MEETING DATE: 01/22/08

AGENDA ITEM: **Discussion of the Sustainable Community Plan, the United States Conference of Mayors Climate Protection Agreement and Related Green Building Standards**

ATTACHMENTS

City of Culver City, California

City Council Agenda Item Report

Meeting Date: 11/26/07	Item Number: A-1
AGENDA ITEM: Discussion of Green Building and Related Issues	
Contact Person/Dept.: Jerry Fulwood	Phone Number: 310-253-6000
Fiscal Impact: Yes [X] No []	General Fund: Yes [X] No []
Public Hearing: []	Action Item: [x] Attachments: []
Public Notification: Master Notification List (11/21/2007)	
Department Approval: Martin R. Cole (11/21/07)	City Attorney Approval: Carol Schwab (by H. Iker) (11/20/07)
Fiscal Impact Review: Marlee Chang (by N. Kimball)(11/20/07)	City Manager Approval: Jerry B. Fulwood (11/21/2007)

RECOMMENDATION

Staff recommends the City Council discuss the issue of green building and related issues and direct staff as deemed appropriate.

BACKGROUND

As a result of City Council discussion at the November 19, 2007 City Council meeting, staff has placed this item on the agenda for Council's consideration.

DISCUSSION

The City Council has passed a number of policies related to green building and green "best management practices." In implementing these policies, staff has implemented a number of practices. These include:

Building

- Photovoltaic requirements on new development (ready for final adoption)
- Retro-fit faucets/toilets with low flow compatible options (part of Building Code compliance)
- Replace inefficient windows with double panes and weather strip (part of Building Code compliance)
- Clean water regulations for parking lot clarifiers and SUSMPS and best management practices for construction projects.

Land Use/Planning/Conditions of Approval

- Create usable, safe bike paths throughout City to entertainment and employment locations and require bike rack parking in new projects.
- Mixed Use Ordinance to help bring housing, shopping and work together to reduce traffic congestion and improve air quality.
- Tree planting program that focus on California indigenous species.
- Require less traditional hardscape and increase use of permeable areas and permeable paving.
- Complete Washington-National Specific Plan and Transit Oriented Development projects.

Procurement

- Buy recycled, renewable items in bulk.
- Update fleet with vehicles utilizing alternative fuels, or electric cars.
- Waste Diversion Programs to bottles and paper.
- Update mailing lists to reduce duplications of hard copy items.

Office/Program Administration

- Implementing more electronic communication internally and externally
- Printing marketing materials on recycled paper and noting that on the materials
- Distributing the City's green/sustainability materials at every special event.

Sustainability Program

- Status of AIA Sustainability Report – report is currently being edited by AIA
- Status of formation of Environmental Operations & Programs Division to oversee Public Works Environmental and Sustainability programs

Energy Efficiency and Photovoltaic Projects for City Buildings

- Exploring possible pilot project for photovoltaic installation
- Study of potential for Photovoltaic installation at City facilities
- Developing project to replace aging HVAC system at Police Station with high efficiency system

Stormwater Program

- Prop 50 Stormwater Treatment Train Project

Sewer Programs

- Development of Sanitary Sewer Management Plan
- Upgrades to Pump Stations and Sewer Emergency Notification System
- Installation of "Smart Manholes" to provide additional sewer overflow protection

Solid Waste & Recycling

- Once a week residential recycling coming up
- Potential LA County Smart Gardening Demo Center at Culver Park
- Expansion of Commercial Recycling services
- Development of a Business Greening & Award Program

The City Council may wish to provide additional direction on what policy items the City Council would like to see over the next several Council meetings related to green building and related items.

FISCAL ANALYSIS

There are no additional costs associated with the discussion of this topic. However, depending on what policies are eventually adopted by the City Council, there will be associated fiscal impacts. Those impacts will be estimated and presented to the City Council at the time of consideration of these topics.

ATTACHMENTS

None

MOTION

That the City Council:

Discuss the topic of Green Building and Green Best Management Practices and direct staff as deemed appropriate.

Attachment 2

The U.S. Mayors Climate Protection Agreement

(As endorsed by the 73rd Annual U.S. Conference of Mayors meeting, Chicago, 2005)

A. We urge the federal government and state governments to enact policies and programs to meet or beat the target of reducing global warming pollution levels to 7 percent below 1990 levels by 2012, including efforts to: reduce the United States' dependence on fossil fuels and accelerate the development of clean, economical energy resources and fuel-efficient technologies such as conservation, methane recovery for energy generation, waste to energy, wind and solar energy, fuel cells, efficient motor vehicles, and biofuels;

B. We urge the U.S. Congress to pass bipartisan greenhouse gas reduction legislation that 1) includes clear timetables and emissions limits and 2) a flexible, market-based system of tradable allowances among emitting industries; and

C. We will strive to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking actions in our own operations and communities such as:

1. Inventory global warming emissions in City operations and in the community, set reduction targets and create an action plan.
2. Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walkable urban communities;
3. Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for car pooling and public transit;
4. Increase the use of clean, alternative energy by, for example, investing in "green tags", advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste to energy technology;
5. Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money;
6. Purchase only Energy Star equipment and appliances for City use;
7. Practice and promote sustainable building practices using the U.S. Green Building Council's LEED program or a similar system;
8. Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel;
9. Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production;
10. Increase recycling rates in City operations and in the community;
11. Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO2; and
12. Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.

The United States Conference of Mayors
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Phone (202) 293-7330 • Fax (202) 293-2352
E-mail: info@usmayors.org URL: usmayors.org

For Immediate Release
Date: July 13, 2007

Contact: Lina Garcia / Mayors Climate Protection Center
202.861.6735 or lgarcia@usmayors.org

600 Mayors in All 50 States and Puerto Rico Take Action to Reduce Global Warming

Washington, DC – Today, 600 U.S. Mayors have signed The U.S. Conference of Mayors' Climate Protection Agreement, an agreement where supporting mayors pledge to reduce carbon dioxide emissions by 7 percent below 1990 levels by 2012. This agreement is the only climate protection agreement of its kind among U.S. elected officials. Cedar Rapids Mayor Kay Halloran became the 600th mayor to sign the agreement.

The rapidly growing support from mayors for this agreement is significant because more than two-thirds of the American population currently live in cities. "We're proud to have the support of 600 mayors from all 50 states sign this agreement but we won't stop until every U.S. mayor has joined the fight to protect our climate," said Conference President Trenton Mayor Douglas H. Palmer. "The significant commitment by mayors to confront this global challenge is strong evidence of the growing political consensus from the local level to protect our climate now."

Conference Vice President Miami Mayor Manuel Diaz stated, "Mayors in Florida are attuned to the threats that global warming poses to cities especially coastal communities, that is why so many mayors in my state have joined the campaign to reduce global warming."

"City by city across America mayors are taking action. Isn't it time our Federal government joined the fray? Our grandchildren would appreciate it," said Conference Advisory Board Chair Seattle Mayor Greg Nickels, who first launched the mayors climate agreement in 2005.

Conference Executive Director Tom Cochran added, "We left our historical 75th Annual Meeting exceeding our aggressive goal to have 500 cities sign our climate agreement. Climate protection dominated our deliberations and we confirmed that mayors are on the front lines in protecting the environment in American cities."

In early May, Conference President Palmer announced during a convening of international mayors in New York, that Tulsa Mayor Kathy Taylor became the 500th mayor to sign the agreement, further demonstrating the geographic support behind the agreement.

To view a list of mayors who are signatories to the U.S. Conference of Mayors Climate Protection Agreement, please visit usmayors.org/climateprotection.

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Attachment 3

Meeting Date: February 14, 2005	Item Number 7

AGENDA ITEM:
Discussion of Options for Future Green Building Standards in Culver City

Contact Person/Dept.: Craig Johnson	Phone Number: 253-5802	
Fiscal Impact: Yes [X] No []	General Fund: Yes [X]	No []
Public Hearing: []	Action Item: [X]	Attachments: [X]
Public Notification: Legal Notification: Not Required Non Legal Notification: Publication in the Culver City News on February 3rd and 10th; Master Notification List on February 10, 2005 and a mailing of 495 postcards to all City licensed design professionals (architects and engineers) and all City licensed general contractors and City licensed realtors.		
Department Approval: Susan Evans 2-2-05	CAO Approval: Jerry Fulwood 2/9/05	
City Controller Approval: Jim Lavery 2/9/05		

RECOMMENDATION:

That the City Council discuss its options for a future Green Building Program and provide direction to staff.

BACKGROUND:

A Green Building is described as one using an integrated framework of design, construction, operations and demolition practices that encompasses the environmental and economic impacts of buildings. Green Building practices recognize the interdependence of the natural and built environments and seek to minimize the use of energy, water, and other natural resources and provide a healthy, productive indoor environment by providing more natural light, cleaner air, improved health, comfort and productivity.

In recent years, several municipalities throughout California have adopted a Green Building program (Attachment 1). These programs have been implemented by cities seeking ways to be more energy efficient, reduce solid waste during construction, reduce environmental pollution, and conserve natural resources. Several cities have found that integrating Green Building practices into the construction of city buildings has proved to be a sound financial decision as these buildings require lower energy, waste disposal and water costs.

Most municipalities tailor their programs to their specific community needs and goals. However, all Green Building programs address one or both of the following:

1. Energy efficiency measures; and
2. Water, materials, and interior environment measures.

A building's energy use is particularly significant because buildings in the United States consume 39% of the nation's primary energy and 71% of the nation's electricity. The remainder of energy is consumed by transportation and industry.

Based on the impact of energy use, this staff report will focus more on the concept of a Green Building program that addresses energy efficiency measures instead of one that focuses on water, materials, and interior environment measures.

Currently, Culver City's development and construction standards are no more restrictive in terms of Green Building standards than what is mandated by California State Code. Despite this fact, the City's Building Safety Division has two (2) educational handouts available to the public concerning Green Buildings (Attachment 2), which has led to Green Building measures being voluntarily taken by residents resulting in an average of three (3) new solar photovoltaic installations in the City per year. In addition, the City's Sanitation Division has adopted various recycling measures which are also a part of a Green Building program. Through these efforts, the Sanitation Division has surpassed, by 7%, the California Integrated Waste Management Board's requirement that 50% of all solid waste be diverted to recycling.

Energy use of new buildings is regulated nationwide, with California currently having the most restrictive requirements. In California, building energy efficiency is regulated by Title 24, Part 6, of the California Code of Regulations: California's Energy Efficiency Standards for Residential and Nonresidential Buildings. The 2001 Title 24 Standards are scheduled to be made more restrictive in October 2005 per the California Building Standards Commission.

The adopted standards are mandatory for all new and remodeled construction in California, with several minor exceptions. The standards may be met through either a prescriptive approach, specifying building features' energy performance; or a performance approach, meeting a maximum energy usage allowed. The standards are enforced by all jurisdictions in California through standardized forms and computer analysis that is submitted with the construction drawings as part of a construction permit application. The construction is inspected in the field to verify compliance with the approved plans. As a result of this process, California ranks 48th in energy consumption per capita.

DISCUSSION:

When determining the parameters of a Green Building program for the City, there are numerous policy questions that should be addressed:

1. What level of upgraded standards should be mandatory?
2. Should there be tougher standards for City and Redevelopment Agency projects than private construction?
3. If upgraded standards are instituted, should they apply to all construction or only projects of a certain size and scope?
4. What are the estimated additional costs of construction for various standards?
5. What are the estimated energy savings and reduced pollution that may be realized?
6. What will be the cost to the City general fund to institute new standards?

1. What level of upgraded standards should be mandatory?

The following are four (4) different potential programs that could be implemented in Culver City. All of the following options are more restrictive than the current California Title 24 requirements. Option 1 is the least restrictive program while Option 4 is the most restrictive program.

