



# CITY OF LONG BEACH

OFFICE OF THE CITY MANAGER

# R-22

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PATRICK H. WEST  
CITY MANAGER

February 2, 2010

HONORABLE MAYOR AND CITY COUNCIL  
City of Long Beach  
California

## RECOMMENDATION:

Adopt the Initiatives, Goals and Actions of the Sustainable City Action Plan and direct the City Manager to prepare the final document for public distribution.  
(Citywide)

## DISCUSSION

The Sustainable City Commission, which advises the City Council on environmental issues such as buildings and neighborhoods, urban nature, transportation, water, energy, waste reduction and green economy and lifestyle, has created the City's Sustainable City Action Plan. The Sustainable City Action Plan is a task to be completed by the Sustainable City Commission according to the work plan approved by the City Council.

Long Beach's Sustainable City Action Plan (Plan) is a comprehensive, citywide framework and is intended to be a tool for creating a sustainable city by helping to guide future operational and policy decisions. The Plan was developed over seven months at public Sustainable City Commission meetings and has had input from departments across the City, including the Port of Long Beach and the Long Beach Water Department.

A draft of the Plan was made available on the City's website along with an online survey designed to solicit feedback from the community. The draft Plan was available for public comment between July 6, 2009 and September 30, 2009. The online survey was a brief eight questions and yielded approximately 100 responses and additional comments.

Additionally, staff built community support by sharing the draft Plan at over 20 community meetings, where the public was invited to comment and provide input to improve the Plan. The draft Plan was provided at all community meetings and online. Staff and the Sustainable City Commissioners also shared the Plan with the City's internal green team, other City Commissions, other agencies and the City Council.

The Plan is intended to be comprehensive, citywide and strategically incorporate multiple interconnected aspects of what it means to be a sustainable city. The Plan includes initiatives, goals and actions that are intended to be challenging and realistic and is

organized into seven chapters, including buildings and neighborhoods, urban nature, transportation, water, energy, waste reduction, and green economy and lifestyle. Each chapter includes quantifiable, measurable goals with specific action items, and also provides baseline information and supporting documentation such as graphs, charts and/or diagrams which demonstrate the concepts presented. The Plan will be followed by a citywide Green Report Card, which will show incremental progress toward the goals and metrics provided in the Plan and will be published each year during Earth Week (April).

The Plan has been unanimously approved by the Sustainable City Commission on September 24, 2009 and the Council's Environmental Committee on October 27, 2009. This Plan supports the City Council's desire to be a green city and sets priorities for accomplishing this goal. The Plan is designed to be a beacon and a roadmap for the type of city we want to become and can be used as a tool for guiding the City's operational and policy decisions toward a greener future. This Plan shows that Long Beach is well-positioned for meeting current and future local, regional, state and federal requirements and gives the City a competitive advantage for grants and partnerships moving forward. The Plan is a solid framework to achieve a sustainable city for current and future generations.

This matter was reviewed by Deputy City Attorney Linda Trang January 13, 2010 and Budget and Performance Management Bureau Manager David Wodynski on January 19, 2010.

#### TIMING CONSIDERATIONS

City Council action is not time critical.

#### FISCAL IMPACT

There is no cost associated with this item. All projects that implement the initiatives recommended in the Plan will come to the City Council for approval along with identified funding.

#### SUGGESTED ACTION:

Approve recommendation.

Respectfully submitted,



f PATRICK H. WEST  
CITY MANAGER


Attachments: Sustainable City Action Plan and Summary  
Community Meeting Map  
Environmental Committee Presentation

# LONG BEACH SUSTAINABLE CITY ACTION PLAN


This Sustainable City Action Plan includes initiatives, goals and actions that will move Long Beach toward becoming a sustainable city. Recognizing the interconnectedness of our environment and our place in it, the initiatives in this plan are interconnected as well. This plan is meant to guide our decisions, expand our thinking and inspire us to strive toward a truly sustainable Long Beach.

## Initiatives


### Buildings and Neighborhoods

- 
- Accelerate the use of green building techniques in new development, renovations and retrofits to improve building efficiency and health
  - Enhance and enliven corridors and neighborhoods with green infrastructure and public spaces
  - Enhance our community to encourage people to get out of their cars and into their neighborhoods


### Energy

- 
- Shrink Long Beach's carbon footprint by reducing greenhouse gas emissions
  - Ensure all of the City of Long Beach's operational needs are met through energy efficiency, conservation and renewable energy sources
  - Reduce electricity and natural gas consumption of the Long Beach community


### Green Economy & Lifestyle

- 
- Establish Long Beach as the leading California city for green business and green job growth
  - Promote individual action that encourages active and green lifestyles, which supports a green economy


### Transportation

- 
- Reduce emissions and improve air quality by moving toward more fuel efficient and alternative fuel vehicles
  - Increase public transit ridership by expanding access, infrastructure and convenience
  - Provide an environment and culture where walking and biking are safe, viable and preferred modes of transportation in the city


### Transportation

- 
- Implement the Clean Air Action Plan (CAAP), designed to significantly reduce port-related air emissions over a 5-year plan, through a partnership with the Harbor Department and its tenants


### Waste Reduction

- 
- Increase diversion by reducing waste and increasing recycling and reuse
  - Increase awareness and promote the concepts of reduce, reuse, and recycle
  - Utilize recyclable materials as a raw materials source for industrial development to enhance the recycled-materials market in Long Beach

### Urban Nature

- 
- Create a more balanced network of open spaces through acquisition, restoration and gateway linkages, consistent with the 2002 Open Space and Recreation Element of the General Plan
  - Promote biodiversity citywide by encouraging the wide scale use of native or edible landscapes
  - Increase awareness and promote the natural environment as a place to play, learn and be active

### Water

- 
- Ensure a sustainable water supply through conservation and reduced dependence on imported water
  - Implement low impact development strategies to reduce runoff and pollution at the source and increase the beneficial use of rainwater

## Contact

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Office of Sustainability  
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# SUSTAINABLE CITY ACTION PLAN GOALS

## 2011

- Reduce future port-related emissions by 45%



## 2012

- 100% of city-owned vacant lots are utilized with interim green uses
- Create at least 6 new community gardens



- Double the number of LEED accredited professionals (or equivalent) in the City and community

- Increase city employee average vehicle ridership to 1.5



- Through a pilot program, facilitate the installation of rain catchment systems at 5 City facilities



- Identify and develop at least 2,000 green collar jobs in Long Beach



- Enroll 100 green businesses in the Long Beach Green Business Certification Program
- Target half of the business grants/loans for green business development

## 2016

- Increase number of students participating in TREC to 2000 per year



- Increase public transit ridership by 25%
- 100% of taxi cab fleets are alternative fuel and/or low emission



- Increase bike ridership from 1% to 10%

- Train 500 Habitat Stewards



- Establish one or more Nature Centers along the LA River

LA River

- Convert 1,200 front yards to native or edible landscapes by 2016



- Facilitate the development of 50 green roofs communitywide

## Other

- Reduce diesel particulate matter from all port-related sources by 1,200 tons per year



- Reduce port-related nitrous oxide emissions by 12,000 tons per year

- Annual reduction in average pounds of solid waste generated per person per day



## 2020

- 50% of Long Beach residents work in Long Beach
- At least 60,000 residents in the downtown TREC to 2000 per year
- At least 30% of Long Beach residents use alternative transportation to get to work
- Plant at least 10,000 new trees in Long Beach
- 100% of suitable alley and parking lot projects use permeable pavement
- 100% of major city facilities are LEED certified (or equivalent)
- At least 5 million square feet of privately developed LEED certified (or equivalent) green buildings



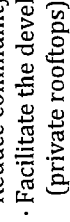
- Increase City green spending to 100%



- Reduce greenhouse gas emissions from City facilities by 15%
- Reduce electricity use in City operations by 25%
- Reduce natural gas use in City operations by 15%
- Facilitate the development of at least 2 Megawatts of solar energy on city facilities



- Reduce community electricity use by 15%
- Reduce community natural gas use by 10 %
- Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops)



- Increase the average fuel efficiency of the gasoline-powered City fleet to 35 mpg
- 100% of the City fleet is alternative fuel and/or low emission
- Create a system of at least 200 miles of interconnected bike routes (Class 1-3)
- Reduce vehicle emissions by 30%



- Create 8 acres of open space per 1,000 residents
- Create 100 miles of green linkages
- Establish a native landscape demonstration in parks 1 acre or larger
- Establish a community garden in every park 5 acres or larger



- Attract and retain of total of 20 RMDZ manufacturing companies



- Reduce per capita use of potable water, exceeding the State mandate to achieve a 20% demand reduction in per capita water use



To view Long Beach's Sustainable City Action Plan, visit: [www.sustainablelb.com](http://www.sustainablelb.com)



S U S T A I N A B L E  

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L O N G B E A C H

# Sustainable City Action Plan

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# SUSTAINABLE LONG BEACH

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# SUSTAINABLE LONG BEACH

## *ACKNOWLEDGEMENTS*

We would like to acknowledge the following people who assisted in the development of the Sustainable City Action Plan. A special thanks to all those residents and business owners who provided their comments and feedback through our website, at outreach meetings and at Sustainable City Commission meetings.

## *SUSTAINABLE CITY COMMISSION*

Andrea White-Kjoss, 2<sup>nd</sup> District  
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**Long Beach Office of Sustainability**

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## SUSTAINABLE LONG BEACH

A sustainable community is one that can meet the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable cities are places where people enjoy living, working and raising their families, where sustainability is the economic engine that helps drive jobs and services and where the environment and citizen health is protected, ensuring a great quality of life now and into the future.

Everything we do takes resources, and most of these resources are not renewable. To be truly sustainable, we must use resources in a way in which can be maintained over time. It is our responsibility to change the traditionally accepted ways of thinking and acting and begin to reduce our consumption, produce less waste and pollution and protect and restore our environment.

With so many issues in today's society from global warming and high fuel prices to poverty and unemployment, sustainability seeks to consider the environmental, social, and economic components. Meaning, the environmental benefit will not necessarily trump all other considerations, nor will the financial costs of doing something override all the other benefits. And central to all this, our actions should improve social equity. Sustainability follows the precautionary principle of "do no harm," and seeks to maximize benefit with the smallest negative impact. Because many of the environmental problems today, like pollution and habitat degradation, are caused by manmade processes, sustainability also emphasizes more natural processes and products, improving the environment for people and animals alike.

Sustainability is vital to Long Beach's future. A green, clean Long Beach is essential to the quality of life, economic development, culture and public and environmental health of our citizens, businesses and neighborhoods.

This Sustainable City Action Plan includes initiatives, goals and actions that will move Long Beach toward becoming a sustainable city. Recognizing the interconnectedness of our environment and our place in it, the initiatives in this plan are interconnected as well. This plan is meant to guide our decisions, expand our thinking and inspire us to strive toward a truly sustainable Long Beach.

At the request of the Long Beach Mayor and City Council, this plan was created through a collaboration of City staff and members of the Sustainable City Commission with comments from the citizens of Long Beach. The Sustainable City Action Plan is the culmination of a year of research, development, planning and public meetings to provide a comprehensive foundation upon which to build a Sustainable City. Feedback was solicited at 18 community meetings throughout the City during the Summer of 2009. Although no one plan can provide all the answers, this plan is meant to guide our future operational and policy decisions. A Sustainable City will always grow and adapt to the changing needs and challenges of our time, and this plan serves as a guide as we move toward a greener Long Beach.

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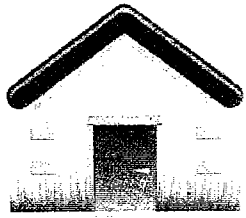
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# BUILDINGS & NEIGHBORHOODS

## INTERRELATED ACTIONS



Energy



Transportation



Urban Nature

In an urban environment like Long Beach, homes, commercial buildings, streets and sidewalks cover the vast majority of the landscape. Therefore, an essential component of a sustainable city are buildings and neighborhoods that minimize our impact on the environment while creating an active, engaging city where daily needs can be met without the use of a car.

Green buildings reduce our impact on the earth because they use more environmentally friendly materials, emit less pollution and are healthier for its occupants. Green buildings have the added benefits of better indoor air quality and being less expensive to run due to reduced demand for heating, cooling, and water. The average green building uses 30% less energy and 30-50% less water than a comparable building. Buildings also account for 30% of greenhouse gas emissions. Green buildings have smaller carbon footprints than conventional ones, thus reducing our city's contribution to climate change. Encouraging residents to get out of their cars and into their neighborhoods also helps reduce emissions by decreasing car use.

A green foundation is also important to a sustainable city. Incorporating sustainable construction techniques into infrastructure projects will not only reduce the project's impacts, but also improve the surrounding area. More community gardens, enhanced public spaces, and increased community engagement also contribute to a sustainable city.

Neighborhoods with access to a variety of nearby amenities allow residents to conveniently walk or ride their bike instead of driving. Encouraging growth in these areas, especially in the downtown, promotes sustainable living while improving the sense of community in the neighborhoods.

The initiatives, goals and actions in this section will create more opportunities for green buildings and infrastructure while fostering a sense of community in neighborhoods. The actions in this plan are interrelated, and the goals that follow will contribute to energy and water consumption reduction goals and alternative transportation goals that are discussed in other sections. The City of Long Beach recognizes that in order to build a sustainable city, the City and community must work together to improve building efficiency and health and protect and enhance our neighborhoods.

## SUSTAINABILITY GOALS

1. 100% of major city facilities are LEED certified (or equivalent) by 2020
2. At least 5 million square feet of privately developed LEED certified (or equivalent) green buildings by 2020
3. Double the number of LEED accredited professionals (or equivalent) in the City and community by 2012
4. 100% of city-owned vacant lots are utilized with interim green uses by 2012
5. Create at least 6 new community gardens by 2012
6. Plant at least 10,000 trees in Long Beach by 2020
7. 100% of suitable alley and parking lot projects use permeable pavement by 2020
8. 50% of Long Beach residents work in Long Beach by 2020
9. At least 60,000 residents in the downtown by 2020
10. By 2020, at least 30% of Long Beach residents use alternative transportation to get to work



# A HISTORY OF LEADERSHIP



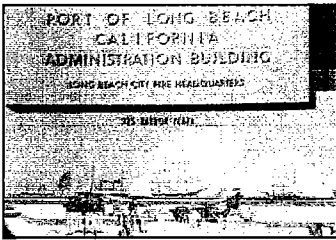
## MUNICIPAL GREEN BUILDING POLICIES

The City of Long Beach adopted a Green Building Policy for Municipal Buildings in 2003, which states that all new construction of municipally owned and operated buildings will meet the LEED (Leadership in Energy and Environmental Design) standard. In November 2006, the City Council implemented an interim green building policy for private development. In October 2007, the City Council approved the creation of a permanent green building policy for private development, which will be released in early 2009.



## LONG BEACH 2030

Long Beach 2030, the update of the City's General Plan, is a major step towards sustainability with the comprehensive approach to land use, mobility, urban design, historic preservation and economic development. This comprehensive approach represents a new way of thinking about accommodating growth with well-designed, efficient new development linked to public transit options and jobs while maintaining and enhancing all the things that we value about Long Beach today.



## PORT OF LONG BEACH GREEN BUILDINGS

The Port completed their LEED Silver Command and Control Center for security operations and is designing two LEED Gold fire stations. In November 2008, the Port approved the LEED Silver rated Administration and Operations Buildings (76,000 Square Feet) and is designing the first Maintenance and Repair complex buildings to Silver LEED (100,000 Square Feet). This will be a first set of industrial open-bay buildings designed to this rating.



