

County of San Luis Obispo Green Building Ordinance

Stakeholder Outreach



Meeting Agenda

- What is a Green Building Ordinance (GBO)
- Why a GBO
- GBO Process
- Other Programs & CALGreen
- GBO Contents
- Feedback
- Prioritization



County Team

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- ❑ Cheryl Journey, Chief Building Official



What is a Green Building Ordinance?

- A program that includes measures to influence how we build, remodel and maintain our buildings:
 - Increase energy efficiency
 - Reduce greenhouse gas emissions
 - Decreases harmful environmental impacts
- Many strategies: codes, trade-offs, incentives, education, outreach, training...



Why Would We Want One?

- Address Legislative Requirements
- Create Jobs
- Maintain/Improve Environmental Quality of Life
- Reduce Costs

GREEN BUILDINGS:

- *consume 26% less energy*
- *account for 33% fewer greenhouse gas emissions*
- *require 13% lower maintenance costs*
- *yield 27% higher occupant satisfaction*



Economic benefits



- Reduce operating costs
- Enhance asset value and profits
- Improve employee productivity and satisfaction
- Optimize life-cycle economic performance



Health and community benefits



- Improve air, thermal, and acoustic environments
- Enhance occupant comfort and health
- Minimize strain on local infrastructure
- Supports local economy
- Contribute to overall quality of life



Return on Investment

...an upfront investment of less than two percent of construction costs yields life cycle savings of over ten times the initial investment.

For example, an initial upfront investment of up to \$100,000 to incorporate green building features into a \$5 million project would result in a savings of at least \$1 million over the life of the building, assumed conservatively to be 20 years.

The Costs and Financial Benefits of Green Buildings
A Report to California's Sustainable Building Task Force
October 2003



Local Green Buildings



County Government Center



SLO Eye Associates



Knight Residence



Congregation Beth David

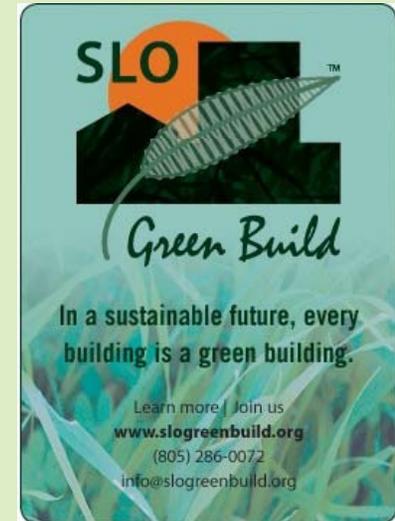


Department of Industrial Relations



Process?

- County received Energy Efficiency and Conservation Block Grant, including \$200,000 for a “Green Building Ordinance and public outreach funding”
- SLO Green Build and USGBC C4 brought in for community outreach and training