Option 1: Current Culver City Building Safety Voluntary Measures Model:

- No change to current Code
- Voluntary adoption of Green Building Measures
- Staff would continue providing educational handouts at the Building Safety counter on energy efficiency measures and sustainable building measures.

Option 2: California Department of General Services/ Real Estate Services Division Model

- The goals of the State of California are to site, design, deconstruct, construct, renovate, operate and maintain State buildings that are models of energy, water, and materials efficiency through mandating that all projects are designed in accordance with Title 24 and Government Code Sections 15814.30-31.

- This involves a requirement that all projects be designed to exceed the applicable Title 24 Energy Efficiency Regulations, Whole Building Appropriate, at initiation of preliminary plans by a minimum of 10%, unless documented by a consultant to the satisfaction of the State that it would not be cost effective. In such case, the project shall be designed and constructed within the initial project budget to exceed the energy efficiency requirements of Title 24, Part 6, California Energy Code by the maximum amount that is determined by the consultant to be cost effective.

- Consultant shall perform analyses of the US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) criteria as it applies to the design and construction of a project. While it is not required that an official USGBC certification and rating be obtained, the equivalent score of a "certified" rating, or better, is required for a project.

Option 3: City of Santa Monica Green Building Model

- Excluding single family dwelling units and duplexes, Santa Monica's ordinances related to Green Building standards require all projects (public and private development) to achieve better than Title 24 efficiency and use a minimum of four (4) major building materials with recycled content along with a series of other requirements regarding:
  1. Siting and form
  2. Landscape
  3. Transportation
  4. Envelope
  5. Materials
  6. Water systems
  7. Construction management
  8. Energy requirements

Option 4: Leadership in Energy and Environmental Design Green Building Model (LEED)

- The USGBC has developed the LEED Green Building Rating System which is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. LEED promotes green building through a comprehensive system offering project certification, professional accreditation, training and

practical resources.

- The current LEED Rating System can be made applicable to new commercial construction and major renovation projects, existing building operations, commercial interiors projects, core and shell projects, homes and neighborhood development.
- The LEED Rating system addresses location, site design, landscape features, construction materials, energy systems and performance, recycling, emissions, water reduction, and other development features.
- Under the LEED rating system, a project is awarded points based on the incorporation and implementation of green building elements. Projects can be awarded one of four levels of status: "certified," "silver," "gold," or "platinum," depending on the number of points achieved.

Option 5: Hybrid Model

- A combination of different aspects of each model.

2. Should there be tougher standards for City and Redevelopment Agency projects than private construction?

The following are four (4) different options regarding standards. Option number 1 is the least restrictive while option number 4 is the most restrictive.

Option 1
- Current Culver City voluntary measures be made mandatory for public construction.

Option 2
- Current Culver City voluntary measures be made mandatory for private construction and all public projects meet a LEED standard.

Option 3
- Private construction meet the State Real Estate Services Division guidelines and public construction meet a LEED certified standard.

Option 4
- Private construction meet a LEED certified standard and public construction meet a LEED gold standard.

3. Should upgraded standards apply to all construction or only projects of a certain size and scope?

The following are three (3) different options regarding size and scope. Option number 1 is the least restrictive while option number 4 is the most restrictive.

Option 1
- Upgraded standards would apply to all new commercial buildings over 10,000 square feet, all multifamily projects with eleven units or greater, and new single family home development.
- Standards would not apply to commercial buildings 10,000 square feet or less, commercial addition or renovation projects, multifamily projects of three (3) units or less, or single family homes.

Option 2
- Upgraded standards would apply to all new commercial buildings and all multifamily projects.

Option 3
- Upgraded standards would apply to all new commercial buildings, major additions or major renovations and to all multi-family buildings.

Option 4
- Upgraded standards would apply to all new commercial buildings, major additions or renovations, and to all single-family buildings.

4. What are the additional costs of construction for mandating various standards?

The following are three (3) different options relating to costs and standards. Option number 1 is the least restrictive while option number 4 is the most restrictive.

Option 1 : 10% energy efficiency improvement

- This option would add an estimated 2% to the total cost of construction.
- Examples of items that would be impacted by these standards include: lighting, insulation, heating, ventilating, and air conditioning equipment.
- A new 8,000 square foot commercial building may cost $140/ s.f. = $1,120,000 million.
- To improve the energy efficiency by 10% may increase the building cost by 2%; $22,400.

Option 2: 15% energy efficiency improvement

- This option would add an estimated 2.5% to the total cost of construction.
- To use the example above this would increase the building cost by 2.5%; $28,000.

Option 3: A LEED Gold Certification

- This option would add an estimated 4% to the total cost of construction.
- LEED certification, as noted previously, would involve much more than improving energy efficiency.
- To use the example above this would increase the building cost by 4%; $44,800.

5. What are the estimated energy savings and reduced pollution that may be realized?
The following is based on the same three examples presented in policy question number 4 above:

	Annual British Thermal Units ("btu")	**Annual Energy Cost**	**Annual Carbon Emissions**
Base 8,000 sq. ft. office building	680,800,000 btu	$9,680	15 tons
10% energy efficiency improvement	612,720,000 btu	$8,712	13.5 tons
15% energy efficiency improvement	578,680,000 btu	$8,228	12.7 tons
20% energy efficiency improvement	544,640,000 btu	$7,744	12 tons

6. What will be the cost to the City's general fund to institute various standards?

City costs may be divided into a one-time program set-up cost, annual costs, or costs per individual project. See elaborated discussion under financial impact.

SUMMARY:

Green Building energy efficiency measures are generally much more objective and simpler to establish and measure than building materials and interior environment measures. Efforts to minimize electricity use in particular is very important to the environment. Two thirds of all electricity produced is wasted through generation or transmission losses. One watt of electricity saved at the point of use corresponds to a savings of the raw materials required and pollution produced by the generation of 3 watts of electricity. Buildings themselves (and the equipment/appliances within them) consume 71% of the annual electricity production, the remainder goes to business and industry functions.

In determining what types of projects should be included in a Green Building program, it is important to take into consideration that currently no jurisdiction applies mandatory Green Building standards to single or two family renovations or new construction. Applying mandatory standards to residential renovations would be very difficult, and applying mandatory standards to new one or two family homes would not create a significant environmental improvement in Culver City as only a few such homes are built here annually.

The majority of construction projects in Culver City are renovations of some type. Applying mandatory Green Building standards to renovation projects in general, either multi-family residential or commercial, is possible but would be very involved and may be very costly because it would involve hiring a full time staff person who would be responsible for monitoring all renovation projects based on their full understanding of the mandatory standards.

It would be feasible to apply mandatory Green Building standards to new multi-family and commercial construction. They are new, generally freestanding buildings, and Green Building upgrades could be incorporated into the design from the beginning. All new multi-family and commercial construction in Culver City must complete a Planning

discretionary review process prior to applying for a construction permit. The applicant could be advised of the mandatory Green Building standards at this early stage in the design process.

In determining what type of program is right for Culver City, it is important to take into consideration staffing abilities.

A custom designed program, such as the City of Santa Monica program, would require a consultant and increased community involvement to establish, and would require highly qualified City staff members to monitor and enforce such a program.

Adopting a LEED standard could be implemented by utilizing outside LEED consultants. Any project intending to meet a LEED standard would initially hire a LEED accredited architect, or would add a LEED accredited consultant to the project. The LEED consultant would follow the project from start to finish, monitoring and advising on every aspect of the project. The LEED consultant would also coordinate the "building commissioning" after the project is finished (fine tuning and verifying performance, and instructing the building managers in the operation of the building), and would also submit the applications to the USGBC requesting LEED certification. The USGBC is the final determiner of whether a project meets a LEED standard.

Any Green Building program that the City adopts must be integrated into the City's current Planning discretionary review, construction permit review, construction permitting, construction inspection, and certificate of occupancy processes.

FISCAL ANALYSIS:

The following are cost comparisons of several potential program models and additional costs associated with a Green Building program.

	One time set-up cost	**Annual cost (to the City or Agency)**	**Cost per project (to the City or Agency)**
A 10% energy efficiency improvement for all major private construction	$50,000 consultant	$120,000 for one permanent contract plan reviewer/ inspector	None
A full Green Building program for all major private construction (The City of Santa Monica Model)	$300,000	$360,000 for three permanent or contract plan reviewers/inspectors	None
A full Green Building program for all major City construction (The City of Santa Monica Model)	$300,000 consultant (note: this would not be in addition to the $300,000 listed above for private construction.	$120,000 for one permanent contract plan reviewer/inspector	Would vary per project, probably a minimum of 2.5% additional construction cost per project
A LEED Gold standards for all major City construction	None	None	Would vary per project, probably a minimum of 4% additional construction cost per project

Additional costs associated with a Green Building program involve the following:

Workshops and Training: Workshops and training could be provided for staff, Planning Commissioners, and City Council members by an outside consultant. The estimated cost for these workshops is are approximately $1,000 each, for a total cost of $3,000 for an estimated need of three workshops.

Community Outreach: To encourage green private sector development in a voluntary program, or if the program is mandatory for the private sector, workshops should be provided for community members. A non-profit organization can provide these workshops to the public at an estimated cost of $1,000, for a total cost of $2,000 for an estimated need of two workshops.

Additionally, a brochure and handouts would be developed to explain the program

to the public at an estimated cost of $1,000 for development and printing.

Incentives: Some jurisdictions offer partial fee rebates, expedited permit processing, or recognition by the City Council to encourage private construction projects to meet voluntary Green Building standards.

ATTACHMENTS:

1. Other Municipality Green Building Comparison
2. Culver City Green Building Handouts
3. State of California Real Estate Division Energy Efficiency Checklist
4. LEED Description
5. Santa Monica Green Building Program Introduction and Required and Suggested Practices
6. Potential Culver City Green Building Model

MOTION:

That the City Council:

Discuss its options for a future Green Building Program and provide direction to staff.

Application for:

Revised Locally Adopted Energy Standards by the City of Culver City Building Safety Division
Establishing a mandatory 1kw solar photovoltaic system (or as an alternate an equivalent solar water heating system) for new commercial construction of 10,000 s.f. or greater and new multifamily construction of 10,000 s.f. or greater in Accordance with Section 10-106 of the California Code of Regulations, Title 24, Part 1

April ____, 2007

From:
Craig Johnson, Building Official
Culver City Building Safety Division
2nd Floor City Hall
9770 Culver Blvd.
Culver City, CA, 90232
310-253-5802
Email: craig.johnson@culvercity.org

Executive Summary

The City of Culver City Building Safety Division has researched and reviewed the feasibility and cost effectiveness of building permit applicants exceeding the performance requirements of the 2005 Energy Efficiency Standards.
The current and projected staffing level of the Culver City Building Safety Division will not support an additional energy efficiency program which requires a large amount of additional plan check staff time or additional field inspection staff time. The existing Building Safety Division staff will be able to implement and manage this proposed solar photovoltaic initiative.
Having established local energy efficiency criteria contained in the language of draft Resolution #____ (included as attachment #1 to this document). The City would like to implement its resolution at the earliest convenient date following approval by the California Energy Commission.

As stated in the resolution application, the proposed local energy efficiency standards and implementation have been designed with several key criteria in mind. These include:

- Consistency with the structure, format, and calculation methods of the 2005 Title 24 Energy Efficiency Standards;

- Simplicity and clarity for Building Safety Division enforcement for both energy plan review and field inspection;

- Meeting the local energy compliance requirements as defined by the resolution which exceed the 2005 Title 24 standards; and;

- The provision of flexibility by allowing construction permit applicants to meet the new requirement by one or more design approaches: (a) a solar photovoltaic system; and/ or (b) a solar hot water heating system; and/ or (c) paying an equivalent amount into a City fund to pay for solar systems on City owned facilities or other local non-profit entities.