## TREE CITY USA AND TREE GRANTS

In April 2008, the City became a Tree City USA by creating a Tree Advisory Committee, a Tree Maintenance policy and Urban Forest Master Plan; establishing a Public Works Tree Care budget of \$3.7 million; and observing Arbor Day with tree plantings. Additionally, Neighborhood Services partnered with neighborhood associations, community service groups, individual volunteers, the Conservation Corps of Long Beach, and the Street Trees Division to plant 605 trees with a \$56,986 State grant.



## COMMUNITY GARDENS

There are 9 community gardens located across the City that help foster a green community within the gardens and the neighborhoods they are found in. Many of these gardens open their gates to the public for festivals and educational events, and they serve as an example for small scale, sustainable farming in an urban setting.



## **BUILDINGS & NEIGHBORHOODS INITIATIVE 1:**

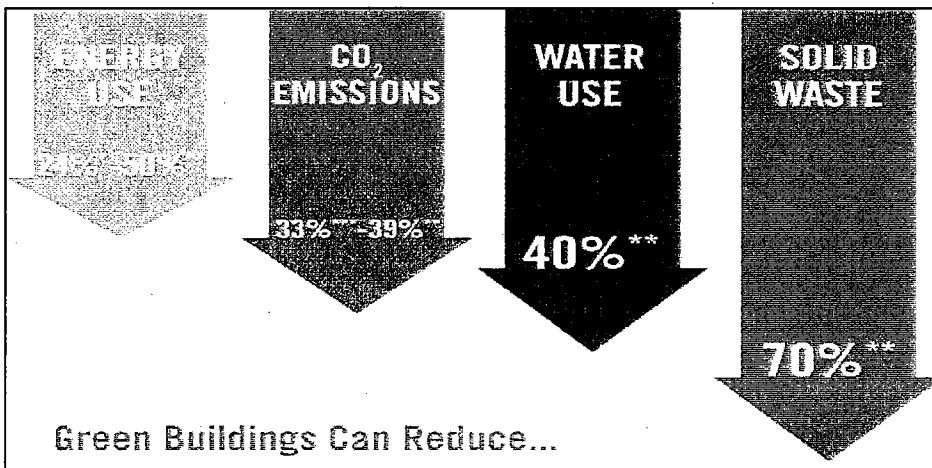
Accelerate the use of green building techniques in new development, renovations and retrofits to improve building efficiency and health

### **SUSTAINABILITY GOALS**

100% of major city facilities are LEED certified (or equivalent) by 2020

At least 5 million square feet of privately developed LEED certified (or equivalent) green buildings by 2020

Double the number of LEED accredited professionals (or equivalent) in the City and community by 2012



### **STATISTICS**

- Today, 10 municipal developments have registered with the USGBC as LEED projects
- Currently, there are 9 private developments registered as LEED projects in Long Beach
- In California, commercial buildings account for 36% of the State's electricity use
- Building materials like wood, concrete, brick and carpet account for almost 22% of the waste stream going to landfills
- There are 15 LEED accredited green building professionals on staff at the City

### **ACTIONS**

1. Explore green development requirements for the Long Beach Redevelopment Agency and any private project that includes public/city money
2. Incorporate sustainability strategies such as transit-oriented development, adaptive reuse and green buildings in the General Plan (Long Beach 2030)
3. Create a green affordable housing strategy and implement a green development policy for affordable housing projects in the city
4. Upgrade roofs to be solar ready and engage in site leases for solar projects
5. Implement solar and wind demonstration projects such as solar/wind-powered at bus stops, pay stations, signage and erect solar/wind displays in vacant city-owned lots
6. Create opportunities for community members to participate in fix-it green programs that demonstrate how to incorporate green techniques and products in home renovation
7. Provide training and funding to increase the number of LEED accredited employees
8. Explore the development of assessment districts for the funding of green improvements throughout the city



## BUILDINGS & NEIGHBORHOODS INITIATIVE 2:

Enhance and enliven corridors and neighborhoods with green infrastructure and public spaces

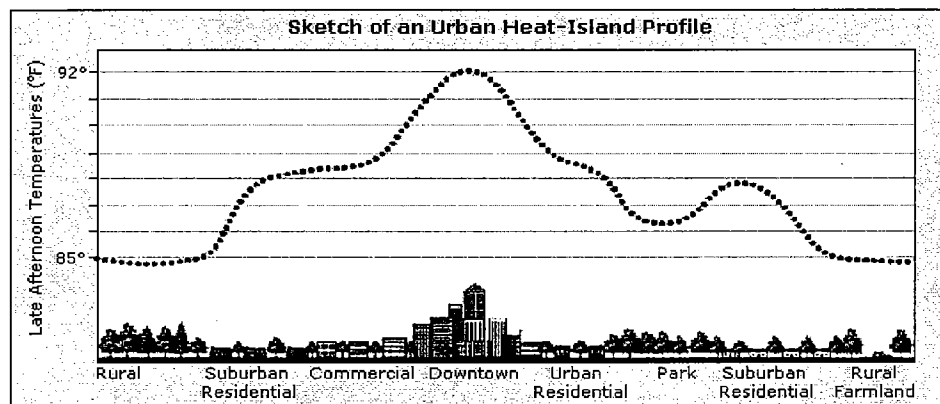
### SUSTAINABILITY GOALS

100% of city-owned vacant lots are utilized with interim green uses by 2012

Create at least 6 new community gardens by 2012

Plant at least 10,000 new trees in Long Beach by 2020

100% of suitable alley and parking lot projects use permeable pavement by 2020



### STATISTICS

- When resurfacing streets, the City uses rubberized asphalt containing up to 15% recycled material including recycled rubber tires
- The City reuses materials from street projects by recycling asphalt or utilizing it as base material on other street improvements
- When resurfacing streets, the City expedites work to reduce emissions from the construction equipment as well as idling cars
- There are 9 community gardens in Long Beach
- There are approximately 330,000 trees in Long Beach's parks and urban forest

### ACTIONS

1. Implement interim green uses in vacant city-owned lots by utilizing mulched green waste from city operations, developing solar, wind or landscaping pilot projects or locating community gardens
2. Implement public-right-of-way enhancements such as energy efficient street lights/signs, street furniture and public art
3. Designate locations throughout the City for community gardens and encourage edible landscapes
4. Plant landscaping demonstration projects that showcase native, drought-tolerant landscape techniques
5. Incorporate neighborhood elements like roundabouts, meandering sidewalks, street trees, public plazas and bike and pedestrian improvements that create a sense of place
6. Encourage neighborhood and business groups to sponsor and participate in community clean-up and beatification programs like tree plantings, coastal cleanups, etc.
7. Create a program that enables greening of alleys throughout the city
8. Incorporate green construction techniques in sidewalks, street maintenance and pothole repair and initiate pilot infrastructure projects that test green construction techniques such as permeable pavement
9. Survey City's watersheds to assess appropriate placement/suitability for permeable pavement



## BUILDINGS & NEIGHBORHOODS INITIATIVE 3:

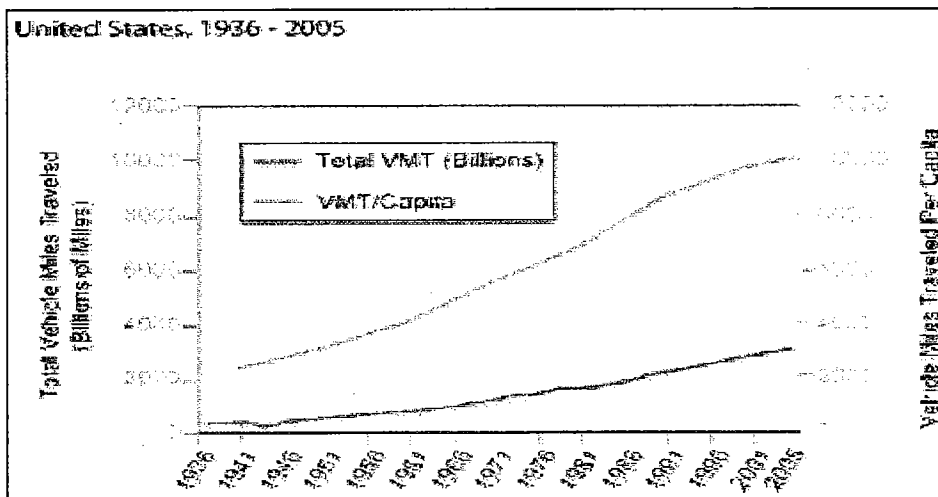
Enhance our community to encourage people to get out of their cars and into their neighborhoods

### SUSTAINABILITY GOALS

50% of Long Beach residents work in Long Beach by 2020

At least 60,000 residents in the downtown by 2020

By 2020, at least 30% of Long Beach residents use alternative transportation to get to work

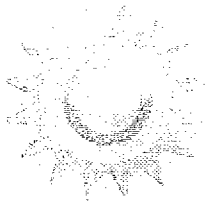


### STATISTICS

- 33% of Long Beach residents work in Long Beach while the majority, or 66%, commute out of Long Beach for work
- As of 2000, there were 37,000 downtown residents
- Only 36% of Long Beach residents get to work in less than 20 minutes
- In 2000, 3.3% of Long Beach residents biked or walked to work while 6.6% rode public transit to work
- Downtown Long Beach is ripe for sustainable development as a nexus for transit, job center and buildings for commercial retail
- There are 5 farmers markets held in Long Beach each week
- There are 140 registered neighborhood organizations in Long Beach

### ACTIONS

1. Establish live/work districts and establish incentives to encourage living near work
2. Establish workforce housing projects near large job centers in Long Beach such as Downtown, CSULB, Hospitals and Boeing
3. Encourage grocery stores and healthy food options in neighborhood centers
4. Create car-sharing and bike-sharing opportunities in neighborhood centers
5. Encourage additional locations for farmers markets throughout the City
6. Implement incentives to reduce vehicle miles traveled and save fuel
7. Encourage and expand local, neighborhood events and festivals
8. Incorporate traffic calming measures to make neighborhood streets more inviting and keep pedestrians and bicyclists safe
9. Create and expand unique neighborhood identity through the use of special signage and public art and adhering to unique architectural styles
10. Encourage neighborhood and business groups to sponsor or participate in local community events that draw residents and foster community involvement



# ENERGY

## INTERRELATED ACTIONS



Buildings/Neighborhoods



Transportation



Green Economy/Lifestyle

Energy is an important resource in today's society. However, it is almost invisible—most of us don't think about the energy used by a light bulb, computer, or air conditioner, so it can be easy to forget about the effects of this energy on our environment, our economy and our lives.

Energy use is a vital component of sustainability because the greenhouse gas emissions associated with electricity, natural gas, and transportation fuel use is the primary contributor to climate change. Climate change has the potential to threaten our coastal City by rising sea level, increased storm activity, and warmer weather.

Dependence on fossil fuel-based energy sources also undermines our nation's economy and security. The supply of coal for our power plants and natural gas to heat our homes will not last forever and investing now in alternative sources of energy like solar, wind, and thermal will avert a supply and demand crisis and soaring energy costs in the future.

Because energy is still relatively abundant and inexpensive, we often use more of it than we really need. This is an unnecessary waste of money and resources. In 2007, the residents and businesses of Long Beach used over 2.9 billion kilowatt-hours of electricity. Existing technologies provide many opportunities to reduce this number by increasing energy efficiency. Efficient use is an important and cost effective technique to reduce our energy consumption.

This section will focus primarily on initiatives and actions to reduce our carbon footprint and become more sustainable energy users with regard to stationary energy use, such as electricity and natural gas. The transportation section of the plan will also include actions to help us meet our energy goals. Actions throughout this plan are interrelated and will also contribute to reducing energy demand and greenhouse gas emissions but may be addressed in a different section.

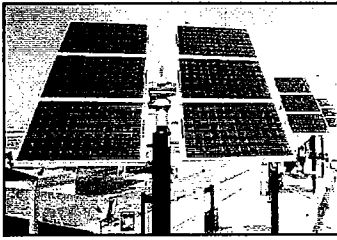
The City of Long Beach recognizes that in order to ensure sustainable sources of energy the City and community must work together by investing in both renewable energy sources and energy efficiency. Clean energy and energy efficiency means not only reducing our energy needs but also saving money, improving public health, and protecting the environment.

## SUSTAINABILITY GOALS

1. Reduce greenhouse gas emissions from City facilities and operations by 15% by 2020
2. Reduce electricity use in City operations by 25% by 2020
3. Reduce natural gas use in City operations by 15% by 2020
4. Facilitate the development of at least 2 Megawatts of solar energy on city facilities by 2020
5. Reduce community electricity use by 15% by 2020
6. Reduce community natural gas use by 10 % by 2020
7. Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020

# A HISTORY OF LEADERSHIP

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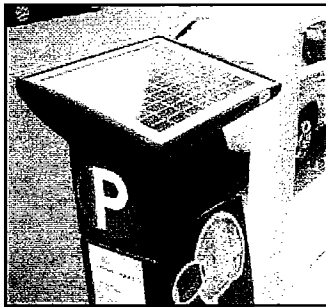
## LONG BEACH AIRPORT SOLAR TREES

The Long Beach Airport installed 6 solar trees that track the movement of the sun to produce electricity. Considered to be one of the most advanced solar systems in the region, the system is expected to create 15,000 kilowatt hours annually, save at least \$5,000 a year and offset nearly a half-million pounds of carbon dioxide emissions over the system's 25-year lifespan - which equates to planting three acres of trees.



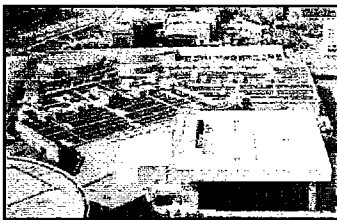
## MARK TWAIN LIBRARY

The Mark Twain Library is the City's first LEED building constructed under the City's Green Building Policy. The Library opened in August 2007 and has received a LEED Silver rating, using 27% less energy than a comparable building. The Library is a model for future public buildings that are safe and healthy for people and that protect the environment.



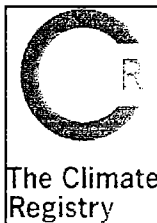
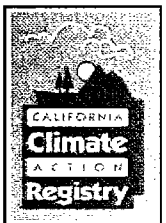
## SOLAR POWERED PAY STATIONS

The City's Redevelopment Agency installed solar powered pay stations at three parking lots in Downtown Long Beach. These new state of the art systems accept cash, coins and credit/debit cards, and replace old 'honor boxes'. Solar powered pay stations are the cutting edge in parking technology and by replacing the old honor boxes with these new pay stations, the City is not only providing more reliable service to customers, but also putting our money where our mouth is in terms of utilizing environmentally friendly innovation.



## SOLAR PANELS ON LONG BEACH CONVENTION CENTER

The Long Beach Convention and Entertainment Center installed a 750 kilowatt solar panel array on its roof. The Long Beach Convention Center has one of the largest public facility solar panel installation on the West Coast and generates over 1 million kilowatt hours of pollution-free electricity annually.



## CLIMATE REGISTRY & CALIFORNIA CLIMATE ACTION REGISTRY

The City joined many other municipalities, state agencies, non-profit organizations and businesses by joining The Climate Registry and the California Climate Action Registry as a first step toward aggressively improving energy efficiency and reducing greenhouse gas emissions. Long Beach released their first annual citywide greenhouse gas emissions inventory in June 2009.