Process



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

Energy Efficiency and Conservation Block Grant Program

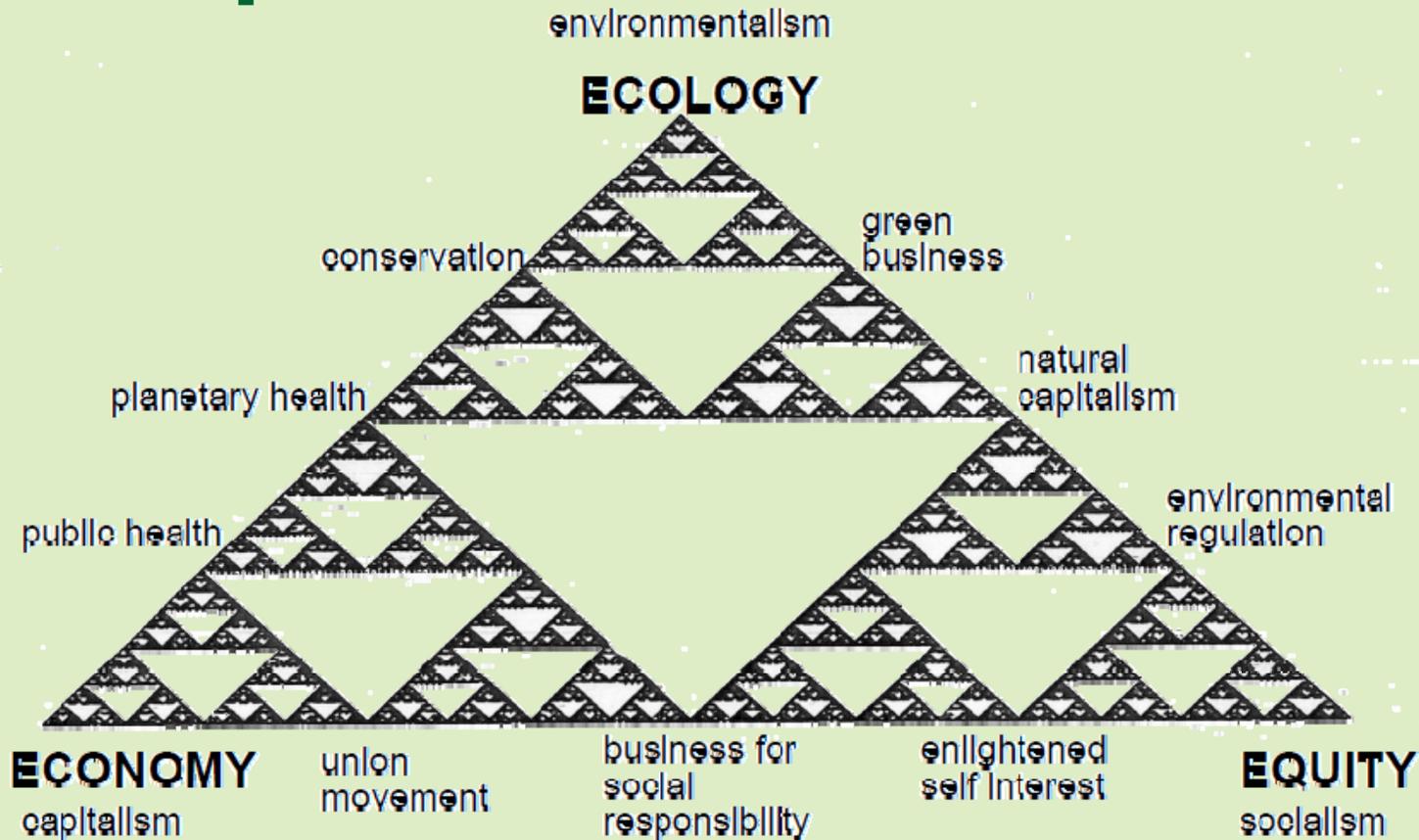


What about all the cities?

- Municipalities will be involved in the development process
- Cities may adapt all or part of the ordinance



To be sustainable, it must meet the Triple Bottom Line



CALGreen

- California's New Building Code
- Implemented January 1st, 2011 (Water July 1st, 2011)
- Jurisdictional Authority
 - New Construction
 - Low-rise Residential
 - Commercial/Institutional
- Portal for Other Codes (Energy Code, etc.)
- Mandatory
- Tier 1 (Voluntary)
 - Mandatory +
- Tier II (Voluntary)
 - Mandatory +



CALGreen

FEATURE OR MEASURE	LEVELS APPLICANT TO SELECT ELECTIVE MEASURES			VERIFICATIONS ENFORCING AGENCY TO SPECIFY VERIFICATION METHOD		
	Mandatory	Prerequisites and electives ¹		Enforcing Agency <input type="checkbox"/> All	Installer or Designer <input type="checkbox"/> All	Third party <input type="checkbox"/> All
		Tier 1	Tier 2			
4.303.2 When using the calculation method specified in Section 4.303.1, multiple showerheads shall not exceed maximum flow rates.	<input checked="" type="checkbox"/> 7/01/2011			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.303.3 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with specified performance requirements.	<input checked="" type="checkbox"/> 7/01/2011			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.303.1 Kitchen faucets and dishwashers shall comply with this section. Tier 1. The maximum flow rate at a kitchen sink faucet shall not be greater than 1.5 gallons per minute at 60 psi. Tier 2. In addition to the kitchen faucet requirements for Tier 1, dishwashers in Tier 2 buildings shall be ENERGY STAR qualified and not use more than 5.8 gallons of water per cycle.		<input checked="" type="checkbox"/> ²	<input checked="" type="checkbox"/> ² <input checked="" type="checkbox"/> ²	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.303.2 Nonwater supplied urinals or waterless toilets are installed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor Water Use						
4.304.1 Automatic irrigation systems controllers installed at the time of final inspection shall be weather-based.	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.304.1 Install a low-water consumption irrigation system which minimizes the use of spray type heads.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4.304.2 A rainwater capture, storage and re-use system is designed and installed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



