

City of Culver City, California
City Council Agenda Item Report

Meeting Date: 9.22.08		Item Number: <u>A-2</u>	
AGENDA ITEM: Discussion of Green Building Standards in Culver City			
Contact Person/Dept.: Craig Johnson Sol Blumenfeld		Phone Number: 310-253-5802 310-253-5702	
Fiscal Impact: Yes ☒ No ☐		General Fund: Yes ☒ No ☐	
Public Hearing: ☒		Action Item: ☐	Attachments: ☒
Public Notification: Master E-Mail Notification List (09/17/08), public stakeholders, public speakers at past green building City Council discussions. Advertisement in <i>Culver City Observer</i> (9/18/08)			
Department Approval: Sol Blumenfeld (09/16/08)		City Attorney Approval: Carol Schwab (by H. Baker) (09/16/08)	
Chief Financial Officer Approval: Jeff Muir (by N. Kimball) (09/17/08)		City Manager Approval: Jerry Fulwood (09/17/08)	

RECOMMENDATION

Staff recommends the City Council discuss proposed green building standards and provide direction to staff.

BACKGROUND

The purpose of this report is to provide a menu both to require and encourage green building in the City. The recommendations contained herein are intended to build on the successful work that has been accomplished over the last two years. These efforts are summarized on the attached chronology. (Attachment No. 1).

DISCUSSION

In keeping with Culver City's leadership in the areas of environmental stewardship, the City has taken certain steps regarding the problems of rising energy costs and global warming have prompted the City to consider a more sustainable approach to the way buildings are planned and constructed. "Green" buildings are more energy efficient, reduce solid waste during construction, reduce environmental pollution and conserve natural resources. Green buildings create healthier work, learning, and living environments with more natural light and cleaner air, contributing to improved health, comfort, and productivity.

Staff has focused initially on green building as an important component of sustainability. Other program considerations and sustainable measures may be coordinated through the Sustainable City Plan and focus on the areas of conservation, land use and waste diversion.

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In looking at best practices of current green building programs operating in Santa Monica, West Hollywood and other nearby cities (Attachment No. 2), staff has prepared three green building options for the City Council's consideration. These options range from incentive programs to mandatory construction requirements for new development. Staff recommends that the City Council consider implementing one or more of the following green building options:

Option 1: Incentive Program for LEED Certification and "Green Zone" Program

Option 2: Mandatory New Development Requirements

Option 3: Mandatory Green Building Point System.

Option 1: Incentive Programs for LEED Certification & Green Zone Program

LEED Certification Incentive Program

This option proposes a partial permit fee refund for projects obtaining Leadership in Energy and Environmental Design (LEED) Certification. Building permit fee refunds are an incentive to developers, but do not fully cover the costs of obtaining LEED certification. LEED is the third party review and green building rating system which offers four certification levels for new construction: Certified, Silver, Gold, and Platinum. These levels correspond to five green design categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources and indoor environmental quality. The LEED certification adds from 6% to 9% to overall building permit costs.

Staff proposes the City establish a fee refund schedule as follows:

- 20% of the building permit fee for projects obtaining LEED certified status
- 30% of the building permit fee for projects obtaining LEED silver status
- 40% of the building permit fee for projects obtaining LEED gold status
- 50% of the building permit fee for projects obtaining LEED platinum status

Example of New Development and LEED Certification Costs:

New Development (square footage)	Valuation	Approximate Building permit fees*	<u>Certified</u> 6% of project valuation	<u>Silver</u> 7% of project valuation	<u>Gold</u> 8% of project valuation	<u>Platinum</u> 9% of project valuation
117,000	\$14.7 Million	\$90,000	\$882,000	\$1,030,000	\$1,176,000	\$1,323,000

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- *excluding plan check fees and all other City fees and charges, and excluding the costs of the other civil, fire, mechanical, electrical, and plumbing permits that may be typically expected with a project of this type.*

It is important to note that the typical Culver City building permit fee cost, if refunded in full, would probably only cover the cost of a project to obtain LEED certified status. Since a full refund would significantly reduce City building permit revenues, staff recommends a cap of \$60,000 for any individual project. Staff proposes administering this program by collecting the full building permit fees prior to construction. Upon presentation of LEED certification, a refund would be generated (subject to the annual cap as recommended by staff and approved by the City Council).