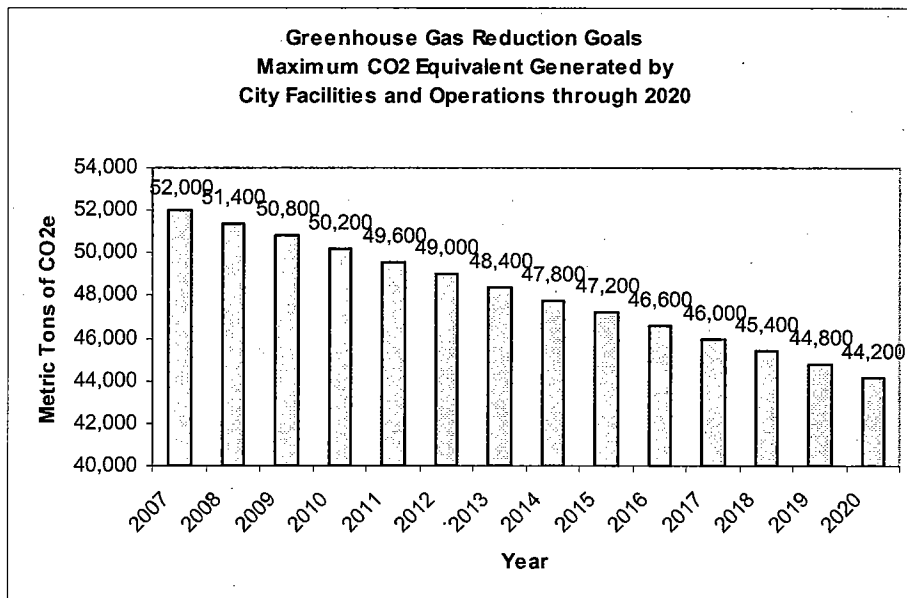


## ENERGY INITIATIVE 1:

Shrink Long Beach's carbon footprint by reducing greenhouse gas emissions

### SUSTAINABILITY GOALS

Reduce greenhouse gas emissions from City facilities and operations by 15% by 2020



### STATISTICS

- In 2007, the City's operations emitted 51,754 tons of carbon dioxide
- 59.8% of the City's carbon emissions are from indirect emissions (buildings, electricity)
- 7.4% of the City's carbon emissions are from stationary emissions (buildings, natural gas)
- 32.9% of the City's carbon emissions are from mobile emissions (vehicles)
- AB 32 Draft Scoping Plan estimates that the per capita carbon footprint in California is 14 tons of carbon dioxide
- The 2020 goal listed in AB 32 is equal to about 10 tons of CO<sub>2</sub> per capita

### ACTIONS

1. Complete, verify and release an annual City greenhouse gas inventory
2. Create a community greenhouse gas inventory
3. Employ best practices to avoid, minimize or mitigate greenhouse gas emissions for all planning and future development
4. Provide incentives to residents and businesses to implement energy efficiency measures and other measures that reduce greenhouse gas emissions
5. Educate and encourage residents and businesses to calculate their carbon footprint and pursue strategies to reduce their emissions
6. Support state and federal action to curb climate change





## ENERGY INITIATIVE 2:

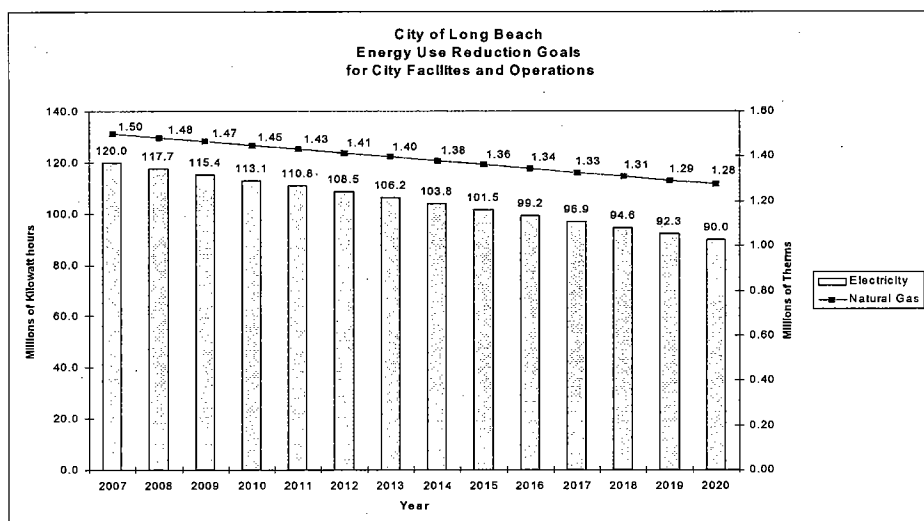
Ensure all of the City of Long Beach's operational needs are met through energy efficiency, conservation and renewable energy sources

### SUSTAINABILITY GOALS

Reduce electricity use in City operations by 25% by 2020

Reduce natural gas use in City operations by 15% by 2020

Facilitate the development of at least 2 Megawatts of solar energy on city facilities by 2020



### STATISTICS

- Almost 16% of energy delivered by SCE to Long Beach residents, businesses and institutions comes from renewable sources (wind, solar)
- In 2007, the City of Long Beach used 119,339,834 kilowatt-hours of electricity to power city facilities and infrastructure
- In 2007, the City of Long Beach used 1,476,832 therms of natural gas to power city facilities and infrastructure
- The City has multiple solar projects including solar trees at the Long Beach Airport and solar panels on the Convention Center, the Nature Center, SERRF and the North Long Beach Police Station
- The City of Long Beach has approximately 2 million square feet of roof space on city facilities

### ACTIONS

1. Increase energy efficiency in City facilities through ongoing energy audits, retrofits, weatherization and preventative maintenance
2. Pursue emerging cutting-edge renewable energy technologies as they become available, such as LED, solar-hot water systems, wind
3. Annually achieve increased savings on City's electricity and gas bills
4. Participate in the SCE's Energy Leader Partnership for municipal governments
5. Require that all new City construction and major renovations are LEED silver
6. Require that all City leases and tenant improvements follow LEED standards and energy efficiency standards are built into all City lease/rental agreements
7. Aggressively apply for grants for energy efficiency programs and renewable energy projects
8. Partner with other City Departments, local companies and organizations to promote energy efficiency
9. Implement energy efficiency and conservation measures



## ENERGY INITIATIVE 3:

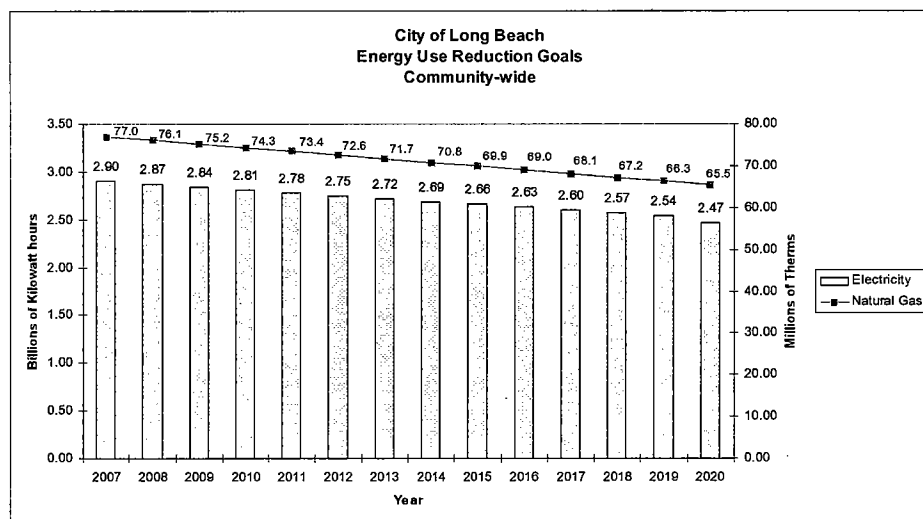
Reduce electricity and natural gas consumption of the Long Beach community

### SUSTAINABILITY GOALS

Reduce community electricity use by 15% by 2020

Reduce community natural gas use by 10 % by 2020

Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020



### STATISTICS

- In 2007, Long Beach residents and businesses used over 2.9 billion kilowatt-hours of electricity
- There are 179,926 SCE accounts in Long Beach
- In 2007, Long Beach residents and businesses used 76,936,320 therms of natural gas
- There are, on average, 139,702 community gas accounts with Long Beach Gas & Oil
- At least 145 solar installations have been completed in Long Beach that have received solar rebates
- Long Beach has approximately 270 million square feet of private roof space
- 1 megawatt of solar energy can power approximately 350 homes.

### ACTIONS

1. Participate in the SCE's Energy Leader Partnership for community outreach
2. Encourage the community to participate in energy efficiency and conservation programs from LBGO and SCE and provide energy efficiency education and resources to the community
3. Target specific high electricity use industries for energy efficiency programs
4. Encourage the use of energy efficient products including efficient lighting, energy monitoring systems, cool and green roofs, insulation and efficient HVAC systems
5. Encourage the community to invest in efficient building practices, energy retrofits, weatherization and renewable energy systems for homes and businesses
6. Require that private development projects incorporate Green Building Requirements for Private Development and encourage development projects to exceed Title 24 standards
7. Support incentives and rebates for electric and solar thermal installations for residents and businesses



# GREEN ECONOMY & LIFESTYLE

## INTERRELATED ACTIONS



Energy



Buildings/Neighborhoods



Urban Nature

Eco products and services and an active, eco-conscious community are vital to a sustainable city. The United States has only 5% of the world's population but consumes 30% of the world's resources and creates 30% of the world's waste. If every one of the world's 6.7 billion people consumed at these rates, we would need the resources and space of 3 to 5 planets. This pattern of over consumption is responsible for resource depletion and overproduction of waste.

Ecologically and socially responsible products can help reduce our resource use as well as reduce our harmful impact on the planet. Eco products and services are those that reduce environmental impacts, are recyclable, made from recycled content, save energy and water, reduce waste, are made from organic and renewable materials and are free from hazardous or toxic materials. Purchasing choices made by the City can help support the market for green products.

An economy built on green jobs, from solar panel installers to green building contractors to bike shop owners, are essential green jobs, products and services that tie together the various aspects of sustainability—environment, economy and equity. Green jobs support a more environmentally friendly economy while providing good-quality, medium-skilled jobs that pay a living wage to support hard-working families. Green industries also provide the workforce to implement green changes and improve our neighborhood and community.

A large, vibrant eco-conscious community is necessary to support the market for eco products and services. An active, healthy, green lifestyle improves one's wellbeing as well as reduces one's impact on the environment. There are many benefits to a green lifestyle including reduced consumer costs and healthier people. For example, energy efficient appliances reduce electricity costs while drought tolerant landscaping reduces water use and therefore cost. Organic, whole food promotes health and green cleaning products improve indoor air quality and reduce exposure to toxins. Less driving and more walking and biking encourages exercise as well as reduces greenhouse gas emissions. As well as the personal benefits, green lifestyles also protect the environment and reduce resource use as well as support local green businesses and the jobs they create.

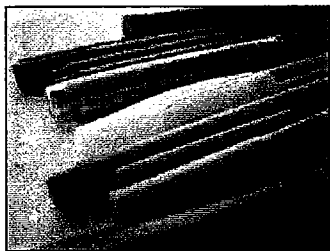
The City of Long Beach recognizes that environmental protection and sustainable development cannot be achieved without the help of individual actions in the community. This section will focus on initiatives and actions that will create green jobs and industries as well as encourage an eco-consciousness throughout the community. The goals and actions in this section are interrelated and will contribute to waste reduction, decreased water and energy use and will improve our neighborhoods and quality of life.

## SUSTAINABILITY GOALS

1. Identify and develop at least 2,000 green collar jobs in Long Beach by 2012
2. Enroll 100 green businesses in the Long Beach Green Business Certification Program by 2012
3. Target half of the business grants/loans for green business development by 2012
4. Increase City green spending to 100% by 2020
5. Annual increase in participation in citywide green events

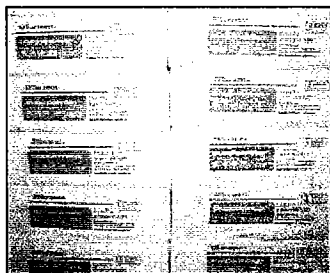
*Together, we can support a green economy that provides green jobs & an improved quality of life.*

# A HISTORY OF LEADERSHIP



## ENVIRONMENTAL PURCHASING POLICY

The City established its first Environmentally Preferable Purchasing Policy in 2003. This policy was designed to encourage the purchase of services and products that reduce toxicity, conserve natural resources, materials and energy and maximize recyclability and recycled content. In 2009, the City has updated this policy to create a Citywide Green Purchasing Policy that reaches farther and establishes requirements that promote waste reduction and product efficiency, solicit "Green" businesses that use materials and practices that are environmentally friendly and includes language for 3rd party vendors/contractors that also require them to follow this policy when doing business with the City.



## SUSTAINABLE OFFICE SUPPLIES (SOS) PROGRAM

The City has expanded their green purchasing commitment through the Sustainable Office Supply or "SOS" program. This program creates automatic product substitution, substituting non-green products for green products automatically. The City has also reduced the number of delivery days for office supplies from five to three days per week. This reduces emissions associated with transportation and delivery of orders. The SOS program is estimated to increase green spending from 10% to 15% and reduce cost by an estimated 10% to 12%.



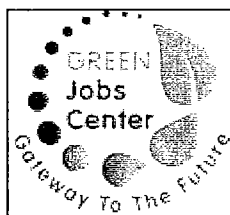
## LOCAL FARMERS MARKETS

The City of Long Beach is home to five farmers markets throughout the City, offering fresh food grown by local farmers. These markets include East Village, Alamitos Bay Marina, World Trade Center, Marine Stadium and Atlantic/46th Street. Farmer's Markets give residents the opportunity to purchase healthy, locally grown food while supporting local businesses.



## SHOP LOCAL. SHOP LONG BEACH.

The Shop Local. Shop Long Beach. Campaign is designed to educate and encourage residents to spend their money locally, with each dollar spent supports public safety, libraries, parks, infrastructure improvements and helps to create more local jobs. Shopping locally has many sustainable benefits, including reducing vehicle miles traveled, which contributes to less air pollution, reduces our carbon footprint, and helps save money on gasoline as well as helps support the local economy.



## GREEN JOB CENTER

In 2009, the City's Pacific Gateway Workforce Investment Network was awarded almost \$2 Million for green job training and placement. This funding will train over 200 at-risk youth and low-income adults in green industries such including solar panel installation, drought-tolerant landscaping, weatherization and recycling as well as provide environmental stewardship training.