So What are the Options?

- Fill the gaps left by CALGreen Primarily in the Area of Renovations
- “Custom” list of green measures
- 3rd Party Checklist and/or Certification
 - LEED
 - Build It Green/Green Point Rated
- Specific Measures or Full Tiers Beyond CALGreen

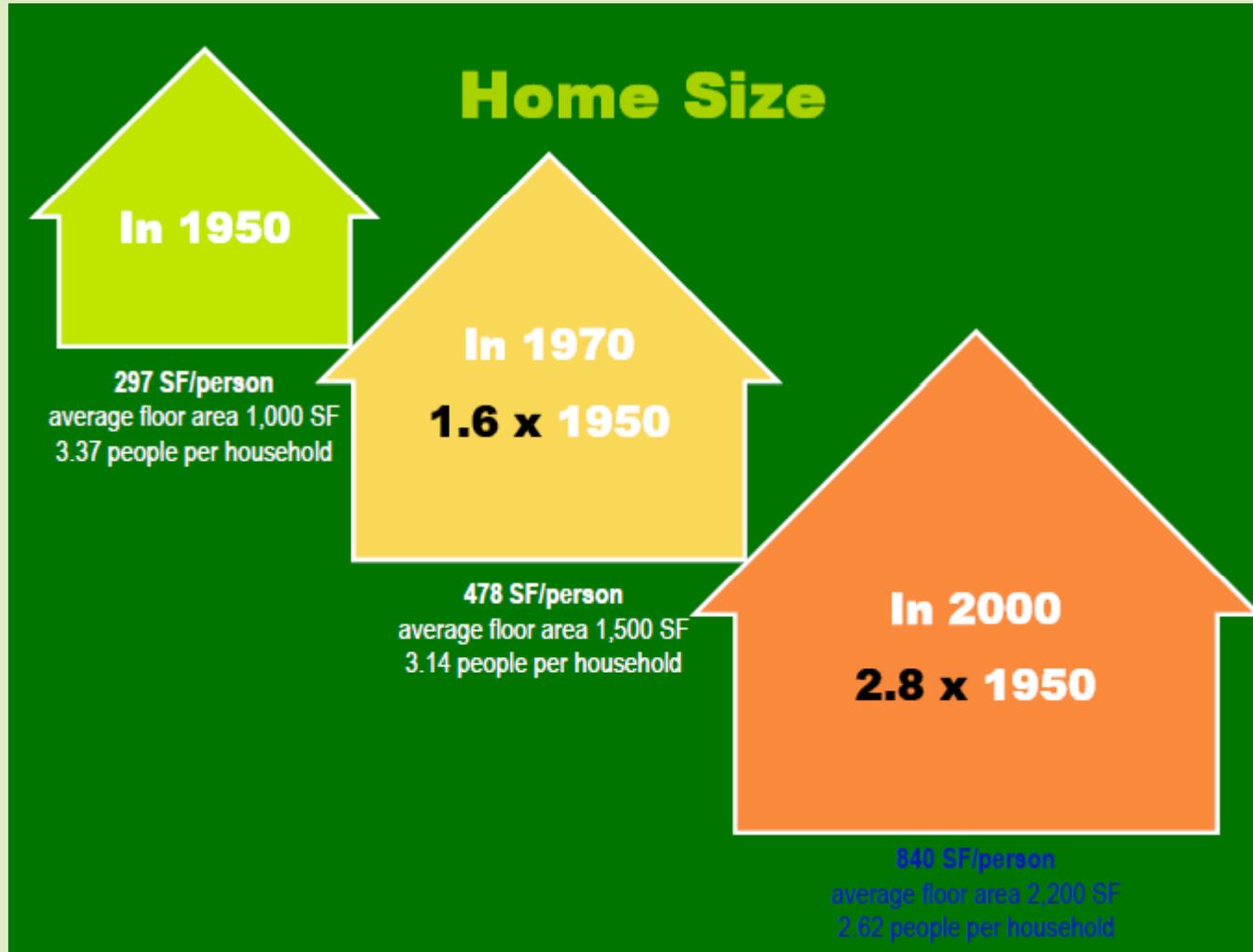


Additional Considerations

- Integration with Climate Action Plans to target ‘highest impact’ on GHG’s
- Regional priorities and Municipal priorities
 - Water, transportation, renewable energy
 - Historic preservation? Local job creation?
- Taking a leadership position
 - What does that look like?



Additional Considerations



Learning from Others

City	Date	City	Date	City	Date
Albany	Jul-07	Marin (Co.)	Jun-10	San Mateo (Co.)	Mar-08
Brisbane	Jan-08	Mill Valley	Dec-08	San Rafael	Jun-10
Calabasas	Feb-04	Morgan Hill	Not Avail.	Santa Barbara	Mar-08
Cotati	Jan-08	Napa	Jan-09	Santa Clara (Co.)	Aug-09
Culver City	Mar-08	Novato	Oct-05	Santa Cruz	Jan-07
Davis	Aug-08	Oakland	May-05	Santa Monica	May-08
Dublin	Mar-04	Palm Desert	Feb-07	Santa Rosa	Jun-08
Hayward	Aug-09	Palo Alto	Jul-08	Sebastopol	Mar-05
Healdsburg	Aug-09	Pasadena	May-08	Sonoma	Aug-09
Livermore	Jan-08	Pleasanton	Jan-06	Tiburon	Nov-08
Long Beach	Jun-09	Redwood City	Nov-09	Union City	2009
Los Altos	Dec-07	Rohnert Park	Jul-07	Windsor	Jun-07
Los Altos Hills	Nov-08	San Francisco	Not Avail.	West Hollywood	Oct-07
Los Angeles	May-08	San Jose	Sep-09		



Examples around California



- Marin

- ❑ LEED/Green Point Rated based
- ❑ Requirements/incentives vary by size
- ❑ Includes remodels and renovations