“Green Zone” Demonstration Program

This program would allow for building permit fee waivers for installation of **any** approved energy saving construction within the City’s designated “green zones.” It is proposed that these green zones be the current Phase I and Phase II Area Improvement Project Demonstration Areas (West Washington Blvd from Wade to Beethoven Avenues (Phase I Shown on Attachment No. 3) and Centinela Boulevard to Colonial Avenue (Phase II)). A list of approved energy saving construction efforts would be culled from the proposed Mandatory measures (Option 2) and the points based system (Option3).

Staff recommends a 100% building permit fee refund as illustrated below within the green zones with a maximum cap of \$5,000 for any individual project.

Project Scope	Project Valuation	Total Permit All Fees	Building Permit Fee	Total Amount of Incentive
Improve energy efficiency through upgraded insulation, exterior doors and windows.	\$40,000	\$2,200	\$650	\$650

Staff recommends that the Green Zone program remain in effect for five years for each zone designated in order to provide time to encourage business and property owner’s participation. There are approximately 40 properties and businesses that could benefit from this option. This option would provide a financial incentive in a highly visible demonstration program for the City.

Option 2: Mandatory Requirements Program for All New Development

This option involves the creation of a list of mandatory prescriptive measures that would apply to new ground-up construction. A building permit will not be issued until adherence to the program requirements is achieved. Over time, zoning

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considerations and new technology may require updating this list to ensure program effectiveness. This option does not provide any financial incentive; but would be effective and relatively simple to administer.

The following mandatory green building requirements are proposed for all new development:

1. Minimum 17 Seasonal Energy Efficiency Ratio (SEER) for all new ac units in new construction (The efficiency of air conditioners is often rated by SEER. The SEER rating is the Btu of cooling output during a typical cooling-season divided by the total electric energy input in watt-hours during the same period. The higher the SEER rating of a unit, the more energy efficient it is. A minimum SEER rating of 13 is currently required under the Building Code??.)
2. All new gas heating units in new construction to be minimum 92% efficient (96.6% efficient is the highest efficiency generally available).
3. All heating and cooling ducts to be within heated or cooled space for new construction.
4. Minimum R-38 roofs and floors (to exterior spaces), minimum R-28 walls in new construction. (R-rating is an index of the insulation value. The higher the rating, the higher the insulation value.)
5. Radiant barriers under roof sheathing in new construction. (Possible additional measure: also require radiant barriers under all west, south, and east wall sheathing in new construction.)
6. Current code allows exterior glass to be U .38 and SHGC of .31; require all new glass to be minimum U .35 and SHGC of .30 in new construction *and additions and remodels. (U-rating is an insulation rating of the glass. The lower the U-rating, the higher the insulation value. SHGC is the Solar Heat Gain Coefficient which is a measure of glass resistance to radiant heat.)*
7. All new low-slope roofs to have a minimum SRI of 75% in all new construction *and all low-slope re-roofing permits. (Solar Reflectance Index is a measure of reflectivity of the roofing surface.)*
8. Exterior shading over all glass on the west, south, and east sides of all new construction. (Alternate: require all glass on the west, south, and east side of new construction to be upgraded performance.)
9. All new interior and exterior lighting to be fluorescent or Light Emitting Diode (LED) or other high efficiency lighting in new construction.
10. All bathroom lighting (fluorescent or LED) and exhaust fans to be motion sensor controlled in new construction.
11. All corridors (and any other typically unoccupied spaces) lighting (fluorescent or LED) to be motion sensor controlled in new construction.
12. All garage and parking structure lighting (fluorescent or LED) to be motion sensor controlled in new construction. (Minimum base level lighting allowed.)
13. Dual flush water closets in new construction.

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14. Only waterless urinals in new construction.
15. Tankless water heaters in new residential construction.
16. Two(2) - 2" electrical conduits to be installed from the roof to the electrical panels for future photovoltaic installation for each unit in all new residential construction and in all new commercial construction. (Of less than 10,000 sf which doesn't qualify for mandatory photovoltaic installation.)
17. A bike parking area in all new construction.
18. A recyclables collection area in all new construction. (*Possible additional measure: require 2 trash chutes in all new multi-floor construction; routed directly to 2 different dumpsters in a trash room below; one for trash, one for recyclables.*)
19. One (1) duplex ground fault circuit interrupter outlet for each eight parking spaces in new residential construction. (For future plug-in vehicles.)
20. Require all new construction to have smart irrigation controllers.