This application to the California Energy Commission conforms to the requirements laid out in Section 10-106 of the California Code of Regulations, Title 24, Part 1, *LOCALLY ADOPTED ENERGY STANDARDS*. The proposed Culver City resolution shall take effect only after the Commission has reviewed and formally approved the proposed local energy standards as meeting all requirements of Section 10-106.

Statement per Section 10-106(b)3. The proposed resolution requires that all new commercial and multifamily residential construction shall be designed to consume no more TDV energy than permitted by Title 24, Part 6.
The main features of the proposed resolution are that:

1. New commercial or multifamily construction shall be required to install 1kw of solar photovoltaic power per each new 10,000 square feet of construction, or fraction thereof.

2. If the geometry of the new project doesn't permit compliance with the requirement, the construction permit applicant may pay an equivalent amount into a City fund to pay for solar systems on City facilities or other local non-profit entities.

3. This requirement will reduce the demand for offsite electricity for new commercial and multifamily buildings in Culver City.

4. It is expected that builders will consider enlarging the photovoltaic systems beyond the1kW requirement,

With respect to any technical questions concerning the development, methodology, descriptions, or implementation outlined in this application, please contact Craig Johnson at Culver City Building Safety.

Estimated solar photovoltaic energy result of the Proposed Resolution

The resolution proposes a mandatory 1kw solar photovoltaic system per 10,000 square feet of new commercial or multifamily construction; with an equivalent solar water heating system as an acceptable alternate, or if the geometry of the proposed project won't permit compliance with the resolution the permit applicant may pay an equivalent amount into a City fund to pay for solar systems on City facilities or other local non-profit entities.

It is expected that complying with the resolution will allow participating buildings to exceed the 2005 California Energy Efficiency Standards.

Note: the resolution makes it clear that all new buildings must comply with the California Title 24 Energy Standards in effect at the time of permit application. The resolution is in addition to the California Title 24 Energy Standards.

Participating buildings wishing to determine the energy value of photovoltaic installations in comparison to the total energy use calculated by using a California Energy Commission approved compliance program may follow the methodology provided below to convert kW installed PV to Time Dependant Valuation in kTDV/sf-yr.

1151 kWh x 3.414 Btu/Wh x 4.98 x .88 = 17,186 kTDV/yr

1151 kWh/year – assumed generation per year for a 1 kW system

3.414 Btu/W: = conversion from watts to British thermal units

4.98 = the average annual average TDV energy multiplier during daylight hours for Culver City.

0.88 = multiplier per the New Solar Homes PV Calculation for dirt and a modest percentage of non-working PV collectors

The value is then divided by the conditioned floor area of the building to calculate the kTDV/sf-yr.

For example; a 1 kw PV system on a new 10,000 sf commercial or multifamily building in Culver City:

$$\frac{17{,}186 \text{ TDV kBtu/yr}}{10{,}000 \text{ s.f.}} = 1.72 \text{ kTDV/sf-yr}$$

Simple Time Dependant Cost Benefit Analysis

	Estim. cost of constr.	Estim. cost of 1 kw PV system	Estimated CEC rebate	Estim. Fed. tax credit	Final 1 kw system cost	Final System cost as a percentage of constr. cost	Estim. annual dollar value of energy produced	Estim. simple payback time
10,000 s.f. commercial building	$1,500,000 ($150/ s.f.)	$11,000	$3,176 ($2.50/ watt)	$1,564	$6,260	.4% (.0041)	$380 ($.3/ kWh)	16 1/2 years
10,000 s.f. multifamily building	$1,700,00 ($170/ s.f.)	$11,000	$3,176 ($2.50/ watt)	$1,564	$6,260	.3% (.0036)	$380 ($.3 kWh)	16 1/2 years

Estimated cost of each 1 kw PV system if financed as part of the overall Building

Estimated 30 year finance costs as of April 2007 of $1,000: $4.50 per month or $54 per year.

A final 1 kw solar PV cost of $6,260 finance cost would be $28 per month or $336 per year.

A final 1 kw solar PV cost of $6,260 would produce an energy value of $31 per month or $380 per year.

Financing as part of the overall building a 1 kw solar PV system may result in a positive cash flow of approximately $3 per month or $34 per year.

Estimated Carbon Emissions Reduction of a 1 kW solar PV system

Each 1 kw solar PV system is reasonably expected to generate 1,151 kWh annually.

Based on a carbon dioxide emission factor of 818 pounds per Mwh a 1 kW PV system would save approximately 940 lbs of carbon dioxide emissions per year.

Implementation Plan

The proposed Culver City solar initiative would only apply to the larger commercial and multifamily residential construction projects in Culver City. Culver City is approximately 98% built out. There are approximately 2,400 construction permits, including plumbing, electrical, and mechanical permits, issued in a typical year in Culver City. The vast majority of them are for small residential or commercial remodel and/ or addition projects.

The proposed Culver City solar initiative would apply to approximately 6 - 12 projects per year, obviously varying each year.

All medium to large proposed Culver city development projects are required to complete a City Planning Division discretionary review prior to any construction permit applications.

If the solar initiative is put into effect each project applying for a discretionary review would receive an informational handout; describing the program and listing further sources of information, system installers, etc.

All qualifying projects applying for construction permits will again be informed of the requirement at the time of permit application.

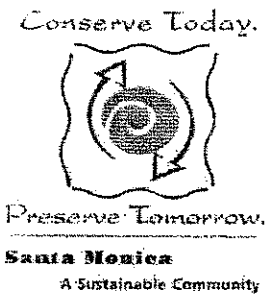
All projects the solar initiative applies to that apply for construction permits would be required to supply the standard energy forms and information on the plans indicating compliance with the 2005 California Energy Efficiency Standards. There will be no changes to the energy forms or the field inspection of qualifying projects, other than the plan review and field inspections of the required solar PV systems.

Culver City Building Safety staff have attended a training seminar on field inspecting solar PV systems, given by Mr. Bill Brooks of Brooks Engineering.

Required solar PV systems will be field inspected concurrently with the overall building construction. The overall building construction will not receive a final inspection nor will it receive a certificate of occupancy until all building systems, including the solar PV systems, are completed and operating.

SANTA MONICA SUSTAINABLE CITY PLAN

Adopted September 20, 1994
Update Adopted February 11, 2003
Revised October 24, 2006



Introduction

We live in a time in which increased population growth, high levels of consumption and the desire to feed growing economies have created escalating demands on our resources - natural, human and social - on a local, regional, and global scale. These demands negatively impact the natural environment, our communities and the quality of our lives. In the face of these challenges, people worldwide have developed a growing concern for the environment and a desire to live sustainably.

In 1994 the Santa Monica City Council took steps to address these pressures locally by adopting the Santa Monica Sustainable City Program. The Sustainable City Program was initially proposed in 1992 by the City's Task Force on the Environment to ensure that Santa Monica can continue to meet its current needs – environmental, economic and social - without compromising the ability of future generations to do the same. It is designed to help us as a community begin to think, plan and act more sustainably – to help us address the root causes of problems rather than the symptoms of those problems, and to provide criteria for evaluating the long-term rather than the short-term impacts of our decisions – in short, to help us think about the future when we are making decisions about the present.

The program includes goals and strategies, for the City government and all sectors of the community, to conserve and enhance our local resources, safeguard human health and the environment, maintain a healthy and diverse economy, and improve the livability and quality of life for all community members in Santa Monica. To check our progress toward meeting these goals, numerical indicators were developed and specific targets were set for the city to achieve by the year 2000 in four goal areas – 1) Resource Conservation, 2) Transportation, 3) Pollution Prevention and Public Health Protection, and 4) Community and Economic Development.

Following eleven years of implementation the Santa Monica Sustainable City Program has achieved much success. Many of the initial targets have been met or exceeded and Santa Monica is now recognized as worldwide role model for sustainability. However, we are not "there" yet. While we have made progress in the right direction, Santa Monica's economy and the activities of its residents, businesses, institutions and visitors continue to negatively impact human health and the environment. And our community does not yet provide for the basic needs of all its members. Many challenges remain before Santa Monica can truly call itself a Sustainable City.

Sustainable City Update Process

In reviewing the progress made since the 1994 adoption of the program, the Task Force on the Environment recognized the need to update and expand the Sustainable City goals and indicators to provide a more complete picture of community sustainability, and to develop new indicator targets for 2010. The Task Force felt that a comprehensive update would allow Santa Monica to build on its initial success and to better address the challenges to sustainability that remain.

The update process began in July 2001 with the formation of the Sustainable City Working Group - a large group of community stakeholders that included elected and appointed officials, City staff, and representatives of neighborhood organizations, schools, the business community and other community groups. The Working Group met numerous times over the course of 15 months to discuss the myriad issues related to the sustainability of the community. They evaluated the long-term sustainability of Santa Monica using a framework comprised of three forms of community capital that need to be managed with care in order to ensure that the community does not deteriorate. These include natural capital – the natural environment and natural resources of the community; human and social capital – the connectedness among people in the community and the education, skills and health of the population; and financial and built capital – manufactured goods, buildings, infrastructure, information resources, credit and debt.

The group proposed significant changes to the initial Sustainable City goals and indicators, and assisted with the creation of new indicator targets. Early drafts of the proposed update were revised based on a large amount of public input received during the summer of 2002.

The result of this process is this updated Santa Monica Sustainable City Plan, which represents the community's vision of Santa Monica as a sustainable city. The change in name from Sustainable City Program to Sustainable City Plan was made to better reflect the long-term comprehensive nature of Santa Monica's vision and the community's efforts to become a sustainable city.

Sustainable City Plan Structure

The Santa Monica Sustainable City Plan is founded on nine **Guiding Principles** that provide the basis from which effective and sustainable decisions can be made. These Guiding Principles have been revised and updated from the versions initially adopted in 1994.

The Plan has also been expanded to include eight **Goal Areas**:

- Resource Conservation
- Environmental and Public Health
- Transportation
- Economic Development
- Open Space and Land Use
- Housing
- Community Education and Civic Participation
- Human Dignity

Within each Goal Area are specific **Goals** which comprise the core of the community vision and represent what Santa Monica must achieve in order become a sustainable city.

For each goal specific **Indicators** have been developed to measure progress toward meeting the goals. Indicators are tools that help to determine the condition of a system, or the impact of a program, policy or action. When tracked over time indicators tell us if we are moving toward sustainability and provide us with useful information to assist with decision-making. Two types of indicators are tracked as part of the Sustainable City Plan. **System level indicators** measure the state, condition or pressures on a community-wide basis for each respective goal area. **Program level indicators** measure the performance or effectiveness of specific programs, policies or actions taken by the City government or other stakeholders in the community.

Many of the goals and indicators measure more than one area of sustainability. A **Goal / Indicator Matrix** has been included to demonstrate the linkages between these areas. The amount of overlap shown by the matrix demonstrates the interconnectedness of our community and the far ranging impact of our decisions across environmental, economic and social boundaries.

Specific **Targets** have been created for many of the indicators. The targets represent aggressive yet achievable milestones for the community. Unless otherwise noted, the targets are for the year 2010 using 2000 as a baseline. For some indicators no specific numerical targets have been assigned. This was done where development of a numerical target was determined to be not feasible or where limits on data type and availability made it difficult to set a numerical target. In many of these cases a trend direction was substituted for a numerical target.

Terms throughout this document that may be unfamiliar to the general reader are defined in a **Glossary**. Words or phrases defined in the glossary are shown in *italics* the first time they appear in the document.

Leadership, Guidance and Implementation of the Sustainable City Plan
The City's Task Force on the Environment assumed the initial leadership role on behalf of the community for the Sustainable City Program. With the update and expansion of the Sustainable City Plan into new and more diverse goal areas, the Task Force on the Environment recommended the creation of a Sustainable City Task Force (SCTF) that

includes broad representation from community stakeholders with expertise in all of the SCP goal areas The Sustainable City Task Force was created in 2003 to provide leadership and guidance for implementation of the SCP.

