

# Opportunities for Conservation in Residential Development

Chapter 4





# Opportunities for Conservation in Residential Development

This chapter delineates the opportunities that exist for water and energy conservation in residential development as required by California Government Code §65583(a)(8), all of which can reduce development costs and improve the affordability of housing units. The discussion highlights the conservation efforts being made by the City of Los Angeles, which aim to both reduce energy and water consumption at the consumer end through regular usage, as well as to minimize the need or demand for traditional energy and water sources. This chapter also addresses building design and land-use planning initiatives, which contribute to conservation such as green building programs, the promotion of infill projects and mixed-use development, and transit-oriented sustainable development.

In September 2006, Assembly Bill 32 approved the Global Warming Solutions Act. This bill codifies the State of California's goal to reduce emissions contributing to global warming. The bill commits to reducing the emission of greenhouse gases statewide to 1990 levels by the year 2020. At the City level, in May 2007, furthering the effort to reduce greenhouse gas emissions locally, the City initiated Green LA - An Action Plan to Lead the Nation in Fighting Global Warming. Through this program, the City of Los Angeles commits to a more ambitious target over a longer-term, aiming to reducing greenhouse gas emissions to 35% below 1990 levels by 2030. Some of the other Green LA goals include :

- Increase renewable energy from solar, wind, biomass, and geothermal sources to 20% by 2010 & to 35% by 2020
- Complete energy efficiency retrofits of all city-owned buildings to meet a 20% or more reduction of energy consumption
- Reduce per capita water consumption by 20%
- Recycle 70% of all trash by 2015
- Expand City employee rideshare program

<sup>152</sup> [http://www.ci.la.ca.us/mayor/villaraigosaplan/EnergyandEnvironment/LACITY\\_004467.htm](http://www.ci.la.ca.us/mayor/villaraigosaplan/EnergyandEnvironment/LACITY_004467.htm)

- Extend the regional rail network
- Promote high-density housing close to major transportation arteries and public transit train and bus lines
- Support and implement transit oriented development

Achieving these goals requires cooperation from many city departments, and includes the incorporation of conservation measures into residential developments. The City has developed and is pursuing a number of programs to support this initiative, many of which are offered by the Los Angeles Department of Water and Power. The methods described below, as well as those described in Chapter 6, are efforts that the City is currently undertaking to reduce energy and water consumption, thereby working towards the greenhouse gas emission reduction levels set by AB 32, and as part of the City's Green LA Plan.

Please note that specific objectives, policies and programs relating to conservation are detailed in Chapter 6 under Goal 2: Safe, Livable and Sustainable Neighborhoods.

## A. Reducing Consumer Use of Energy and Water

### Los Angeles Green Building Code

On January 1, 2011, the Los Angeles Green Building Code (LA Green Code) went into effect citywide. The Code is based primarily on the 2010 California Green Building Standards Code (CALGreen), the nation's first statewide green building standards code. Both were direct responses to meeting the goals of Assembly Bill 32 (AB 32), California's landmark greenhouse gas legislation, which seeks to reduce the energy and water use of construction; reduce waste; and reduce the carbon footprint.

The LA Green Code expands upon CALGreen's policies and regulations, incorporating some earlier green provisions in the pre-existing LA Code, as well as replacing some overlapping provisions requiring that certain projects meet a LEED® standard. The LA Green Code exceeds CALGreen by applying not only to all new residential structures, but also to all building additions and alterations with a value in excess of \$200,000. It also incorporates some green provisions in the pre-existing Code by requiring "solar ready" roofs and electric vehicle-ready components for all new buildings. In addition, the LA Green Code attempted to clarify various code sections within the CALGreen Code to make it easier to understand and implement.



The LA Green Code is a comprehensive approach to greener building in the city and touches on numerous conservation opportunities in residential development. Since much of the Code mirrors statewide efforts and are now mandatory, it is not necessary to cite many of its details. However, significant segments of the code, particularly those not part of CALGreen, are noted in this chapter under their respective categories.

## Energy Efficiency Methods

### Cap-and-Trade

Cap-and-trade is a central element of California's Global Warming Solutions Act (AB 32) and addresses major sources of greenhouse gas emissions. It establishes a "cap" on emissions and allows companies to "trade" their carbon allowances thus incentivizing them to innovate to meet their allocated limit. The less they emit, the less they pay so they are economically encouraged to pollute less. The built environment significantly contributes to greenhouse gas emission. Housing location is critical for contributing toward energy efficiencies. In fact, buildings and transportation jointly account for approximately 70% of energy use nationally and are responsible for about 62% of U.S. greenhouse gas emissions<sup>153</sup>.

