



PLANNING COMMISSION AGENDA REPORT

DATE: August 18, 2005

AGENDA OF: September 15, 2005

ITEM NO: **Creation of City of Santa Cruz - Green Building Program to be contained as a reference in SCMC Section 24.13 GREEN BUILDING REQUIREMENTS and requiring mandatory participation within one-year of approval.**

RECOMMENDATION: That the Planning Commission approve and recommend to the City Council an ordinance creating the CITY OF SANTA CRUZ - GREEN BUILDING PROGRAM as a referenced document to be contained in Title 24 of the Santa Cruz Municipal Code and approve for mandatory participation the creation of SCMC Section 24.13 GREEN BUILDING REQUIREMENTS referencing the green building program as designed by the Green Building Working Group.

BACKGROUND:

On September 26, 2002, the Planning Commission, in response to direction from the City Council, authorized the formation of the Green Building Working Group (GBWG), approved the initial make-up of the group and charged it with developing a green building policy and regulatory framework for the City of Santa Cruz. The fifteen-member committee then set about the task of reviewing green building policies from a variety of sources and assessing their applicability to this community. They compared operating models used by other jurisdictions and programs developed by private organizations, such as the U.S. Green Building Council's "Leadership in Energy and Environmental Design" (LEED) program. The GBWG members attended various conferences and held regular monthly meetings as well as sub-committee meetings to discuss and develop a strategy.

After digesting a very considerable amount of information, the GBWG agreed on a conceptual program which was presented to the Planning Commission in November 2003. The GBWG also presented the program concepts at a public workshop at the Loudon Nelson Community Center on April 22, 2004, which was attended by nearly seventy members of the public. With input from the public and the Planning Commission, the GBWG finalized its draft plan and presented it to the Planning Commission on August 19, 2004.

The Planning Commission provided generally positive comments to the GBWG; one member opposed anything other than a voluntary program, while another member felt the program was not stringent enough. The Commission accepted the report and referred it to the City Council for consideration.

The GBWG then returned to the City Council at the October 26, 2004 meeting with a presentation of the developed program for approval. The City Council greatly appreciated the work of the committee, but had reservations over creating new positions and incurring new costs to the already beleaguered fiscal outlook for the city into the unforeseeable future. The City Council then directed the committee to regroup and come up with a program that will work for the City of Santa Cruz with minimal expense to the city. The GBWG went back to the drawing table to redesign the program, modifying it as the City's financial picture worsened.

Originally, the GBWG recommended the following program:

1. A point system that is based upon the Alameda County green building program for residential structures and the LEED program for all non-residential structures. The program would apply to all new construction, additions and remodels, with exclusions for minor projects. After a trial period of voluntary compliance and participation, there would be increasing requirements for participation until 100% mandatory participation is achieved within two years of plan implementation.

2. All development applications would require submission of a checklist identifying the green building practices which would qualify the project for points as specified in the program. Projects that failed to meet a minimum point threshold (or that opt out of participation) would be subject to a "brown" fee for not building "green." Projects that met specified thresholds would qualify for four incentives:

- Waiver of the "brown" fee
- Priority permit processing
- Reduction or deferral of planning and building permit fees
- Public recognition and awards

3. Projects undertaken by the City or that receive funding from the City or Redevelopment Agency would be required to achieve points equivalent to the LEED Silver standard.

4. That a "Green Building Coordinator" position be created that would oversee program compliance and implementation.

Inclusive of the October meeting, staff expressed a variety of concerns over:

- The legality of collecting a "brown fee"
- How to monitor and implement the program
- What to do with deconstructed materials with our landfills unprepared to accept them.
- Establishing a priority processing program
- Reduction of fees for participation
- The effect on existing building stock, especially historic buildings

- The impact on existing regulations including the general plan, the zoning ordinance and the local coastal program

DISCUSSION:

Program Summary

Because of the costs inclusive of a green building coordinator position, the GBWG has chosen not to include the position at this time, however as financing possibilities improve in the future, the position may be reintroduced.

The GBWG has determined that a voluntary program is not desirable and would not be productive at this point. Therefore, the committee recommends the imposition of a mandatory program for all new and substantially modified buildings.

