



Comments on March 26th Revisions to the California Green Building Code

April 17, 2009

The Natural Resource Defense Council (NRDC) appreciates the opportunity to comment on the March 26th, 2009 proposed Green Building Code changes. While we are generally supportive of the recent revisions to the Green Building Code, the proposed language still contains flaws that need to be addressed. Most importantly, the March proposals include many standards which impact energy efficiency developed by the Department of Housing and Community Development (HCD). With over 30 years of successful development of energy efficiency standards, which have delivered consistently cost-effective energy savings, the California Energy Commission (CEC) has the record, mandate and capacity to continue to develop such standards. This mandate and process should not be changed or undermined and all building standards pertaining to energy efficiency should continue to be under the purview of the CEC.

In addition, we urge HCD and the Building Standards Commission (BSC) to address the following issues below in the March revisions to fulfill the mission of the California Green Building Code and strengthen the green building movement in California. Reducing the environmental and health impacts of the built environment through strong green building standards will help California retain its leadership role in environmentally sound building construction and provide dividends to future generations for many years to come.

In summary, the following comments are contained in this letter:

General Comments:

- 1) Consistent with current mandate and expertise, the CEC should continue to develop and adopt any building standards which impact energy efficiency
- 2) Adopt more mandatory measures
- 3) Establish publicly available data collection for green measures
- 4) Increase number of required measures for Tier I and Tier II
- 5) Change CALGREEN to a more formal name and change definition of green building

Energy Efficiency and Water Efficiency and Conservation

- 6) Consistent with current mandate and expertise, the CEC should continue to develop and adopt all water efficiency or conservation standards that impact energy demand
- 7) Water efficiency standards should be expanded and aligned to EPA's Water-Sense program
- 8) Rainwater capture (Measure A4.3.4.3) needs clarity to preserve intent
- 9) The low-rise residential buildings standard, 4.2.3.1, disadvantages homes with large families and shared housing.

Material Conservation and Resource Efficiency

- 10) The Alternative Fuels measure A5.405.5.1 should not allow dirty fuels such as tires as an alternative fuel for cement plants

Environmental Quality

- 11) Consistent with current mandate and expertise, the CEC should continue to develop and adopt environmental quality measures that affect energy demand

Planning and Design

- 12) A4.1.3 too narrowly addresses development and allows construction in environmentally sensitive areas
- 13) Measure A 4.1.4.4 is too vague to quantify and evaluate
- 14) Infill, Brownfields and Greyfields measure needs clarity
- 15) Using SB375 Sustainable Communities Project Criteria as a Performance Standard
- 16) Using LEED-ND as Performance Standards

GENERAL COMMENTS:

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- 2) **Adopt more mandatory measures**
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- 5) **Change CALGREEN to a more formal name and change definition of green building**

1) **Consistent with current mandate and expertise, the CEC should continue to develop and adopt any building standards which impact energy efficiency**

The CEC has been developing and adopting energy efficiency standards for both residential and non-residential buildings for over 30 years. Consistent with existing authority, Public Resources Code § 25402 (attached at end), the CEC shall continue to develop and adopt mandatory and voluntary energy efficiency standards. In addition, Health and Safety Code § 18930.5 (attached at end) makes it absolutely clear that the BSC will only adopt and approve green building standards for which no state agency currently has the authority *or* expertise to do so. The statutory mandate and history of the CEC give it both the authority *and* expertise to continue to develop energy efficiency standards, which are green building standards, for both residential and non-residential buildings. Although we applaud the efforts of other state agencies to develop stringent energy efficiency measures for buildings, we believe these standards, voluntary or mandatory, must go through the established process at the CEC. All currently proposed energy efficiency measures in the March revisions of the Green Building Code not approved by the CEC must be deleted. Consistent with current process and mandate, all future green building measures pertaining to energy efficiency must be developed, adopted and submitted by the CEC before inclusion in the Green Building Code.

2) **Adopt more mandatory measures**

NRDC urges all agencies to adopt more of the Green Building Code measures as mandatory. NRDC is encouraged to see that the Office of Statewide Health Planning and Development (OSHPD) have determined that 14 of 29 potential measures are ready for mandatory status. Given that the first version of the Green Building Code will have been available for over a year by the time the next version has been enacted, many of the voluntary measures should become mandatory for the 2010 version. Prior to this workshop many people were led to believe that *all* of the voluntary measures in the 2008 version would become mandatory *automatically*. While

we understand many measures still need slight technical modifications and further exploration, we still expect many to become mandatory and urge HCD, BSC and the Division of State Architect (DSA) to determine which are ripe for mandatory status now.