At the City staff level, an interdepartmental Sustainability Advisory Team (SAT) was created to coordinate existing City activities so they are consistent with the Sustainable City goals and facilitate the future implementation of innovative programs and policies to achieve the goals. Members of this group serve as Sustainable City liaisons to their respective departments.

Between them, the SCTF and the SAT are responsible for developing a comprehensive implementation plan for meeting Sustainable City goals and targets, and for coordinating implementation, both interdepartmentally and between the City and community stakeholder groups.

Reporting

Following the City Council adoption of the Sustainable City Plan, the SCTF , SAT and city staff will present Council with a baseline indicators report and a Sustainable City Implementation Plan. The indicators report will be updated and presented to Council annually. The report is intended to provide useful information to City Council, City staff and community members on progress being made toward meeting goals and targets of the Plan, and will provide a basis for decision-making about policies and actions that influence the City's ability to meet the goals and targets.

Santa Monica Sustainable City Plan
GUIDING PRINCIPLES

1. **The Concept of Sustainability Guides City Policy**
   Santa Monica is committed to meeting its existing needs without compromising the ability of future generations to meet their own needs. The long-term impacts of policy choices will be considered to ensure a sustainable legacy.

2. **Protection, Preservation, and Restoration of the Natural Environment is a High Priority of the City**
   Santa Monica is committed to protecting, preserving and restoring the natural environment. City decision-making will be guided by a mandate to maximize environmental benefits and reduce or eliminate negative environmental impacts. The City will lead by example and encourage other community stakeholders to make a similar commitment to the environment.

3. **Environmental Quality, Economic Health and Social Equity are Mutually Dependent**
   Sustainability requires that our collective decisions as a city allow our economy and community members to continue to thrive without destroying the natural environment upon which we all depend. A healthy environment is integral to the city's long-term economic and societal interests. In achieving a healthy environment, we must ensure that inequitable burdens are not placed on any one geographic or socioeconomic sector of the population and that the benefits of a sustainable community are accessible to all members of the community.

4. **All Decisions Have Implications to the Long-term Sustainability of Santa Monica**
   The City will ensure that each of its policy decisions and programs are interconnected through the common bond of sustainability as expressed in these guiding principles. The policy and decision-making processes of the City will reflect our sustainability objectives. The City will lead by example and encourage other community stakeholders to use sustainability principles to guide their decisions and actions.

5. **Community Awareness, Responsibility, Participation and Education are Key Elements of a Sustainable Community**
   All community members, including individual citizens, community-based groups, businesses, schools and other institutions must be aware of their impacts on the environmental, economic and social health of Santa Monica, must take responsibility for reducing or eliminating those impacts, and must take an active part in community efforts to address sustainability concerns. The City will therefore be a leader in the creation and sponsorship of education opportunities to support community awareness, responsibility and participation in cooperation with schools, colleges and other organizations in the community.

6. **Santa Monica Recognizes Its Linkage with the Regional, National, and Global Community**
   Local environmental, economic and social issues cannot be separated from their broader context. This relationship between local issues and regional, national and global issues will be recognized and acted upon in the City's programs and policies. The City's programs and policies should therefore be developed as models that can be emulated by other communities. The City will also act as a strong advocate for the development and implementation of model programs and innovative approaches by regional, state and federal government that embody the goals of sustainability.

7. **Those Sustainability Issues Most Important to the Community Will be Addressed First, and the Most Cost-Effective Programs and Policies Will be Selected**
   The financial and human resources which are available to the City are limited. The City and the community will reevaluate its priorities and its programs and policies annually to ensure that the best possible investments in the future are being made. The evaluation of a program's cost-effectiveness will be based on a complete analysis of the associated costs and benefits, including environmental and social costs and benefits.

8. **The City is Committed to Procurement Decisions which Minimize Negative Environmental and Social Impacts**
   The procurement of products and services by the City and Santa Monica residents, businesses and institutions results in environmental, social and economic impacts both in this country and in other areas of the world. The City will develop and abide by an environmentally and socially responsible procurement policy that emphasizes long-term values and will become a model for other public as well as private organizations. The City will advocate for and assist other local agencies, businesses and residents in adopting sustainable purchasing practices.

9. **Cross-sector Partnerships Are Necessary to Achieve Sustainable Goals**
   Threats to the long-term sustainability of Santa Monica are multi-sector in their causes and require multi-sector solutions. Partnerships among the City government, businesses, residents and all community stakeholders are necessary to achieve a sustainable community.

10. **The Precautionary Principle Provides a Complimentary Framework to Help Guide City Decision-Makers in the Pursuit of Sustainability**
    The Precautionary Principle requires a thorough exploration and careful analysis of a wide range of alternatives, and a full cost accounting beyond short-term and monetary transaction costs. Based on the best available science, the Precautionary Principle requires the selection of alternatives that present the least potential threat to human health and the City's natural systems. Where threats of serious or irreversible damage to people or nature exist, lack of full scientific certainty about cause and effect shall not be viewed as sufficient reason for the City to not adopt mitigating measures to prevent the degradation of the environment or protect the health of its citizens. Public participation and an open and transparent decision making process are critical to finding and selecting alternatives.

Santa Monica Green Building Program

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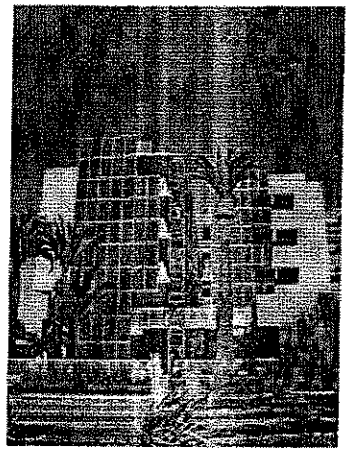
Santa Monica Green Building Program

The City of Santa Monica has a commitment to protecting the environment, improving quality of life, and promoting sustainability. In order to fulfill this commitment, the City has adopted a set of requirements and recommendations to encourage the development of "green" buildings without forcing excessive costs or other burdens upon developers, building owners or occupants. The City has also developed Green Building Guidelines to explain possible ways of achieving green building goals.



This site contains information both on what you must do and what you might consider doing in order to achieve Santa Monica's standards of excellence in green building design and construction.

For information on green techniques in general, and strategies for both Required and Suggested practices, see the Green Building Design and Construction Guidelines link. The Introduction to the Guidelines contains background information on Santa Monica's Green Building Program, as well as explanations of the green building design process.

For information on city requirements for all building projects in Santa Monica, see the Green Building Program Requirements.

For information about other City of Santa Monica Environmental Programs go to www.smepd.org.

Santa Monica Green Building Program

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Introduction

In September 1994 Santa Monica's City Council adopted the Santa Monica Sustainable City Program. This program was developed by the city's Task Force on the Environment as a way to create the basis for a more sustainable way of life – one that safeguards and enhances local resources, prevents harm to the natural environment and human health, and strengthens the community and local economy -- for the sake of current and future generations.

Conventional design and construction methods produce buildings that can negatively impact the environment as well as occupant health and productivity. These buildings are expensive to operate and contribute to excessive resource consumption, waste generation, and pollution. To help reduce these impacts and meet the goals of the Sustainable City Program, the Task Force recommended that the City adopt a set of guidelines to facilitate the development of "green" buildings in Santa Monica without forcing excessive costs or other burdens upon developers, building owners or occupants.

The Green Building Design and Construction Guidelines were developed over a three-year period by City staff and Sheltair Scientific Ltd., a sustainable design consultant team, with extensive input from the local design, construction and development community. The Guidelines include required and recommended practices that are intended to reduce life-cycle environmental impacts associated with the construction and operation of both commercial and municipal developments and major remodel projects in Santa Monica. They provide specific "green" design and construction strategies in the following topic areas: Building Site and Form, Landscaping, Transportation, Building Envelope and Space Planning, Building Materials, Water Systems, Electrical Systems, HVAC Systems, Control Systems, Construction Management, and Commissioning.

The Guidelines were developed for, and specifically apply to, the following building types:

- Institutional and Commercial Offices
- Light Industrial Buildings
- Commercial Retail Buildings
- Multi-Family Residences
- Hotels and Motels

They are not intended to address development of single-family residential dwellings and duplexes, high rise buildings, or occupancies with special process demands (heavy industrial operations, car washes, service garages, etc.), however many of the recommended practices presented in the Guidelines are relevant to these building types as well.

Santa Monica Green Building Program

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Why Green Building Design

North Americans currently lead a material way of life that is unsustainable in ecological and resource terms over the next century – and buildings are major causes of this. The "ecological footprint" — the productive land area required for resource extraction and to assimilate pollution generated — of the average American exceeds three city blocks per person. For comparison, the average European requires two-thirds of this land area; the average Third World citizen one-twelfth. If all of the earth's population lived a Californian lifestyle, the equivalent of three planets would be required to maintain them.

Buildings are major contributors to this consumption and waste:

- Buildings consume ~40% of total annual U.S. energy use. Production of this energy emits ~100 million tons of carbon dioxide, the primary greenhouse gas driving climate change.
- Most existing air-conditioned buildings use chlorofluorocarbon refrigerants, which have been implicated in destruction of the ozone layer.
- American homes each use between 10,000 and 40,000 gallons of water per year.
- Construction of the average home creates ~2.5 tons of waste; demolition produces ~20 tons, of which most goes to landfills.

Buildings have impacts on health as well as the environment. It is estimated that half of all commercial buildings suffer from air quality problems, resulting in poorer health of workers and other occupants.

Santa Monica Green Building Program

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Performance Ordinances in Santa Monica

Two Santa Monica Municipal Code ordinances aim at higher environmental and resource performance of buildings than state or federal requirements. These performance-based ordinances require building projects to meet or exceed a performance target, but allow complete flexibility in the methods used. These targets have been set to reduce resource or environmental impacts, using cost-effective and well-proven design and construction strategies. Santa Monica's two building performance ordinances focus on reducing energy consumption and runoff of untreated storm water.

This web site sets out many Recommended Practices that offer different ways to satisfy and surpass these performance requirements. These Recommended Practices provide of techniques to respond to the unique opportunities and constraints of a specific project. While the SMMC performance ordinances do not require the use of any particular method, they require documents demonstrating that the design meets minimum performance targets.

Building Energy Conservation Ordinance

The City of Santa Monica requires lower annual energy consumption than California's 2001 Title 24 regulation. Santa Monica Municipal Code requires more stringent annual non-renewable energy budgets, summarized in the following table.

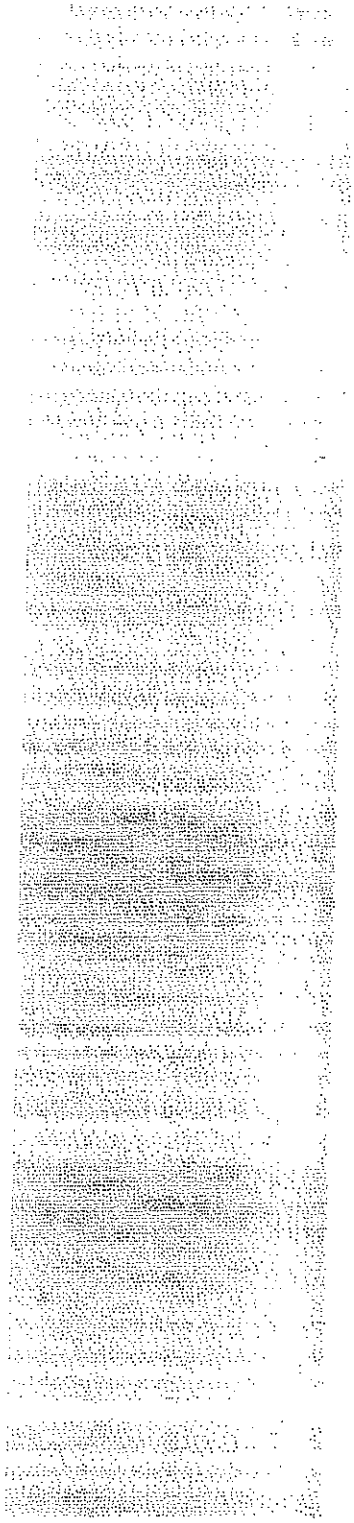
Building Occupancy	Annual Source Energy Conservation Target (relative to 2001 Title 24 energy budget)
Multi-family residences	10%
Hotels and motels	15%
Office	15%
Light industrial	15%
Retail	10%

These annual energy conservation targets are based on detailed computer energy simulations of archetypal buildings that comply with Santa Monica's zoning and building ordinances, and the 2001 Title 24 regulation. Computer model inputs and targets for Santa Monica were independently reviewed for accuracy and cost-effectiveness by respected architects, quantity surveyors and energy engineers familiar with construction practices in the City.