All development applications would still require submission of a checklist identifying the green building practices which would qualify the project for points as specified in the program. Projects that fail to meet a minimum point threshold will simply not be issued a building permit. Staff understands this will most likely increase code enforcement activity as people try to skirt around the requirements. However, the compliance limit is set very low to encourage participation. It can certainly be raised in the future as the program develops.

There will no longer be any incentive to building green by the reduction of fees since participation will be mandatory.

The City of Santa Cruz will be expected to participate by leading by example in all of its construction projects and any private projects funded with public money. Projects undertaken by the City or that receive funding from the City or Redevelopment Agency would be required to achieve points equivalent to the LEED certified standard.

Supplemental Staff Analysis

(Note: for reference each of these items are presented in the original text followed by an updated staff analysis.)

“Brown” Fee: The justification for and amount of the proposed “brown” fee will need to be carefully considered with respect to legal standards concerning fees. The GBWG suggests that the amount of the fee should be “compelling” when weighed against investing in the up-front cost of a green project. The rate recommended by the GBWG is 0.25% to 0.50% of the calculated valuation of the project. This would result in a fee of approximately \$1,000 for a 2,000-square-foot dwelling. For a larger project, the fee would be substantially higher and would range from \$2,500 to \$5,000 per \$1,000,000 of valuation. To place this into perspective, the recently constructed six-story structure at 1010 Pacific Ave. is valued at about \$14,000,000 on the building permit. The opt-out brown fee would have been between \$35,000 and \$70,000, depending on the percentage used.

Update: Staff is no longer recommending the inclusion of a "brown fee" that in our opinion is a tax that does not benefit the overall public. Instead, staff recommends the creation of an educational resource fund that would be charged on each construction permit (not including sub-trade permits) equal to .0025 (0.25%) times of the overall valuation of the project. The funds received would be for the development of educational green building programs and services.

Incentives: *Two of the four incentives – priority permit processing and reduction or deferral of fees – would have significant implications for the Planning Department as well as other reviewing agencies in the City. Plan checking would acquire an additional layer of review to confirm that the plans satisfactorily incorporate the green building measures claimed on the applicant's green checklist. Subsequent field inspections would likewise involve compliance checking over and above the current verification of compliance with building codes. In addition to the staffing and training requirements implied by these added tasks, staff is concerned about the feasibility of providing priority permit processing as more and more applications qualify for this incentive. Staff is particularly concerned about reducing or deferring permit fees, inasmuch as the lost revenue could threaten our ability to maintain an adequate staffing level.*

Update: Due to the economic hardship the City of Santa Cruz is enduring, it is unfeasible to offer any reduction in fees. Priority processing will become unnecessary after an initial introductory period that is recommended to be reduced from two years to one year. The exception would be for above average or exceptional participation in which the applicant would receive preferential processing over other projects as well as a recognition award from the City.

Implementation Method: *Because state-adopted building codes can only be modified by local jurisdictions on the basis of local climatic, geographical or topographical conditions, staff believes that the building codes are not an appropriate venue for implementing a green building program. Many communities are choosing to implement sustainability regulations within the framework of community design standards, which are usually contained in local zoning ordinances. Staff recommends this as the preferred course for implementing a green building program in the City of Santa Cruz.*

Update: Staff still recommends that this program be created under the provisions of the zoning ordinance rather than in the construction regulations. The chief building official has analyzed the program for unique climatic, geographical and topographical conditions within the City of Santa Cruz that are the necessary findings to modify building regulations and finds no nexus exists to justify such a modification.

Deconstruction: *Should a deconstruction element become part of this program, there may be some problems with disposal of materials by contractors or property owners if adequate and easily accessible facilities are not available to promote reuse. Also, some materials may not in fact be reusable under current structural and energy management codes in this state. (There may be alternate uses for these materials for non-structural and cosmetic/decorative applications.) Finally, some buildings, or portions thereof, may have to be disposed of outright if they contain high levels of asbestos, lead paint or other dangerous substances to prevent the spread of these materials in the deconstruction process. It will be important to consider both the practical*

aspects of deconstruction and the availability of appropriate recycling facilities in setting expectations for this dimension of a green building program. On the positive side, deconstruction and materials recycling present significant opportunities for private enterprise as well as regional cooperation among jurisdictions.