3) Establish publicly available data collection for green measures

To aid in future code revisions, we suggest the establishment of a data tabulation system that can be used as a reference guideline throughout subsequent code versions. In other words, if a voluntary measure is employed in the majority of construction seeking California green building recognition, that measure should become mandatory in the next code cycle. This information should be publicly available, on a macro level, and kept up-to-date.

4) Increase number of required measures for Tier I and Tier II

While we approve of the tiered approach for the green building code, we would like to see more voluntary measures required to meet Tier 1 and Tier 2. Three voluntary measures is a very low bar for meeting such levels of excellence. The remaining requirements for meeting Tier 1 should be specific to each section of the code. As an example, to meet Tier 1 a building should make a reduction in energy use by 15% as well as a select group of materials measures, site selection measures and environmental quality measures.

5) Change CALGREEN to a more formal name and change definition of green building

In spite of the creative new name, CALGREEN, we believe the code should be formally named in a similar way to that of the other parts of the building code. We suggest calling Part 11 the “Environmental Performance Standards Code.” In this manner the standards in Part 11 are Environmental Performance Standards and the term ‘green building standard’ is removed from the code as irrelevant. This approach will help alleviate confusion around what a green building standard is and why it is different from a traditional building standard.

In lieu of changing the name of Part 11, we suggest at a minimum expanding (or removing altogether) the definition of “green building” in the definitions section of Part 11. This definition, if it must be retained, should align with national and state green building rating systems and could read:

Green Building Standards: building standards developed with the intent of minimizing the building’s impact on the environment through efficient use of natural resources, enhancing occupant health and well-being, and reducing strain on the local infrastructure while utilizing best available technology and building practices. These building standards include, but are not limited to, standards relating to site planning, water efficiency, energy efficiency, materials and resource efficiency, reduction of toxic chemicals, indoor air quality, and environmental quality.

ENERGY EFFICIENCY AND WATER EFFICIENCY AND CONSERVATION:

- 6) Consistent with current mandate and expertise, the CEC should continue to develop and adopt all water efficiency or conservation standards that impact energy demand**
- 7) Water efficiency standards should be expanded and aligned, where appropriately stringent, to EPA’s Water-Sense program**
- 8) Rainwater capture (Measure A4.3.4.3) needs clarity to preserve intent**
- 9) The low-rise residential buildings standard, 4.2.3.1, disadvantages homes with large families and shared housing.**

6) Consistent with current mandate and expertise, the CEC should continue to develop and adopt all water efficiency or conservation standards that impact energy demand

Consistent with Comment 1, where water use impacts energy demand, the CEC should continue to develop and adopt such standards, both voluntary and mandatory. This includes any standards relating to domestic hot water use, generation or distribution, such as measures A4.2.8.1, A4.2.8.2 and A4.2.8.3.

7) Water efficiency standards should be expanded and aligned, where appropriately stringent, to EPA's Water-Sense program

We urge HCD and BSC to align their water standards, where appropriately stringent, to the Environmental Protection Agencies Water-Sense Program (a summary of which is attached to these comments). In addition, we urge the inclusion of water-sense compliant appliances such as residential clothes washers in at least the voluntary section. In this manner, reaching Tier 1 or 2 would require installation of water-sense appliances where such appliances exist. Perhaps simply referencing the Water-Sense Program would aid in keeping the code simple and consistent.

8) Rainwater capture (Measure A4.3.4.3) needs clarity to preserve intent

Measure A4.3.4.3 relating to rainwater capture should require an amount of rainwater to be captured *or infiltrated* rather than simply calling for a system without delineating specific capacity requirements. This amount should be expressed as a percentage of available rainwater, proportional to available roof space. As written, a bucket on one's roof could be argued to achieve compliance. Infiltration should be included for buildings with little landscape irrigation needs which may capture rainwater and use it to recharge groundwater instead of irrigate.

9) The low-rise residential buildings standard, 4.2.3.1, disadvantages homes with large families and shared housing.

Consistent with comment 1, this measure should be deleted or sent through the CEC for approval. Furthermore, the proposed measure has technical errors which may lead to disadvantaging large families or families who share a home. Basing the criteria for increased efficiency purely on home size does not account for occupancy or the efficient use of that space.

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY:

10) The Alternative Fuels measure A5.405.5.1 should not allow dirty fuels such as tires as an alterative fuel for cement plants

Measure A5.405.5.1 relating to alternative fuels for cement plants should require that the fuel and process in use in the plant not produce worse emissions, including toxic air contaminants, greenhouse gases and criteria pollutants, than natural gas. Specifically, this measure should exclude tires as an alternative fuel.

ENVIRONMENTAL QUALITY:

11) Consistent with current mandate and expertise, the CEC should continue to develop and adopt environmental quality measures that affect energy demand

Indoor air quality measures that affect energy efficiency and demand, including measures relating to the use of filters in air supply systems, should be developed and adopted or approved by the CEC, consistent with Public Resources Code § 25402.8, which reads:

§ 25402.8. Indoor air pollution; assessment of new building standards

When assessing new building standards for residential and nonresidential buildings relating to the conservation of energy, the commission shall include in its deliberations the impact that those standards would have on indoor air pollution problems.

PLANNING AND DESIGN:

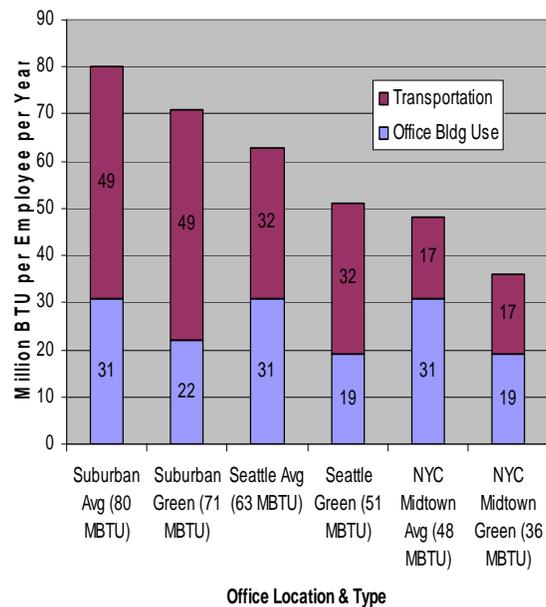
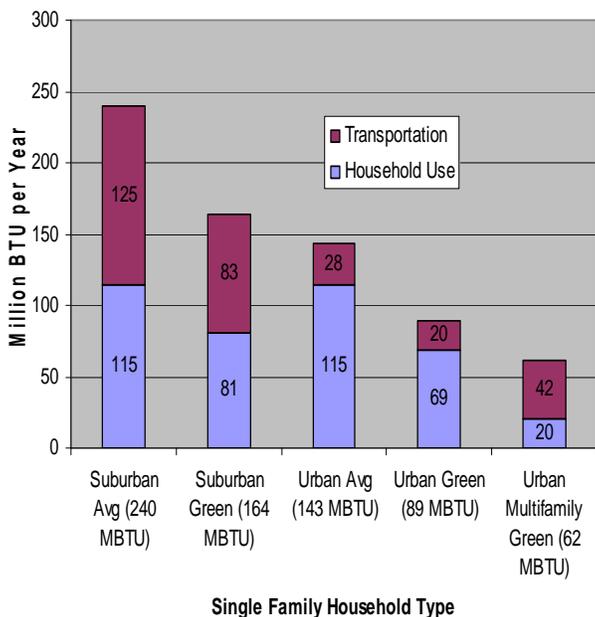
- 12) A4.1.3 too narrowly addresses development and allows construction in environmentally sensitive areas**
- 13) Measure A 4.1.4.4 is too vague to quantify and evaluate**
- 14) Infill, Brownfields and Greyfields measure needs clarity**
- 15) Using SB375 Sustainable Communities Project Criteria as a Performance Standard**
- 16) Using LEED-ND as Performance Standards**

NRDC supports the inclusion of the Planning and Design section in the proposed Green Building Code. We are pleased that consideration will be given to project location and context, but believe this section needs significant work to truly capture the environmental benefits of well-designed and well-sited development.

For too long, “green buildings” have been viewed outside their context. Where a project is sited can have more environmental impact than how a project is constructed. Green buildings are good; green buildings in the right locations are even better. Green building standards must consider not only what a building is made of and how it is powered, but how much energy will be required for residents, occupants and customers to get to and from it each day.

As the following graphs show for residential and commercial development, transportation energy is a significant part of a project’s entire energy impact.¹

¹ Source: *Jonathan Rose Companies, LLC*.
http://www.seattle.gov/DPD/stellent/groups/pan/@pan/@sustainableblding/documents/web_informational/dpdp_018337.pdf Accessed: April 6, 2009.



The role urban form plays in transportation energy use is well-documented. Residential projects that are dense, walkable and close to transit can reduce household Vehicle Miles Travelled (VMT—the primary measure of transportation energy use) between 20% and 40%.² Both the California Air Resources Board’s Adopted Scoping Plan and the recently-passed SB 375 strongly rely on urban form, design and planning to contribute significant greenhouse gas reductions in the coming decades.

Fortunately, leading proponents of green building and development have already heeded the call. The US Green Building Council, the Congress for New Urbanism and NRDC have been working together for over five years on the creation of LEED-Neighborhood Development, the first effort to describe, catalog and verify what constitutes green development at the project and neighborhood scale. Much like the proposed California Green Building Code, what LEED-ND endeavors to do is to integrate planning and urban design into the evaluation of the environmental performance and energy efficiency of buildings.

Comments on Draft Language

The draft Planning and Design criteria in the Application checklist need serious improvement if they are to accurately capture and encourage more sustainable development. We are afraid that under the current checklist a project that is certain to cause environmental harm could somehow be characterized as green. This not only harms the environment, but cheapens the valuable premium and marketability more responsible developers should enjoy from real green development.

12) A4.1.3 too narrowly addresses development and allows construction in environmentally sensitive areas

For example, the four criteria under A 4.1.3 address only a few of the possible environmental aspects of development, and the fact that only one measure is required makes the feature too

² Ewing, Reid et al *Growing Cooler: The Evidence on Urban Development and Climate Change*, Urban Land Institute, 2008.

easy to accomplish. Indeed, a project could meet the requirement if it is admittedly in an environmentally-sensitive area.

13) Measure A4.1.4.4 is too vague to quantify and evaluate

What is the definition of “environmental impact” and what does a project sponsor produce to prove that it has been “minimized?” More specific language is needed here as to the types of impacts that should be avoided and the metrics used to ascertain effort and compliance.

Also, projects can be evaluated not only on the impact they may have on the site, but at other scales, as well. For example, denser infill projects may have on-site water quality impacts, but from a broader watershed perspective, the impact is less and environmentally beneficial.³ The same may be true for other environmental considerations, such as habitat preservation or farmlands and forest conservation. For certain types of development, localized impacts may be acceptable to avoid more serious regional impacts.

14) Infill, Brownfields and Greyfields measure needs clarity

NRDC applauds the attention to infill, brownfields and greyfields, but recommends significantly more work on the entire Planning and Design section to serve as a meaningful environmental standard. NRDC is happy and eager to work with staff to design better criteria for this section.

Accordingly, NRDC recommends two specific standards for staff consideration: the Sustainable Communities Project Criteria from SB375 and LEED-Neighborhood Development.

15) Using SB375 Sustainable Communities Project Criteria as a Performance Standard

SB375 is the first law in the nation to explicitly tie land use and transportation investments to reducing global warming pollution. Supported by an unprecedented coalition that included NRDC, the California League of Conservation Voters, the California Building Industry Association and the League of California Cities, it requires regions to create efficient land use plans and rewards regions and projects that conform to those plans. For the purposes of the Green Building Code, projects that meet SB 375’s Sustainable Communities Project criteria (California Public Resource Code Chap. 4.2 § 21155.1) could be presumed to have a less significant environmental impact.

Sustainable Communities Projects are required to meet a number of criteria that correlate strongly with low transportation-related air and GHG emissions, such as minimum densities, infill sites and proximity to public transportation. Other prerequisites exclude common greenfield and “leapfrog” development, which correlate with higher transportation related pollution (among these prerequisites are the exclusion of projects in wetlands or in areas not served by existing utilities).

16) Using LEED-ND as Performance Standards

LEED-ND is the first comprehensive attempt to describe and quantify the benefits and character of sustainable, low carbon development.⁴ LEED-ND examines projects for environmental performance in three general areas: the location of the proposed project (Smart Location and Linkage), the urban design principles of the project itself (Neighborhood Pattern and

³ See, for example, EPA’s “Protecting Water Resources with Higher-Density Development,” at http://www.epa.gov/smartgrowth/water_density.htm

⁴ USGBC, “1st Public Comment Version, LEED for Neighborhood Development Rating System,” 2008. Available: <http://www.usgbc.org/ShowFile.aspx?DocumentID=5275>

Development) and the utilization of green building, Low Impact Development and other technologies (Green Infrastructure and Buildings). Projects must meet prerequisites in each of the three areas and can earn an accreditation score based on meeting certain criteria for credits.

LEED-ND prerequisites could be used to qualify projects as CALGREEN. The system's helpful point system may also help better distinguish Required, Tier 1 and Tier 2 projects.

A project meeting the Smart Location and Linkage prerequisites would be in a "smart" location (infill site, contiguous with existing development served by existing utilities and with adequate transit access) that correlates with lower transportation-related pollution. The project would also not be in a location associated with sprawl and high transportation-related pollution (such as recently converted agricultural land, impacting wetlands or significant habitat, being beyond the service reach of existing utilities).

A project meeting the Neighborhood Pattern and Design prerequisites would include urban design elements that accommodate all modes of travel (not just driving) and encourage walking, biking and transit use. A project would need to be a "connected and open community" (minimum street densities and connectivity; no gated communities); and be compact, with minimum densities and transit service, and a mix of uses.

The intent of LEED-ND's Green Buildings and Infrastructure section may already be met through the existing, non-design aspects of the Green Building Code. The section could, however, offer guidance on how to integrate traditional, building-based greening within a larger, location and context-based approach.

We appreciate the opportunity to submit our recommendations to improve the code and are available to discuss this matter with you further.

Sincerely,

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Natural Resource Defense Council

Public Resources Code § 25402. Reduction of wasteful, uneconomic, inefficient or unnecessary consumption of energy

The commission shall, after one or more public hearings, do all of the following, in order to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy:

(a) Prescribe, by regulation, lighting, insulation climate control system, and other building design and construction standards which increase the efficiency in the use of energy for new residential and new nonresidential buildings. The standards shall be cost-effective, when taken in their entirety, and when amortized over the economic life of the structure when compared with historic practice. The commission shall periodically update the standards and adopt any revision which, in its judgment, it deems necessary. Six months after the commission certifies an energy conservation manual pursuant to subdivision (c) of Section 25402.1, no city, county, city and county, or state agency shall issue a permit for any building unless the building satisfies the standards prescribed by the commission pursuant to this subdivision or subdivision (b) of this section which are in effect on the date an application for a building permit is filed.

(b) Prescribe, by regulation, energy conservation design standards for new residential and new nonresidential buildings. The standards shall be performance standards and shall be promulgated in terms of energy consumption per gross square foot of floorspace, but may also include devices, systems, and techniques required to conserve energy. The standards shall be cost-effective when taken in their entirety, and when amortized over the economic life of the structure when compared with historic practices. The commission shall periodically review the standards and adopt any revision which, in its judgment, it deems necessary. A building that satisfies the standards prescribed pursuant to this subdivision need not comply with the standards prescribed pursuant to subdivision (a) of this section. The commission shall comply with the provisions of this subdivision before January 1, 1981.

(c)(1) Prescribe, by regulation, standards for minimum levels of operating efficiency, based on a reasonable use pattern, and may prescribe other cost-effective measures, including incentive programs, fleet averaging, energy consumption labeling not preempted by federal labeling, and consumer education programs, to promote the use of energy efficient appliances whose use, as determined by the commission, requires a significant amount of energy on a statewide basis. The minimum levels of operating efficiency shall be based on feasible and attainable efficiencies or feasible improved efficiencies which will reduce the electrical energy consumption growth rate. The standards shall become effective no sooner than one year after the date of adoption or revision. No new appliance manufactured on or after the effective date of the standards may be sold or offered for sale in the state, unless it is certified by the manufacturer thereof to be in compliance with the standards. The standards shall be drawn so that they do not result in any added total costs to the consumer over the designed life of the appliances concerned.

Health and Safety Code § 18930.5 If no state agency has the authority or expertise to propose green building standards applicable to a particular occupancy, the commission shall adopt, approve, codify, update, and publish green building standards for those occupancies.

Environmental Protection Agencies Water-Sense Program Summary