

*HCD and CalHFA  
present*

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*PNAs gone Green*



# Introduction

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# Today's Objectives

- What is Green?
  - State Initiatives
- Overview of Mandatory Code Provisions
  - Past, Present and Future
- Green Physical Needs Assessment (GPNA)
  - What are they and how do you read them?
- Additional Questions and Answers



# Brief History of Green Building

- What is Green Building?
  - An integrated approach to developing or rehabilitating an energy efficient structure.
- Why Green?
  - ❖ Global Warming
  - ❖ Carbon Emissions
  - ❖ Climate Change
- Why Now?
  - Federal Mandates
  - State Initiatives
  - Local Initiatives



# Green Building Rating Systems

- **LEED**- Leadership in Energy and Environmental Design
  - ❑ Established by the United States Green Building Council (USGBC)
  - ❑ Green Building Certification Categories:
    - Certified
    - Silver
    - Gold
    - Platinum



# Green Building Rating Systems

- **Build it Green**
  - ❖ California-based organization with a green home focus
  - ❖ GreenPoint Rated
    - New and existing homes
    - Single-family
    - Multi-family



# Green Building Rating Systems

## ❖ GreenPoint Rated

- New and existing homes
- Single-family
- Multi-family

## ❖ Build It Green

- California-based organization with a green home focus



# STATE of CA Initiatives

- AB 32 California Global Warming Solutions Act of 2006 (Schwarzenegger)
- Executive Order B-18-12 (Brown)
  - Reduce overall energy use by 2025
  - Require minimum LEED Silver certification of new or renovated State buildings.
- Green California Task Force



# Useful Websites

[www.builditgreen.org](http://www.builditgreen.org)

[www.calrecycle.ca.gov/greenbuilding/Basics.htm](http://www.calrecycle.ca.gov/greenbuilding/Basics.htm)

[www.green.ca.gov](http://www.green.ca.gov)

[www.epa.gov/greenbuilding](http://www.epa.gov/greenbuilding)

[www.usgbc.org](http://www.usgbc.org)



# How did it start

## 2007/2008 Legislative Cycle

- Governor's message
  - Supports the development of green building standards
  - The Building Standards Commission was created to ensure an open public adoption process allowing experts to develop standards and periodic updates to the building codes
  - Allowing private entities, such as proposed in this bill, to dictate California's building standards usurps the state's authority to develop and adopt those standards
  - Directed specified state agencies with authority to develop green building standards for residential, commercial, and public building construction for the 2010 code adoption process



# What Happened Next

- The California Building Standards Commission directed CBSC staff to develop green building standards for new construction of buildings under its authority.
- The appointed members of the CBSC also requested HCD and the other proposing agencies to work together to develop green building standards for new construction of buildings under their respective authority.
- HCD responded to the Governor's message and joined other state agencies in development of the California Green Building Standards Code now known as CALGreen.



# Result – California Green Building Standards Code or CALGreen

- Enforced like other California codes
- Does not require third party inspection or verification
- Maintains current relationship between enforcing agencies and builders
- Uniformity and Consistency
  - Jurisdictions using different programs



# CALGreen Milestones

- Initial Voluntary Standards
  - Effective August 1, 2009
- Became Mandatory
  - Effective January 1, 2011
- **2010 Supplement**
  - **Effective July 1, 2012**
- 2013 Code Cycle
  - Effective January 1, 2014



# Changing Times

- The Code Of Hammurabi (1760 BC) contained 282 laws including some which covered building construction.
- If a builder build a house for some one, and does not construct it properly, and the house which he built fall in and kill its owner, then that builder shall be put to death.
- If it ruin goods, he shall make compensation for all that has been ruined, and inasmuch as he did not construct properly this house which he built and it fell, he shall re-erect the house from his own means.