Update: While there have not really been any significant advances in the city over the last few years, there is substantial interest in creating a multi-district cooperative facility that may not only serve Santa Cruz County, but possibly Monterey County as well. Staff is highly interested in this concept and encourages the City Council to participate positively in any discussions leading to the development of such a facility.

Criteria Monitoring: *Forthcoming changes in state regulations including more restrictive energy conservation measures, best management practices and updated building codes could modify or make mandatory some of the options for building “green.” The program would need to be reviewed regularly to assure that the point system is adjusted as necessary to take such changes into account.*

Update: Staff does not recommend any changes in this particular element. The only exception would be the requirement of regular review and updating of the program within a finite time frame. The recommendation is at least every two years or as significant regulations are made mandatory by the State.

PROPOSED PROGRAM:

I. OVERVIEW:

The City of Santa Cruz Green Building program distinguishes between two types of building projects: (a) non-residential projects, and (b) residential projects.

The non-residential component is based on the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) standard, which awards points based on building performance. The calculations of performance for LEED are typically done by design professionals using specialized knowledge and forms. Thus the LEED system is typically used for larger projects in the non-residential (commercial) sector, where specialized professionals will typically be involved already.

The residential component is based on the Alameda County Waste Management Authority (ACWMA) Green Building Guidelines and awards points for specific measures rather than performance. The identification of the measures being utilized does not require specialized knowledge. Thus the ACWMA system is suitable for both small and large projects, not necessarily employing specialized professionals.

The basis for compliance consists of the checklists from these two programs, which set out the number of points earned for any one of the measures on the checklist. Compliance is measured

in terms of the total number of points for the items to which the applicant commits at the time of building permit application.

Projects are required to implement items for which points have been awarded. Typically this will be enforced at intermediate or final Building Inspections. If for some reason beyond the applicant's control a measure cannot be implemented, then other green item(s) with an equivalent point total must be substituted, with prior approval from the Building Department.

The point systems are used to award the following actions:

(1) Receipt of the building permit (mandatory)

A minimum number of points (as described below) is required to receive the building permit. This element of the program is mandatory. The only exceptions are relatively small projects; the threshold sizes for these exceptions are given below along with the point requirements.

(2) Accelerated permit processing (optional, awarded for exceptional design)

If the project applicant commits to a larger number of points (as described below) accelerated Building Permit processing will be given. The specific accelerated processing protocol to be followed by Building Department staff is enumerated in a separate document.

(3) Project Recognition and Green Building Award (optional)

Projects achieving a still larger number of points (as described below) will be recognized publicly through the Education and Outreach Program and will receive Green Building Awards.

II. STANDARDS FOR COMPLIANCE FOR NON-RESIDENTIAL PROJECTS:

LEED Model

The LEED system recognizes six major categories of opportunities and uses the checklist in Appendix C. Points are awarded for performance that meets or exceeds defined metrics in each category. As a performance-based system, LEED provides the flexibility to accommodate a variety of designs and materials. Design teams can develop their own solutions to achieve a given point, or build upon elements of previously successful projects. After completion, the USGBC awards certification levels, ranging from basic Certification to Platinum recognition, according to the total number of points earned for green elements incorporated into the final project.

The six categories addressed by LEED are:

Sustainable Sites

Site selection affects energy consumption, commuting choices, local ecosystems, and infrastructure needs. Considerations include proximity to downtown, urban redevelopment, rehabilitation of adversely affected lands, minimizing building footprint, preserving natural

ecosystems and agricultural lands, building orientation, landscaping, storm water flow, and erosion control.

Materials and Resources

Maximize use of reused/reusable and recycled-content/recyclable materials. Minimize use of scarce resources and materials that create environmental or health problems during mining, production, transportation, building, use, or at the end of their useful life.

Energy and Atmosphere

Maximize use of renewable energy sources, energy efficiency and passive solar design measures. Minimize fossil fuel and other non-renewable resource use.

Water Conservation and Management

Maximize water conservation and water quality.

Indoor Air Quality

Maximize indoor air quality. Minimize or eliminate toxic emissions generated by chemical off-gassing from synthetic and treated materials or from mold, including chemicals in furniture, rugs, and prefabricated materials.

Innovation and Design

Encourage innovative approaches not specified in the other five categories that enhance LEED objectives and City policies.