Given cap-and-trade's importance and funding prospects, the City has an opportunity to ensure a portion of the cap-and-trade auction proceeds are directed to affordable housing investments to further advance AB 32's goals. To this end the City will be actively monitoring this issue to ensure these proceeds are invested in affordable multi-family housing located near transit, the preservation of existing affordable multi-family housing through green retrofits, and preventing the displacement of disadvantaged communities by prioritizing and directing proceeds to an affordable housing development program. With local resources diminishing, the City needs to seek new State and Federal resources for continued affordable housing efforts along transit corridors.

### Case Processing Incentives

When the LA Green Code went into effect in January 2011, the City's primary green project expediting incentive program ended. The program had tied permit expediting to meeting the LEED® Silver standard. However when the LEED® Silver standard essentially became mandatory for most projects, there was no need to incentive such projects. However, the Department of City Planning opted to alter its expedited policies soon after the switch to retain a sustainability incentive. Projects that voluntarily commit to the highest levels of green building (Tier 1) under the LA Green Code can receive expedited ("top of stack") case processing from City Planning under the Standard of Sustainability Excellence program. This expediting process creates an incentive to go beyond the mandatory provisions of the new LA Green Code.

<sup>153</sup> United States Environmental Protection Agency, "Location Efficiency and Housing Type – Boiling it Down to BTUs," [http://www.epa.gov/dced/location\\_efficiency\\_BTU.htm](http://www.epa.gov/dced/location_efficiency_BTU.htm)

## Efficient Appliances

Implementing conservation measures with regard to energy use will decrease the operating costs of a home or apartment, making it more affordable for the tenant or owner. One means of lowering energy costs is by using more efficient appliances. The US Environmental Protection Agency's Energy Star rating program identifies specific manufacturers' appliances that use between 10% and 50% less energy and water than other manufacturers. There are periodic manufacturer's rebates available for these products to off-set their initial cost. In addition, as of April 2013, LADWP offers the following rebates for the purchase of energy efficient appliances<sup>154</sup>:

- \$65 per unit for an ENERGY STAR® rated refrigerator minimum 15 cubic foot
- \$50 rebate for refrigerator/freezer recycling program that is between 10 to 25 cubic square feet and 10 years or older and in working condition.
- \$50 per unit rebate for ENERGY STAR® rated Room Air Conditioner
- Up to \$120 per ton rebate for Energy Efficient Central Air Conditioner or Heat Pump (condenser must be rated 15 SEER or greater)
- \$200 per unit for Whole House Fan (permit(s) required) and requires permanent installation and must move at least 1.000 cubic feet of air per minute.
- \$500 per units for Variable/Multi-speed Pool Pump and Motor
- Up to \$8,000 for whole house retrofit
- Up to \$2 per square foot for Energy Star Windows

The 2011 Los Angeles Green Building Code also requires that each appliance provided and installed in all new buildings meets ENERGY STAR® requirements if ENERGY STAR® designation is applicable to that appliance.

## Home Energy Audit

LADWP encourages and assists homeowners to perform energy audits as a way to make homes more energy efficient. A home energy audit benchmarks how much energy a home uses, measuring the efficiency of its heating and cooling systems. The audit identifies ways to conserve hot water and electricity and helps to determine what measures homeowners can take to make their home more energy efficient. LADWP has started offering free home energy improvement assessments performed by trained technicians

<sup>154</sup> LADWP website, retrieved 2013

to its residential customers under the Home Energy Improvement Program (see Program #89 in Chapter 6). The program aims to identify the most appropriate and effective improvements to save water and energy.

### Influencing hours of use of energy sources

LADWP's pricing of electricity use is structured to encourage conservation. Electric bills are based on the time and extent of use, with rates being the highest during the peak hours and lowest during off-peak hours.