# California Green Building Standards Code

## Scope

- Currently Low-rise residential (3 stories and less)
- New construction (not alterations, additions or repairs)
- Not intended to be identified as meeting the requirements of a point rated system

## Local amendments based on findings

- Climate
- Topography
- Geology

## Tiers



# California Green Building Standards Code

## Chapter 4 - Residential Mandatory Measures for new construction

- 20 percent reduction in indoor water use;
- Runoff protection for construction sites not covered by regulations adopted by a state agency or local ordinance for construction sites less than one acre;
- Low or no VOC adhesives, paints and coatings on the interior;
- Low or no VOC carpet systems;
- Low formaldehyde interior materials;
- HVAC sizing and selection requirements;
- Interior moisture reduction and protections;
- Protection of air handling equipment during construction;
- Installer and Inspector knowledge requirements;
- Waste stream reduction of at least 50% through reuse or recycle;
- Maintenance and Operations manual



# Mandatory considerations for CALGreen during the 2012 Code Cycle (effective January 1, 2014)

- High rise, above three stories
- Alterations and rehabilitation
- Move CALGreen requirements to other codes



## Other considerations during the 2012 Code Cycle (effective January 1, 2014)

- Graywater
  - Indoor use for owner occupied single family
- Rainwater Catchment
- Amendments to address Solar Photovoltaic (PV)



## HCD, OPR, SFM and BSC

- Photovoltaic Systems
  - Guidebook
    - General information
    - Streamline permit process
    - Submittal checklist
    - Standard plan
    - Inspection checklist
    - MOU
    - Resources



# Costs Related to California Energy Code Updates

<u>Year</u>	<u>%</u>	<u>Cost</u>
1998	9%	\$900
2002	14%	\$1400
2005	15%	\$1600
2008	20%	\$2000
2013 Riverside	25%*	\$3500*
2013 Sacramento	25%*	\$2720*
2013 Fresno	25%*	\$2720*

\*Currently under development , includes 2015 DOE air conditioner update.





*Business, Transportation and Housing Agency*



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## Section One

### Property Assessment – basic description of report types and traditional requirements

- ASTM E 2018-08 sets standards for Property Condition Assessments: Baseline Property Condition Assessment Process.
- Physical Needs Assessment – Fannie Mae Guidelines
- HUD Green Physical Needs Assessment