Non-Residential Green Building Actions

A total of 75 LEED points (Appendix C) are available to earn actions at the building permit stage. (Projects are awarded points for each of the measures considered ‘prerequisites’ in the original LEED rating system.) The point totals required to receive these actions, whether for new construction, additions, or interior remodels, are summarized in Table 1 below.

The LEED system is performance based, so the point threshold for each of the actions is not dependent on project size.

TABLE 1: NON-RESIDENTIAL (COMMERCIAL) ACTIONS AND POINT REQUIREMENTS

Total points possible	75
<i>Action</i>	<i>Points required to receive action:</i>
C-1. Receipt of Building Permit*	7
C-2. Accelerated building permit processing	33
C-3. Green Building Award	40

*Exceptions: These points are not required for non-residential additions and remodels totaling less than 1000 square feet, or interior-only non-residential remodels of any size

III. STANDARDS FOR COMPLIANCE FOR RESIDENTIAL PROJECTS

Alameda County Waste Management Authority Model

The Green Building Program for residential projects is based on the Residential Green Building Guidelines provided by the Alameda County Waste Management Association (ACWMA). It utilizes a checklist (Appendix B) derived from the ACWMA checklists for new construction and additions/remodels. ACWMA defines residential construction as single-family or multi-family residences, less than or equal to three stories (above grade) in height. For residential building projects containing 5 or more units, the development team may use either check list to demonstrate compliance.

Earning Residential Green Building Rating System Points

The ACWMA-based checklist awards points for specific measures. Where no explicit quantitative measure for receiving credit under a specific point item is given, the following guideline shall apply: If a point credit is claimed, that item shall be applied wherever the specific building element mentioned appears in the project, except where physical factors prevent its use. For example, if credit is awarded for recycled low-VOC carpets (item N-6) then wherever carpets are installed as part of the project, recycled low-VOC carpets shall be used. This would not preclude use of other types of flooring elsewhere. As a second example, if credit is awarded for "Use Wood I-joists for floors and ceilings" (item C-3) but solid sawn lumber needs to be used for deck framing in order to taper the joists to create proper coping for drainage, then credit C-3 applies if Wood I-joists are used for all of the interior (non-deck) floors and ceilings.

Residential Green Building Sub-Categories and Size Dependence

The residential system distinguishes between new construction and additions/remodels. The two columns in Appendix A of this document (covering new and additions/remodels, respectively) differ slightly because certain elements are practical only for new construction, while certain other elements are important mainly for remodels which may not be subject to other standards that apply to new construction.

Construction of a detached unit on property with existing dwellings is considered new construction.

Larger projects have more opportunities to incorporate specific measures than small projects. Therefore, larger buildings require more points than smaller buildings, to receive the same building permit action. For the purpose of determining the required points, the size of the project is defined as heated square footage per dwelling unit.

New Residential Construction

For new residential construction, there are 460 points available for building permit actions. No project will ever earn all 460 points, inasmuch as some measures are mutually exclusive.

For multi-unit properties, points are calculated per dwelling unit. When many of these units are identical to each other, the points do not need to be reported separately for each unit, but all units of a type must incorporate the sustainable measures in order for the project to receive an action. The point requirements to earn each of the actions are summarized below in Table 2.

TABLE 2: RESIDENTIAL NEW CONSTRUCTION ACTIONS AND POINT REQUIREMENTS

Total Points Available	460	
<i>Action</i>	<i>Points required to receive action:</i>	
	<i>First 350 Square Feet</i>	<i>Each Additional 100 Square Feet</i>
R-N-1. Receipt of building permit	10	1.5
R-N-2. Accelerated building permit processing	35	2.5
R-N-3. Green Building Award	60	3.5

Residential remodeling or additions

For residential remodeling or additions, 464 points are available. For multi-unit properties, points are calculated per dwelling unit. The point requirements to earn each of the actions are summarized below in Table 3.

TABLE 3: RESIDENTIAL REMODEL AND ADDITION ACTION POINT REQUIREMENTS

Total Points Available	464	
<i>Action</i>	<i>Points required to receive action:</i>	
	<i>First 350 Square Feet</i>	<i>Each Additional 100 Square Feet</i>
R-A/R-1. Receipt of building permit*	5	1.1
R-A/R -2. Accelerated building permit processing	25	1.9
R-A/R -3. Green Building Award	35	2.5

*Exception: These points are not required for additions and/or remodels of less than 350 square feet.

