintain canopy coverage in not less than fifty per cent of all available sidewalk planting sites.

ACTION 12

Pass legislation that protects critical habitat corridors and other key habitat characteristics (e.g. water features, food-bearing plants, shelter for wildlife, use of native species, etc.) from unsustainable development.

TRANSPORTATION

Public Transportation • Clean Vehicles • Reducing Congestion

ACTION 13

Develop and implement a policy which expands affordable public transportation coverage to within half-a-kilometer of all city residents in ten years.

ACTION 14

Pass a law or implement a program that eliminates leaded gasoline (where it is still used); phases down sulfur levels in diesel and gasoline fuels, concurrent with using advanced emission controls on all buses, taxis, and public fleets to reduce particulate matter and smog-forming emissions from those fleets by fifty per cent in seven years.

ACTION 15

Implement a policy to reduce the percentage of commute trips by single occupancy vehicles by ten per cent in seven years.

ENVIRONMENTAL HEALTH

Toxic Reduction • Healthy Food Systems • Clean Air

ACTION 16

Every year, identify one product, chemical or compound that is used within the city that represents the greatest risk to human health and adopt a law and provide incentives to reduce or eliminate its use by the municipal government.

ACTION 17

Promote the public health and environmental benefits of supporting

locally grown organic foods. Ensure that twenty per cent of all city facilities (including schools) serve locally grown and organic food within seven years.

ACTION 18

Establish an Air Quality Index (AQI) to measure the level of air pollution and set the goal of reducing by ten per cent in seven years the number of days categorized in the AQI range as "unhealthy" or "hazardous."

WATER

Water Access & Efficiency • Source Water Conservation • Waste Water Reclamation

ACTION 19

Develop policies to increase adequate access to safe drinking water, aiming at access for all by 2015. For cities with possible water consumptions greater than 100 liters per capita per day, adopt and implement policies to reduce consumption by ten per cent by 2015.

ACTION 20

Protect the ecological integrity of the city's primary drinking water sources (i.e., aquifers, rivers, lakes, wetlands and associated ecosystems).

ACTION 21

Adopt municipal wastewater management guidelines and reduce the volume of untreated wastewater discharges by ten per cent in seven years through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participants of all affected communities and is based on sound economic, social and environmental principles.

URBAN ENVIRONMENTAL ACCORDS

1. What are the Urban Environmental Accords?

Recognizing that majority of the world's population now reside in cities, and that cities consume 75% of the world's natural resources, the City of San Francisco, as host city of the United

Nations World Environment Day 2005, selected "Green Cities" as the unifying theme for the event and developed the Urban Environmental Accords, a set of 21 action steps that intends to address the special environmental challenges and opportunities of cities everywhere. Given the unique capacity of mayors to initiate and steer initiatives that produce immediate and direct outcomes, mayors are recognized as excellent change agents for making urban communities into models of sustainable development. It is for this reason that mayors from all over the world came to San Francisco on June 1-5, 2005 to share ideas and discuss solutions to universal urban environmental issues on energy, waste reduction, urban design, urban nature, transportation, environmental health, water.

2. What is the goal of the Urban Environmental Accords?
The Urban Environmental Accords are a series of implementable goals that can be adopted at the city level to achieve urban sustainability, promote healthy economies, advance social equity and protect the world's ecosystem. By achieving success at the city level, the multilateral city commitments of the Urban Environmental Accords can inspire and mobilize expanded commitment at the national level. The Urban Environmental Accords build on and continue the legacy of the 1972 Stockholm Conference on the Human Environment, the 1992 Rio Earth Summit, the 1996 Istanbul Conference on Human Settlements, the 2000 Millennium Development Goals and the 2002 Johannesburg World Summit on Sustainable Development.

3. How do cities adopt the Accords?
Implementing the Urban Environmental Accords will require open and active participatory dialogue between the cities, residents, community groups, businesses, academic institutions and other stakeholders. At the end of seven years, a city that has implemented 19-21 Action Steps will be recognized as a 4-Star City, a 3-Star City for 15-18 Action Steps, a 2-Star City for 12-17 Action Steps and a 1-Star City for 8-11 Action Steps.

4. Some of the goals appear too high, unrealistic or may not actually apply to every city. How do cities handle the implementation process?
The 21 Action Steps of the Urban Environmental Accords are a series of action-oriented steps that cities can use as reference points for setting achievable goals and standards that can be tailored to fit the specific structures of their communities. The ability of cities to enact local environmental laws and policies differ from cities to cities. However, the success of the Accords will ultimately be judged on the basis of actions taken collectively. Accordingly, the Accords can be implemented through programs, services or activities even where cities may lack the requisite legislative authority to mandate laws.