## Section Two

### Definition of Terms and a closer look at Tables

#### Traditional PNA

Systems and Conditions Tables

Immediate Physical Needs

Physical Needs over the Term of the Loan

#### Green PNA

Formalized introduction of green concepts

Comparison of traditional vs. Green requirements

Green Immediate Physical Needs

Green Physical Needs over the Term of the Loan



# Dwelling Unit Data

DATE: xx/xx/xxxx

## UNIT INTERIORS

Representative Unit Information

Project: Example Apartments  
some street  
a city in, California

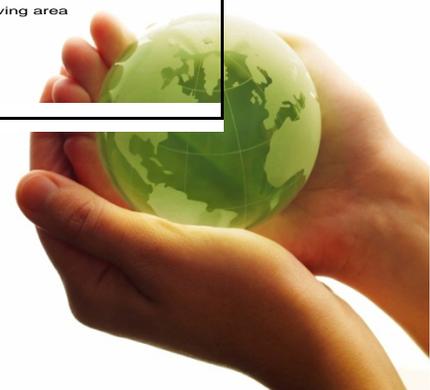
existing building = 33 years old

ITEMS	Effective Useful Life	AGE	CONDITION	EFFECTIVE REMAINING LIFE	DIFF?	ACTION	NOW?	DM	QUANTITY	FIELD NOTES
Flooring, sheet vinyl		varies	fair	varies		Repair	yes		80	Re-adhere seams
Flooring Sheet Vinyl (20)		varies	Fair	varies	0	Replace	Yes		100	Replace vinyl
Flooring Carpet (10)		varies	Fair	varies	0	Replace	Yes		100	Replace carpet
Repair Base		varies	Poor			Repair	Yes		80	Loose rubber base, needs to be adhered
Kitchen Cabinets (25)		varies	fair	varies	0	Replace	No		206	It is recommended to change entire existing unit
Kitchen Counter (20)		varies	Fair	varies	0	Replace	No		206	
Interior Doors, Hdwe. (50)		varies	Fair	35		Replace	No			
Window Coverings (15)		varies	Varies	varies		Replace	yes		50	
Drywall Walls (50)		33	varies	17+		Replace	yes		206	Replace drywall after insulating exterior walls
Kitchen Faucet (10)		varies	Good	varies		Repair	yes		30	Repair dripping kitchen faucets
Garbage Disposal (15)		varies	Good	varies		Replace	No			
Range (20)		varies	varies	varies	0	Replace	Yes		206	Replace with energy star
Refrigerator (15)		varies	varies	7		Replace	Yes		50	12 cubic foot
Lavatory (20)		33	Fair	5		Replace	Yes		100	New lavatories
Bathroom Faucet (20)		varies	Fair	1	0	Repair	Yes		30	Repair or replace dripping faucets
Water Closet - (20)		33	Fair	5		Replace	yes		206	1.6 gallon flush
Bathub / Shower Surround (20)		varies	varies			Replace	yes		100	New fiberglass shower surround
Shut-off valves		33	poor	-	0	Replace	Yes		1030	Replace all shut-off valves
Baseboard hydronic heater (50)		varies	varies			Replace	Yes		30	Replace remaining original baseboard heaters
Thermostat		varies				Repalce	Yes		50	
Additional receptacles							Yes		206	Additional receptacles in cooking area or main room
GFC receptacles in bathroom (20)				0		Replace	Yes		206	Provide GFC receptacles
Hardwired smoke detectors						Provide	Yes		48	Provide hardwired smoke detectors in bedrooms
Relocate smoke detectors in studio units						Relocate	Yes		80	
Light Fixtures, (20)		varies	fair		0	Maintain	yes		618	Provide fluorescent lighting in bathrooms