IV. PROGRAM IMPLEMENTATION AND PHASING

Phase 1 (First 12 months after enactment of the Ordinance)

Phase-in period. All projects first applying for a building permit within this period are required to complete the checklist for their category (residential or non-residential) indicating which measures are being implemented. There is no mandatory requirement to obtain a building permit during this period. Both higher-level actions are available to participants. Outreach and Education Program activities begin.

Phase 2 (Thereafter)

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Same as Phase 1 except mandatory point requirements for receiving a Building Permit are in effect.

APPENDIX C: Non-Residential /Multi-Family Construction Green Building Checklist

(Based on LEED-NC 2.1)

A. Sustainable Sites	Points Available for Building Dept Incentives (All points on the LEED checklist)
1 Erosion & Sedimentation Control -	1
2 Site Selection	1
Urban Redevelopment/Development	
3 Density	1
4 Brownfield Redevelopment	1
Alternative Transportation - Public	
5 Transportation Access	1
Alternative Transportation - Bicycle	
6 Storage and Changing Rooms	1
Alternative Transportation - Alternative	
7 Fuel Vehicles	1
Alternative Transportation - Parking	
8 Capacity	1
Reduce Site Disturbance - Protect or	
9 Restore Open Space	1
Reduce Site Disturbance - Development	
10 Footprint	1
Stormwater Management - Rate and	
11 Quantity	1
12 Stormwater Management - Treatment	1
13 Heat Island Effect - Non-Roof	1
14 Heat Island Effect - Roof	1
15 Light Pollution Reduction	1
Site-related innovation comparable in	
16 scope to the above	0
Available Points	15

B. Water Efficiency	Points Available for Building Dept Incentives
Water Efficient Landscaping - Reduce by	
1 50%	1
Water Efficient Landscaping - No	
2 Potable Use or No Irrigation	1
3 Innovative Wastewater Technologies	1
4 Water Use Reduction - 20% Reduction	1
5 Water Use Reduction - 30% Reduction	1
Available Points	5

C. Energy & Atmosphere		Points Available for Building Dept Incentives
	Fundamental Building System	
1	Commissioning	1
2	Minimum Energy Performance (already required in Title 24)	0
3	CFC Reduction in HVAC&R Equipments	1
4	Optimize Energy Performance	10
5	Renewable Energy - 5%	1
6	Renewable Energy - 10%	1
7	Renewable Energy - 20%	1
8	Additional Commissioning	1
9	Ozone Depletion	1
10	Measurement & Verification	1
11	Green Power	1
Available Points for Energy		19

D. Materials & Resources		Points Available for Building Dept Incentives
1	Storage and Collection of Recyclables	1
	Building Reuse - Maintain 75% of	
2	Existing Shell	1
	Building Reuse - Maintain 100% of	
3	Existing Shell	1
	Building Reuse - Maintain 100% Shell	
4	and 50% Non-Shell	1
	Construction Waste Management -	
5	Divert 50%	1
	Construction Waste Management -	
6	Divert 100%	1
7	Resource Reuse - Specify 5%	1
8	Resource Reuse - Specify 10%	1
9	Recycled Content - Specify 5%	1
10	Recycled Content - Specify 10%	1
	Local/Regional Materials - 20%	
11	Manufactured Locally	1
	Local/Regional Materials - 20%	
	Manufactured Locally + 50% Harvested	
12	Locally	1
11	Rapidly Renewable Materials	1
12	Certified Wood	1
Available Points		14

E. Indoor Environmental Quality		Points Available for Building Dept Incentives
1	Minimum IAQ Performance	1
2	Environmental Tobacco Smoke Control	1
3	Carbon Dioxide Monitoring	1
4	Ventilation Effectiveness	1
5	Construction IAQ Management Plan -	1

During Construction

E. Indoor Environmental Quality, Continued		Points Available for Building Dept Incentives
	Construction IAQ Management Plan -	
6	Before Occupancy	1
	Low-Emitting Materials - Adhesives and	
7	Sealants	1
8	Low-Emitting Materials - Paints	1
9	Low-Emitting Materials - Carpet	1
	Low-Emitting Materials - Composite	
10	Wood	1
	Indoor Chemical & Pollutant Source	
11	Control	1
12	Controllability of Systems - Perimeter	1
	Controllability of Systems - Non-	
13	Perimeter	1
	Thermal Comfort - Comply with ASHRAE	
14	55-1992	1
	Thermal Comfort - Permanent Monitoring	
15	System	1
	Daylight & Views - Daylight 75% of	
16	Spaces	1
	Daylight & Views - Views for 90% of	
17	Spaces	1
	Available Points	17