5. How will implementing these goals result in cost savings?

Measures that support the sustainable utilization and management of energy, urban design, waste reduction, urban nature, transportation, environmental health and water resources often result in reduced resource consumption and improvements in the general health and economic wellbeing of cities. Adopting the Accords can leverage a city's purchasing power and promote the advancement of environmentally sound practices.

6. Who will monitor progress and enforcement?

City mayors may appoint a special city council, city department or advisory group that will work with the mayor in setting goals and oversee the implementation process. In many instances, the Accords can be integrated as part of the city's long-term Sustainability Plan. We will also be working very closely with the International Council of Local Environmental Initiatives (ICLEI) and their partners to implement the Accords.

7. Is there a follow-up session to report and discuss the cooperative progress achieved by all signatory cities?

In 2012, seven years after the initial signing of the Urban Environmental Accords, a United Nations conference will discuss the progress of each city in implementing the Accords. Additional information regarding the Accords is available on www.wed2005.org and questions can be directed at accords@unenvironment.com.



PASADENA
HOSPITALITY CENTER



CITY OF PASADENA
PLANNING & DEVELOPMENT DEPARTMENT
175 North Garfield Avenue, Pasadena, CA 91101-1704
Northwest corner of North Garfield & Ramona Street



PASADENA Planning & Development

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Green Building Program

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PASADENA

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[Green Building Design](#)

[Green Building Project Requirements](#)

[Green Building Initiation](#)

[Green Building Incentives](#)

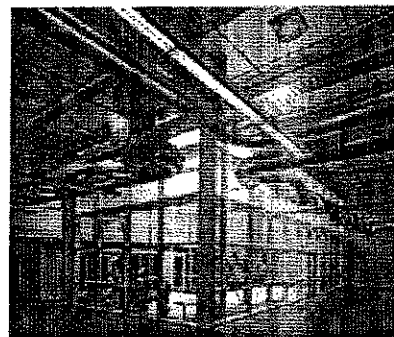
[Green Building Ordinance](#)

[Green Building Outreach and Education](#)

[Rating a Building's Greenness -LEED](#)

Green buildings require the use of fewer natural resources and provide a healthy, productive indoor environment for occupants by using an integrated design approach that incorporates:

- Site Planning
- Design
- Building Preservation
- Construction
- Operations
- Maintenance



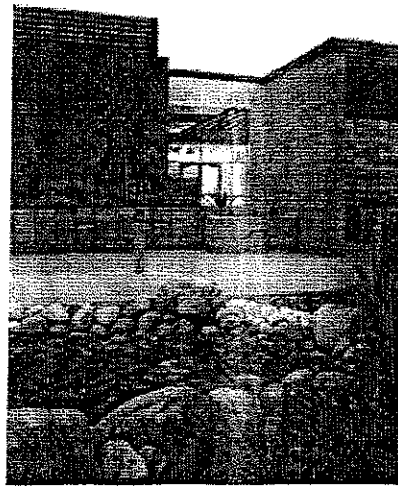
GREEN BUILDING DESIGN

THINK GREEN

Early in the design process the entire life-cycle of the building and its components are considered, as well as the economic and environmental impact and performance. The project team looks at all aspects of the building design to make a conscious assessment of how to lessen the environmental impacts associated with the project. The design team may include:

- Owner/Developer
- Architect
- Engineers (structural, electrical, mechanical)
- Landscape architect
- Interior designer
- Contractor (general & subs)
- Major tenants
- Building operator

Increasingly, designers, builders, and property owners are becoming interested and involved in green building as the



benefits become readily apparent. Benefits of building green include:

- More natural resources for the future
- Reduced energy consumption
- Improved occupant health
- Increased revenue
- Lower operating costs
- Increased employee productivity
- Reduced liability

Green buildings can ultimately result in enhanced economic affairs, lead to market transformation, and provide for responsible, farsighted development.



Did You Know?