### Building design and materials (Passive Solar Design)

DCP reviews and evaluates site plans and other urban design features for projects over 50 units and 50,000 square feet in order to work with developers to reduce energy consumption by maximizing natural light and natural ventilation, reducing impermeable surfaces, and optimizing landscaping for energy efficiency. The review considers building orientation, materials, landscaping, and other site planning issues. In addition, DCP encourages the installation of energy-efficient roofs such as green roofs and cool roofs (light colored roofs) to achieve energy savings. Other energy-efficient building measures, such as window glazing and insulation that help to increase energy savings, are implemented through the plan check process by DBS.

The 2011 Los Angeles Green Building Code also touches upon building design and material elements that promote more passive solar design. It requires high-rise residential and nonresidential buildings to comply with indoor moisture level requirements that have direct impact on air quality and insulation. The LA Green Code also requires access and space for future solar in new low-rise residential and solar-ready pre-wiring for future solar for all other new buildings.

### Landscaping

The City has amended its landscape ordinance in 2005 to go further in helping to shade buildings, minimize direct sunlight, and reduce water consumption. The landscape ordinance helps to reduce the amount of paved surfaces and the resulting heat island effect. It provides developers with a menu of options by allocating points for various elements and requiring a total number of points, depending on the size of a residential project.

### Recycling

In another effort to reduce GHG emissions, Mandatory Commercial Recycling Law Assembly Bill 341 was adopted by the Air Resources Board (ARB). The regulation is effective from July 1, 2012 and requires both businesses that generate more than 4 cubic yards or more of solid waste per week and Multi-Family dwellings that have 5-units or more to arrange regular recycling

services. Increased recycling has been shown to decrease GHG emissions during the multiple phases of product production as well as decreased methane emissions at landfills from the decomposition of organic materials.

The City Green Building Code also requires newly constructed high-rise residential and non-residential buildings to have designated areas for recycling that are readily accessible for the entire building.

### Energy Efficiency and Conservation Block Grant: Multi-Family Retrofit Program

The City of Los Angeles received \$37 million in Energy Efficiency and Conservation Block Grant (EECBG) funding from the U.S. Department of Energy. The Los Angeles Housing and Community Investment Department received \$4.7 million of these funds to green the City's multi-family housing stock. The first component was the Multi-Family Retrofit Program which provided \$3.8 million in loans for 10 properties to achieve at least 20% improvement in energy efficiency by completing retrofit work. This program has had a significant impact not only on these properties but also in informing future programs. Based on the lessons learned, two other programs have been strategically developed to continue to pursue the energy efficiency and water conservation goals of the EECBG. They are the Gateway to Green Program and the Los Angeles Better Buildings Challenge.

#### Gateway to Green

Gateway to Green (G2G) builds on the work currently performed by the HCIDLA's Systematic Code Enforcement Program (SCEP), which inspects all multi-family rental properties in the City on a 4-year cycle. Gateway to Green leverages SCEP by allowing existing housing inspectors to perform energy efficiency and water conservation surveys. G2G will inform building owners of a menu of cost-saving options available to them for water and energy retrofit work. In preparation and development of this program, housing inspectors have been trained on green energy standards to conduct the "green" surveys. G2G has been piloted and appropriate modifications are being made. The HCIDLA plans to roll out this program in 2013.

#### Los Angeles Better Buildings Challenge

Part of a national initiative, the Los Angeles Better Buildings Challenge (Challenge) calls on leaders in business and academia (among others) to volunteer and make a significant commitment to building energy efficiency. Los Angeles has expanded the Challenge to include multi-family properties. Leaders who respond to the call agree to conduct an energy efficiency assessment of their building portfolio; take action by showcasing an energy efficiency project and implementing a plan to achieve lasting energy savings; and report results by sharing costs effective approaches for saving energy and performance data that demonstrates the



success. It should be noted that six of the ten projects awarded loans through the EECBG Multi-Family Retrofit Program participate in the Challenge. This amplifies their accomplishments and connects them to a larger environmental effort.

### Water Conservation Methods

Approximately 85% of the water provided to customers in the City of Los Angeles is imported from 300 miles away, therefore water conservation and improved efficiencies are very important for the region.

#### Efficient appliances

There are a number of opportunities to reduce water consumption and decrease long term operational costs in residential buildings. High efficiency toilets, urinals, shower heads, sink faucets and tankless water heaters are readily available and save money over the long term. The LADWP offers several rebate and financial incentive programs for single family and multi-family residential customers to assist them with the installation of pre-approved equipment and products. In addition, LADWP began offering home energy improvement services to its customers in October 2011 under the ARRA-funded Weatherization Program. After ARRA funding ran out, LADWP decided to continue this program as the Home Energy Improvement Program as mentioned above and listed as a new program in Chapter 6.