F. Innovation & Design Process		Points Available for Building Dept Incentives
1	Innovation in Design	1
2	Another Innovation in Design	1
3	Another Innovation in Design	1
4	Another Innovation in Design	1
5	LEED Accredited Professional	1
	Available Points	5

Total Available Points 75

**Appendix B: Residential Construction Green Building Checklist
(Based on Alameda County Waste Management Authority checklist)**

	Points Available for Building Department Incentives	
	New Homes	Additions & Remodels
Community Design Issues		
1. Orient Homes on E/W Axis for Solar Access	0	0
2. Orient Living Rooms and Porches to Streets and Public Spaces	0	0
3. Build Mixed Use, Residential/Commercial	0	0
4. Design for Diverse Family Sizes	0	0
5. Provide "Granny Flats" Above Garages	0	0
6. Build within 1/4 Mile of Public Transit Stop	0	0
7. Minimize Street Widths	0	0
8. Locate Buildings to Preserve Open Space and Wildlife Habitat	0	0
Available Points	0	0
A. Site		
1. Recycle Job Site Construction & Demolition Waste 50% Recycling Rate is Required; 65% = 1 point; 75% = 2 points; 80% = 4 points	4	4
2. Donate Unused Materials	4	4
3. Protect Native Soil	2	0
4. Minimize Disruption of Existing Plants & Trees	1	1
5. Implement Construction Site Stormwater Practices	2	2
6. Protect Water Quality with Landscape Design	2	0
7. Design Resource and water-Efficient Landscapes	4	4
8. Reuse Materials/Use Recycled Content Materials for Landscape Areas	2	2
9. Install High-Efficiency Irrigation Systems	2	2
10. Provide for On-Site Water Catchment / Retention	2	2
11. Utilize Permeable Paving for 50% of Nonstructural Site paved area	2	2
Available Points	27	23
B. Foundation		
1. Incorporate Recycled Flyash in Concrete up to 15% Recycled Flyash = 2 points; Add 1 point for every 10% increase of flyash, up to 5 points	5	5
2. Reuse Form Boards	1	1
3. Re-usable metal Forms	3	3
4. Use Recycled Content Aggregate	2	2
5. Insulate Foundation/Slab before backfill	3	3
6. Install Rigid Foam, Insulated Concrete Forms (ICFs)	3	3
7. Rammed earth foundation	5	5
8. Use non-toxic release agents on concrete forms	1	1
Available Points	23	23
	Points Available for Building Department Incentives	

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	New Homes	Additions & Remodels
C. Structural Frame		
1. Substitute Solid Sawn Lumber with Engineered Lumber		
a. Floors	1	1
b. Headers (non-structural)	1	1
c. Structural beams and headers	1	1
2. Use FSC Certified Wood for framing (For every 10% of FSC lumber used = 2 points, up to 10)	10	10
3. Use Wood I-Joists for Floors and Ceilings	2	2
4. Use Steel Interior Web Trusses	2	2
5. Design Energy Heels on Trusses	2	2
6. Use OSB		
a. Subfloors	1	1
b. Sheathing	1	1
7. Use Finger-Jointed Studs for Non-Structural Vertical Applications	2	2
8. Use Engineered Studs for Vertical Applications	2	2
9. Use Recycled Content Steel Studs for Interior Framing	2	2
10. Reduce lumber framing and improve thermal performance* with alternative wall construction such as: - Insulated concrete forms - including Rastra -Structural Insulated Panels (SIP) - Rammed-earth and pressed earthen block - Straw bale - Structural Bamboo 2 points for every 10% reduction in framing compared to standard framing <i>*Steel framing is not eligible for this point due to thermal performance</i>	20	20
11. Design with 8 foot high plate: 2 points for each floor where used	6	6
12. Apply Advanced Framing Techniques	4	4
13. Use Reclaimed Lumber for Non-Structural Applications	3	3
Available Points	60	60
D. Exterior Finish		
1. Use Sustainable Decking Materials		
a. Recycled content	3	3
b. FSC Certified Wood	3	3
	1	1
2. Use Non-CCA Treated Wood		
	Points Available for Building Department Incentives	