Environmental impacts associated with buildings include:

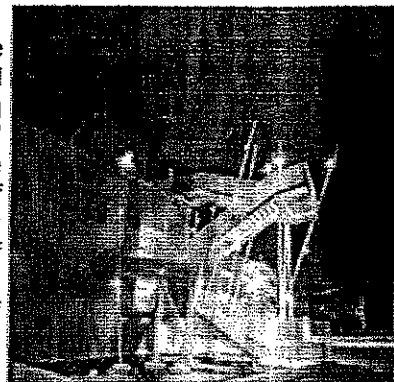
70% of total U.S. electricity consumption

GREEN BUILDING INITIATION

THINK GREEN

Realizing that Pasadena's rich architectural fabric and community livability should be complimented with environmentally sound buildings, the City pursued the development of a green building program focused on new development.

In early 2005, Pasadena retained the services of a green building expert; reviewed existing City regulations; analyzed building activity; examined other jurisdictions' environmental programs; and solicited advice from development groups with the goal of having a green building program approved by year end. A green ribbon committee of industry and community stakeholders was formed to provide guidance. As a result of these efforts, on December 19, 2005 (view



staff report), the Pasadena City Council unanimously approved a green building program with three components:

1. green building ordinance
2. incentives, and
3. outreach & education

As stated by Pasadena Mayor Bill Bogaard,

"Pasadena is a city that is committed to creating a livable community and our green building policies are intended not only to be efficient so that they are profitable but also so they are protective of the environment."

Remarks of Mayor Bill Bogaard
Pasadena's Green Building Program
October 20, 2005

GREEN BUILDING ORDINANCE



THINK GREEN

Effective as a permanent city policy on April 15, 2006, the City Council approved a set of progressive green building regulations for public and private sector buildings – Pasadena Municipal Code Chapter 14.90 Green Building Practices Ordinance.

Buildings required to comply with **Chapter 14.90** include:

- municipal buildings of 5,000 square feet or more of new construction
- non-residential buildings with 25,000 square feet or more of new construction
- tenant improvements of 25,000 square feet or more
- mixed use and multi-family residential buildings four stories in height or more

These thresholds were chosen as they represent a majority of construction projects in Pasadena and coincide with thresholds for other mandatory City reviews.

As part of a greater city sustainability program, in April 2008, the City Council plans on evaluating the effectiveness and success of the Green Building Practices Ordinance and may consider lowering the thresholds.

GREEN BUILDING BROCHURE (7mb)

RATING A BUILDING'S 'GREENNESS' - LEED

To measure a building's "greenness" in a fair and consistent manner, the Green Building Practices Ordinance adopts by reference the US Green Building Council's

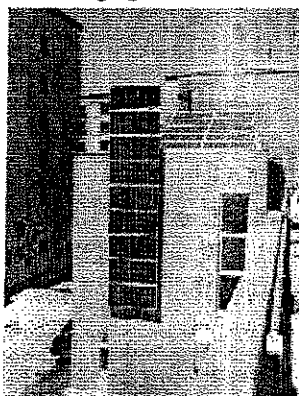
THINK GREEN



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Leadership in Energy and Environmental Design (LEED™) green building rating system.

Compelling reasons for selecting LEED over other green guidelines, and in lieu of creating separate guidelines for Pasadena, include LEED's recognition as a national green building rating system, its flexibility, and its integrated approach to achieving "greenness."



LEED awards points to buildings based on five main categories:

1. Sustainable site planning
2. Safeguarding water and water efficiency
3. Energy efficiency and renewable energy
4. Conservation of materials and resources
5. Indoor environmental quality

For more about the US Green Building Council and LEED go to <http://www.usgbc.org/>

Click here for information on the LEED green building rating system and portfolio of the green checklists.

GREEN BUILDING PROJECT REQUIREMENTS

THINK GREEN



The following steps are provided to assist in the review and approval of a project with a building that meets one of the Green Building Practices ordinance thresholds:

Pre-Plan Check Steps:

1. Retain the services of a LEED Accredited Professional as part of the design team
2. Register the building with the USGBC
3. Discuss City requirements and plan review procedures with the City's LEED AP consultant
4. Obtain City forms for LEED review at the Permit Center or online

Initial Plan Check Submittal (typical turn around time 30 days)

1. Incorporate the applicable LEED checklist as a sheet in the plan sets indicating points meeting at a minimum LEED Certified level (LEED checklist must be signed and dated by the project LEED AP). Provide a three point margin for credits that might be compromised during construction.
2. Submit required number of plans for review (the City's LEED AP consultant will receive one set of plans)
3. Submit one set of documents in support of LEED credits (e.g. Title 24 modeling, specifications, LEED templates or access to LEED templates on line)
4. Submit the appropriate Pasadena LEED checklist:

LEED NC	PDF	Excel
LEED CS	PDF	Excel
LEED CI	PDF	Excel

Note:

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