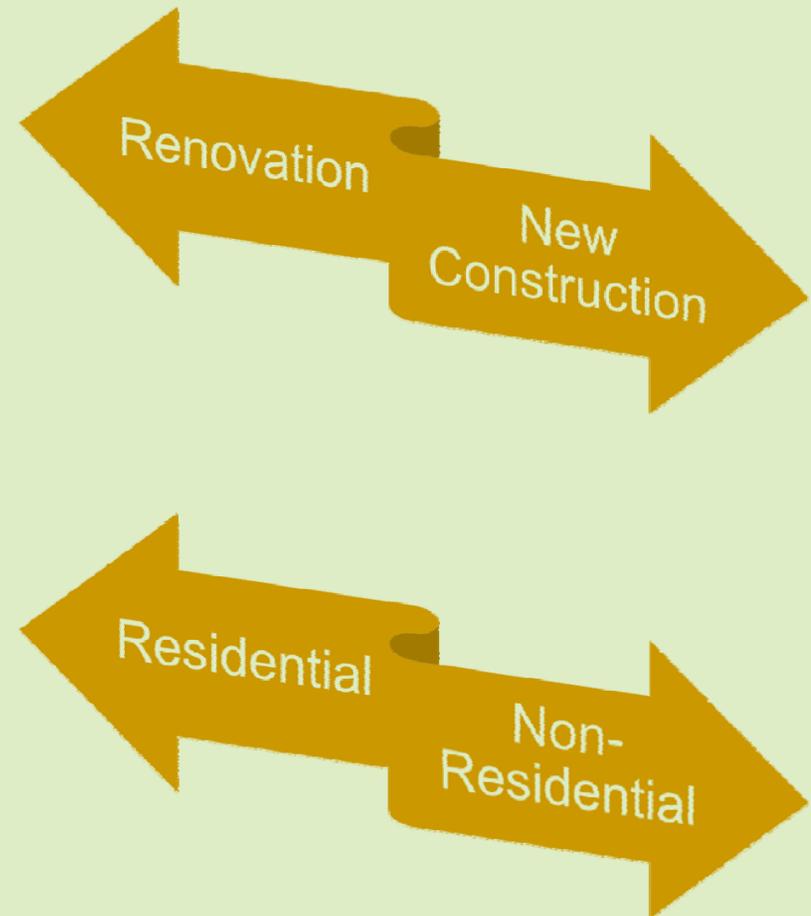
- Palo Alto

- ❑ Formerly LEED/Green Point Rated based
- ❑ Moving toward CALGreen Tiers



Categories to Consider

- Planning & Design
- Energy Efficiency
- Water Efficiency and Conservation
- Material Conservation and Resource Efficiency
- Environmental Quality



Planning & Design

- **Mandatory Baseline:**
 - SWPPP
 - Bike Parking
 - Fuel Efficient Vehicles
 - Grading and Drainage
 - Light Pollution
- Others – Stormwater? LID?

5.106.10: Grading and Paving. The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows



Energy Efficiency

1. Mandatory Baseline - Title 24
2. Tier 1 - Beat Title 24 by 15%
3. Tier 2 - Beat Title 24 by 30%
4. Energy Ratings?
5. What about Net Zero?
6. Or, Net Zero Ready?
7. What about Onsite Renewables?



Water Efficiency and Conservation – Indoor

- Mandatory Baseline
 - 20% Reduction from Baseline
 - Prescriptive thresholds by fixture or fixture category
- Tier 1 – 30% Reduction from Baseline
- Tier 2 – 35% Reduction from Baseline



Water Efficiency and Conservation – Indoor

Water Use Reduction – Prescriptive (July 2011)		
FIXTURE TYPE	FLOW RATE	20 percent REDUCTION
Showerheads	2.5 gpm @ 80 psi	2.0 gpm @ 80 psi
Lavatory faucets, resid.	2.2 gpm @ 60 psi	1.5 gpm @ 60 psi
Lavatory faucets, non-res.	0.5 gpm @ 60 psi	0.4 gpm @ 60 psi
Kitchen faucets	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi
Water closets	1.6 gallons/flush	1.28 gallons/flush
Urinals	1.0 gallon/flush	0.5 gallon/flush



Water Efficiency and Conservation – Outdoor



- Mandatory Baseline
 - Separate Meters for Indoor & Outdoor
 - Irrigation Controls
- Tier 1 and Tier 2 – Reduced Potable water usage



Material Conservation and Resource Efficiency

- Mandatory Baseline:
 - Implement a Water Tight Structure
 - Construction Waste Management Plan
 - Construction Waste Diversion – 50%
- Tier 1 –Construction Waste Diversion – 65%
- Tier 2 –Construction Waste Diversion – 80%
- What about Regional Materials? Sustainably forested wood? Fly ash in concrete?



Building Maintenance and Operations

- Mandatory Baseline – Commissioning over 10,000 sf
 - Owner's Project Requirements (OPR)
 - Basis of Design (BOD)
 - Develop Commissioning Plan – CxA
 - Functional Performance Testing
 - Training and Systems Manual
 - Commissioning Report
- Commissioning 'Lite' under 10,000 SF