#### Influencing level of use of water

In June 2009, the City of Los Angeles introduced a Mandatory Water Conservation program which placed restrictions on outdoor water usage and prohibited certain uses of water. Notably, the measure restricted sprinkler usage for lawns to a maximum of 3 days a week as well as prohibiting customers from hosing down driveways and sidewalks along with an array of other measures. In the hot, dry, Southern California climate, limiting outdoor water usage is especially critical to reducing overall water usage. Since the measure has been in place, LADWP customers have successfully reduced water consumption citywide by nearly 20%.

Alternatives to traditional turf grass such as native, drought-resistant landscaping can also help reduce water use. The Metropolitan Water District of Southern California (MWD) aims to encourage such creative alternatives for outdoor landscaping through their Turf Removal Program. Started in 2009, the program provides rebates of \$1 or more per square foot of removed turf grass that has been substituted with approved alternatives.

The City Green Building Code also aims to reduce water usage in all applicable newly constructed buildings by requiring a 20% reduction in the overall usage of potable water for the entire building. In addition, it outlines standards flow rates for different fixtures and fixture fittings in all of the buildings falling under its code

## Graywater

Since August 2009, the California Building Standards Commissions approved emergency graywater regulations that have been put into effect that revised graywater standards. Graywater systems have been re-categorized into 4 different types of systems: clothes washer, simple, complex, and treated. Differentiating these systems allows the city to better regulate graywater usage in residential buildings. As of March 2013, the LADWP first-tier water rate for single-dwelling unit residential customers is \$3.963 per hundred cubic feet.

## Recycled Water

The City of Los Angeles has four wastewater treatment plants, including the Hyperion Treatment Plant, Terminal Island Water Reclamation Plant, the Donald C. Tillman Water Reclamation Plant, and the Los Angeles – Glendale Water Reclamation Plant. The Tillman Plant is the largest of the four and treats waste flows from the San Fernando Valley, providing around 26 million gallons of recycled water per day. The Tillman and Los Angeles-Glendale Water Reclamation Plants combined are the leading producers of recycled water in the San Fernando Valley. Recycled water from the Tillman Plant is currently used for irrigation of golf courses, the on-site Japanese gardens, the Wild Life Reserve, DWP pumping station, and replenishment of flow through public use recreational lakes in the Sepulveda Basin. The City hopes to use 5,149 more acre-feet of Tillman water on four more golf courses and for other uses by 2013. The City has installed 10 miles of pipeline for a \$55-million project that uses treated, recycled water from the Donald C. Tillman Water Reclamation Plant to provide recycled water to the San Fernando Valley for landscape irrigation and industrial uses. Water from the Donald C. Tillman Water Reclamation Plant in the past was not used on private or public property due to concern over high levels of chlorides. The regulators have since relaxed chloride limits which will enable greater uses of recycled water in the San Fernando Valley.

In May 2008, the City's Water Supply Action Plan was released, setting a goal of increasing retained recycled water production to 19,350 AFY by July 2014. This water will be used exclusively for non-potable purposes such as irrigation and industrial uses. The plan outlines the expansion of the existing "purple pipe" system that distributes water for irrigation and industrial uses as well as continuing to develop a "groundwater replenishment" water-recycling program. The majority of the customers targeted for utilization of recycled water are refineries in the Harbor area, golf courses, parks, and schools throughout the entire city. Major existing customers include the Valley Generating Station, golf courses in the Sepulveda Basin (Woodley, Balboa, and Encino), portions of Griffith Park (Wilson & Harding Golf Courses, Gene Autry Museum), Loyola Marymount University, Forest Lawn and Mount Sinai Cemeteries, and the

Dominguez Gap for seawater intrusion barrier. In addition to increasing recycled water production in Los Angeles City, the plan also integrates water conservation, addressing storm water runoff, and ground water cleanup.