## **GREEN ECONOMY & LIFESTYLE INITIATIVE 1:**

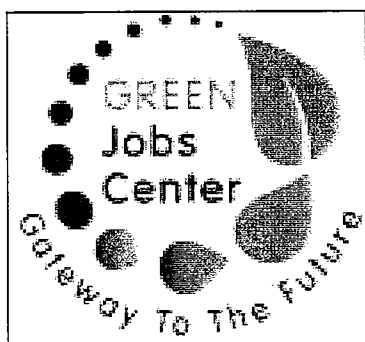
Establish Long Beach as the leading California city for green business and green job growth

### **SUSTAINABILITY GOALS**

Identify and develop at least 2,000 green collar jobs in Long Beach by 2012

Enroll 100 green businesses in the Long Beach Green Business Certification Program by 2012

Target half of the business grants/loans for green business development by 2012



### **STATISTICS**

- There are currently 925 green collar jobs in the City of Long Beach, which is 4.7% of the City's 195,000 total jobs
- The City has been granted \$4.3 million for Stimulus projects related to energy efficiency projects
- The Workforce Investment Network established a Green Jobs Center in May 2009
- The City's Microenterprise Loan Program & the Grow Long Beach Loan Program provides up to \$25,000 to start-up or support existing businesses
- Long Beach has received over \$2 million in Green Jobs grants

### **ACTIONS**

1. Attract renewable energy and green technology manufacturing companies to establish a presence/office in Long Beach and facilitate the creation of jobs in the renewable/clean energy sector
2. Promote the development of renewable energy and emerging greenhouse gas technologies
3. Partner with CSULB, LBCC, Pacific Gateway Workforce Investment Network Youth Opportunities Center to create training programs for green jobs and create a green jobs center and training academy
4. Aggressively pursue grants and other funding related to green job training and placement
5. Repurpose business development grants and loans for green business development in Long Beach and encourage technology and manufacturing companies to take advantage of Long Beach green business development opportunities
6. Support power purchasing agreements, site leases and bulk purchasing arrangements for solar
7. Create innovative renewable energy partnerships and demonstration projects
8. Implement a City green business program that incorporate goals and strategies for waste reduction, energy efficiency, water conservation, green purchasing, etc.
9. Encourage the formation of an environmental business network to share information and promote green business strategies and best practices
10. Conduct green business workshops designed to help local businesses go green and showcase local green vendors and products



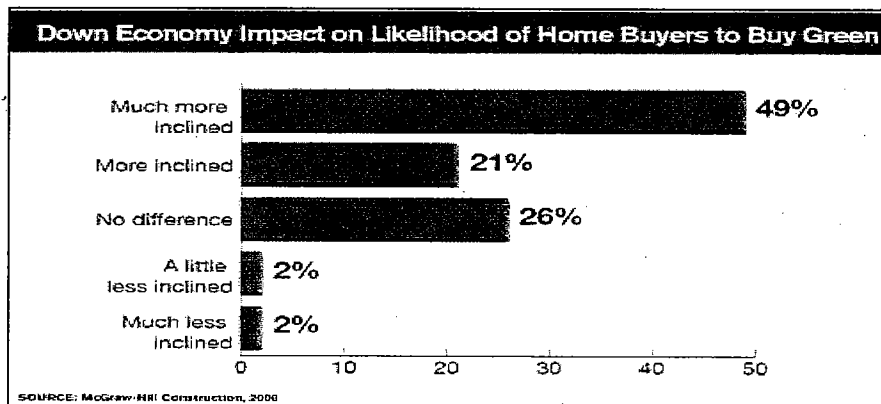
## GREEN ECONOMY & LIFESTYLE INITIATIVE 2:

Promote individual action that encourages active and green lifestyles, which supports a green economy

### SUSTAINABILITY GOALS

Increase City green spending to 100% by 2020

Annual increase in participation in citywide green events

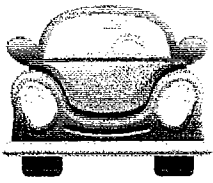


### STATISTICS

- The City spends over \$1 Million in office supplies each year.
- By purchasing remanufactured (recycled) toner instead of new, the City expects to save \$6,699 a year.
- City Bike Share encourages city employees to ride a bike to lunch or meetings by providing bikes to share in the Civic Center Plaza.

### ACTIONS

1. Update the City's green purchasing policy and the Sustainable Office Supply program to include additional requirements, green-only choices and automatic substitution to purchase materials with high post-consumer content that reduce quantity and toxicity of any generated waste
2. Develop a 'shop green' program to increase consumer awareness about local green businesses and available green products and where to get them so that consumers can easily make green purchasing choices
3. Organize and produce a Long Beach eco guide that includes information from all green programs across the City and create targeted outreach materials for homeowners, businesses and renters about how to live a green lifestyle
4. Advocate for extended producer responsibility (EPR) regional, state and national legislation programs
5. Expand public-private green partnerships that promote green products
6. Incorporate green benefits/message into all other City programs
7. Encourage healthy food options in Long Beach neighborhoods that are convenient, walkable/bikeable and encourage healthy eating habits
8. Encourage residents and their children to make exercise a lifestyle habit by participating in recreational and outdoor activities
9. Support the greening of neighborhood associations and encourage green neighborhood programs and activities such as tree plantings, cleanups and education
10. Leverage CDBG, HUD, and other funding to conduct green rehab projects, affordable housing programs, retrofits and weatherization
11. Partner with SCE and other agencies to implement green dorm program for student housing at local colleges



# TRANSPORTATION

## INTERRELATED ACTIONS



Energy



Buildings/Neighborhoods



Green Economy/Lifestyle

The Southern California lifestyle is dominated by cars. However, cars, along with trucks, trains, ships and planes, contribute to traffic, pollution and greenhouse gas emissions. Our transportation choices greatly impact sustainability and our quality of life. Transportation emissions are a major contributor to climate change, which threatens our coastal environment. Soot and smog from vehicles also poses a health threat, increasing the risk for cancer and asthma. Fortunately, there are a variety of sustainable transportation methods; these methods are essential components of a sustainable city.

Fossil fuel is a finite resource and is energy-intensive to produce and transport. Although some motor vehicle use is necessary, innovative alternative fuel technologies like electric and biodiesel can reduce air pollution, greenhouse gas emissions and lessen the demand for fuel. Improving vehicle efficiency and increasing average vehicle mileage also reduces fuel use and decreases emissions.

Personal transportation can become more sustainable through the use of alternative transportation such as buses and light rail. Improving access, infrastructure, and convenience further encourages people to use public transportation instead of a car. Biking and walking are also essential parts of sustainable transportation because it requires no fuel and is pollution free. Also, biking and walking creates a greater connection to the community and provides a healthy alternative to driving.

Goods-related transportation is also an significant portion of transportation emissions in Long Beach. With a Green Port Policy guiding efforts to minimize or eliminate negative environmental impacts, the Port is a catalyst for innovative environmental programs. Serving as a model for ports around the world, the Port of Long Beach has pioneered such programs as the Green Flag Vessel Speed Reduction Program and the San Pedro Bay Ports Clean Air Action Plan. With these bold initiatives, the Port is dedicated to improving air quality more quickly and aggressively than has ever been attempted by any seaport, anywhere in the world. For these reasons and more, the Port is recognized internationally as one of the world's best seaports and locally as a partner dedicated to helping the community of Long Beach thrive.

The initiatives in this section will focus on goals and actions to improve transit options, expand bicycle infrastructure, use and education, promote a less car dependent lifestyle and reduce port-related air emissions. Efforts to improve sustainable transportation options will also contribute to meeting the greenhouse gas reduction goals in the energy section of this plan. Together, we can contribute to healthier air and a cleaner environment and support a less car-dependent lifestyle for all residents and visitors.

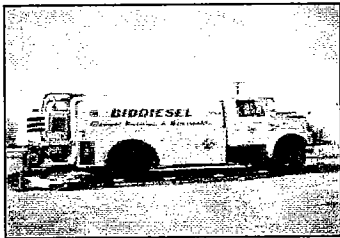
## SUSTAINABILITY GOALS

1. Increase the average fuel efficiency of the gasoline-powered City fleet to 35 mpg by 2020
2. 100% of the City fleet is alternative fuel and/or low emission by 2020
3. Reduce vehicle emissions by 30% by 2020
4. Increase public transit ridership by 25% by 2016
5. Increase city employee average vehicle ridership to 1.5 by 2012
6. 100% of taxi cab fleets are alternative fuel and/or low emissions by 2016
7. Increase bike ridership from 1% to 10% by 2016
8. Create a system of at least 200 miles of interconnected bike routes (Class 1-3) by 2020
9. Reduce future port-related emissions by 47% reduction in DPM, 45% reduction in NOx, and 52% reduction in SOx from OGV, CHE & HDV source categories by 2011

*Together, we can contribute to healthier air and a cleaner environment and support a less car-dependent lifestyle for all residents and visitors.*

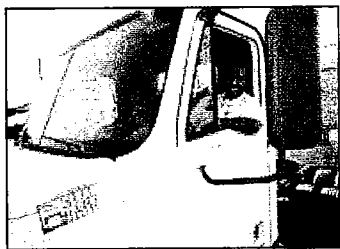


# A HISTORY OF LEADERSHIP



## LONG BEACH: NO. 1 GREEN FLEET

One of America's greenest fleets of City-owned vehicles, the City of Long Beach's low emissions, alternative fuel approach won the City the US Department of Energy's Green Fleet Award as the number one greenest fleet in North America. The City has over 250 alternative fuel vehicles, including CNG, electric, hybrid, LNG, biodiesel, and propane powered vehicles. Recently, four City Priuses were outfitted with plug-in technology that allows these vehicles to get upwards of 100 mpg.



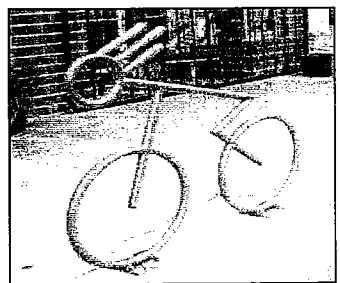
## PORT OF LONG BEACH CLEAN TRUCKS PROGRAM

The most ambitious anti-pollution program ever developed at a global seaport, the Clean Trucks Program, kicked off at the Port of Long Beach in 2008. Old, dirty trucks built before 1989 were banned from Port terminals and by 2012, only EPA-certified 2007 trucks or better will be allowed at Port terminals, reducing pollution by an overall 80 percent from 2008 levels.



## LONG BEACH TRANSIT

Long Beach Transit has taken an active role in reducing their carbon footprint by retrofitting their buses with particulate traps to further reduce emissions from their already clean burning gasoline buses. They have also begun replacing older diesel buses with new hybrid technology "E-Power" buses, which are the first hybrid gasoline-electric buses to be introduced into regular transit service in the world.



## MOST BICYCLING-FRIENDLY CITY IN THE U.S.

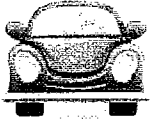
Long Beach is making great strides to become the most bicycle-friendly city in the U.S. by installing 400 bike racks, additional bike routes and signage, conducting a citywide bicycle count to guide its efforts to improve bicycle infrastructure and riding conditions, receiving numerous bicycle-related grants valued at over \$10 million for bike planning and improvements and partnering with Tony Cruz, a professional cyclist and Long Beach's own Bike Ambassador.



## BIKESTATION LONG BEACH

The first facility of its kind in the U.S., Bikestation Long Beach is strategically located on the First Street Transit Mall, a nexus for light rail, buses, bicyclists, pedestrians, and a local shuttle that services neighborhoods and key attractions. Bikestation also partners with the City of Long Beach for City Bike Share, which provides free bikes to city employees providing a green, healthy form of transportation to downtown locations.





## TRANSPORTATION INITIATIVE 1:

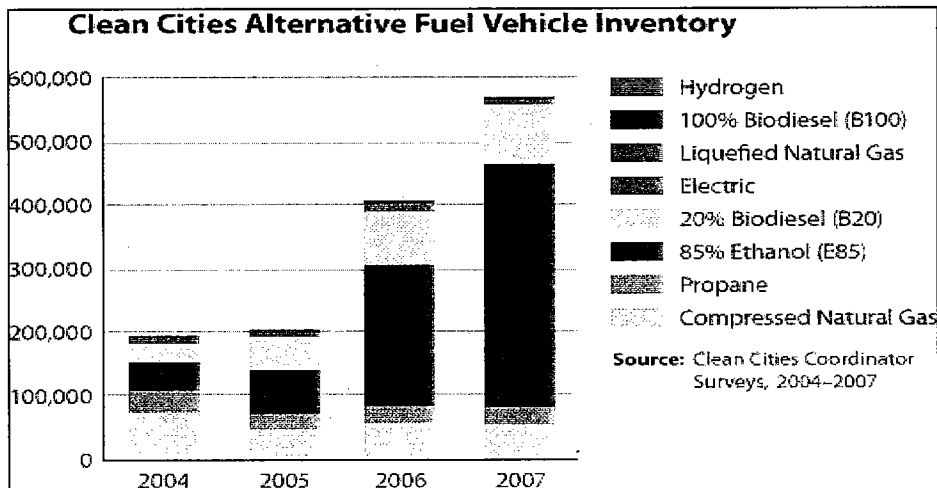
Reduce emissions and improve air quality by moving toward more fuel efficient and alternative fuel vehicles

### SUSTAINABILITY GOALS

Increase the average fuel efficiency of the gasoline-powered City fleet to 35 mpg by 2020

100% of the City fleet is alternative fuel and/or low emission by 2020

Reduce vehicle emissions by 30% by 2020

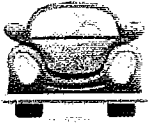


### STATISTICS

- There are 381 alternative fuel vehicles in city fleet
- The current average mpg of the gasoline-powered city fleet is an estimated 22mpg
- LB Transit was the first agency in California to install particulate traps on its diesel buses, significantly reducing particulate matter emissions, a major air pollutant
- In 2007, 1 poor air quality day was reported. Generally, the number is less than 10 each year
- The U.S. EPA bestowed a "Clean Air Excellence Award" on the San Pedro Bay Ports Clean Air Action Plan (CAAP), which was created to reduce emissions in the San Pedro Bay port by more than 45% by 2012

### ACTIONS

1. Expand the use of alternative fuels through environmentally responsible programs including but not limited to CNG, LNG, Biodiesel, electric and plug-in hybrid, hydrogen, etc.
2. Incorporate alternative fuel vehicles into the City fleet when vehicle leases turn over, emphasize fuel efficiency and optimize routes for service vehicles
3. Establish local alternative fuel fueling stations for both City and public use
4. Develop and implement a comprehensive Long Beach Green Airport Program that includes mitigation measures and incentive programs to reduce air emissions from airplanes, vehicles and cargo handling equipment and incorporates greening Airport office operations
5. Attract car-sharing companies to the City especially in parking impacted areas to reduce the need for individual vehicles
6. Encourage local car-pool programs to reduce the number of single occupancy commute trips and promote the public's use of low or no emission vehicles
7. Support the use of neighborhood electric vehicles by improving street safety and incorporating street calming measures
8. Convert all street sweeping and refuse vehicles from diesel fuel sources to liquefied natural gas (LNG)



## TRANSPORTATION INITIATIVE 2:

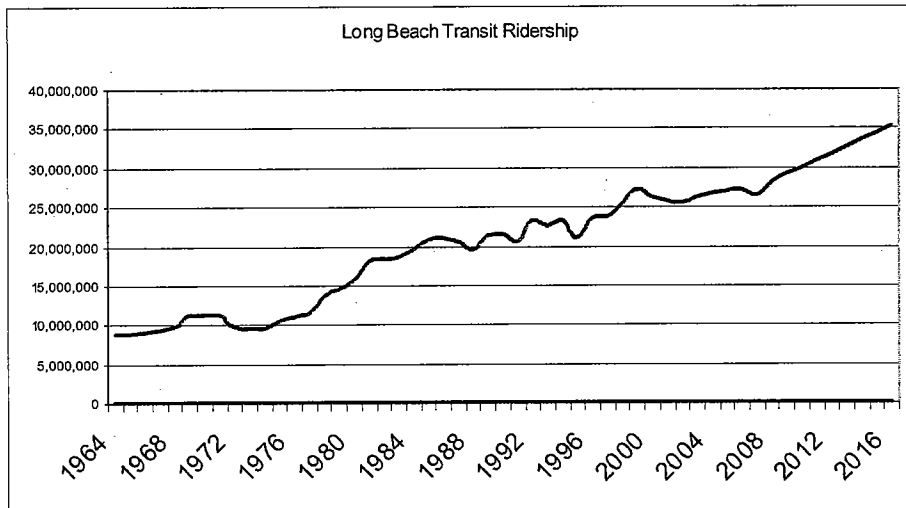
Increase public transit ridership by expanding access, infrastructure and convenience

### SUSTAINABILITY GOALS

Increase public transit ridership by 25% by 2016

Increase city employee average vehicle ridership to 1.5 by 2012

100% of taxi cab fleets are alternative fuel and/or low emissions by 2016



### STATISTICS

- In 2008, LB Transit ridership served 28.2 million riders
- In 2008, the city employee average vehicle ridership was 1.209
- Long Beach Transit was the first agency in the nation to introduce alternative fuel technology into fixed route transit service
- An average of 4,500 CSULB students and staff used transit daily through a U-Pass program initiated in 2008
- Long Beach Yellow Cab will transition their fleet to 85% alternative fuel vehicles by 2012

### ACTIONS

1. Create connections between transit and biking systems including placing bike racks on local and regional buses, the Passport and Aqualink and include bike parking at key bus stops.
2. Establish baselines/guidelines to create green transportation standards in Long Beach, including companies such as LB Yellow Cab and LB Transit
3. Expand transit systems so that anyone can travel anywhere within the City by any form of transit
4. Increase the number of solar-powered electric bus tracking signs that provide live bus wait times
5. Increase the number of alternative fuel buses in the LB Transit fleet
6. Expand and enhance bus stop amenities such as benches, shelters, signage and public art to provide comfortable and convenient waiting areas



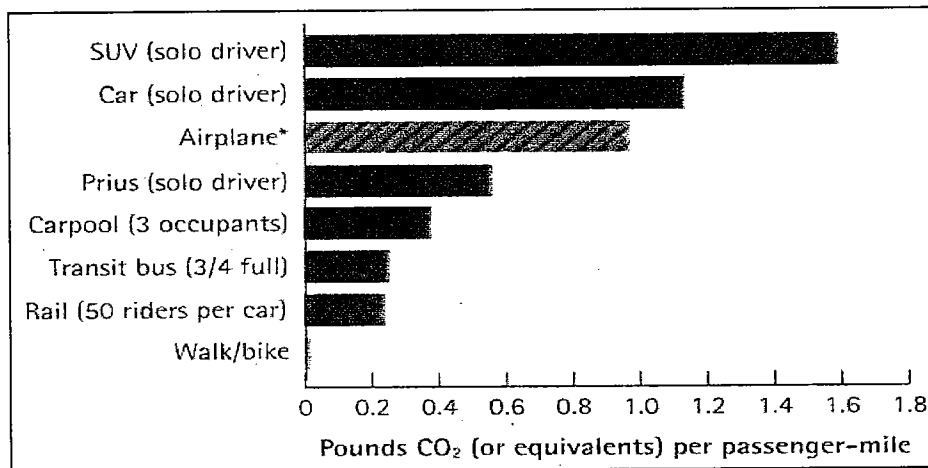
### TRANSPORTATION INITIATIVE 3:

Provide an environment and culture where walking and biking are safe, viable and preferred modes of transportation in the city

#### SUSTAINABILITY GOALS

Increase bike ridership from 1% to 10% by 2016

Create a system of at least 200 miles of interconnected bike routes (Class 1-3) by 2020

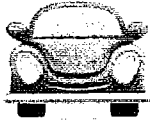


#### ACTIONS

1. Create a safe, connected, and easy to navigate bike transportation system (routes, signage, parking, education)
2. Work with the City's Bike Ambassador and Mobility Coordinator to create signature bike projects/programs
3. Offer bike friendly public facilities, transit, and shops through special route maps, increase bike rental locations and promote bike paths that circulate through popular tourist attractions and provide connections to local cycling groups
4. Promote bike share opportunities throughout the city by creating a bike share program at CSULB and partner with local business to expand bike share program throughout the City
5. Encourage the community, through education, to create a culture where cyclists and motorists interact safely by partnering with community groups, City Departments and LB Transit to link buses to bicycles, promote bike events and awareness like Bike To Work day and Bicycle Rodeos
6. Implement fun, healthy bicycle programs by partnering with the LBUSD to establish educational bike programs, partnering with the HHS to establish exercise bike and walking programs and partnering with PRM to establish recreational bike programs
7. Incorporate traffic calming measures to make streets more inviting and keep pedestrians and bicyclists safe and implement walking infrastructure that creates neighborhood identity and promotes safe passages
8. Develop internal expertise among City staff for innovative mobility concepts like complete streets
9. Encourage and expand the use of bike valet at local, neighborhood events and festivals

#### STATISTICS

- 1% of commuters regularly ride a bike as their primary means of transportation
- In 2008, Long Beach had 96 miles (Class 1-3) of interconnected bike paths, lanes, and trails
- The percentage of kids who walk or bike to school has dropped from 50% to 15%
- The City has been awarded over \$10M in transit/bike grants for use over the next three years
- Over 400 Bike racks were installed in 2008
- 150 employees are enrolled in City Bike Share where employees check out bikes to ride to meetings or errands, cutting down on car trips and promoting exercise

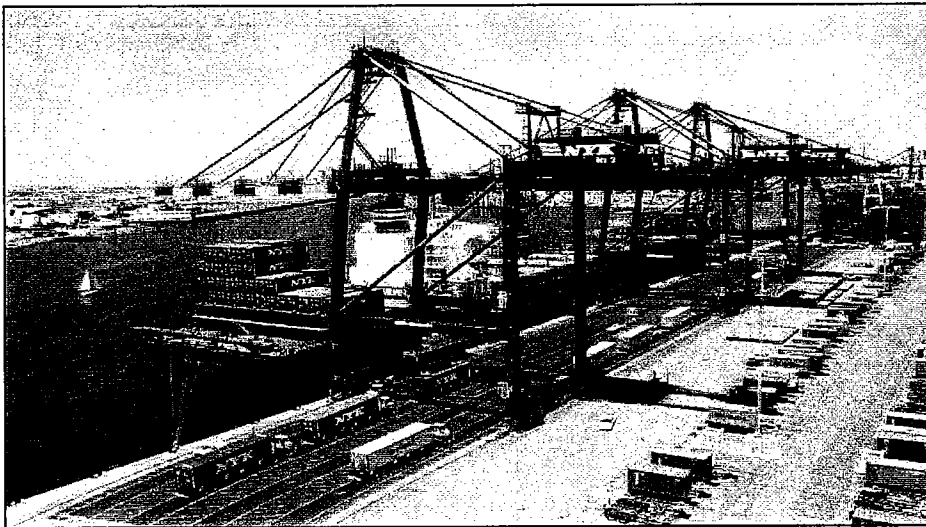


## **TRANSPORTATION INITIATIVE 4:**

Implement the Clean Air Action Plan (CAAP), designed to significantly reduce port-related air emissions over a 5-year plan, through a partnership with the Harbor Department and its tenants

### **SUSTAINABILITY GOALS**

- Reduce future port-related emissions by 47% reduction in DPM, 45% reduction in NOx, and 52% reduction in SOx from OGV, CHE & HDV source categories by 2011



### **STATISTICS**

- The port is proposing to provide over \$400 million over the next 5 years to support emission reduction programs
- Compliance with the POLB Green Flag Vessel Speed Reduction Program is approximately 95%
- The Clean Trucks Program (CTP) will reduce air pollution from harbor trucks by more than 80% by 2012
- World's first shore powered liquid bulk terminal operational as of second quarter 2009

### **ACTIONS**

1. Develop and implement mitigation measures and incentive programs necessary to reduce air emissions from trucks, locomotives, harbor craft, ocean-going vessels and cargo handling equipment (reduced through modernizing the fleets, retrofitting with exhaust after-treatment controls, and using cleaner fuels)
2. Reduce the public health risk associated with port-related mobile sources
3. Maintain the CAAP website to provide the public status of implementation progress, and updates to emission reduction programs
4. Reduce emissions through participation in the Green Flag Vessel Speed Reduction Program, aimed at reducing nitrous oxide (NOx) emissions from ships by slowing their speeds as they approach and depart the port
5. Implement the Technology Advancement Program to identify, evaluate, and demonstrate new and emerging emissions reduction technologies/strategies that could be utilized in future updates to the CAAP
6. Implement the Clean Trucks Program (CTP), which calls for drayage truck owners to scrap & replace old, polluting trucks with the assistance of a port-subsidized lease or loan
7. Construct the cold ironing infrastructure at all POLB container terminals



# URBAN NATURE

## INTERRELATED ACTIONS



Water



Buildings/Neighborhoods



Green Economy/Lifestyle

In an urban environment like Long Beach, where the most of the city is covered with buildings, streets and sidewalks, it is easy to overlook the natural environment around us and that the fact that it plays an important role in how the city looks and functions and is even a part of our City's name. Urban nature is a part of our city from trees and parks to wetlands and beaches. Recognizing this and promoting environmental stewardship is fundamental to a sustainable city.

Both recreational and natural open space is essential to a sustainable city. Recreational open space provides for healthy outdoor activities and a community gathering place, while natural open space is important for habitat and species protection as well as for the health and wellbeing of our City and its residents. Wetlands, rivers, lagoons, lakes, and beaches are natural resources that provide not only recreation but also necessary habitat.

While public open space is the most recognizable type of open space, it is equally important for each residence to be its own sustainable ecosystem. Private yards can become edible gardens that provide healthy food for families or drought tolerant and native gardens that attracts birds and butterflies.

Ecosystems provide vital services to its inhabitants. Society is dependent on many of these services, often unconsciously. For example, ecosystems provide food and water, regulate the climate, protect biodiversity, and provide recreational outdoor experiences. We rely on these systems for our health and wellbeing; however, we often overuse or destroy these resources and problems such as climate change, overfishing, and pollution result. A fundamental shift in how we interact with nature is necessary to ensure sustainable ecosystems.

Education is an important component of connecting to and improving urban nature. Too many people, especially children, do not have regular access to open space and do not understand the interconnectedness of people and nature. Such an understanding is vital, as our community must become environmental stewards to truly advance sustainability and effectively protect and preserve the Long Beach environment.

The initiatives, goals and actions in this section will improve existing urban nature, expand park and wildlife areas, and encourage sustainable uses of open space while fostering a sense of place and understanding of nature. The actions in this plan are interrelated, and the goals that follow will contribute to the neighborhoods and water use goals that are discussed in other sections. A sustainable city is one where nature is protected and restored, where ecosystems thrive and both people and animals have a healthy habitat to enjoy.

## SUSTAINABILITY GOALS

1. Create 8 acres of open space per 1,000 residents by 2020
2. Create 100 miles of green linkages by 2020
3. Establish one or more Nature Centers along the L.A. River by 2016
4. Establish a native landscape demonstration in every park 1 acre or larger by 2020
5. Establish a community garden in every park 5 acres or larger by 2020
6. Convert 1,200 front yards to native or edible landscape by 2016
7. Train 500 Habitat Stewards by 2016
8. Annual increase of youth who are trained as Long Beach Bioneers

*Together, we can become stewards of our environment by protecting and conserving our natural resources and providing accessible open space for all*

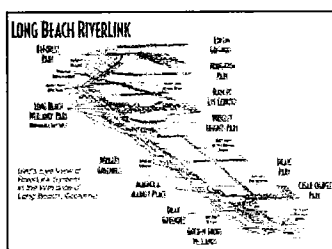


# A HISTORY OF LEADERSHIP



## EL DORADO NATURE CENTER

For more than 30 years, the El Dorado Nature Center's 102.5 acres has been an oasis of greenery in the midst of Long Beach's busy urban landscape. Two lakes, a stream, 2 miles of dirt trails and a ¼ mile paved trail wind through meadows, coastal sage scrub and woodlands offering visitors a serene getaway. The Center provides habitat for many wild animals and the museum has interactive hands-on exhibits and a mini zoo. Educational programs are provided monthly for adults and youth that focus on our natural world, and how to live a more sustainable life.



## RIVERLINK

The Department of Parks, Recreation and Marine adopted "Riverlink", an integrated open space plan, to green the approaches to the Los Angeles River and make it more accessible to nearby neighborhoods which suffer from a deficit of open space. When fully implemented, RiverLink will comprise 263 acres of open space.



## WETLANDS RESTORATION

Wetlands restoration and preservation is continuing in Long Beach, including projects such as the Colorado Lagoon, Sims Pond, Dunster Reserve, Dominguez Gap and Deforest Park. The Colorado Lagoon park includes a Wetland and Marine Science Education Center and wetland tours, which provides critical education about the City's wetlands and habitats.



## AQUARIUM OF THE PACIFIC

Aquarium of the Pacific provides a journey of discovery through the world's largest ocean where visitors can at the discover sunny Southern California and Baja, the frigid waters of the North Pacific, and the colorful reefs of the Tropical Pacific. The Aquarium also recently opened *Our Watersheds: Pathway to the Pacific*, the new watershed environmental exhibition, classroom and native garden. The Aquarium also provides a traveling education center, the *Aquarium on Wheels* as part of their many educational programs.



## LONG BEACH GREENBELT

The site served for over half a century as a portion of the Pacific Electric Red Car line. In 1999, the City of Long Beach converted the land to recreational park lands, the Long Beach Greenbelt. One block on the right-of-way, between 7th and 8th streets, was set aside for native habitat restoration. Since then, the City has actively purchased all available Pacific Electric right-of-way area to be used as park or open space.

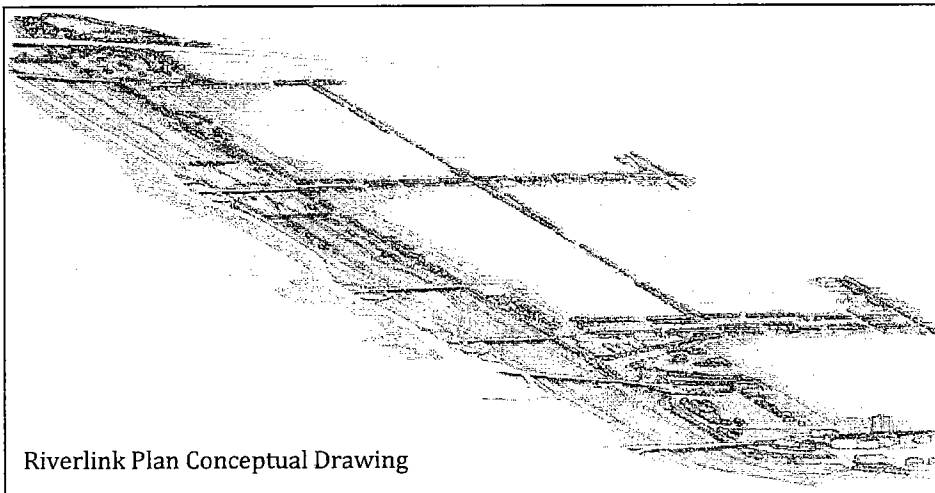


## URBAN NATURE INITIATIVE 1:

Create a more balanced network of open spaces through acquisition, restoration and greenway linkages, consistent with the 2002 Open Space and Recreation Element of the General Plan

### SUSTAINABILITY GOALS

- Create 8 acres of open space per 1,000 residents by 2020
- Create 100 miles of green linkages by 2020
- Establish one or more Nature Centers along the L.A. River by 2016



Riverlink Plan Conceptual Drawing

### STATISTICS

- There are currently 6.1 acres of park land for every 1,000 residents
- 8.9% of our City's land area dedicated to parks
- Approximately 300 acres of joint-use open space exists in Long Beach
- El Dorado is the 133rd largest park in the U.S. at 800 acres
- 3100 acres within the City's 50 square miles are dedicated to recreation, including recreational waters and 155 parks and encompasses 1672 acres
- Since 1998, \$188.7M has been invested in City parks and 126.3 acres of parks have been added, with 60.3% added in western Long Beach, 31% added in central Long Beach and 8.7% added in eastern Long Beach

### ACTIONS

1. Create a Green Linkage Plan that connects existing & future parks, open space & beaches through greenway linkages & pedestrian & bike paths
2. Create a diversity of recreational space including pocket parks, playing fields, playgrounds, trails, etc
3. Expand the adopt-a-park program & create public-private partnerships for continued park maintenance
4. Create joint use park facilities & work with LBUSD to enhance the utilization of school sites for public use
5. Work with local transit partners to create transit connections within & to parks, open space & beaches & explore a recreational transportation program
6. Identify partnerships, funding & begin the planning process for an urban nature center along the L.A. River
7. Incorporate sustainable principles & practices into golf course, marina, beach, park & playground/field design & maintenance (grasscycling, reclaimed water irrigation, water conservation, recycling/waste management & integrated pest management)
8. Continue to minimize & find alternatives to the use of chemical pesticides & herbicides in city parks & open space
9. Require all new developments to provide usable open space tailored to the recreational demands they would otherwise place on public resources
10. Create walking trails & use native, drought-tolerant landscaping in street & frontage road medians



## URBAN NATURE INITIATIVE 2:

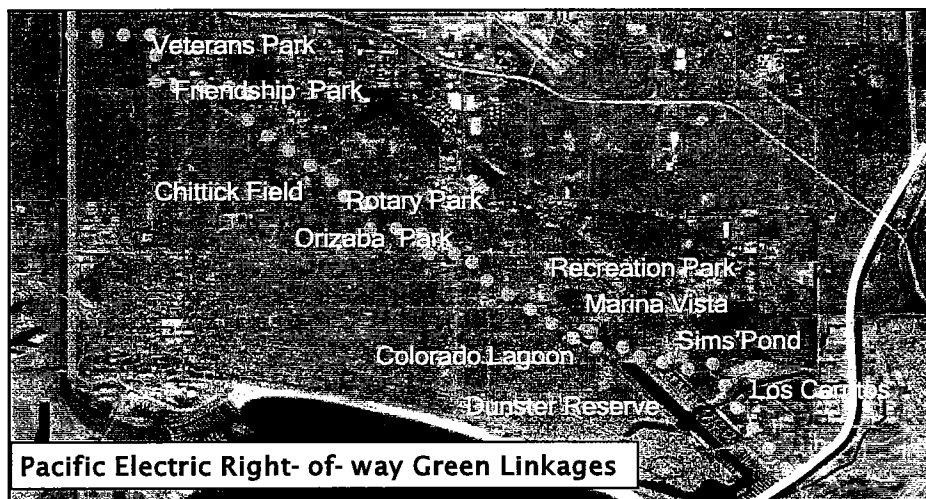
Promote biodiversity citywide by encouraging the wide scale use of native or edible landscapes

### SUSTAINABILITY GOALS

Establish a native landscape demonstration in every park 1 acre or larger by 2020

Establish a community garden in every park 5 acres or larger by 2020

1,200 front yards converted to native or edible landscape by 2016



### STATISTICS

- Native landscape demonstration gardens exist at the Nature Center, Rancho Los Cerritos and the Long Beach Water Department
- The Long Beach Water offers free residential landscape classes
- The Los Cerritos Wetlands once stretched over 2,400 acres at the mouth of the San Gabriel River and today, approximately 415 acres of the tidal marshes remain in southeast Long Beach and Seal Beach
- The City installed an 20 growing containers in the Edible Garden Project in the Civic Center Plaza as a partnership between the Office of Sustainability and the Pacific Gateway Workforce Investment Network's Hire A Youth program creating green jobs for local youth

### ACTIONS

1. Identify partnerships, funding & complete the Deforest Wetlands project
2. Work with utility companies & others who own the former Pacific Electric right-of-ways to create projects that green our right-of-ways
3. Ensure all open space & greening projects incorporate native/drought tolerant plants & use low-water strategies
4. Encourage private residences to remove water intensive landscapes & replace them with native, drought-tolerant and/or edible landscapes
5. Protect & restore the City's urban creek system
6. Leverage public & private dollars to implement habitat & wetland restoration projects in the community & develop new & enhance existing marine life habitats
7. Work to acquire & restore lands along the San Gabriel & Los Angeles Rivers & Los Cerritos Wetlands & Colorado Lagoon
8. Work with schools & community groups to create partnerships to establish & maintain community gardens





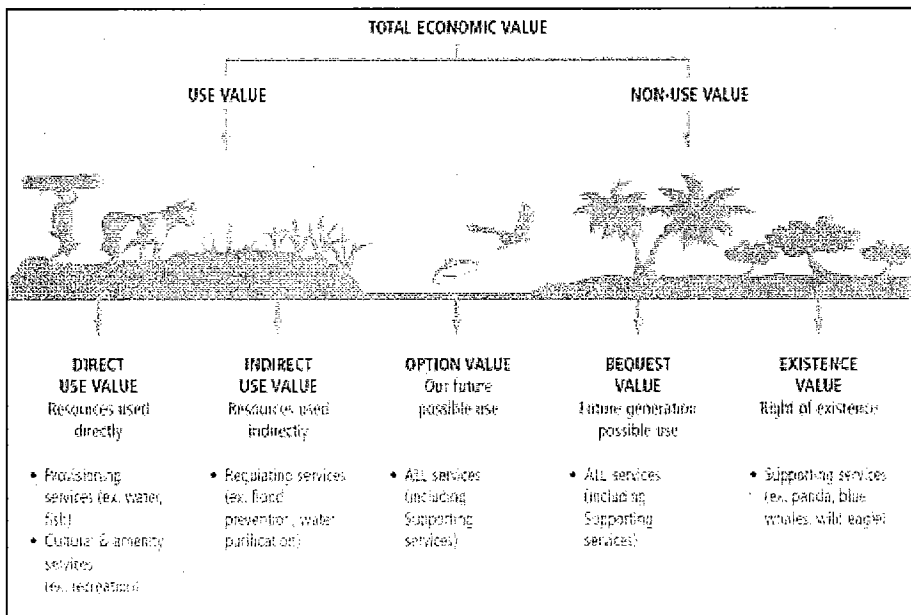
## URBAN NATURE INITIATIVE 3:

Increase awareness and promote the natural environment as a place to play, learn and be active

### SUSTAINABILITY GOALS

Train 500 Habitat Stewards by 2016

Annual increase of youth who are trained as Long Beach Bioneers

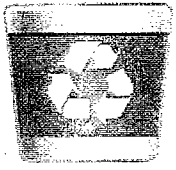


### STATISTICS

- Long Beach has 5 miles of ocean-facing beach and 15 miles of river paths
- The El Dorado Nature Center is the 69th most visited park nationwide with 500,000 visitors per year
- The Aquarium of the Pacific is the fifth largest in the nation and the third largest cultural attraction in the Los Angeles area, with 1.4 million annual visitors, including 200,000 school children
- The Aquarium of the Pacific offers a multitude of on-site and off-site educational activities and programs for schools, including Aquarium on Wheels and Oceanographer for a Day

### ACTIONS

1. Offer environmental habitat educational programs for schools & partner with LBUSD, LBCC & CSULB to incorporate educational courses/lessons about nature & our impact on the environment
2. Support the Wetland & Marine Science Center at Colorado Lagoon, El Dorado Nature Center and other experiential learning opportunities in our outdoor classroom
3. Encourage and promote local entertainment, leisure and community events at the beaches and in parks
4. Aggressively promote tree planting in city parks & open space & promote the tree dedication program
5. Promote the Ranchos as locations for history & nature, including native, drought-tolerant landscapes
6. Promote volunteer opportunities with Adopt-a-beach, Adopt-a-wetland, Coastal Cleanup days and the Aquarium of the Pacific
7. Participate & encourage community participation in Green Port Fest & other community festivals geared toward environmental education & stewardship
8. Incorporate community participation in planning parks, open space, gardens & demonstration projects to increase community ownership



# WASTE REDUCTION

## INTERRELATED ACTIONS



Energy



Buildings/Neighborhoods



Green Economy/Lifestyle

As Long Beach faces ever-increasing environmental concerns in areas such as decreasing resources and landfill space, responsible waste management is increasingly vital for the City. It is more important than ever to conserve resources by reducing waste, reusing items, and recycling. Environmentally responsible management of waste is a vital component of sustainability that combines the efforts of both government and residents.

As a municipal government, Long Beach is taking steps to improve its waste management by implementing the 3 R's at every opportunity. The City strives to reduce consumption and waste by implementing programs to facilitate waste reduction, encourage reuse of resources, and provide recycling opportunities for residents and businesses within Long Beach.

One step towards effective waste management is to discontinue wasteful practices that have become rampant in our society. Every day thousands of tons of trash is disposed or littered on the ground in California, but many of those materials could be diverted from being wasted at landfill by reusing or recycling goods, thereby reducing the need for new materials. The increasing scarcity of resources requires that we continually reduce the amount of waste we produce while maximizing recycling and reuse.

Waste generation contributes to greenhouse gas emissions, since vast amounts of energy and water are used to produce consumer materials and packaging that is eventually discarded and buried in a landfill or incinerated. Burying waste in landfills produces carbon dioxide and methane. Incinerating trash can also produce carbon dioxide and other pollutants. Reducing the use of unnecessary products not only reduces the greenhouse gas emissions associated with both the production and the disposal of these goods, but also reduces waste at its source by creating fewer products and less waste.

This section focuses on initiatives and actions to reduce the amount of waste we produce, manage our waste more efficiently and support the market and use of recycled materials. Actions taken to reduce waste will also have benefits in other areas of sustainability by reducing the waste management carbon footprint, conserving natural resources and supporting local eco products and services.

As our City's population grows, landfill space fills up and we recognize the effects that trash, toxic materials, and litter have on our environment and quality of life, it becomes more and more important for our City to effectively manage our waste by reusing, recycling, and disposing in the most environmentally friendly way possible. Society must embrace environmental sustainability in waste management as an essential part of everyday lifestyle and business. Together, we can more sustainably manage waste by reducing, reusing and recycling.

## SUSTAINABILITY GOALS

1. Annual reduction in average pounds of solid waste generated per person per day
2. Increase the number of students participating in TREC to 2,000 per year by 2016
3. Attract and retain of total of 20 RMDZ manufacturing companies by 2020

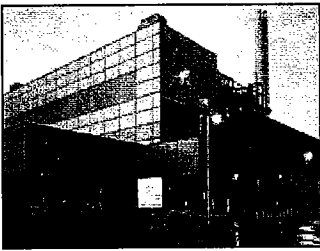
*Together, we can effectively manage waste by reducing, reusing and recycling*

# A HISTORY OF LEADERSHIP



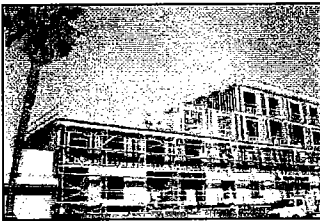
## NATIONAL LEADER IN SOLID WASTE DIVERSION

In 1989, California mandated that all cities and counties must divert at least 50% of their waste stream into recycling or reuse by year 2000. In the first year on record, 1995, Long Beach had a 12% diversion rate. After implementing its waste management programs Long Beach easily exceeded the state goal, diverting 69% of its waste in 2006. Among large cities, that diversion rate is the second highest in the nation. This is achieved through various programs like residential curbside recycling, household hazardous waste roundups, consistent public outreach, elementary school recycling education, and even classes for at-home composting.



## SOUTHEAST RESOURCE RECOVERY FACILITY

In 1988, the City of Long Beach opened SERRF in conjunction with the County Sanitation Districts of Los Angeles. SERRF converts municipal trash into energy, and generates enough electricity to power 35,000 homes annually. Another benefit of this conversion process is the reduction of solid waste volume by an astounding 80% with the resulting ash being used as road base at the Puente Hills Landfill.



## CONSTRUCTION & DEMOLITION RECYCLING PROGRAM

In 2007, the City implemented a Construction and Demolition Debris Recycling Program. This program is helping to reduce solid waste going to landfills by requiring the largest development projects across the city to ensure that at least 60% of the waste materials generated during a building demolition or major construction activity reused or recycled.



## RECYCLING MARKET DEVELOPMENT ZONE (RMDZ)

In 1992, Long Beach created the first of 40 RMDZs across the state. RMDZs were created to assist sustainable companies that use recyclables as feedstock in manufacturing. The Long Beach RMDZ is combined with the City's Enterprise Zone and the economic benefits that both programs offer can greatly assist in corporate development and expansion. To date, 8 companies have taken advantage of the technical and fiscal benefits offered, including a company that retreads used tires, one that processes used oil filters into recyclable components, one that manufactures wood pallets from scrap wood, a company that grinds scrap asphalt and concrete into road base, and another corporation that manufactures consumer items from recycled plastic pellets.