Commissioning in Action

START-UP CHECKLIST

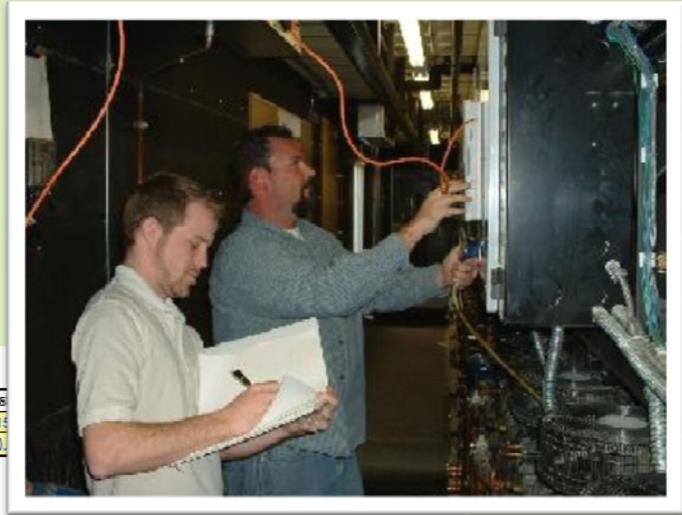
A. Preliminary Information

OUTDOOR: MODEL NO. 4TTA3048A2000M SERIAL NO. 9215K1K2F
 INDOOR: AIR HANDLER MANUFACTURER Trane
 MODEL NO. McE 2006 UA0A20B SERIAL NO. 409A 4265AA
 ADDITIONAL ACCESSORIES _____

B. Pre-Start-Up

OUTDOOR UNIT
 IS THERE ANY SHIPPING DAMAGE? None (Y/N) _____
 IF SO, WHERE: _____

WILL THIS DAMAGE PREVENT UNIT START-UP? (Y/N) NA
 CHECK POWER SUPPLY, DOES IT AGREE WITH UNIT? (Y/N) Yes
 HAS THE GROUND WIRE BEEN CONNECTED? (Y/N) Yes



Duct Leak Test Report Sheet

Test date	6/9/2009	Model duct test apparatus	United McGill	Formula Const
Test Technician	LAAB, Scotty Mc Clain	Orifice Serial No	4703-L	A= 15
Project	Range Control Fac. FHL	Cal Sheet Number	1	B= 0
Bldg Name/No	RCF	Orifice Formula	A/Delta P/B	
Floor tested	First	Owner	LAAB	
DP Dlg Instr Used	Shorridge ADM-860-C	Serial Number	MO3365	
Calibrated	3/24/2008	Owner	LAAB	
Duct Press Instr Used	Digital Manometer Series 475	Serial Number	475-0-FM	
Calibrated		Owner	LAAB	

Damper Leak Rate %	No Dampers in System tested
Test Equipment Leak Rate	5 CFM
Delta P	
Test Pressure	
CFM	

Color Key >>> Input Calculated Special Pass Fail RETEST Factor Not Used

System Zone	Diagram Page#	Design / Calculated						Test					Commissioning Agent			
		Total CFM in duct under test	NON-DIVERSITY CFM TOTALS	Operational pressure "WC	Allowable Leak %	Test Over Press %	Max. Leakage Allowed	NEW CFM LEAKAGE	Test over pressure "WC	actual Test pressure	Orifice Delta P Avg "WC	Actual Leak Rate CFM	Test Equip Leak Rate CFM	Damper % CFM	Final Leakage Rate	% Leak Rate <1% Pass/Fail
Test #1 AH-1	#1	2,700	2,700	4.0	1.0%	125%	27.0	27.0	5.0	5.04	0.033	27.2	5.0	0.0	22.2	0.82%
Test #2 AH-2	#1	2,000	2,000	3.8	1.0%	125%	20.0	20.0	4.7	4.71	0.029	25.3	5.0	0.0	20.3	1%



Environmental Quality

- Mandatory:
 - Fireplaces
 - Covering of Duct Openings
 - Low VOC Sealants, Caulking, Coatings, Finishes and Furnishings
 - CFC free HVAC and Halon free Fire Suppression
- Others - IAQ Management? Flush-out?
Flooring?



Questions? Comments?

- Comments and Ideas by category
 - Planning & Design
 - Energy Efficiency
 - Water Efficiency and Conservation
 - Material Conservation and Resource Efficiency
 - Environmental Quality
- Incentives
- Other...