### Storm Water Runoff

Storm water runoff has been identified as one of the principle causes of water quality impacts in urban areas. As urbanization increases, the amount of open land decreases reducing opportunities for natural groundwater recharge. In November of 2011, the City of Los Angeles adopted the storm water Low-Impact Development (LID) Ordinance (Ordinance #181899) in order to mitigate the impacts of increases in runoff and storm water pollution as close to its source as possible. The ordinance will require 100% of rainwater from 0.75 inch of rainstorm to be captured, infiltrated, and, or used, onsite – at most developments and redevelopments where more than 500 square feet of hardscape is added. In small-scaled residential projects with less than 500 square feet added, best management practices such as rain barrels, planter boxes, rain gardens, dry wells, and permeable pavement can be prescribed.

Storm water regulation is also contained within the Los Angeles Green Building Code. All applicable newly constructed buildings have requirements for managing storm water if they disturb more than one acre of soil. Specifically, high-rise residential and nonresidential buildings are required to develop a Storm Water Pollution Prevention Plan (SWPPP) that has been designed specifically for its site. For low-rise residential, the regulations focus on managing storm water drainage during construction.

### Rainwater Harvesting

Rainwater harvesting provides additional means of water conservation, utilizing roof catchment or other basins to collect rainwater. Harvested rainwater can be stored and reused for irrigation or in conjunction with a dual plumbing system for indoor water re-use. The Safe Neighborhood Parks, Clean Water, Clean Air and Coastal Protection Bond Act of 2000 launched a Rainwater Harvesting Pilot program in July 2009 and provided funding to outfit 600 homes with a single rain barrel each. While the percentage of rainwater captured through rainwater harvesting is minimal, the program has had a significant impact towards encouraging water conservation. Benefits of rainwater harvesting include reducing runoff, reducing energy demands, and recharging underground aquifers.

### Renewable Energy

In order to meet the City's goal of reducing greenhouse gas emissions to 35% below 1990 levels by 2030, it will be necessary to shift some energy use to alternative sources. Making this switch on a large scale will provide long term price and supply stability for the City of Los Angeles.

## On-Site Energy Generation

Energy generated off-site loses capacity the further it is transported. Integrating more on-site energy generation into residential projects will both reduce the amount of off-site energy required and increase the efficiency of the system.

Residential installations of photovoltaic (PV) generation are becoming more common and more cost effective. Increasingly, more efficient PV cells have made it feasible to install solar panels on homes and on multi-family buildings. In addition, tax credits and rebates are available to help off-set the initial installation costs. LADWP's Solar Incentive Program was approved August 2006 to comply with SB1 and provides a lump sum payment to LADWP customers that purchase or lease solar photovoltaic (PV) systems to offset traditional energy consumption at the installation site. The program's incentive levels are structured as a 10-step declining incentive, based on the amount of solar PV installed and connected to LADWP's electric grid in order to keep the program affordable as it becomes more popular.

In addition to rebates for installing PV equipment, in January 2013, the Board of Water and Power Commissioners approved the 100 megawatt (MW) Feed-in Tariff (FiT) Program as the first component of the 150 MW FiT Program. FiT allows the LADWP to partner with program participants to purchase, under a standard power purchase contract, energy generated from a participant's renewable energy generating system. This builds on LADWP pilot program in 2012.

Other sources of on-site energy generation will evolve and become available over time. In addition, existing technologies will become more feasible. In order to maximize the potential to integrate alternative energy sources, new residential projects can leave space for equipment and hook-ups for on-site energy generation even if it is not feasible to include the technology at the time of construction. While this has been optional in the past, the Los Angeles Green Building Code has made this a requirement, mandating that buildings that fall under the code anticipate future electrical solar systems. For low-rise residential projects, there must be space allotted and future accessibility for electrical solar systems; in high-rise and nonresidential, projects must include prewiring and solar-ready pre-wiring during construction.

### Other Renewable Energy Options (purchased through DWP)

LADWP's Green Power for Green LA program allows residential customers to support renewable energy sources by paying a slightly increased rate on their power bills (\$.03 additional per kilowatt hour) so that a percentage of their energy comes from an alternative source (minimum of 20% of usage). The program supports solar, wind and hydroelectric power which are all non-polluting and renewable sources of energy. Some examples of the renewable technology include wind turbines, small hydroelectric turbines, and photovoltaic (solar) cells.

## B. Planning and Land Use

### Sustainable Development

Land use patterns and development can occur in ways that are more sustainable and help to conserve resources. Sustainable development recognizes the connections between land use, natural resources and transportation to reduce energy consumption, reduce dependence on the automobile, and provide long term environmental benefits, health benefits, and cost savings.