## LITTER ABATEMENT

The Litter-free Long Beach Campaign is designed to expand awareness of the impacts of litter—how it detracts from the safety of our neighborhoods and negatively impacts property values, the economic vibrancy of business corridors and the health of our environment. Campaign strategies focus on engaging residents and neighborhood associations, partnering with LBUSD schools to reach students, parents and teachers, sponsoring neighborhood litter clean-up events, providing access to programs that allow local businesses to get involved and conducting outreach throughout the City to encourage support and sustain participation

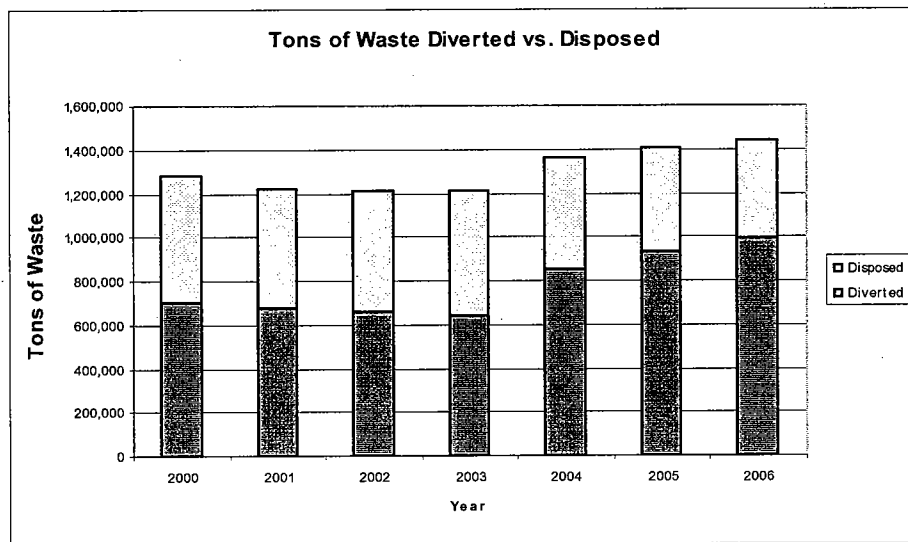


## WASTE REDUCITON INITIATIVE 1:

Increase diversion by reducing waste and increasing recycling and reuse

### SUSTAINABILITY GOALS

Annual reduction in average pounds of solid waste generated per person per day



### ACTIONS

1. Implement the Multifamily Recycling Ordinance and continue to structure waste hauler contracts to offer economic incentives for recycling and disincentives for excess waste
2. Establish commercial recycling guidelines intended to increase the recycling rate of the commercial sector, keeping waste out of the waste stream
3. Establish an Environmental Depot facility that will recycle electronic waste and dispose of hazardous waste
4. Establish a publicly accessible compost/mulch facility in the city and create beneficial uses for city greenwaste within city limits (grasscycling, mulching, etc)
5. Develop commercial sector food-waste recovery programs and expand edible food redistribution programs
6. Create comprehensive publicly-accessible recycling infrastructure at all city facilities and locations and require businesses to have recycling pick-up and public recycling on site
7. Encourage residential composting and expand the City's residential composting program
8. Aggressively implement measures to decrease beach debris and expand beach recycling programs
9. Investigate emerging conversion technologies as part of long-term waste management strategies
10. Establish City purchasing guidelines that requires the purchase of reusable and/or recycled products and require City operations to participate in take-back programs where available
11. Implement an electronic record keeping/processing system for City operations to decrease the use of paper

### STATISTICS

- Long Beach has the 2nd highest diversion rate of any large US city at 69%
- Since 2003, over 9,500 gallons of used oil has been recycled through ESB's programs
- SERRF reduces waste volume by 90%, has generated over 4 billion kilowatts and recycles an average of 825 tons of ferrous metals each month
- Statewide, 60% of waste is generated by the commercial sector
- All Long Beach residential recycling and trash carts are made of 25% post-consumer plastics
- All refuse accounts serviced by Long Beach offer recycling pickup for no extra fee
- The City's e-waste roundups collected 26 tons of e-waste in 2008



## WASTE REDUCITON INITIATIVE 2:

Increase awareness and promote the concepts of reduce, reuse, and recycle

### SUSTAINABILITY GOALS

Increase the number of students participating in Traveling Recycling Education Center to 2,000 per year by 2016



### STATISTICS

- In 2007, 157 different elementary school clean-up events were completed with supplies provided by ESB
- In 2008, Long Beach's TREC program has made 42 school visits and educated 1,440 4<sup>th</sup> graders on the reduce, reuse, recycle concept
- 1,938 "Litter Free" banners were rotated among 938 light poles throughout Long Beach in 2008
- 6,170 litter bags were distributed to residents in 2008, which often included literature and giveaways on recycling and littering
- 5,320 elementary school students participated in the Lunch with a Lizard program which teaches K-3 students about littering and recycling

### ACTIONS

1. Create a public education campaign to reduce litter and waste by promoting the use of all types of reusable products instead of disposable products (reusable grocery bags, water bottles, etc.) and refusal of single-use items
2. Continue public education efforts through continued to support Litter Free Long Beach and other educational programs that promote reduction of waste and litter
3. Continue educating school children to recycle and reduce litter by continuing Traveling Recycling Education Center (TREC) and Lunch with a Lizard programs
4. Develop an environmental recycling awareness program to be implemented in targeted industries (hospitality, medical, restaurants, etc)
5. Publicize and encourage free-cycling programs
6. Promote sustainable landscaping practices and composting
7. Promote and support community beach clean-ups and increase the frequency of beach clean-ups events
8. Promote the use of post-consumer content products thereby reducing demand for virgin materials
9. Promote take-back programs that allow customers to return packaging or used products to manufacturer for proper disposal
10. Promote the proper disposal of special wastes such as Household Hazardous Wastes and electronic waste



### WASTE REDUCITON INITIATIVE 3:

Utilize recyclable materials as a raw materials source for industrial development to enhance the recycled-materials market in Long Beach

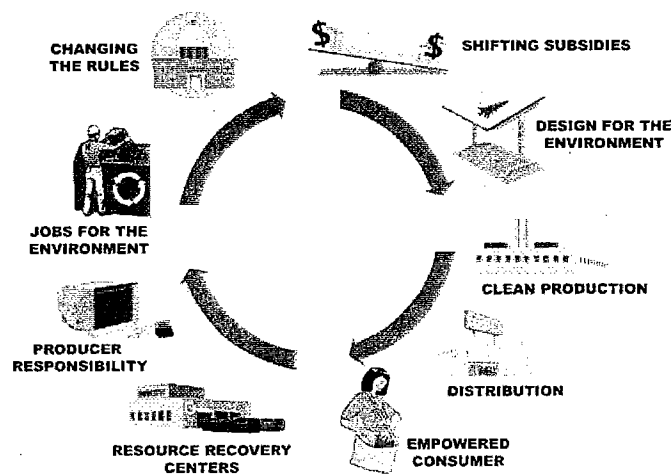
#### SUSTAINABILITY GOALS

Attract and retain of total of 20 RMDZ manufacturing companies by 2020

#### STATISTICS

- In 2007 there were 8 RMDZ companies in Long Beach that employed approximately 170 people
- In 2007, one RMDZ company recycled approximately 4,750 tons of milk jugs, juice bottles, and water containers into plastic pellets that were used by area manufacturers for injection molding
- In 2007, another RMDZ company processed approximately 220 tons of used oil filters in recyclable components
- Statewide, recycling and reuse generates \$4 billion in salaries and wages and produces \$10 worth of goods and services annually

#### ZERO WASTE SYSTEM



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#### ACTIONS

1. Continue existing operations of the Long Beach Recycling Market Development Zone to foster economic development and job opportunities
2. Expand RMDZ boundaries
3. Promote RMDZ products in the local marketplace
4. Offer incentives such as free press for businesses that participate in the "Litter Free Zone" program
5. Encourage location of RMDZ businesses to Long Beach by fast tracking permits and licenses
6. Promote community-based programs that provide jobs for disadvantaged individuals in RMDZ businesses
7. Participate in e-waste recycling program and support private e-waste programs and events
8. Require city operations and encourage businesses and residents to buy recycled products to support the recycled products market
9. Aggressively apply for grants and partner with others agencies to leverage funding to implement used oil and tire recycling programs and other litter programs
10. Partner with Conservation Corps and other local recycling businesses to further recycling and reuse



# WATER

## INTERRELATED ACTIONS



Energy



Buildings/Neighborhoods



Urban Nature

Water is vital to all human activity. However, many people do not realize how little fresh water is available. California is a generally dry state and suffers continuous water supply shortages. Without the massive water transportation system that is in place, life in Southern California as we know it would be impossible.

Water conservation is vital for a sustainable city to maintain a reliable source of fresh water for daily use. Often, water is wasted, which is unnecessary as well as expensive. Simple conservation, as well as a move to more water efficient appliances and landscaping can significantly reduce water use, save money and help ensure a reliable water supply now and in the future. The Long Beach Water Department (LBWD) and the Board of Water Commissioners has jurisdiction over all water use, sale, and distribution, providing a reliable supply of quality potable water through economical and environmentally responsible planning and actions.

Responsible management of stormwater runoff is also important to a sustainable city. Capturing rainwater and urban runoff and reusing it for irrigation and other outdoor uses helps reduce the demand for potable water. Increasing permeability of hardscape and increasing open space helps reduce runoff by allowing rainwater to percolate back into the ground, thereby contributing to replenishing the aquifers.

Protecting and improving our rivers and ocean is also important to sustainability and our quality of life as a coastal city. Improving water quality by reducing pollution helps create healthier habitats as well as inviting areas for recreational activities.

The initiatives, goals and actions in this section will reduce water consumption while promoting a conservationist ethic and protecting and improving our rivers and ocean. The actions in this plan are interrelated, and the goals that follow will contribute to the goals in the urban nature and buildings and neighborhoods sections. The City of Long Beach recognizes that in order to build a sustainable city, the City and community must work together to reduce water use and stormwater runoff and protect and enhance our waterways.

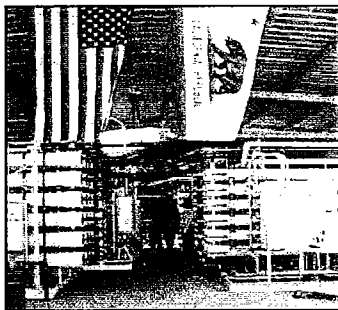
## SUSTAINABILITY GOALS

1. Reduce per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20% in per capita water use by the year 2020
2. Through a pilot program, facilitate the installation of rain catchment systems at 5 City facilities by 2012
3. Facilitate the development of 50 green roofs communitywide by 2016

*Together, we can conserve water, heal our watersheds and restore our waterways*

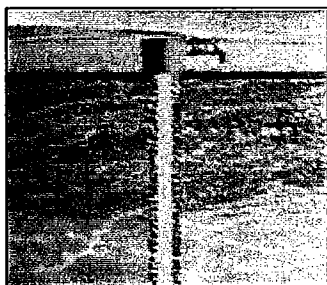


# A HISTORY OF LEADERSHIP



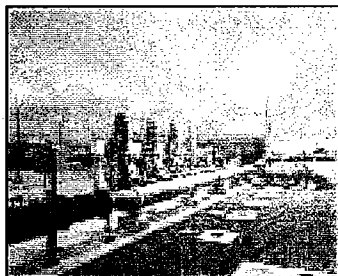
## **LARGEST DESALINATION RESEARCH PROJECT IN THE U.S.**

Long Beach Water Department (LBWD), the L.A. Department of Water & Power and the United States Bureau of Reclamation, have constructed a 300,000 gallon-per-day prototype desalination facility, the largest seawater desalination research & development facility of its kind in the U.S. In addition, LBWD & the Bureau have designed & constructed an "Under Ocean Floor Seawater Intake & Discharge Demonstration System", the first of its kind in the U.S., to demonstrate that desalination intake & discharge systems can be effective & environmentally responsible.



## **MANGEMENT OF LOCAL GROUNDWATER BASIN**

The Long Beach Conjunctive Use Project, a significant water supply reliability project, is an innovative and environmentally responsive water storage project that allows LBWD to better utilize the groundwater basin beneath the City of Long Beach, strengthening the City's water supply reliability while maintaining water rate affordability. The project increases LBWD's groundwater production capability and improves the performance of the saltwater barrier.



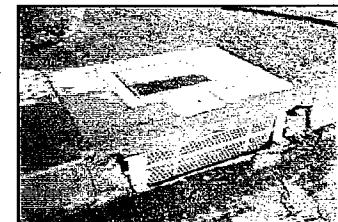
## **EXPANDED USE OF RECYCLED WATER**

The Long Beach Water Department has built one of the most expansive systems for distributing recycled water of any utility its size; reducing the City's need for potable water by over 10%. The Recycled Water System Expansion Project is being developed in four critical, deliberate phases, and is primarily intended to connect the recycled water system to new customers, as well as increase the reliability of the distribution system through the completion of looped transmission corridors.



## **WATER CONSERVATION**

The amount of water imported into southern California has been permanently reduced. Using the remaining water wisely must become one of our highest priorities. Over the years, Long Beach has sustained one of the most effective water conservation programs in California; although the City's population has increased 28% over the last 25 years, its demand for potable water has decreased 17%.



## **WATER QUALITY PROTECTION**

Engineered, structural treatment devices, also known as Best Management Practices, selected specifically because of their pollutant removal capabilities are used as control measures to treat runoff. This 3-Stage "Treatment train" is the trash and debris excluder, the filter baskets set inside the catch basin and the catch basin outfall pipe screen. This approach captures oils, grease, pesticides, sediment and bacteria. and is designed to capture in the at the end-of-pipe.



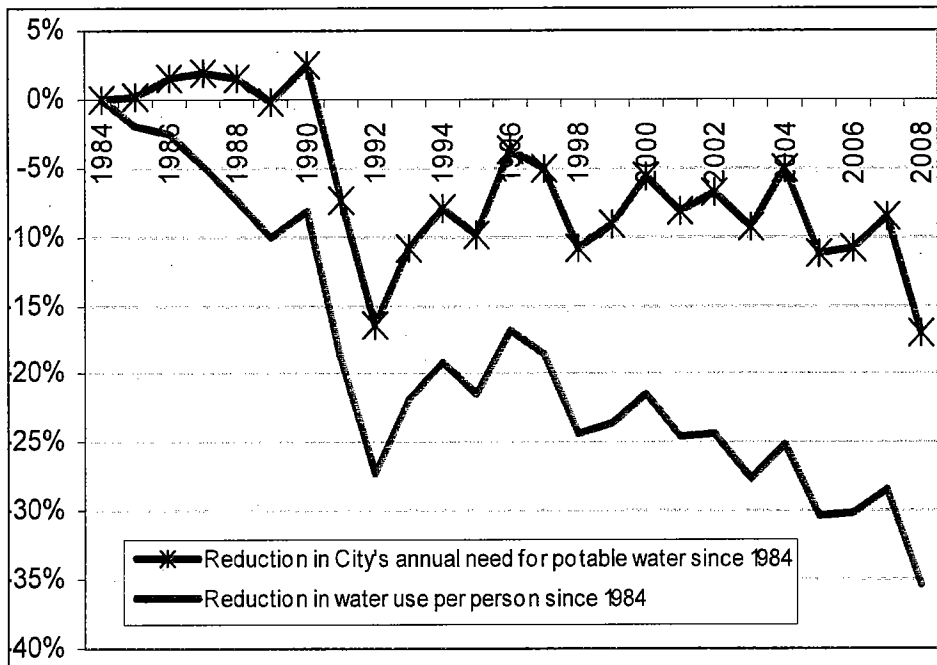


## WATER INITIATIVE 1:

Ensure a sustainable water supply through conservation and reduced dependence on imported water

### SUSTAINABILITY GOALS

Reduce per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20% in per capita water use by the year 2020



### STATISTICS

- In the last 25 years, the City's population has increased 28%, but demand for potable water has decreased 17% overall; demand per person has declined 35%
- During that same period, the City's reliance on imported water declined from 70% to just 46% of total demand
- Long Beach uses an average of 60,000,000 gallons of potable water every day
- Long Beach water usage, year-to-date in Spring 2009, is trending 14% lower than its own 10-year average water usage
- The average single-family home uses 50% of its water outdoors
- There are 915 miles of water lines and 765 miles of sewer lines in the City

### ACTIONS

1. Make it illegal and socially unacceptable to waste water in Long Beach
2. Reduce amount of water used for landscape irrigation by improving irrigation systems and by replacing grass lawns with landscapes that are more drought-tolerant, enhance the environment, require less maintenance, and reduce the amount and pollution load of urban runoff into the Long Beach coastal zone
3. Further reduce demand for potable water by converting industrial and irrigation demands to recycled water wherever practical and cost-effective
4. Continue research and development of cost-effective and environmentally responsible seawater desalination as an alternative, sustainable supply of potable water
5. Continue to improve management and yield of groundwater basin that Long Beach relies on for approximately 50% of its potable water
6. Update landscaping standards to require drought-tolerant and native landscaping to reduce water consumption