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D. Exterior Finish, Continued	New Homes	Additions & Remodels
3. Install House Wrap under Siding	1	1
4. Use Alternative Siding Materials		
a. Recycled content	1	1
b. Fiber-cement	3	3
c. Earth and/or plaster	3	3
5. Use low/no VOC exterior paint such as silicate	2	2
Available Points	17	17
E. Plumbing		
1. Insulate all Hot Water Pipes	2	2
2. Install Flow Reducers to reduce flow to less than code requirement		
a. Faucets (1 point each, up to 2 points)	2	2
b. Showerheads (1 point each, up to 2 points)	2	2
3. Install Dual Flush Toilets (1 point each, up to 4 points)	4	4
4. Install Chlorine Filter on Showerhead	4	4
5. Install Tankless Water Heater	2	2
6. Pre-plumb for Graywater Conversion	4	4
7. Install Graywater System	8	8
8. Install Water Filtration Units at Faucets (2 points each, up to 4 points)	4	4
9. Install On-Demand Hot Water Circulation Pump	4	4
10. Install zero-waters urinals (1 point each to max of 2)	2	2
11. Install rain water collection and storage:		
a. 2500 gallon capacity	5	5
b. 5000 gallon capacity	10	10
12. Install drain water heat recovery fixtures	3	3
Available Points	56	56
F. Electrical		
1. Install Compact Fluorescent Light Bulbs – CFLs. (6 bulbs=2 points, 12=4 points, up to 4 points)	4	4
2. Install Air-Tight Insulation-Compatible Recessed Fixtures for CFLs (1 point each, up to 5 points) (T24 REQ)	0	5
3. Install Lighting Controls (1 point per fixture, up to 4 points)	4	4
4. Install High Efficiency Ceiling Fans with CFLs (1 point each, up to 4 points)	4	4
Available Points	12	17
G. Appliances		
1. Offer Energy Star Dishwasher	1	1
2. Offer Horizontal Axis Washing Machine	1	1
3. Offer Energy Star Refrigerator	1	1
4. Install Built-In Recycling Center	1	1
Available Points	4	4

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	Points Available for Building Department Incentives	
	New Homes	Additions & Remodels
H. Insulation		
1. Upgrade Insulation to Exceed Title 24 Requirements by 20%		
a. Walls	2	2
b. Ceilings	2	2
2. Install Recycled-Content, Formaldehyde-Free Fiberglass Insulation	3	3
3. Use Advanced Infiltration Reduction Practices	2	2
4. Use environmentally preferable insulation materials (Cellulose, recycled cotton, wool, foamed concrete, soy-based polyurethane)		
a. Walls	4	4
b. Ceilings	4	4
5. Install Straw Bale Insulation at least 18" thick	6	6
Available Points	23	23
I. Windows		
1. Install Energy-Efficient Windows		
a. Double-Paned		1
b. Triple-Paned	1	1
c. Low-Emissivity (Low-E)	2	2
d. Low. Conductivity Frames	2	2
Available Points	5	6
J. Heating Ventilation and Air Conditioning		
1. Use Duct Mastic on All Duct Joints		1
2. Install Ductwork Within Conditioned Space	3	3
3. Vent Range Hood to the Outside		1
4. Clean all Ducts Before Occupancy	2	2
5. Install Attic Ventilation Systems	1	1
6. Install Whole House Fan	4	4
7. Install Sealed Combustion Units		
a. Furnaces	3	3
b. Water Heaters	3	3
8. Install 13 SEER/11EER or higher AC with a TXV	3	3
9. Install AC with Non-HCFC Refrigerants	2	2
10. Install 90% Annual Fuel Utilization Efficiency (AFUE) Furnace	2	2
11. Eliminate Wood Burning Fireplaces	1	1
12. Install Zoned, Hydronic Radiant Heating	3	3
13. Install High Efficiency Particulate Air (HEPA) filter	4	4
14. Install Heat Recovery Ventilation Unit (HRV)	5	5
15. Install Separate Garage Exhaust Fan	3	3
Available Points	39	41