The 1994 Framework Element of the General Plan is the City's strategy for growth, setting a citywide context to guide the update of the community plan and citywide elements. The Plan clearly sets forth a vision of sustainable growth in that it focuses on growth occurring in specific areas linked to existing and planned infrastructure and services. The primary objectives of the policies in the Framework Element's Land Use chapter are to support the viability of the City's residential neighborhoods and commercial districts, and, when growth occurs, to encourage sustainable growth in a number of higher-intensity commercial and mixed-use districts, centers and boulevards and industrial districts particularly in proximity to transportation corridors and transit stations.

### Land Use Patterns

In a large, urban, built-out city like Los Angeles, compact, mixed-income residential development close to transit and other amenities offers many benefits including added affordability. When housing is located near transit and other neighborhood services, both work trips and non-work trips can occur without the use of an automobile. Additionally, when a wide variety of housing types and affordability levels are incorporated, people who work in our city's neighborhoods are not forced to drive long distances to afford housing. Providing neighborhood services and a mix of uses within walking distance of transit creates the opportunity for some of the non-work trips to occur without a car, thereby decreasing vehicle miles traveled. Getting people out of their cars is among the most effective ways of reducing transportation's greenhouse gas emissions.<sup>155</sup> Individuals and families living in affordable housing are more likely to use public transit and less likely to own a car. Data indicates households earning less than \$20,000 per year are four times more likely than higher income households to be transit riders<sup>156</sup>. Furthermore, preserving affordable housing near transit sites can prevent the loss of affordable housing while also maintaining the riders that already use public transit.

In alignment to this effort, the Los Angeles Housing and Community Investment Department (HCIDLA) has been offering preference points for affordable housing development near transit in its policies. The HCIDLA has also increasingly been instituting sustainable building practices in its

<sup>155</sup> Reid Weing, Keith Bartholomew, Steve Winkelman, Jerry Walters, Don Chen, *Growing Cooler: The Evidence on Urban Development and Climate Changes*, Urban Land Institute, 2007, p. 11.

<sup>156</sup> CHPC Working Paper, *Building and Preserving Affordable Homes Near Transit: Affordable TOD as a Greenhouse Gas Reduction and Equity Strategy*, California Housing Partnership Corporation, January 2013.

developments further reducing emissions. With unprecedented investment in public transportation infrastructure, Los Angeles has an opportunity to continue to strategically invest its affordable housing funds near transit. Moreover, affordable housing near transit ensures equitable access to transportation, jobs, and nearby amenities for extremely-low to low-income households.

The City has been developing detailed plans for the neighborhoods around rail stations in order to establish appropriate land uses, zoning, incentives, and design guidelines to encourage such "complete neighborhoods. There are currently 71 light-rail or bus rapid transit stations in Los Angeles City, 26 of which have transit-oriented plans completed or under progress. 19 more metro stations are being planned as part of the Westside Subway, Expo Phase 2, Crenshaw, and Regional Connector projects. In June 2012, the Los Angeles Department of City Planning kicked-off a 2-year effort to create Transit Neighborhood Plans for the areas surrounding 22 new or proposed transit stations. The City's General Plan is based on accommodating a large percentage of growth (including residential development and affordable housing of all types) in these Transit Oriented Districts.

Complementing the TOD plans, the Modified Parking Requirements Ordinance was passed August 2012 to provide greater parking flexibility at a community level. Utilizing seven tools, the modified ordinance will help alleviate the strict parking requirements that encourage car usage, wastes precious land and discourage investment in housing, restaurants, and businesses. For example, the ordinance allows off-site parking for all uses within 1,500 feet of transit, creating more opportunities for mixed-use and shared lots. The 'change of use' parking standards have also been modified to allow buildings that have had a change of use to be exempt from additional parking requirements. This new flexibility in parking requirements works alongside of the City's goal of channeling growth along transit corridors. To minimize displacement, it should be noted that the Modified Parking Requirements Ordinance exempts housing subject to the Rent Stabilization Ordinance (RSO) and sites with restricted affordable units.