Santa Monica's building energy performance ordinance is based on California's Title 24 regulation, which is still applicable in the City. However, Santa Monica's ordinance requires use of computer simulations following Title 24's Performance Approach to demonstrate that non-residential buildings meet the energy conservation target.

Design teams of non-residential buildings are required to submit two reports to the City on energy performance of their designs:

A report summarizing preliminary computer energy analysis performed during conceptual design, as part of the development permit application; and



A report summarizing the final computer simulation demonstrating that the final design complies with the above targets, as part of the building permit application.

For residential buildings with more than two dwelling units, two methods can be used to demonstrate compliance with Santa Monica's Building Energy Conservation Ordinance:

computer energy simulations following the same requirements listed above for non-residential buildings; or documentation submitted for the building permit following Title 24's Prescriptive Standards, and incorporating the following list of energy-conserving construction features:

- All windows and glass patio doors equipped with double-glazed, low-emissivity glazing, with center- of-glass U-value not more than 0.260 Btu/(hr.sq.ft. deg.F.), and Solar Heat Gain Coefficient not more than 0.375.
- The average efficacy of all fixed lighting fixtures installed within dwelling units not less than 40 lumens watt (typically T8 and compact fluorescent lamps).
- Space heating appliances with Annual Fuel Utilization Efficiency (AFUE) not less than 92%.
- Space cooling appliances (if installed) with Seasonal Energy Efficiency Ratio not less than 12.

These multi-family residential building energy conservation measures have been demonstrated to result in 10-15% reduction in annual source energy use.

Click here to download the Santa Monica Energy Code Compliance Application (SMECCA)

Stormwater Management Performance Ordinance

The City of Santa Monica's Urban Runoff Reduction ordinance (SMMC 7.10.060) requires that new development and substantial remodels prepare and submit an Urban Runoff Mitigation Plan. The Ordinance and the Runoff Plan are designed to reduce the amount of polluted runoff that reaches our storm drain system and Santa Monica Bay. The Ordinance requires a 20% reduction in urban runoff from all new developments and substantial remodels within the City. The Ordinance also specifies guidelines for existing properties and sites under construction to reduce the level of contaminants carried by urban runoff into the Bay.

The most critical aspect of complying with the Ordinance is incorporating urban runoff reduction into the design of the project. The Urban Runoff Reduction Ordinance is a performance-based ordinance in that it requires a certain level of compliance, yet does not specifically prescribe specific methods that must be used to comply. These Guidelines help designers comply with the ordinance by high-lighting some of the more cost-effective measures that have been used in the City of Santa Monica.

When submitting a project for first planning approval, every applicant is required to submit an Urban Runoff Mitigation Plan to the City's Engineering Division. The Plan must show that the projected urban runoff from the project will be reduced by at least 20%. To accomplish a 20% reduction in runoff the project should maximize the amount of permeable area and minimize the amount of runoff flowing toward impermeable areas. The Site & Form section of this document provides more detail.

Santa Monica Green Building Program

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Required Practices

Siting & Form | Landscape | Transportation
Envelope & Space Planning | Materials | Water Systems
Construction Management

Required Practices	Environment	Ease of Use	Benefits	Capital Cost
Siting & Form				
SFa - (SMMC 7.10.050) Submit an Urban Runoff Mitigation Plan to the Engineering Division	✔✔✔	✔✔✔	✔✔✔	$$
Landscape	**Environment**	**Ease of Use**	**Benefits**	**Capital Cost**
LAa - (SMMC 7.10.050) Minimize stormwater runoff to impermeable areas	✔✔✔	✔✔✔	✔	$
LAb - (SMMC 7.16.020) Specify & Install Water-Efficient Irrigation Systems	✔✔✔	✔✔✔	✔✔✔	$
LAc - (SMMC 7.16.020) Restrict the Use of Water Features & Fountains	✔	✔	✔	$
Transportation	**Environment**	**Ease of Use**	**Benefits**	**Capital Cost**
TRa - (SMMC 5.20.080(c)(2).) Install Clarifiers or Oil/Water Separators on Drains from Service Bays & Parking Areas	✔✔✔	✔✔✔	✔	$
TRb - (SMMC 9.04.10.08.050) Provide Secure & Accessible Bicycle Storage for Visitors & Occupants	✔✔✔	✔✔✔	✔✔✔	$
TRc - (SMMC 9.04.10.08.050) Provide Facilities for Shared Vehicle Transportation	✔✔✔	✔✔✔	✔✔✔	$
Envelope	**Environment**	**Ease of Use**	**Benefits**	**Capital Cost**
ENa - (SMMC 9.04.10.02 150-151) Provide Space for Recycled Material Storage & Handling Systems	✔✔✔	✔✔✔	✔✔✔	$

Materials				
MAa - (SMMC 7.60) Require Recycling of Demolition & Construction Waste in Construction Contracts	✔✔✔	✔✔✔	✔	$
MAb - (SMMC 8.108.050) Specify Recycled Products per EPA purchasing guidelines	✔✔✔	✔✔✔	✔✔✔	$
Water Systems	**Environment**	**Ease of Use**	**Benefits**	**Capital Cost**
WSa - (SMMC 7.18.070) Specify & Install Water-Conserving Plumbing Fixtures & Fittings	✔	✔	✔	$
WSb - (SMMC 8.108.060) Reduce Hot Water Heat Loss with Insulation & Heat Traps	✔✔✔	✔✔✔	✔	$$
WSc - (SMMC 8.108.060) Heat Swimming Pools & Preheat Process Hot Water with Unglazed Solar Collectors	✔✔✔	✔✔✔	✔✔✔	$
WSd - (SMMC 5.20.080(c)(1)) Eliminate Lint from Sanitary Sewers in Professional Cleaning Facilities	✔✔✔	✔✔✔	✔	$
WSe - (SMMC 5.20.080(c)(1) & (c)(4)) Eliminate Grease from Sanitary Sewers in Food Preparation & Meat Retailing Facilities	✔✔✔	✔✔✔	✔	$
WSf - (SMMC 5.20.080(c)(5)) Eliminate Silver from Sanitary Sewers in Photo-Finishing Facilities	✔✔✔	✔✔✔	✔	$
Construction Management	**Environment**	**Ease of Use**	**Benefits**	**Capital Cost**
CMa - (SMMC 7.60) Prepare a Demolition & Site Protection Plan	✔✔✔	✔✔✔	✔✔✔	$
CMb - (SMMC 7.60) Salvage Reusable Materials & Separate Recyclables from Demolition (Recommended as part of Demolition and Site Protection Plan. Not Required)	✔✔✔	✔✔✔	✔✔✔	$
CMc - (SMMC 7.60) Inventory, Mark & Protect Topsoil, Trees & Vegetation to be Retained (Recommended as part of Demolition and Site Protection Plan. Not Required)	✔✔✔	✔✔✔	✔✔✔	$
CMd - (SMMC 7.10.060) Prepare a Stormwater Control Program for the Construction Site	✔✔✔	✔✔✔	✔✔✔	$

CMe - (SMMC 7.60) Recycle Construction Waste. & Designate a Site Waste-Management Person	✔✔✔	✔✔✔	✔✔✔	$
CMf - (SMMC 5.08.150(b), 7.10.040) Provide Safe Storage, Worker Training & Spill Cleanup Procedures for Hazardous Materials.	✔✔✔	✔✔✔	✔✔✔	$
Energy Requirements	**Environment**	**Ease of Use**	**Benefits**	**Capital Cost**
SMMC 8.108 Improved energy performance above California Title 24 requirements.	✔✔✔	✔✔✔	✔✔✔	$

Legend:

Environment :how well a Practice addresses environmental., health and resource-conservation issues.

Low ✔

Moderate ✔✔

High ✔✔✔

(Slightly beneficial; Beneficial; Best practice)

Ease of Use: how easily a given Practice can be implemented in design and construction.

Low ✔

Moderate ✔✔

High ✔✔✔

(Easy; Moderate; Difficult)

Benefits: benefits of a Practice besides reduced environmental, health or resource impacts, e.g. social and livability benefits of pedestrian amenities.

Low ✔

Moderate ✔✔

High ✔✔✔

(Slightly beneficial; Beneficial; Best practice)

Capital Cost: the effect of a Practice on total construction cost, relative to current Southern California practice.

Low ✔

Moderate ✔✔

High ✔✔✔

(Low-cost; Moderate cost; High cost)

Santa Monica Green Building Program

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Suggested Practices

Siting & Form	Landscape	Transportation
Envelope & Space Planning	Materials	Water Systems
Electrical Systems	HVAC Systems	Control Systems
Construction Management	Commissioning	

Suggested Practices	Environment	Ease of Use	Benefits	Capital Cost
Siting & Form				
SF1 - Use Narrow Floor Plates for Access to Daylight, Views & Natural Cooling	✔✔✔	✔✔✔	✔✔✔	$$
SF2 - Locate & Orient the Building to Control Solar Cooling Loads	✔✔✔	✔	✔✔✔	$
SF3 - Locate & Orient the Building for Passive Solar Heat in Winter	✔✔✔	✔	✔✔✔	$
SF4 - Shape Orient the Building for Exposure to Prevailing Winds	✔✔✔	✔	✔✔✔	$$
SF5 - Shape the Building to Induce Buoyancy Airflow into & Out of Interior Spaces	✔✔✔	✔	✔✔✔	$$
SF6 - Shape the Building for Solar Energy Collection	✔✔✔	✔	✔✔	$$
Landscape				
LA1 - Locate Landscaping & Landscape Structures to Shade Buildings	✔✔	✔✔✔	✔✔✔	$
LA2 - Use Landscape Design to Modify Wind Patterns & Enhance Building Ventilation	✔✔	✔✔✔	✔✔	$
LA3 - Apply Environmental Landscape Design Principals	✔✔✔	✔✔✔	✔✔	$
LA4 - Incorporate Areas for Urban Agriculture & Rooftop/Balcony Gardens	✔✔✔	✔✔	✔✔	$$
LA5 - Provide Shelter & Habitat for Urban Wildlife Through Landscape Design	✔✔✔	✔✔✔	✔✔	$
LA6 - Provide On-Site				