Option 3: Mandatory Green Building Point System.

This option involves the establishment of a mandatory point system to help achieve energy efficiency in new development and building improvement. A building permit will not be issued unless there are a minimum number of points received pursuant to the table below. The points based system is a compilation of the most effective items from several points based systems from other cities as well as LEED checklists and would be administered in addition to the mandatory items prescribed in Option #2.

Each item on the list would equal one point and would apply to all remodels, tenant improvements, additions, and new construction. Projects of varying scopes must meet a thresholds of the available points based on new construction square footage.

An example is illustrated below:

Square footage	Mandatory list	Points required
10,000 – 25,000 sq. ft.	All items	13 points
25,000 – 50,000 sq. ft.	All items	16 points
Over 50,000 sq. ft.	All items	22 points

Site

- Preserve all existing site and/or street trees.
- Provide additional drought tolerant landscaping and shade trees, minimize turf areas.
- Install efficient irrigation system (minimize spray heads, maximize use of bubblers and drop irrigation.)

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Natural Heating and Cooling

- Provide operable windows for ventilation in all new construction.
- Provide ceiling fans in all habitable areas.
- Minimize air conditioning.

Foundation

- Incorporate fly ash or recycled content in all paving and foundation concrete.

Structure

- Use engineered wood or steel for 90% of the floor and roof framing (to reduce amount of wood consumption.)
- Use FSC certified wood framing for 20% of all wood framing materials.
- Use structural insulated panels.

Plumbing

- Insulate the full length of all hot water piping.
- Install faucets of less than 2.5 gpm.

Insulation/ Energy

- Minimum 25% of insulation formaldehyde free, recycled content.
- Minimum 60% of wall insulation cellulose, cotton ball, or bio-based foam.
- Minimum 60% of ceiling insulation cellulose, cotton ball, or bio-based foam.
- Pre-plumb for future solar hot water heating.
- Install solar photovoltaic (for projects less than 10,000 sf not qualifying for mandatory solar pv.)
- Install Energy Star programmable thermostats.
- Perform duct testing.

Indoor Air Quality

- Use low Volatile Organic Compound (VOC) sealants and adhesives.
- Use composite wood with no added urea formaldehyde for counters and countertops.
- Use carpet Carpet and Rug Institute Green Label certified.
- All wood flooring bamboo or other renewable material.

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Roofing

- Use 25% recycled content roofing materials.
- Roofing materials warranty minimum 40 yr. for asphalt shingles, 15 yr. for built-up.

Exterior Finishes

- Minimum 30% of exterior surfaces integral or no color stucco, or durable surface panels.

Interior Finishes

- Minimum 20% exposed concrete floors.
- Minimum 25% recycled content countertop materials.

General

- Divert minimum 75% of construction demolition by weight to recycling.
- Innovative design as determined by City staff.

Costs and Benefits of Potential Culver City Green Building Programs

Staffing

Option 1 and Option 2 would not require additional staffing to implement.

Staff estimates, however, that Option 3 would require, at minimum, one additional full time City staff member and one additional City vehicle. (Attachment No. 3)

Energy Costs and Annual Emissions Illustration

In an effort to illustrate the relative benefit of these programs/options against the current Energy Code, an example of a commercial project (totaling 282,000 sq. ft.) and nine new residential units (totaling 49,000) is highlighted below:

Options	Annual Commercial	Annual Residential	Annual Carbon	Annual Energy	Construction Cost Increase	Additional Staffing
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	BTU's	Btu's	Emissions	Costs		
Standard California Energy Code	25.5 billion	.78	561 tons	\$392,000	(0)	n/a
Option 1 – LEED certification*	21.7 billion	.66	477 tons	\$333,000	\$376,000	n/a
Option 2 – Mandatory Program **	22.9 billion	.70	505 tons	\$353,000	\$188,000	n/a
Option 3 – Points based ***	20.4 billion	.62	448 tons	\$313,000	\$564,000	1 additional staff

* assumes Silver certification level, 15% energy improvement and additional \$1.00 square foot construction cost.

Does not include green zone program.

** assumes 10% energy improvement and an additional \$.50 per square foot construction cost.

*** assumes 20% energy improvement and an additional \$1.50 per square foot construction cost.

General Assumptions;

- *That under each option all annual 282k s.f. of new commercial space and all 9 new residential units fully comply with that option.*
- *That the consumption of each 45,000 btu's produces 1 ton of carbon emissions*
- *The btu cost is estimated at 70,000 btu's per \$1.*
- *The estimated construction cost increase is an additional cost to the developer of a building.*

SUMMARY

Staff is proposing three green building program options for Council consideration. Option 1 is an incentive program that could offer a refund of up to 50% of the building permit fee for LEED certified projects. It is proposed that a cap be put in place of at least \$60,000 for individual projects and \$225,000 annually for the program as whole. This option also includes 100% building permit refunds for “green zones” within the City. As a pilot program, staff recommends that the first green zone be coterminous with the current West Washington Demonstration Project – Phase I. Based on the current property and business constitution, the cost for this program could be up to \$15,000 in building permit refunds and would not require any additional staffing.

Option 2 is a mandatory checklist of standards applied to all new development. The list represents a number of effective and straightforward prescriptive measures that would effectively reduce carbon emissions and increase sustainability within the City. Staff believes that this program could be absorbed with current staffing levels and would not require any additional staffing.

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Option 3 is a hybrid program that would require adherence to all of the measures listed in Option 2 as well as additional requirements, via a point system, based on building square footage. This option would be case specific for each new project and would require more in depth inspection to ensure compliance. This option would require an additional staff person and associated resources.

FISCAL ANALYSIS

All three options would forward the City's general policy goal of obtaining a more sustainable environment. However, there is a fiscal cost to the City to implement each option. All three options would have the consequence of a loss in Utility Users' Tax (UUT) revenue. There is a direct relationship between UUT revenues and a building's energy efficiency. As energy efficiency increases, the amount that a business pays per square foot in utilities (such as electricity, gas and water) decreases, consequently decreasing the amount of UUT paid by the consumer. Currently, electricity, gas, and water UUT combined generate approximately \$8 million in revenues, with the primary piece of that being electricity at approximately \$6 million. As the number, size, and level of energy efficient projects increases over time, the City can expect to see a proportionate decrease in UUT revenue over what would be generated by a traditional project. That being said, the economic cost to clean the environment in the long run may far exceed the potential loss of UUT revenue.

If Option #1 were pursued (LEED Certification and Green Zone incentives), staff recommends the City Council determine annual cap limits for building permit refunds and incentives that would result in a decrease in net revenues to the General Fund. As proposed, these discounts would not fully cover the actual cost of LEED certification, but could substantially subsidize consultant fees to achieve certification and/or make sustainable improvements to an existing structure. The cost of this program is whatever the City Council ultimately determines as an annual cap for the program (see next paragraph) plus loss of UUT revenue.

For example, in Option #1 a total annual program cap of \$225,000 (\$60,000 per individual project), or approximately 10% of annual Building Safety revenues, could include three commercial projects refunded \$30,000 each and nine residential projects refunded \$15,000 each or any other combination within this limit. This would, in essence, cost the City up to \$225,000 plus ongoing lost UUT revenue plus staff time to develop the necessary applications, rating processes, benchmarks, etc. Additionally, the "green zone" program could refund an additional \$15,000 in building permit fees if approximately 50% of the business participated in the West Washington Demonstration Project, Phase I. Based on the location of these

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businesses, staff anticipates that most of the sustainable upgrades would be limited to energy efficiency efforts to include glass/window upgrades, insulation, and HVAC.

As proposed, Option #2, a Mandatory Green Building Program, would not have additional cost to the City beyond the potential loss of UUT revenues and some additional staff time to implement the additional requirements for developers.

Option #3, a Points Based System, would require one additional full-time employee (approximately \$100,000 including salary and benefits, which would increase on an annual basis), \$30,000 for one additional hybrid vehicle, and \$5,000 annually for related amortization and garage expenses.

Based on the City Council's desire to explore implementation of one or more of the proposed options, the further fiscal impacts would need to be refined.

ATTACHMENTS

1. Green Building Chronology
2. Green Building Programs in Other Cities
3. Demonstration Area Map
4. Staffing Requirement Calculation for Option 3
5. Culver City Mandatory Solar Photovoltaic Information
6. "Building Green with Carrots and Sticks", *Western City Magazine*, May 2008
7. *Los Angeles Business Journal* Article, August 18, 2008.
8. Other Programs for Consideration

MOTION:

That the City Council:

Receive and file this report and provide direction regarding proposed green building standards.