# Immediate Physical Needs

EVALUATOR'S SUMMARY IMMEDIATE PHYSICAL NEEDS					
DATE: xx/xx/xxxx					
Project: Example Apartments Some Street a city in, California					
ITEMS (EUL)	QUANTITY	UNIT	UNIT COST	TOTAL COST	COMMENTS
<b>GENERAL CONDITIONS (12%)</b>				<b>\$804,999</b>	
<b>BUILDING CONSTRUCTION</b>					
ADA compliant access to parking garage	2	ea	\$10,000	\$20,000	Repair cracks as found Modify ramp and space at strike side of door, verify closer
Restripe parking lot				\$2,000	Restripe for van accessible parking spot
Roofing, tar and gravel	7,000	sf		\$150,000	
Reseal exterior balconies	1,200	sf	\$3	\$10,000	
Replace apartment windows	274	ea	\$2,500	\$685,000	Gascodeck or similar Double glazed replacement windows
Ceiling asbestos abatement	206	ea	\$750	\$154,500	Abatement as needed to remove and install windows
Scaffolding				\$125,000	
Replace dining room and common rooms glazing				\$260,000	Insulated, tempered glass
Replace dining room and common rooms exterior doors	6	ea	\$3,000	\$18,000	Provide insulated glass doors
Remove rust, paint jambs at stairwell doors	56	ea	\$500	\$28,000	Investigate extent of damage - replace if needed
Paint exterior				\$305,000	
Corridors, new flooring	8,775	sf		\$92,775	
Corridors, remove existing flooring	8,775	sf		\$25,000	
Corridors, prep for new flooring	8,775	sf		\$15,000	
<b>UNIT INTERIORS</b>					
Provide free standing stove & add'l counter space	206	ea	\$7,500	\$1,545,000	Redesigned kitchen facility
Refrigerator, 10 cubic foot capacity	206	ea	\$500	\$103,000	Verify new equipment to be Energy Star
Flooring, sheet vinyl	206	ea	\$700	\$144,200	Replace vinyl flooring
Replace base	206	ea	\$150	\$30,900	
Paint interiors	206	ea	\$500	\$103,000	New paint at redesigned kitchen area
Window curtains	206	ea	\$50	\$10,300	Replace
Plumbing repairs	60	ea	\$200	\$12,000	Replace dripping faucets
Replace angle stop shut-off valves	618	ea	\$200	\$123,600	Replace
Replace tub/shower surrounds and valves	103	ea	\$700	\$72,100	
Replace lavatory	100	ea	\$650	\$65,000	
Repair plumbing to water closet	206	ea	\$150	\$30,900	
Replace baseboard hydronic heaters	30	ea	\$150	\$4,500	
Thermostat	50	ea	\$150	\$7,500	Replace broken units with Energy Star programmable thermostats
Additional receptacles	412	ea	\$250	\$103,000	
GFCI receptacle in bathroom	206	ea	\$50	\$10,300	
Hardwired smoke detectors	412	ea	\$250	\$103,000	Hardwired smoke detectors in the bedrooms
Bathroom, hallway and cooking area new fluorescent fixtures	618	ea	\$200	\$123,600	New fixtures as indicated
<b>COMMON AREAS</b>					
Remodel and enlarge the existing dining/common area				\$450,000	
Lever handles at all doors on the accessible route				\$2,750	Doors at common spaces to have lever handles
Insulate exposed plumbing at lavatories	2	ea	\$300	\$600	
Building directory in both lobbies	2	ea	\$500	\$1,000	
Increase lighting in corridors	52	ea	\$150	\$7,800	Alternatively, provide bulbs with greater lumens
Provide a staff bathroom on the ground level				\$50,000	
Redesign and remodel entry lobby and office areas				\$100,000	
Composition tile flooring in laundry	600	sf		\$9,000	
<b>SYSTEMS</b>					
Fire sprinklers in each unit				\$800,000	
Elevator - replace cables, hoist rails and traveling equip.	4	ea			Verify from maintenance records if this is required
Elevator - renovate cab	4	ea	\$25,000	\$100,000	Rebuild interior
Elevator - audible signal	4	ea	\$20,000	\$80,000	
Repair sanitary drainage problems				\$0	Redesigned kitchen will have adequate dish washing facility
Replace plumbing zone control shut-off valves				\$52,000	
Emergency generator - increase capacity	1	ea		\$550,000	Provide generator capacity that will be able to run elevators
Roof mounted fans	18	ea	\$1,000	\$18,000	
Garbage compactor	2	ea	\$17,000	\$34,000	
Increase ventilation to units	206	ea	\$500	\$103,000	
Outdoor reset and boiler control	1	ea	\$2,000	\$2,000	Add a transfer grill to living area
Occupancy control at vending machine	1	ea	\$230	\$230	
Replace boiler motors	4	ea	\$250	\$1,000	
Fluorescent tube fixtures, replace T-12's with T-8' or T-5's	71	ea	\$100	\$7,100	
<b>Total Immediate Physical Needs</b>				<b>\$6,708,325</b>	



# Replacement Reserve Study

DATE: xx/xx/xxxx

## EVALUATOR'S SUMMARY PHYSICAL NEEDS OVER THE TERM OF THE LOAN Page One

Project: Example Apartments  
Some Street  
a city in, California

ITEM	EUL	UNIT COST	YEAR	YEAR										TOTAL Yrs 1-10			
				1	2	3	4	5	6	7	8	9	10				
Seal Exterior Balconies	10	\$ 10,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Restripe Parking Garage	10	\$ 2,000	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New Roof- Built Up Roof	20	\$ 65,000	\$ 65,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Paint Exterior	25	\$ 126,000	\$ 126,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corridor Flooring - vinyl tile	15	\$ 40,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,000	\$ 40,000	\$ 40,000
Kitchen Unit - with sink	20	\$ 3,000		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 63,000	\$ 63,000	\$ 63,000
Stove	20	\$ 500		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,500	\$ 10,500	\$ 10,500
Refrigerator	15	\$ 500		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,500	\$ 10,500	\$ 10,500
Flooring, Carpet	10	\$ 800	\$ 80,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 160,000
Flooring, Sheet Vinyl	20	\$ 700	\$ 70,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 35,000
Lavatory	20	\$ 650	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Shower Surrounds/Valves	20	\$ 700	\$ 72,100	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Baseboard Hydronic Heater	50	\$ 1,500	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Light Fixtures	20	\$ 175	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Paint Interior	8	\$ 1,000	\$ 85,000						\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 26,000	\$ 156,000
Boiler & Equipment	25	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ 50,000	\$ 50,000
Roof Mounted Fans	15	\$ 1,000	\$ 18,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,000	\$ 18,000	\$ 18,000
				\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 42,000	\$ 49,000	\$ 49,000	\$ 49,000	\$ 49,000	\$ 49,000	\$ 241,000	\$ 241,000	\$ 543,000
Starting Annual Balance of Reserves:				\$ 100,000	\$ 176,700	\$ 253,585	\$ 330,657	\$ 407,914	\$ 459,358	\$ 503,988	\$ 548,806	\$ 593,812	\$ 639,006				
Initial/ Annual Contributions to Replacement Reserves:		\$ 100,000	\$ 92,700	\$ 92,885	\$ 93,071	\$ 93,257	\$ 93,444	\$ 93,631	\$ 93,818	\$ 94,006	\$ 94,194	\$ 94,382	\$ 94,570	\$ 94,758	\$ 94,946	\$ 95,134	\$ 1,035,388
Withdrawals for Required Expenditures			\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 16,000	\$ 42,000	\$ 49,000	\$ 49,000	\$ 49,000	\$ 49,000	\$ 49,000	\$ 49,000	\$ 241,000	\$ 241,000	\$ 543,000
<b>Ending Annual Balance of Replacement Reserves</b>			<b>\$ 176,700</b>	<b>\$ 253,585</b>	<b>\$ 330,657</b>	<b>\$ 407,914</b>	<b>\$ 459,358</b>	<b>\$ 503,988</b>	<b>\$ 548,806</b>	<b>\$ 593,812</b>	<b>\$ 639,006</b>	<b>\$ 692,388</b>	<b>\$ 747,776</b>	<b>\$ 803,164</b>	<b>\$ 858,552</b>	<b>\$ 913,940</b>	<b>\$ 969,328</b>
	206	\$ 450	\$ 92,700														
				with a .002 yearly rate increase													



# Green PNA Discussion Points in Narrative

## 5.2. PARKING, PAVING, AND SIDEWALKS

Item	Description	Action	Condition	Replacement
Parking and Paving	Surface lots 34 total parking stalls, including handicapped-accessible stalls 27 parking spaces located in covered carports Addition on-street parking provided adjacent to entrance of property 1 handicapped-accessible parking stalls of which 0 are van-accessible Asphalt	RR	Good	Green
Sidewalks, Curbs and Gutters	Concrete	RR	Good/Fair	Green
Site Access	1 driveway into site from adjacent street.	NA	Good	NA

**Green Physical Condition Discussions:** For replacement or rehabilitation of sidewalks and other hardscape features such as footings, mat foundations, slab on grade, slabs on metal deck, cast in place and tilt up walls, drives and equipment pads, displace Portland cement in concrete mixes with at least 20 percent recycled content materials (flyash or slag). This measure increases the durability and strength of the concrete, reduces greenhouse gas emissions associated with cement production, and helps keep flyash out of landfills.

Increasing porous surfaces decreases runoff and protects the health of creeks, wetlands and other bodies of water. Reducing runoff improves soil health because it retains valuable topsoil on site. Types of pervious or porous pavement include porous aggregate, porous turf, plastic geocells, open-jointed paving blocks, open-cell paving grids, porous concrete, granite or crushed rock, and soft porous surfacing such as bark or mulch.

Specify light color pigments or aggregates for any replacement or rehabilitation of sidewalks and other hardscape features. This measure reduces the building's cooling costs and minimizes the heat island effect by reducing the amount of heat retained by surrounding asphalt, concrete, and building structures. Adding colorants and pigments to mixes of concrete and asphalt does not generally increase costs. Changing aggregate colors is also relatively inexpensive.

### Observations/Comments:

- The asphaltic concrete paving appeared to be in good condition with no significant signs of cracking or surface deterioration. In order to maximize the pavement life, pothole patching, crack sealing, seal coating and re-striping will be required during the reserve term. The cost for this work is included in the 20 Year Reserve Schedule as a Reserve Item. The Green Alternative is recommended.
- Based on the Estimated Useful Life and the observed conditions, an overlay of the pavement system is recommended during the reserve term. The cost for this work is included in the 20 Year Reserve Schedule as a Reserve Item. The Green Alternative is recommended.



## Integration of Green Items into Reserve Study

5.4	Landscaping	No Green Alternative	F	50	47	3	1	\$30,000.00	\$30,000
5.5	Fencing, stockade/basketweave - west	No Green Alternative	F	12	7	5	150	\$12.00	\$3,600
5.5	Fencing, stockade/basketweave - west	No Green Alternative	G	12	2	10	300	\$12.00	\$3,600
5.5	Trash can enclosures	Replace with cementitious siding	F	25	20	5	6	\$1,200.00	\$7,200
5.5	Recycling Program	Implement Recycling Program	F	20	10	10	1	\$750.00	\$750
6.2	Columns and beams	No Green Alternative	F	50	47	3	1	\$3,000.00	\$3,000
6.2	Repair concrete slabs	Replace/repair using concrete with flyash	F	30	27	3	200	\$5.94	\$1,188
6.3	Roof covering, asphalt shingles	Replace with Energy Star approved, recycled	F	20	8	12	235	\$290.25	\$68,200
6.3	Roof covering, corrugated plastic	No Green Alternative	F	20	14	6	210	\$100.00	\$21,000
6.3	Roof drainage, exterior (gutter & fascia)	No Green Alternative	G	25	13	12	2,500	\$8.00	\$20,000
6.3	Attic insulation	Add insulation to exceed code	F	50	47	3	1	\$36,580.00	\$36,580
6.4	Exterior walls, stucco/EIFS	No Green Alternative	F	10	7	3	50	\$350.00	\$35,000
6.4	Exterior walls, wood trim	No Green Alternative	F	30	27	3	1,000	\$4.55	\$4,550
6.5	Exterior stairs, wood	No Green Alternative	F	30	20	10	2	\$250.00	\$500
6.6	Exterior Community Building Doors (metal with vision panels)	Replace with Energy Star/renewable resource	G	25	10	15	2	\$1,905.00	\$3,810
6.6	Screen Doors	No Green Alternative	F	15	10	5	50	\$175.00	\$17,500
6.6	Exterior Unit Doors	Replace with Energy Star/renewable resource	G	25	10	15	50	\$550.20	\$27,510
6.6	Windows (frames and glazing)	Replace with Energy Star (low E coating & Argon filled)	F	30	26	4	102	\$800.00	\$81,200
6.6	Residential Glass Doors, Sliding	No Green Alternative	F	15	11	4	50	\$1,250.00	\$62,500
6.7	Porch walls, wood	No Green Alternative	F	20	17	3	34	\$750.00	\$25,500
6.7	Trellis structures	No Green Alternative	G	20	5	15	34	\$500.00	\$17,000
7.1	Furnace (gas)	Replace with Energy Star rated	G	25	10	15	1	\$1,950.00	\$1,950
7.1	A/C Condensing Unit or Heat Pump - 2 ton	Replace with Energy Star rated	G	20	5	15	1	\$2,925.00	\$2,925



# Section Three

## Reviewing a Green Physical Needs Assessment

- Draft Report vs Final: this is your chance to focus!
- Tips for the time challenged reviewer
- What to look for and minutia to avoid
- Questions to ask



# Questions and Comments

Thank you...