## WATER INITIATIVE 2:

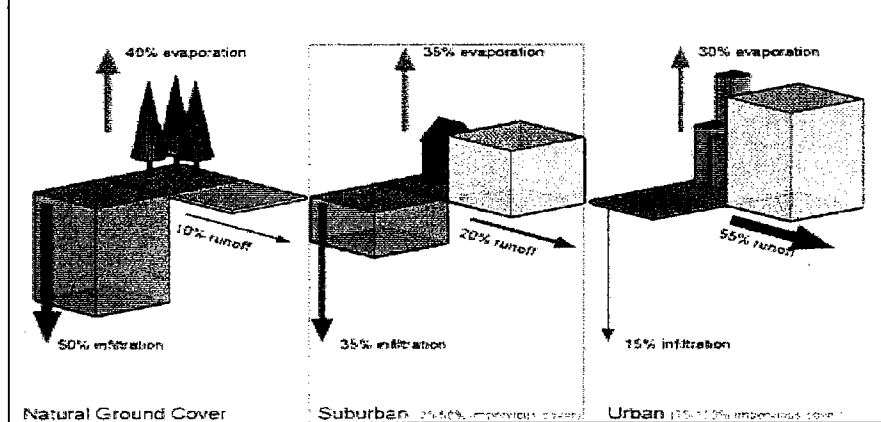
Implement low impact development strategies to reduce runoff and pollution at the source and increase the beneficial use of rainwater

### SUSTAINABILITY GOALS

Facilitate the installation of rain catchment systems at 5 City facilities by 2012

Facilitate the development of 50 green roofs communitywide by 2016

### Where Does Rain Go?



### STATISTICS

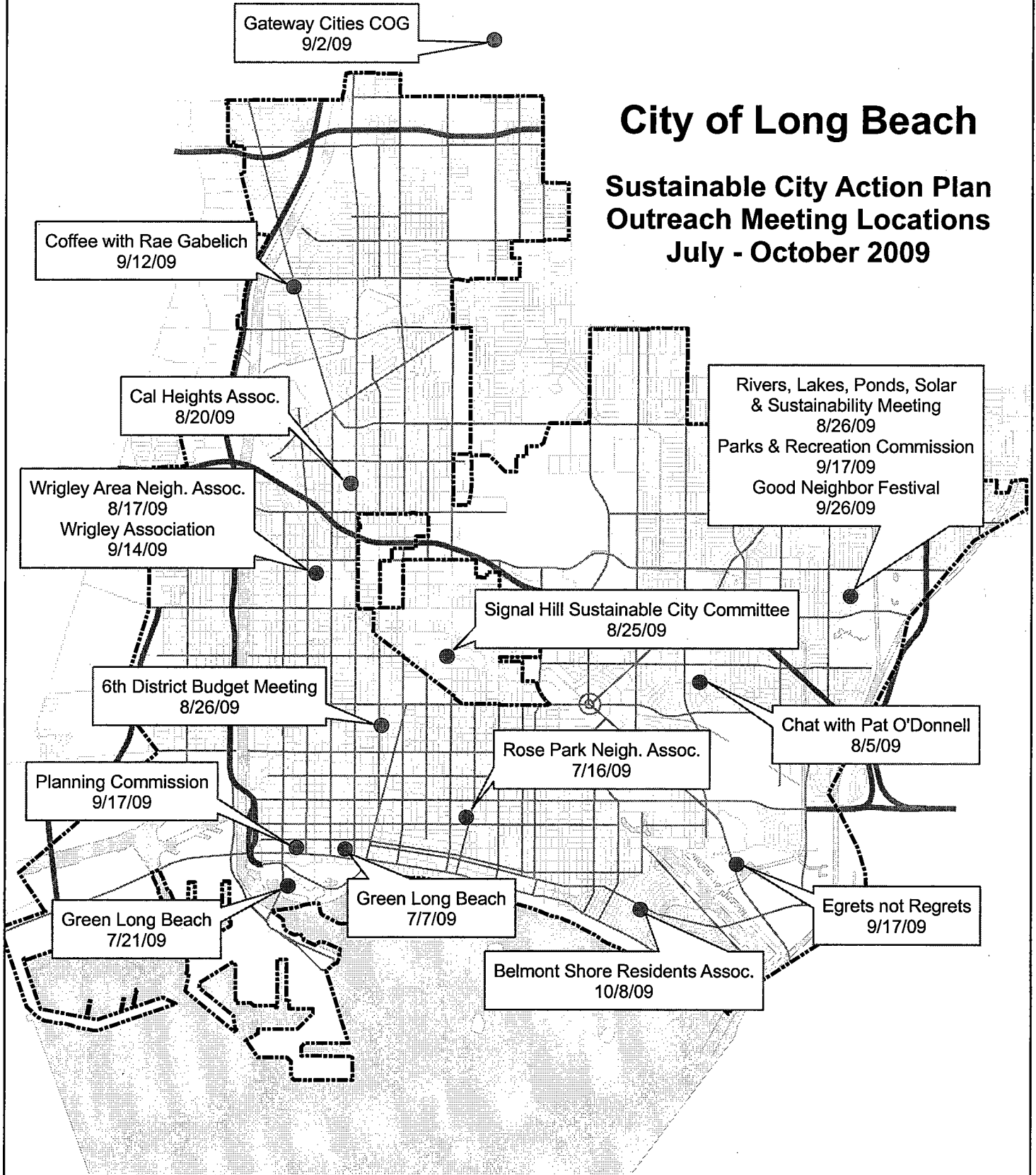
- 151 storm drains have been outfitted with 'Treatment Train' technology that provides 3 levels of defense for stormwater, debris and bacteria
- In FY 2008, the City swept 163,298 curbed-miles, which collected 10,617 tons of trash and debris
- The City has 181 miles of stormwater conveyance pipes, 23 pump stations, 3,872 catch basin, 5.5 miles of open channel
- In FY 08, the Long Beach Storm Water Management Plan was implemented at an estimated cost of \$26,863,474

### ACTIONS

1. Aggressively pursue strategies to keep trash off our beaches and pollution out of our ocean
2. Continue to manage urban and stormwater runoff by installing emerging treatment technologies into the storm drain system
3. Continue to work with upstream cities in the Los Angeles River Watershed to implement stormwater best management practices (BMPs) in the watershed to reduce pollutant loadings
4. Pursue legislation and secure funding to mitigate surface water and ground water pollution
5. Participate in and promote beach, neighborhood and community and business corridor cleanups in order to keep our watersheds and beaches clean
6. Encourage the use of development techniques to direct rooftop runoff to pervious areas such as yards, garden beds, vegetated/soft bottom open channels, or on-site structural BMPs for capture, treatment, reuse
7. Design streets to direct rainwater runoff to landscaped areas
8. Utilize and/or replace non pervious surfaces with permeable materials (e.g., sidewalks, driveways, outdoor patios, and parking lots)
9. Continue to pursue the breakwater reconnaissance study
10. Update development standards to require low impact development strategies such as detention basins, infiltration basins, infiltration trenches, conservation of natural areas, permeable pavements, treatment wetlands, bioswales, curb cuts, green roofs, rain gardens, and other pre/post construction BMPs.
11. Expand Stormwater Management Education and Outreach programs to a watershed-based program and develop public-private educational partnerships to promote behavioral change

# City of Long Beach

## Sustainable City Action Plan Outreach Meeting Locations July - October 2009





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# City of Long Beach Sustainable City Action Plan

Larry Rich  
Sustainability Coordinator



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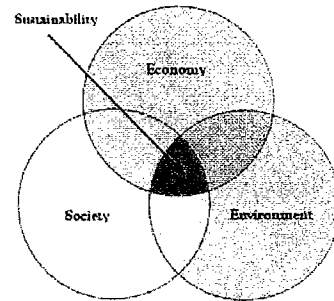
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## What Sustainability Means To Us

- Meet the needs of the present without compromising the ability of future generations to meet their own needs
- Balances economic, social, & environmental components
- The capacity to endure (and thrive)



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## Setting The Groundwork

- “Going Green” a priority for Mayor & City Council
- Sustainable City Commission created to advise City Council on environmental issues & create a Sustainable City Action Plan
- Office of Sustainability created to develop & implement model sustainability programs & facilitate comprehensive, citywide sustainability projects & policies



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## Sustainable City Action Plan

- Helps to guide operational, policy & financial decisions
- Comprehensive, citywide & strategically incorporates multiple interconnected aspects
- Solid framework to achieve a sustainable city
- Intended to be challenging & realistic
- Inspires us to strive toward future goals



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## Focus Areas

- Buildings & Neighborhoods
- Energy
- Green Economy & Lifestyle
- Transportation
- Urban Nature
- Waste Reduction
- Water



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## Focus Areas

- Overview
- History of Leadership
- Initiatives
  - Goals: Quantifiable, measurable
  - Actions: Specific action items
  - Statistics: Baseline information
  - Visual: Graph, chart, diagram to demonstrate concepts



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## Long Beach Sustainable City Action Plan Initiatives

### Buildings and Neighborhoods



Accelerate the use of green building techniques in new development, renovations and retrofits to improve building efficiency and health

Enhance and enliven corridors and neighborhoods with green infrastructure and public spaces

Enhance our community to encourage people to get out of their cars and into their neighborhoods

### Energy



Shrink Long Beach's carbon footprint by reducing greenhouse gas emissions

Ensure all of the City of Long Beach's operational needs are met through energy efficiency, conservation and renewable energy sources

Reduce electricity and natural gas consumption of the Long Beach community

### Green Economy & Lifestyle



Establish Long Beach as the leading California city for green business and green job growth

Promote individual action that encourages active and green lifestyles, which supports a green economy

### Transportation



Reduce emissions and improve air quality by moving toward more fuel efficient and alternative fuel vehicles

Increase public transit ridership by expanding access, infrastructure and convenience

### Transportation



Provide an environment and culture where walking and biking are safe, viable and preferred modes of transportation in the city

Implement the Clean Air Action Plan (CAAP), designed to significantly reduce port-related air emissions over a 5-year plan, through a partnership with the Harbor Department and its tenants

### Urban Nature



Create a more balanced network of open spaces through acquisition, restoration and greenway linkages, consistent with the 2002 Open Space and Recreation Element of the General Plan

Promote biodiversity citywide by encouraging the wide scale use of native or edible landscapes

Increase awareness and promote the natural environment as a place to play, learn and be active

### Waste Reduction



Increase diversion by reducing waste and increasing recycling and reuse

Increase awareness and promote the concepts of reduce, reuse, and recycle
















Utilize recyclable materials as a raw materials source for industrial development to enhance the recycled-materials market in Long Beach

### Water



Ensure a sustainable water supply through conservation and reduced dependence on imported water

Implement low impact development strategies to reduce runoff and pollution at the source and increase the beneficial use of rainwater

SUSTAINABLE CITY ACTION PLAN GOALS		
2011	2016	2020
 <ul style="list-style-type: none"> <li>Reduce future port-related emissions by 47% reduction in DPM, 45% reduction in NOx, and 52% reduction in SOx from OGV, CHE &amp; HDV source categories by 2011</li> </ul>	 <ul style="list-style-type: none"> <li>Increase number of students participating in TREC to 2000 per year</li> </ul>	 <ul style="list-style-type: none"> <li>50% of Long Beach residents work in Long Beach</li> <li>At least 60,000 residents in the downtown</li> <li>At least 30% of Long Beach residents use alternative transportation to get to work</li> <li>Plant at least 10,000 new trees in Long Beach</li> <li>100% of suitable alley and parking lot projects use permeable pavement</li> <li>100% of major city facilities are LEED certified (or equivalent)</li> <li>At least 5 million square feet of privately developed LEED certified (or equivalent) green buildings</li> </ul>
2012	Other	
 <ul style="list-style-type: none"> <li>100% of city-owned vacant lots are utilized with interim green uses</li> <li>Create at least 6 new community gardens</li> <li>Double the number of LEED accredited professionals (or equivalent) in the City and community</li> </ul>	 <ul style="list-style-type: none"> <li>Train 500 Habitat Stewards</li> <li>Establish one or more Nature Centers along the LA River</li> </ul>	 <ul style="list-style-type: none"> <li>Increase City green spending to 100%</li> <li>Reduce greenhouse gas emissions from City facilities by 15%</li> <li>Reduce electricity use in City operations by 25%</li> <li>Reduce natural gas use in City operations by 15%</li> <li>Facilitate development of 2 Megawatts of solar on city facilities</li> <li>Reduce community electricity use by 15%</li> <li>Reduce community natural gas use by 10%</li> <li>Facilitate development of 8 Megawatts of solar within the community</li> </ul>
 <ul style="list-style-type: none"> <li>Increase city employee average vehicle ridership to 15</li> </ul>	 <ul style="list-style-type: none"> <li>Reduce diesel particulate matter from all port-related sources by 1,200 tons per year</li> <li>Reduce port-related nitrous oxide emissions by 12,000 tons per year</li> </ul>	 <ul style="list-style-type: none"> <li>Increase average fuel efficiency of gas-powered City fleet to 35 mpg</li> <li>100% of the City fleet is alternative fuel and/or low emission</li> <li>Create a system of at least 200 miles of interconnected bike routes</li> <li>Reduce vehicle emissions by 30%</li> </ul>
 <ul style="list-style-type: none"> <li>Through a pilot program, facilitate the installation of rain catchment systems at 5 City facilities</li> </ul>	 <ul style="list-style-type: none"> <li>Annual reduction in average pounds of solid waste generated per person per day</li> </ul>	 <ul style="list-style-type: none"> <li>Create 6 acres of open space per 1,000 residents</li> <li>Create 100 miles of green linkages</li> <li>Establish a native landscape demonstration in parks 1 acre or larger</li> <li>Establish a community garden in every park 5 acres or larger</li> <li>Convert 1,200 front yards to native or edible landscapes by 2020</li> </ul>
 <ul style="list-style-type: none"> <li>Identify and develop at least 2,000 green collar jobs in Long Beach</li> <li>Enroll 100 green businesses in the Long Beach Green Business Certification Program</li> <li>Target half of the business grants/loans for green business development</li> </ul>	 <ul style="list-style-type: none"> <li>Annual increase in citywide green events &amp; youth trained in the Bioneer Academy</li> </ul>	 <ul style="list-style-type: none"> <li>Attract and retain of total of 20 RMDZ manufacturing companies</li> <li>Reduce per capita use of potable water, exceeding the State mandate to achieve a 20% demand reduction in per capita water use</li> </ul>

## Community Outreach

- 20 Community Meetings
- 80 Online Survey Responses
- Spanish Translation
- Internal Green Team Meetings
- Meetings with Other City Commissions
- Presentations to Other Agencies
- Monthly Commission Meetings
- Commissioner Presentations
- City Council Briefings



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## Desired Outcomes

- Beacon & roadmap for the type of city we want to become
- Tool for guiding future operational & policy decisions
- Standard for innovative citywide partnerships
- Competitive advantage for grants & partnerships
- Well-positioned for meeting current & future Regional/State/Federal requirements



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## City of Long Beach Office of Sustainability

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