Composting Facilities	✔✔	✔✔	✔✔✔	$
LA7 - Use Recycled Landscape Products & Materials	✔✔	✔✔✔	✔✔✔	$
Transportation				
TR1 - Match the Area & Type of Paved Surfaces to their use.	✔✔✔	✔✔	✔✔	$
TR2 - Create a Safe & Comfortable Environment for Pedestrians	✔✔	✔✔	✔✔✔	$
TR3 - Provide Changing Rooms, Lockers & Showers for Cyclists & Joggers	✔✔	✔✔	✔✔	$
TR4 - Place Automobile Parking Fully or Partially Underground	✔	✔✔	✔✔✔	$$
TR5 - Share Parking Between Occupancies in Mixed-Use Projects	✔	✔	✔✔	$
TR6 - Provide Convenient Parking & Charging Facilities for Electric Vehicles	✔	✔✔	✔	$
Envelope				
EN1 - Design Windows to Maximize Daylighting & Views	✔✔✔	✔✔	✔✔✔	$$
EN2 - Shade Windows During Cooling Periods	✔✔✔	✔✔	✔✔	$$
EN3 - Use Roof Monitors for Daylighting Upper Floors	✔✔✔	✔✔	✔✔✔	$$
EN4 - Design Windows to Maximize Natural Ventilation	✔✔	✔✔	✔✔	$$$
EN5 - Shape & Plan the Interior to Enhance Daylight & Natural Airflow Distribution	✔✔	✔✔	✔✔✔	$$
EN6 - Incorporate Thermal Mass Into Building Structure	✔✔	✔✔	✔✔✔	$
EN7 - Select Light Colors for Exterior Finishes	✔✔	✔✔✔	✔✔	$
Materials				
MA1 - Restore & Incorporate Portions or Entire Existing Buildings in New Designs	✔✔✔	✔	✔✔	$$
MA2 - Specify Reuse of Salvaged Building & Landscape Materials	✔✔✔	✔	✔✔	$
MA3 - Design with Panel, Precut & Engineered Construction Products to Minimize Waste	✔✔	✔✔✔	✔	$
MA4 - Specify Durable				

Exterior & Interior Finishes	✔✔✔	✔✔	✔	$$$
MA5 - Design Interior Building Components for Future Disassembly, Reuse & Recycling	✔✔	✔✔	✔✔✔	$$
MA6 - Specify Wood from Sustainably Managed Sources	✔✔✔	✔✔	✔✔✔	$
MA7 - Use Low-Emission Finishes & Interior Materials to Reduce Indoor & Environmental Pollution	✔✔✔	✔✔	✔✔	$$
Water Systems				
WS1 - Specify & Install Water- & Energy-Conserving Appliances	✔✔	✔✔	✔✔✔	$$$
WS2 - Reuse Graywater for Outdoor Landscaping Irrigation	✔✔✔	✔	✔	$$
WS3 - Collect Rainwater for Outdoor Landscaping Irrigation	✔✔✔	✔✔✔	✔	$
WS4 - Select High-Efficiency Service Hot Water Heaters & Boilers	✔✔	✔✔✔	✔	$$
WS5 - Install Heat Recovery Systems on Wastewater Plumbing	✔✔	✔✔	✔✔	$
WS6 - Use Solar Collectors for Service Hot Water Heating	✔✔✔	✔✔	✔✔	$$
Electrical Systems				
ES1 - Select Electrical Equipment for Reduced Energy Demand & Consumption	✔✔✔	✔✔✔	✔✔	$$$
ES2 - Select Lighting Equipment for Reduced Energy Demand & Consumption	✔✔✔	✔✔	✔✔✔	$
ES3 - Integrate Daylighting & Electric Lighting in Task Oriented Spaces for Productivity & Comfort	✔✔	✔✔	✔✔✔	$$
ES4 - Integrate Daylighting & Electric Lighting in Task-Oriented Spaces for Productivity & Comfort	✔✔✔	✔✔	✔✔	$
ES5 - Maximize Impact in Sales Area with Efficient Lighting Strategies	✔✔✔	✔✔	✔✔✔	$
ES6 - Integrate Daylighting & Electric Light in High-Bay, Manufacturing & Color-Critical Areas	✔✔✔	✔✔✔	✔✔	$$
ES7 - Incorporate Photovoltaic Electricity Systems into the Building Fabric	✔✔✔	✔	✔✔	$$$
ES8 - Provide for Future Electric Vehicle Charging Stations	✔✔	✔✔✔	✔	$

HVAC Systems				
HS1 - Eliminate Mechanical System Sources of Indoor Air Pollution	✔✔✔	✔✔✔	✔✔✔	$$
HS2 - Isolate & Exhaust Indoor Point Sources of Air Pollution	✔✔✔	✔✔✔	✔✔✔	$$
HS3 - Separate Outdoor Intakes from Air Pollutant Sources	✔✔✔	✔✔	✔✔✔	$
HS4 - Provide for Additional Outdoor Air Supply Quantities in the Future	✔✔	✔✔✔	✔✔	$
HS5 - Filter or Treat Ventilation Air Supplies	✔	✔✔	✔	$
HS6 - Provide Effective Ventilation Air Distribution	✔	✔✔	✔✔	$$
HS7 - Reduce or Eliminate the Use of CFCs & HCFCs in Cooling Equipment	✔✔✔	✔✔	✔✔	$
HS8 - Select High-Efficiency Heating & Cooling Equipment to Reduce Energy Consumption & Demand	✔✔✔	✔✔✔	✔✔✔	$$
Control Systems				
CS1 - Use Digital Electronic Control of Lighting & HVAC Systems for Energy & Demand Savings	✔✔✔	✔✔	✔✔	$$
CS2 - Incorporate Daylighting Controls in Architecturally Daylit spaces	✔✔✔	✔✔	✔✔	$$
CS3 - Incorporate Occupancy Controls in Zones with Intermittent Use	✔✔✔	✔✔✔	✔	$$
CS4 - Use Variable-Speed Motor Controllers for Fans & Pumps with Modulating Flows	✔✔	✔✔✔	✔✔✔	$$
CS5 - Cool Building Mass at Night for Energy & Demand Savings	✔✔✔	✔✔✔	✔✔	$
Construction Management				
CM1 - Crush Waste Concrete & Masonry for Reuse	✔✔✔	✔✔✔	✔	$
CM2 - Use Material-Conserving Construction Practices	✔	✔✔✔	✔✔	$
CM3 - Select Safe Materials for Use On-Site	✔✔	✔✔	✔✔	$$
CM4 - Use Integrated Pest Management (IPM) to	✔✔✔	✔	✔✔✔	$$

Minimize Pesticide Use in Construction				
CM5 - Use Energy-Efficient Site Lighting & Controls & Low-Pollution Equipment	✔	✔✔✔	✔✔	$$
CM6 - Isolate Construction in Occupied Buildings to Protect Occupants	✔✔✔	✔✔	✔✔	$
CM7 - Schedule Potential Air-Polluting Operations to Reduce Occupant & Worker Exposure	✔✔	✔✔	✔✔✔	$$
CM8 - Flush with Full Outdoor Air for Seven Days Prior to Occupancy to Protect Occupants	✔✔	✔✔	✔	$$
CM9 - Thoroughly Clean Interiors, Building Cavities & HVAC Systems Prior to Furniture Installation & Occupancy	✔	✔✔✔	✔✔✔	$
Commissioning				
CO1 - Prepare & Follow a Formal Commissioning Plan	✔✔✔	✔✔✔	✔✔✔	$$
CO2 - Pretest & Functionally Test All Equipment to be Commissioned & Correct Deficiencies	✔✔	✔✔✔	✔	$
CO3 - Provide Operation & Maintenance Training for Staff	✔✔✔	✔✔	✔✔✔	$$
CO4 - Provide a Complete Final Commissioning Report to the Owner & Building Management	✔✔	✔✔	✔✔	$

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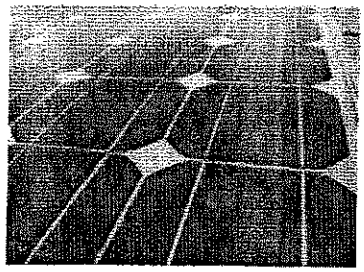
Design Credits

Solar Santa Monica

THE PROGRAM

Solar Santa Monica – the next step

Santa Monica is committed to becoming a "sustainable city." A number of active programs already help raise awareness and maintain public support for a cleaner, more environmentally responsible lifestyle.



Solar Santa Monica represents the next logical step in this community-wide effort. It includes ways to *save* energy by making homes and businesses more efficient – and it includes ways to *produce* energy by installing solar panels on individual buildings and on community sites throughout the City. Its goal is take a big step toward being energy self-sustaining by 2020.

Easy for you to participate

Solar Santa Monica approaches energy use in a new way. With the help of a full-time team of energy professionals, Solar Santa Monica has designed a process that will make energy decisions easier for residents. At the same time, Solar Santa Monica is determined to be sure all energy decisions make sense and that installations are of the highest quality.

Getting the most bang for your buck

The process begins with an examination of each home or business to find ways to reduce energy requirements. We assess appliances, the building envelope, electronics, heating and air conditioning, lighting, water and safety. After taking full advantage of energy efficiency potential we consider adding solar.

Bundling lower-cost efficiency upgrades with higher-cost solar significantly improves overall rate of return on the investment.

Simple choices, no surprises

To help simplify decision making, Solar Santa Monica has developed sample "packages" that combine efficiency and solar upgrades to show what a typical resident might expect in the way of equipment and costs.

Solar Santa Monica Package Providers have agreed to provide these typical residential upgrades at a fixed price. Working with standardized components means contractors can plan ahead, buy in bulk, train their people for maximum effectiveness – and pass on related savings.

Commercial buildings also take advantage of program savings and professional assistance. But with the exception of fixed per kW solar prices, each commercial project will be considered a custom installation.

NEWS

Town Hall

Town Hall – An enthusiastic crowd gathered at the Main Library on November 1 to celebrate Solar Santa Monica's first year.

Mayor Richard Bloom called residents and installers from the local community up onto the stage to recognize them for taking concrete action.

Santa Monica's accomplishments were put into a larger context by Terry Tamminen, Governor Schwarzenegger's chief energy policy advisor. "I talk about Solar Santa Monica everywhere I go," he said.

continued...

Banner Year

Solar Santa Monica Partners

The City of Santa Monica has selected a special environmental consulting firm, EcoMotion, to help the Energy and Green Building Programs office manage the day-to-day affairs of the program. These two groups make up the Solar Santa Monica team.

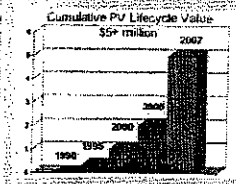
Solar Santa Monica has selected Preferred Providers (contractors who do actually do the work), is serving as a liaison with the City to streamline permitting, offers discounts through local appliance and hardware stores, and is working with local financing organizations to develop financing just for the program. We are involving the entire community in this effort!

Attention Participants. As our interest list continues to grow, we must request that residents have the historical data on their energy use available BEFORE the On-Site Energy Assessment. If you do not have copies of 12 months of your bills, you can get them on-line by clicking here for instructions for your Edison bills, and clicking here for Gas Co bills.

At the Town Hall, EcoMotion President Ted Flanigan highlighted 2007 Solar Santa Monica accomplishments.

As the chart shows, this year has seen a doubling of solar capacity for the City.

At a simple rate of 15 cents/kWh, the City's installed solar has a lifecycle value of over $5,250,000.



Over 335 kW were installed this year, with the City itself leading the way.

continued...

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City of Santa Monica

Solar Santa Monica

SOLAR SANTA MONICA RESIDENTIAL PACKAGES

Solar Santa Monica has developed four sample packages to show how typical efficiency upgrades work together with solar, for apartments and homes.

The On-Site Energy Assessor is familiar with each item, and the Package Providers have agreed to provide these items at a fixed price so as to simplify all decision making.

Our 50 demonstration sites will – to the extent possible – include these typical efficiency and solar upgrades.

The sample packages are:

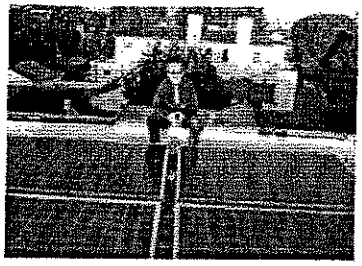
- Solar + Efficiency Standard - most popular
- Super Solar - most comprehensive
- Single Family - a minimum standard
- Basic Apartment - every upgrade makes a difference

At the walk-through, the home will be examined for savings potential in nine areas:

1. Appliances
2. Building Envelope
3. Electronics
4. HVAC (Heating, Ventilation, Air Conditioning)
5. Lighting
6. Water Heating
7. Water Savings
8. Safety
9. Solar

The assessment for roof-top solar potential includes the orientation of the roof, available roof space, type of roof, current electrical usage (for PV – Photovoltaic – panels) or current water usage (for solar thermal – hot water – collectors).

In the case of an apartment or a condo, where a rooftop installation is impossible or impractical, the solar option consists of the purchase of shares of a community solar trust. The trust will invest in solar installations at neighborhood locations – in a park, on a parking lot, etc. – so that everyone is involved in providing "clean energy" for the City.



Building the program around standardized components has a number of advantages. It reduces choices and thus makes decisions easier for **residents.** It means **contractors** can plan ahead, buy in bulk, train their people for maximum effectiveness and pass on related savings. Standardized components make it easier for the **City** to manage and approve the upgrade process. Finally, having standardized components encourage **lenders** to finance the

Solar Santa Monica

SOLAR SANTA MONICA: SOLAR STANDARD PACKAGE

Sample Solar + Efficiency Standard Package
Gross cost: $22,800
Discounted cost: $14,900
Typical savings over 5 years (current rates): $7,230
Simple rate of return on investment: 9.8%

Solar savings alone over 30 years: $52,800
(assumes 5300 kWh/year saved at $.15/kWh, with 5% annual increase in utility costs)

This package is the cornerstone of the Solar Santa Monica program. It starts with a thorough assessment of the home for efficiency improvements, and then considers solar. Gross costs include the purchase of equipment plus the cost of expert installation. Discounted costs are calculated by subtracting state, city and utility rebates plus a $2,000 Federal income tax credit.*

This representative sample uses a 2 kW solar electric installation. At the walkthrough, the Solar Santa Monica advisor and the resident will decide the best size for that particular home.

Solar Santa Monica: Solar Standard Package

Class	Measures	Quantity
Walkthrough	Energey usage assessment	1
Appliances	21 cubic foot Estar refrigerator (assume $800 allowance)*	1
Building Envelope	Window Tune Up	2
	Door Weather Strip	2
	Door Sweep	2
	Switch and Outlet Insulation	12
Electronics	Smart Strip power strip	1
HVAC	Table Fan	1
	Clean/replace A/C Filters	1
	Re-program thermostat	1
Lighting	7 watt CFL	8
	15 watt CFL	4
	23 watt CFL	6
	Par 40 23 watt reflector lamp	4
	55 watt torchiere	1
	Energy Star circline fixture 40w	1
	Energy Star circline fixture 20w	1
	EStar motion security light 40w	1
	Energy Star exterior lights 18w	1
	LED nightlights	2
Solar	2 kW AC photovoltaic system	1

Water Heating	Insulate hot water pipes	1
Water Saving Measures	Low-flow showerhead	2
	Low-flow faucet aerator	2
Safety and Referrals	Safety Check	1
	Referral Sheets	1

*Incentives or tax credits apply. Please consult with your own tax advisor to understand tax implications and confirm your eligibility for tax credits.

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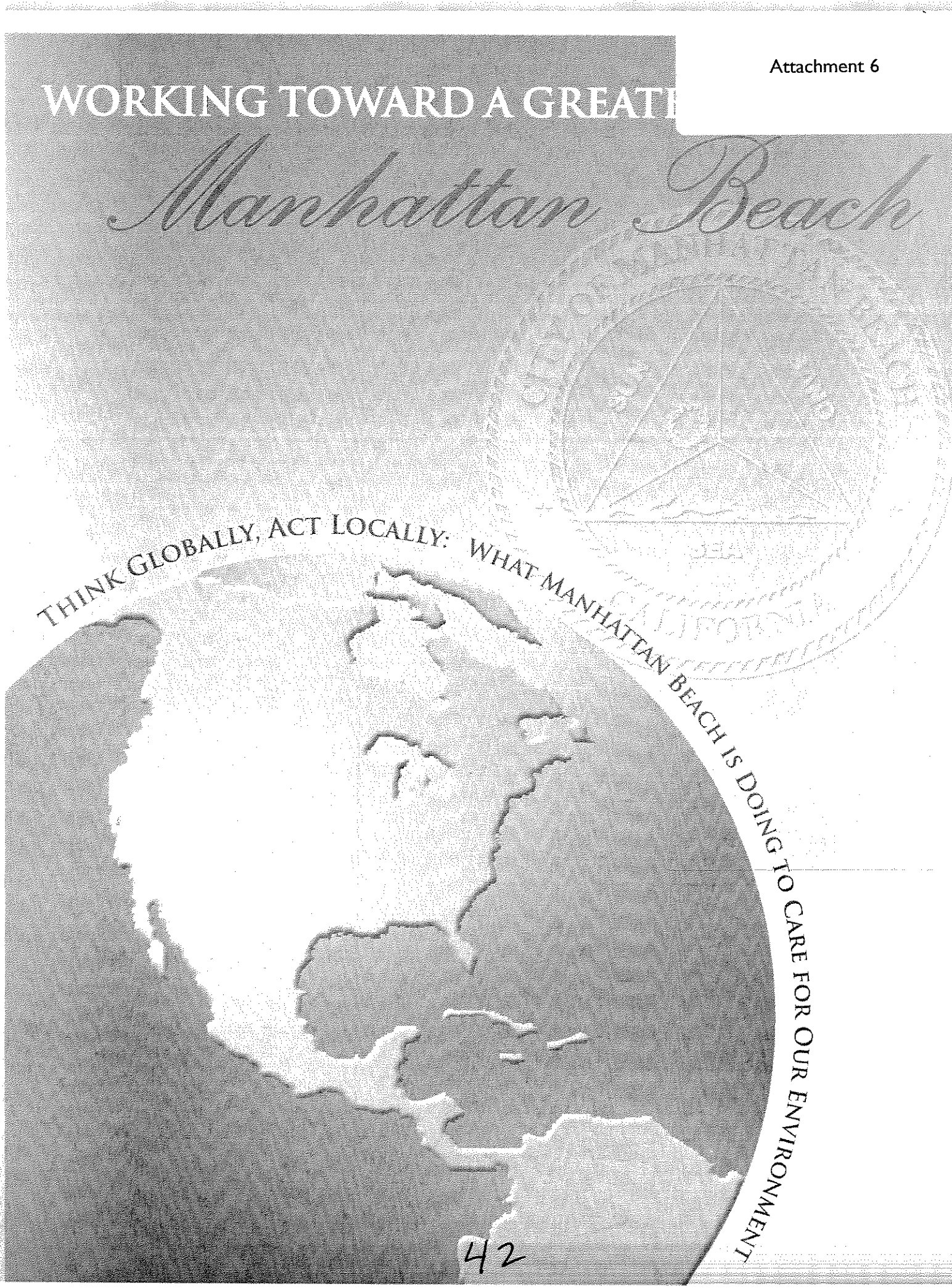
City of Santa Monica

WORKING TOWARD A GREATE

Manhattan Beach



THINK GLOBALLY, ACT LOCALLY: WHAT MANHATTAN BEACH IS DOING TO CARE FOR OUR ENVIRONMENT

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Message from the City Manager

In response to the City Council 2007/08 Work Plan item, I am pleased to present this comprehensive environmental evaluation. In order to prepare this report, I brought together a group of employees and called them the "Green Team," comprised of Police Chief Rod Uyeda, Public Works Director, Jim Arndt, Community Development Director, Richard Thompson, Finance Director, Bruce Moe, and Assistant to the City Manager, Lindy Coe-Juell. I want to thank and congratulate them and their staffs for their time and effort in compiling this Green Book.

Global warming, urban runoff pollution, sustainability, carbon emissions, and the three R's (reduce, reuse and recycle) are all terms we read about in the papers daily. This book furthers our understanding of these issues and how they impact the City of Manhattan Beach, and most importantly, how we can become more proactive in protecting and preserving our environment.

Every resident satisfaction survey conducted by the City has shown beach and ocean cleanliness as our residents' top priority. Clearly our residents have an interest in our environment and our planet.

The purpose of the Green Book is to address the entire environmental spectrum from ocean, water, and air quality to global warming and conservation of resources.

Our first task was to identify and categorize the many environmental programs the City of Manhattan Beach participates in and/or implements. As you will read throughout this report, the City has been environmentally responsive for many years. While we are very proud of our past and current efforts, there is so much more we can accomplish.

Consequently, our next task was to identify opportunities and best management practices that we can consider adopting, thus becoming an even more environmentally sensitive city. As we move forward, some of the new initiatives we've identified may be fairly easy to implement, while others may take additional resources. Still, others may require significant community involvement and political leadership from Council.

The last section of our report is a review of the opportunities for community involvement. Although the City can undertake some initiatives unilaterally, others will clearly need the support of the community. Indeed, the ultimate goal is to not only improve municipal practices, but to lead a paradigm shift in community awareness and action. How well we do this may depend effectively on how we involve residents in our municipal efforts.

Finally, we recognize that this is our initial effort and some ideas and opportunities may not have been identified. As City Council moves forward and sets priorities, and as we implement these programs, we will continue to look for opportunities to be the best stewards of our community and planet resources we can be.

Sincerely,

Geoff Dolan
City Manager

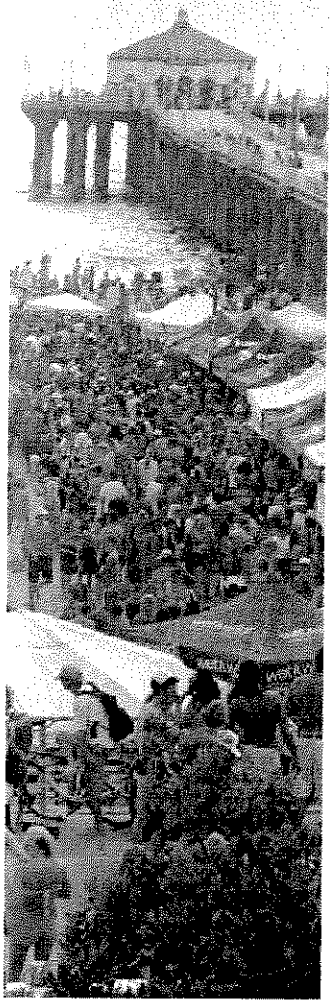
Introduction

Our City

Manhattan Beach, a thriving 3.88 square mile coastal community, is often referred to as the Pearl of the South Bay. Indeed, the people who live and work in Manhattan Beach view this city with a special reverence and work hard to preserve its beauty and charm. Still, the City's focus is becoming more global as we rise to the challenge of preserving more than what lies within Manhattan Beach's borders.

In the 2006 Resident Satisfaction Survey, protecting the beaches and ocean from pollution rated as a resounding priority, with 91% of residents indicating that this was very or extremely important to them in preserving the quality of life in Manhattan Beach. In the spirit of preserving this and other natural resources, and under the direction of City Council, the City of Manhattan Beach has committed to embracing additional measures that will reduce the negative impacts of its operations on the environment.

> Worldwide, increased population growth has created escalating demands on natural resources, caused higher levels of pollution, and negatively affected oceans and polar ice caps.



A Little History...

The City of Manhattan Beach has always been sensitive about the environment, implementing a variety of programs considered environmentally friendly. The City's General Plan, which lays out the long-term goals, programs and policies for future development, contains a number of policies which support a "greener" Manhattan Beach. These include:

- Implementing construction and demolition programs that require enhanced recycling efforts
- Implementing storm drain programs to protect our ocean and coastal beaches
- Preserving the existing green spaces in the City, and encouraging additional landscaping
- Ensuring that we are a pedestrian-oriented community with the greenbelt, walk streets, enhanced streetscapes, mixed-use projects, and sidewalks
- Providing alternative transportation and public transit
- Conserving and protecting natural resources in Manhattan Beach
- Using reclaimed water to irrigate many of our green spaces
- Encouraging maximum recycling in all sectors of the community, including residential, commercial, industrial, institutional, and construction
- Encouraging the City's franchise trash service to have more recycling programs

- Purchasing more recycled and environmentally friendly products
- Purchasing alternative fuel, hybrid and gas efficient vehicles when possible
- Installing energy and water saving devices in City buildings where possible

Although these programs are effective and do raise awareness about environmental issues, only a few programs currently include specific pollution reduction goals or hold us accountable in our efforts to protect the environment.

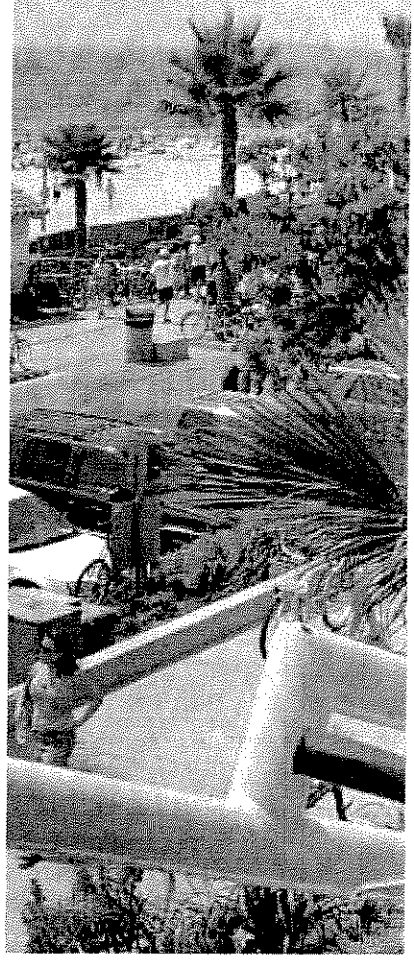
Formation of the Green Team

In the fall of 2006, several local residents approached the City Council asking that they consider endorsing the United States Mayors Climate Protection Agreement, which focuses on global warming and the need for all cities to reduce greenhouse gas emissions. The City Council directed staff to research the Agreement and report back with their findings. Following this directive, in January, 2007, the City Council adopted a resolution endorsing the US Mayors Climate Protection Agreement. Although this resolution focuses solely on greenhouse gas emissions, it was the catalyst for comprehensively evaluating the City's environmental programs, policies and goals.

Shortly thereafter, in April of 2007, the City Council met to discuss the upcoming 2007/08 Annual Work Plan. At that meeting, the City Council unanimously agreed to direct staff to prepare a report on programs that the City of Manhattan Beach is currently implementing to protect the environment, as well as to investigate and summarize what other cities are doing in this arena. The City Council decided to expand its focus beyond global warming issues to include all of the City's environmental programs and policies, such as water conservation, storm water run off, pollution, urban forests, development, beach protection, and environmentally friendly purchasing.

As a first step, in the summer of 2007 the City Manager formed the "Green Team." This team included the Chief of Police, the Directors of Community Development, Public Works, and Finance, and the Assistant to the City Manager. Over the past several months, the Green Team and their staffs have compiled data on the City's own environmental programs, researched successful programs and best practices implemented in other communities, and developed a list of actions for future consideration by City Council.

We, the "Green Team" of Manhattan Beach, are proud and excited to engage ourselves in this incredibly worthwhile endeavor. We thank the City Council for having the foresight and willingness to choose this exciting path, one that will leave a legacy that benefits not only the people of today, but also the generations to come.



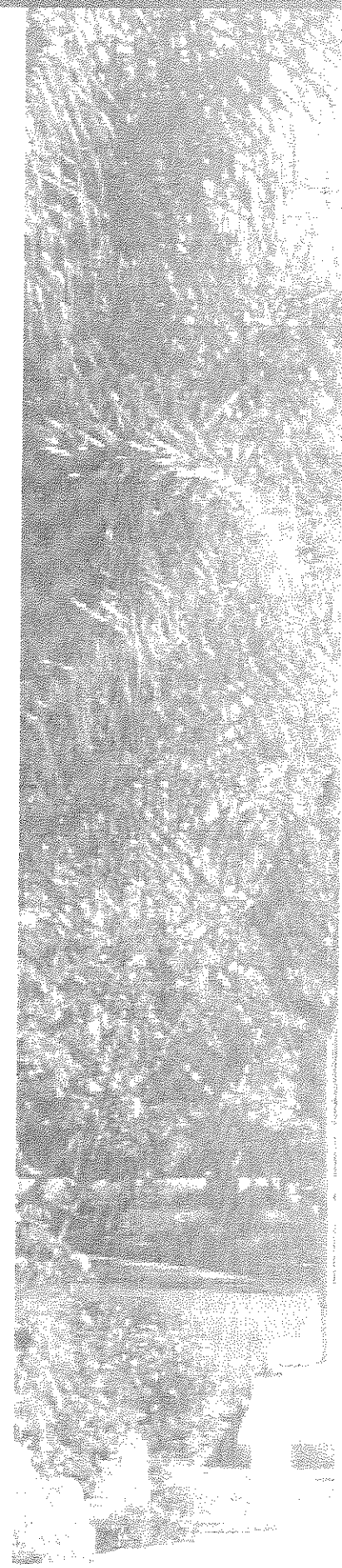
US Mayors Climate Protection Agreement

With the City Council's endorsement of the US Mayors Climate Protection Agreement, Manhattan Beach is acknowledging the dangers associated with global warming and making a commitment to take steps to reduce global warming pollution to seven percent below 1990 levels by 2012, a goal often referred to as the Kyoto Protocol.

This commitment includes considering alternatives to fossil fuels and accelerating the development of clean, economical energy resources and fuel-efficient technologies such as conservation, methane recovery for energy generation, waste-to-energy, wind and solar energy, fuel cells, efficient motor vehicles, and bio-fuels.

To help the City reach or exceed Kyoto Protocol targets, the City has agreed to try to reduce greenhouse gas pollution by taking actions in its operations and communities. These actions include:

- Conducting an inventory of global warming emissions in City operations and in the community, setting reduction targets, and creating an action plan.
- Supporting energy efficiency through retrofitting City facilities with energy efficient lighting and urging employees to save energy which saves costs.
- Increasing the average fuel efficiency of municipal fleet vehicles; launching an employee education program including anti-idling messages; converting diesel vehicles to bio-diesel.
- Practicing and promoting sustainable building practices using the United States Building Council's LEED program or a similar program (see Sustainable Development section).
- Supporting land-use policies that preserve open space and create compact, walkable urban communities.
- Promoting transportation options such as bikeways, commuter trip-reduction programs, incentives for car pooling, and public transit.
- Evaluating opportunities to increase pump efficiency in water and wastewater systems.
- Maintaining healthy urban forests; promoting tree planting to increase shading and absorb CO_2.
- Increasing the use of clean, alternative energy by advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste-to-energy technology.
- Where feasible, increasing recycling rates in City operations and in the community.
- Where feasible, purchasing "Energy Star" equipment and appliances for City use.
- Supporting education of the general public, students, service organizations, businesses, industry and others about reducing global warming pollution.



Working Towards a Greater, Greener Manhattan Beach

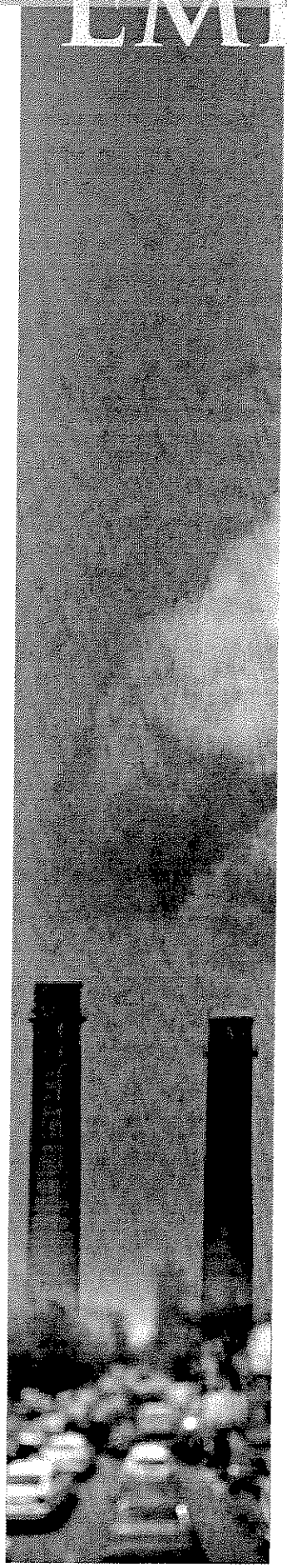
This report is divided into eleven environmental sections. The first part of each section introduces the environmental topic and highlights the environmentally friendly City practices and policies. The next part of each section highlights other notable programs implemented both locally and throughout the nation. The last part of each section identifies programs and practices for future consideration as the City Council and the community decide how to become a greater and greener city.

To give the readers some perspective, each program and practice for future consideration includes a preliminary rating scale identifying its likely costs and ease of implementation. These ratings were subjectively assigned by the Green Team through discussion about initial understanding of costs, and general agreement was reached on the rating for each program and practice.

Cost considerations included equipment, resources, staff time, operations, capital expenditures and other tangible items. Ease of implementation considerations included public acceptance, conflicting environmental concerns, infrastructure, practicality and intangible concepts. Actual cost projections will be worked out as Council decides which programs and practices to pursue.

Cost Rating		**Feasibility Rating**	
$	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

EMISSIONS *Inventory*



In August of 2007, the City Council adopted a resolution in support of the Cities for Climate Protection Campaign. As with the US Mayors Climate Protection Agreement, the City pledged to establish a greenhouse gas (GHG) reduction goal and develop an action plan to achieve that goal.

One of the first steps being taken to accomplish this goal is to calculate greenhouse gas emissions generated from government operations and our community; this is also known as determining our City's emissions footprint. 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.

We will also use historical data to estimate the City's greenhouse gas emissions released in 1990, information which will help us to determine our future emissions reduction goal. In line with the Kyoto Protocol, our goal is to achieve a 7% reduction below the City's 1990 emissions level.

International Council for Local Environmental Initiatives (ICLEI)

To measure our greenhouse gas emissions, The City utilized assistance from the International Council for Local Environmental Initiatives (ICLEI). ICLEI is an international association of more than 600 local governments, with at least 50 members from California, dedicated to the solution of local, regional, and global environmental problems. Through ICLEI, this network of local governments shares knowledge and ideas about how to effectively and cost-efficiently achieve local, national, and global sustainability objectives.

In 1991, ICLEI launched the Urban CO_2 Reduction Project. Six North American cities and six European cities were chosen to participate in this pilot project to analyze and quantify their individual greenhouse gas (CO_2) emissions and to develop local action plans to help achieve a 20% reduction in emissions. Initial results of the pilot project have shown that these cities have achieved significant energy savings and corresponding financial savings by taking steps to reduce their emissions.

Building on the success of the pilot program, ICLEI recently initiated the Cities for Climate Protection (CCP) Campaign. The campaign, which is partially funded by the Environmental Protection Agency (EPA), promotes local action to reduce greenhouse gas emissions. The campaign also developed a software program which evaluates commonly accessible data for local utilities, electricity usage, natural gas usage, fuel usage, employee commute miles, waste generation, etc. The software program then