Goals to improve bicycle use and accessibility have gone hand in hand with goals to rethink parking in the City. In 2012, the City Council's Planning and Land Use Management Committee recommended approving revisions to the Bike Parking Ordinance to further facilitate bike usage in the City. The revision expands bike parking requirements to all new buildings, providing incentives for increased bike parking. The revision allows the substitution of four bike spaces for every one required parking space, with varied maximum caps for different buildings. The revised ordinance will build upon the Modified Parking Requirements Ordinance, with the effect of positively affecting land use patterns in the City.

The City of Los Angeles is actively promoting housing opportunities and compact infill development, both in Transit-Oriented Districts (TOD's) and other designated parts of the city through zoning code and building regulations. Chapter 2 of the Housing Element goes into greater depth of these issues.

In addition to pursuing development near transit, Los Angeles City is working towards encouraging greater compact infill development. Planned Unit Development, or PUD, is a comprehensive development plan that serves as a tool to provide flexibility in design and building placement, promote attractive and efficient environments, and preserve natural or cultural resources. PUD is being proposed to replace Residential Planned Development (RPD) meaning single-family, suburban-style, and residential development, alternatively promoting a broader range of mixed-use development, including commercial or industrial uses. PUD would thus better enable more innovative, mixed-used, infill projects within urbanized areas. Currently, a draft ordinance has been completed and may be passed in 2013.

### Development Standards/Performance Standards

Developing sustainably also pertains to building and development standards. Building with sustainable materials benefits resource conservation as well as public health. Technologies and materials are constantly evolving and frequently are no more costly than less sustainable options. Green building rating systems such as the U.S. Green Building Council’s LEED® (Leadership in Energy and Environmental Design) program, Enterprise Community Partner’s Green Home Program, and the Energy Star Program offer guidance for sustainable residential construction.

The adoption of CALGreen and LA Green Building Code has furthered the effort towards greater sustainability in development. CALGreen was created as a set of statewide regulations that would address the concept of Sustainable Building Design for newly constructed low-rise residential structures (three stories or less). It aims to improve public health, safety, and general welfare through enhancement of design and construction of buildings using building concepts that



reduce negative impacts or have positive environmental impacts, and encourage sustainable construction practices. Deriving and expanding from CALGreen, the City of Los Angeles created and adopted the 2011 City of Los Angeles Green Building Code, which requires compliance from every new building, every building alteration with a building permit valuation of over \$200,000, and every building addition (unless otherwise indicated), throughout the city of Los Angeles.

The 2011 Los Angeles Green Building Code differentiates between low-rise residential buildings (up to and including six stories) from high-rise (over six stories) residential and all non-residential buildings. Similar to the US Green Building's LEED® Program, the Green Building Code evaluates planning & design, energy efficiency, water efficiency & conservation, material conservation & resource efficiency, and environmental quality criteria on applicable projects.

### Green Streets + Standard Plans (BoE)

The Green Streets Standard Plans are City approved construction details for Green Street elements that incorporate storm water "best management practices," or BMP's, into pre-approved designs. By having pre-approved engineering drawings that address storm water concerns, such plans can be readily incorporated into new street improvements. The Green Streets



Standard Plans are designed to improve water quality and to increase water use efficiency by: diverting street runoff into planter areas to cleanse storm water and urban runoff, providing irrigation for landscaping, and recharging groundwater. By adopting and utilizing Green Street Standards Plans, Los Angeles will have more uniform storm water BMP's throughout the city.

### Neighborhood Stabilization Program

The Neighborhood Stabilization Program (NSP) is funded by the U.S. Department of Housing and Urban Development. With over \$142 million in NSP funding, the HCIDLA is purchasing and rehabilitating foreclosed single family homes and multi-family properties throughout the City in areas such as South Los Angeles and Pacoima, communities which have been significantly affected by foreclosures. The HCIDLA is maximizing the long-term impact of these funds by targeting the most distressed properties and by instituting sustainable building practices. Sustainable materials are more durable than less expensive options and they do not need to be replaced with as much frequency and therefore are often more cost effective over the life of the material. All NSP homes adhere to Enterprise Community Partners' Green Communities sustainable building standards which improve a property's energy and water efficiency and create a healthier living environment. The criteria focus on the use of environmentally sustainable materials and methods, reduction of negative environmental impacts, and increased energy and water efficiency. Examples include recycled content ceramic flooring or sustainable wood flooring, tankless water heaters, drought tolerant landscaping and low VOC paints. With program income and remaining NSP funding, the HCIDLA will continue to institute these green standards.

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