Scope of Ordinance

Cal Green	Workshop Ideas	Votes (So Far)
New Construction	Renovation	
	Informational Only – Only Voluntary Measures	0 (1 Green, 1 Red)



Planning & Design

Cal Green (or other)	Workshop Ideas	Votes (So Far)
SWPPP	Low Impact Development (LID)	2
Bike Parking	Offer Deconstruction	
Fuel Efficient Vehicle Parking	Re-use of Materials	
Grading & Drainage	Higher Value for Re-use	
Light Pollution	Transit	3
	Parking Maximums	1
	Expand bike lane widths	1
	Pedestrian Connections	
	Alternative Transportation	
	Consider solar (project and adjacent parcels)	
	Electric vehicle hookups	1
	Bike facilities	1

Energy Efficiency

Cal Green (or other)	Workshop Ideas	Votes (So Far)
Title 24	Home energy rating audit/incentive	0 (1 Green, 1 Red)
Beat Title 24 by 15% - Tier 1	Efficiency determined by project/house size	3
Beat Title 24 by 30% - Tier 2	Ongoing monitoring (voluntary)	
	Exceed Title 24	1
	Performance Energy Modeling	1
	Graphic examples	1
	Minimum performance by category	1
	Efficiency determined by project/house size (based on County Average Statistics, Marin SF too High)	1

Water Efficiency

Cal Green (or other)	Workshop Ideas	Votes (So Far)
20 % Baseline Reduction	Greywater/rainwater harvesting	4
Prescriptive thresholds by fixture or fixture category	Moisture Sensors	1
Beat Baseline by 30% - Tier 1	Limiting or banning turf	1
Beat Baseline by 35% - Tier 1	Tie to cost	
Separate Meters Indoor/Outdoor	Outdoor water budget	1
Irrigation Controls	Performance Based	1
	Consider functionality	
	Composting toilets	1
	Incinerating toilets	1
	Increased regulation on municipal water use (waste water and fire)	1

Material Conservation

Cal Green (or other)	Workshop Ideas	Votes (So Far)
Water Tight Structure	Waste Diversion (65% - 75%)	
Waste Management Plan	Advanced/alternative framing	
Waste Diversion – 50%	Waste Reduction	1
Waste Diversion 65% - Tier 1	Reduce Solid Lumber	1
Waste Diversion 80% - Tier 2	Reduce Concrete Impact	1
	Contact info for local suppliers/recycled materials	2
	Free recycle bins for commercial	



Material Conservation

Cal Green (or other)	Workshop Ideas	Votes (So Far)
Commissioning (>10,000 SF)		
Commissioning Lite		



Environmental Quality

Cal Green (or other)	Workshop Ideas	Votes (So Far)
Fireplaces	Daylight	1
Covering Duct Openings	Temp control	
Low VOC	Operable windows	
CFC Free HVAC and Halon Free Fire Suppression		



Incentives

Cal Green (or other)	Workshop Ideas	Votes (So Far)
	Fees tied to usage	2
	Reduced parking requirements with transit plan (bond for 1 year)	1
	Expedited permitting	1
	Thresholds or incentives	1
	Streamline permitting	1
	Waive Permit Fees for Green Upgrades	



Others

Cal Green (or other)	Workshop Ideas	Votes (So Far)
	Urban v. Rural – Energy Efficiency	
	Established baseline with utility	
	Graphic examples of various measure on website for each item	1
	Approval flow chart on website of <u>all</u> relevant approvals/requirements	
	Consider lifestyle impacts	
	Rebate consolidation resource	
	More rigorous inspection process	



Next Steps

Stakeholder Meetings

- *Oct . 4 – Industry, Agencies, Municipalities*
 - *Oct. 12 – Public (South County)*
 - *Oct. 18 – Developers and Contractors*
- *Oct. 25 – Environmental Organizations*
 - *Nov. 1 – Public (North County)*



Next Steps

Draft Ordinance
Stakeholder Surveys
Draft Revisions
Public Review
Board of Supervisors
Implementation and Training

Resources:

- SLO County: www.slocounty.ca.gov/planning.htm
- SLO Green Build: www.slogreenbuild.org
- USGBC: www.usgbc.org www.usgbcc4.org