	Points Available for Building Department Incentives	
	New Homes	Additions & Remodels
K. Renewable Energy and Roofing		
1. Pre-Plumb for Solar Water Heating	4	4
2. Install Solar Water Heating System	10	10
3. Pre-Wire for Future Photovoltaic (PV) Installation	4	4
4. Install Photovoltaic (PV) Panels (1.2 kw = 6 points, 2.4 kw = 12 points, 3.6 kw = 18 points)	18	18
5. Install Solar (PV) Walkway Lights	4	4
6. Select Safe and Durable Roofing Materials	3	3
7. Install Radiant Barrier Roof Sheathing	3	3
8. Select EPA Energy Star Cool Roofing material	3	3
9. Use roofing materials with at least 33% recycled content	3	3
10. Install a green roof (sod or other living roof)	12	12
11. Install photovoltaic walkway lights (same as 5.)	0	0
Available Points	64	64
L. Natural Heating and Cooling		
1. Incorporate Passive Solar Heating	5	5
2. Overhangs or Awnings on South Facing Windows	3	3
3. Plant Deciduous Trees on the West and South Sides	3	3
Available Points	11	11
M. Indoor Air Quality and Finishes		
1. Install Whole House Vacuum System	3	3
2. Use Low/No-VOC Paint	1	1
3. Use Low VOC, Water-Based Wood Finishes	2	2
4. Use Solvent-Free Adhesives	3	3
5. Formaldehyde-Free Particleboard	6	6
6. Use Exterior Grade Plywood for Interior Uses	1	1
7. Use Formaldehyde-Free MDF and Materials	4	4
8. Seal all Exposed Particleboard or MDF	4	4
9. Use FSC Certified Materials for Interior Finish	4	4
10. Use Finger-Jointed or Recycled Content Trim	1	1
Available Points	29	29
N. Flooring		
1. Select FSC Certified Wood Flooring	8	8
2. Use Rapidly Renewable Flooring Materials	4	4
3. Use Salvaged or at least 20%-Recycled Content Ceramic Tiles	4	4
4. Install Natural Linoleum in Place of Vinyl	5	5
5. Use Exposed Concrete as Finished Floor	4	4
6. Install Recycled Content Carpet with Low VOCs	4	4
7. Use finished concrete for 50% or more of floor area on the ground floor	8	8
8. Use earthen flooring for 50% of more of floor area on the ground floor	10	10

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Available Points	47	47
	Points Available for Building Department Incentives	
Other	New Homes	Additions & Remodels
1. Incorporate Listing of Green Features into Cover of Blueprints	1	1
2. Develop Homeowner Manual of Green Features/Benefits	1	1
3. Offer Coupons for Compost Bins to Homeowners	1	1
4. Energy Ratings: Every % reduction in whole house energy beyond Title 24 Code - 1 point (up to 30 points). Use energy software such as EnergyPro or MicroPas, to show improvement over California Residential Energy Standards (Title 24)	30	30
5. Innovation Points These points are given for innovative approaches, including model zero net energy homes, new materials and methodologies, currently not identified above. These approaches must meet environmental goals identified in the Residential Green Building Guidelines.	10	10
Available Points	43	43
Total Points Available	460	464

SUMMARY:

The Green Building Working Group has developed a green building regulatory framework for the City of Santa Cruz that provides for minimum mandatory measures as well as incentives for fuller participation. The program is designed to be easy to comply with without adding a significant burden to design and/or construction costs. By keeping the program flexible, it can be easily updated to reflect current practices and updated technologies without interfering with normal code adoption or creating an excessive work load for staff.

FISCAL IMPACT:

Implementation of the proposed Green Building Program may require some additional staff time to handle increased plan checking and inspection/monitoring requirements. However, staff does not perceive this to be an overwhelming impact to the existing workforce. City building construction projects could incur some greater up-front costs that would be offset by long-term savings in operating costs. Revenue generated by the proposed education resource fund is expected to offset costs associated with public education and outreach programs.

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Submitted by:

Approved by:

Richard A. Stubendorff
Chief Building Official

Eugene O. Arner
Director of Planning

Attachments:

Draft Green Building Ordinance
Appendix A: Green Building Standards
Appendix B: New Home Green Points Checklist
Appendix C: Non-Residential / Multi-Family Check List

At the Reference Desk of the Central Branch Library for public review: