

**Utilities**

electric · stormwater · wastewater · water
700 Wood Street
PO Box 580
Fort Collins, CO 80522

970.221.6700

970.221.6619 – fax
970.224.6003 – TDD
utilities@fcgov.com
fcgov.com/utilities

R-TRAC**Meeting # 1**

Topic: TRAC Process and NGBS Overview

Wednesday April 28, 2010, 3 – 5:30 pm

PARTICIPANTS**Utilities Green Building Team**

Amanda Sutton – Green Building Program Coordinator

Doug Swartz - Green Building Program Manager

Felix Lee – Green Building Code Manager

Gary Schroeder – Energy Engineer – Commercial GB Code Review

John Phelan – Energy Services Manager

Facilitator

Susanne Durkin-Schindler

Consultant

The Brendle Group

John Butler

Julie Sieving

R-TRAC Members

Company	Representative
Armstead Construction	Jeff Schneider
Aspen Construction	Gil Paben
Aspen Homes of Colorado	Rob Sabin
Energy Logic	Peter Oberhammer
Fort Collins Board of Realtors	Michelle Jacobs
Habitat for Humanity	Bob Hand
Highcraft Builders	Gordon Winner
Institute for the Built Environment	Laura Barrett
J&J Construction of Northern Colorado	Larry Buckendorf
Larkspur Homes, LLC	Michael Bello
National Center for Craftsmanship	Nick Benson

Sovick Design Builders	Dennis Sovick
The Green Team Real Estate	Lara Williams
The Group Real Estate	James Mitchell
Vaught-Frye-Ripley Design	Linda Ripley
Vignette Studio	Terence Hoaglund
Jurisdiction	Representative
City of Boulder	Jim Gery
Larimer County	Tom Garton
Safe Built	Russ Weber
City of Loveland	Tom Hawkinson
City of Longmont	Chris Allison

Key Points:

Presentations located in Appendix A

Goals, Process and Roles – Doug Swartz

The green building code is part of a larger process. We will be accepting input from the team to put this code together. We will also be bringing in additional City staff, facilitator, and consultants to provide additional assistance. Community outreach is also a component.

TRACS – Focus on the code but will also help provide input on the other elements of the GBP. Not here to represent an organization but bring your technical expertise to the process.

Process: Staff will be working with TRACs to develop an initial draft of the GB code by fall 2010. Will get public comment and then come back to put together a final draft that will go to council in early 2011.

Susanne Durkin-Schindler will be the facilitator for this process.

Meeting Ground Rules:

TRAC participation expectations

1. Arrive on time
2. Minimize interruptions by turning off your cell phones, pagers, etc.
3. Raise your hand before speaking
4. Respect groups time and meeting time table
5. Listen as allies
6. Treat all participants with respect – ideas may be challenged-not the speaker
7. Notify a staff person if you are going to be absent - do your homework and let us know if you have any comments.

NGBS Overview & Chapters 1-3 – Felix Lee

NGBS (*National Green Building Standard*[™]) is a green building code that builds on existing basic health and safety and energy codes.

The NGBS is strictly residential – covers new construction, site, subdivisions and renovation. The standard was intentionally designed to be adaptable, adoptable, and verifiable.

We have not decided how the code will be verified – there are several options for inspection and verification that we will explore throughout the TRAC process. The NGBS states that the City, “. . .shall provide a verification process to ensure compliance with the” NGBS.

The financial impacts of adopting the new code are going to be considered carefully. That is one of the things that we are going to have to bring to council as part of their decision process. There is a concern that the cost of verification and implementation may be too substantial if you have to pay a third party to do the testing. So far, it is the intention of Staff that the City would do the verification in-house. The City of Longmont adopted the NGBS and they have been able to do all of the inspection and verification in house. Currently, Longmont has 6 people in-house working on inspection and enforcement.

The Brendle Group is going to be providing the Cost and Benefits analysis to this process as a whole. So we can bring that information to council and the community.

The NGBS also has a Renovation and Addition path. If a building was built prior to 1980 it gets special treatment. The code considers only water and electric conservation in that case. If the home was built in 1980 or later it (any new renovation work from adoption date of NGBS) must be completely up to code (NGBS). If the renovation is less than 75% of the conditioned floor area it is allowed to go the renovation or addition path. If the renovation is at or over 75%, will count as new construction for the entire building.

In order to reduce confusion, the City needs to be specific about the year that builders will reference for code compliance.

- Is the year of the home built according to the assessor's office the year that we would reference the code?
- Where do builders go to find the true age of the home for compliance purposes?

As of now, the builder and City would look in the City Records for when the building permit was issued (must on or before Dec. 31, 1979 per NGBS Sec. 305.5.2 to use the "Green Remodel Path—Sec. 305.5".

Some of the specifics of the enforcement are arbitrary right now – need to make it very clear as to what is required for each path to take. Need to make a clear definition and explanation for the date chosen.

City of Longmont - Adopted NGBS Standard

Longmont decided to adopt the NGBS but excluded the Site Chapter. The Chapter 4 points are awarded to every project. Their threshold for enforcement is the Bronze level. It is mandatory for all new construction to meet the Bronze level. If you are using the scoring tool, you can't do too many amendments to it because the scoring tool becomes useless.

Inspection of the buildings takes slightly longer than it did before they adopted the code. After additional training, education, and experience the time decreases. Longmont developed a checklist for inspectors to help them stay on track.

In order to ensure compliance and enforcement the adopting entity needs to take the guess work out of the process and make it as easy as possible to follow. Clear expectations make it easier for the builder and customer to meet code.

It is important to note that the City may not use the scoring tool option for this code. The TRAC is going to help us decide what format is the most logical for the code for the Fort Collins community.

Code Review and Development Process - Doug Swartz

Currently the NGBS is a template for the Fort Collins code development process, it is not going to be as simple as just adopting the NGBS as is. We need to go through a process to make sure that the template turns into something that is a good fit for the Fort Collins community.

What is a good code?

- Requirements support intent
- Unambiguous language (applicants, enforcers)
- Supporting materials clearly convey intent, what meets code and what doesn't
- Effective verification mechanisms
- No unintended consequences

- No conflicts with other regulations
- Straightforward to navigate: paper and field

This code would also be consistently enforced.

We may not be able to achieve the “ideal” code – but it is something to shoot for.

If you look at points vs. making a level it will be more difficult to determine a baseline which may make things more difficult for plan reviewers and inspectors.

For Longmont, the bronze level will help raise the bar in areas like IEQ, owner education and resources and materials. However, it may not raise the bar as far as energy is concerned. Depends on the type of code you adopt.

NGBS in Perspective – Julie Sieving

The Brendle group was hired to assist the green building team with providing a comparison of existing green building standards to the NGBS and IgCC. They will also be providing green building cost and benefit data to the team and providing data on a benchmark pilot project. The Benchmark project will help City staff and the TRAC teams to better understand where a real life project in Fort Collins would rank in the proposed standard (challenges, costs, performance, etc.). This process will help us determine potential barriers to green building code in Fort Collins. They will be completing a benchmark for both the residential and commercial sectors.

The standards comparison will help City staff and Council answer some key questions about the green building code including:

- How does the proposed GB code compare with other, more familiar standards?
 - Does it cover more or less ground?
 - How far does it push in each GB category?
 - Where is the balance between mandatory and optional measures?
- What good ideas can we borrow from other standards?
 - Is the code template missing any key pieces?
 - Do other standards have better ways of addressing particular items?
- Comparing with other standards may suggest logical breakpoints between code and voluntary / incentive-based approaches.

The Brendle Group has developed a tool to help them perform a comparison of green building standards. They need feedback from the committee in order to help them focus their efforts.

Task 1 – Standards Comparison Feedback

This is an evolving process – The Brendle Group wants your feedback on the structure of the tool in general.

1. Does the comparison structure make sense?
2. Have we included the key points of comparison?

Task 2: Benchmark Project Pilot.

The Brendle Group is asking committee members to brainstorm ideas for a building to benchmark.

Ideal Criteria for a Project:

- Built home
- Detached single family home
- Built using today's mainstream construction practices
- NEED DATA!!!
- Drawings, specs, materials, costs (line items and upgrades), community and infrastructure information (development density), access to the utility data (average or specific),

The Brendle Group requested input from the TRAC members on potential projects that would meet all of these criteria for the benchmarking. Feedback accepted no later than May 7th.

Homework:

Review Chapters 4 and 5 in the NGBS.

NEXT MEETING

May 12th – R-TRAC Meeting #2:
3-5:30 p.m. City of Fort Collins Streets Facility

May 17th – Cost and Benefits Meeting with The Brendle Group:
3-5:00 p.m. City of Fort Collins Utilities – Training Room
700 Wood St.

Questions for Staff Follow up:

1. Council meeting – did council say that they wanted to add another section???
2. How many new houses can be built in Fort Collins GMA??? Will this code then be more focused on infill renovation?
3. Can the Developer impact the points/level that the builder can reach?

Appendix A
Staff Presentations

A green house-shaped graphic with a white outline, centered on a blue background. The text is inside the house shape.

Fort Collins Green Building Program

R-TRAC Meeting
April 28, 2010



Agenda

- Welcome
- Goals, Process, Roles
- The Team
- Meeting Ground Rules
- NGBS Overview: Chapters 1-3
- Code Review + Development Process
- NGBS in Perspective
- Preparation for Next Meeting



Green Building Program Goal

The goal of an ongoing Green Building Program is to increasingly align Fort Collins' built environment with community goals of reduced carbon emissions, reduced energy use and reduced water use.



3

Other Green Building Benefits

- Buildings that
 - Work better
 - Cost less to operate and maintain
 - Have higher future value
- Less vulnerability to energy supply disruptions
- Increased use of local materials
- Fort Collins' reputation as hub for energy efficiency + clean energy



4

Fort Collins Green Building Program

Voluntary,
market-driven,
above-code

- Provide incentives for projects significantly exceeding minimum codes
- Recognize GB innovation + success
- Provide education and training

Regulation

- Establish GB code

Foundation

- Research and document local costs + benefits of GB
- Develop metrics and tracking system
- Revise City policies / codes / processes to address barriers + conflicts related to GB

5

GB Program Guiding Principles

- Support GB transition actively underway in marketplace
- Support quality building projects that can demonstrate substantive, measurable results.
- Support the development of City processes that are relatively simple and easily navigated.



6

GB Program Guiding Principles

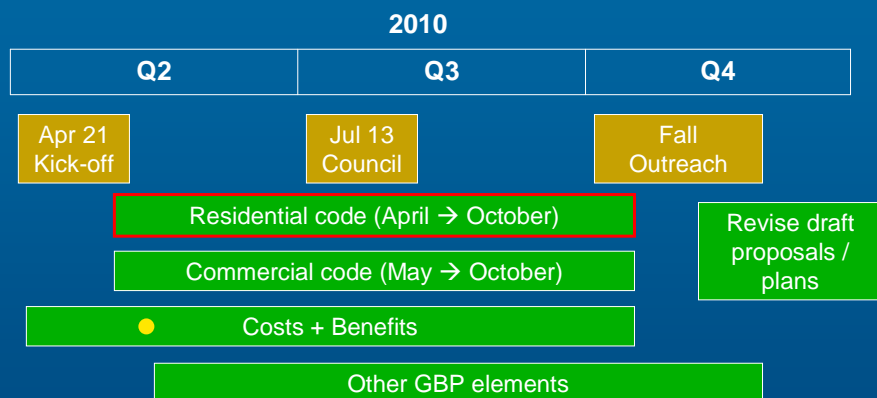
- Dovetail elements addressing individual buildings and lots with neighborhood- and urban-scale green elements.



7



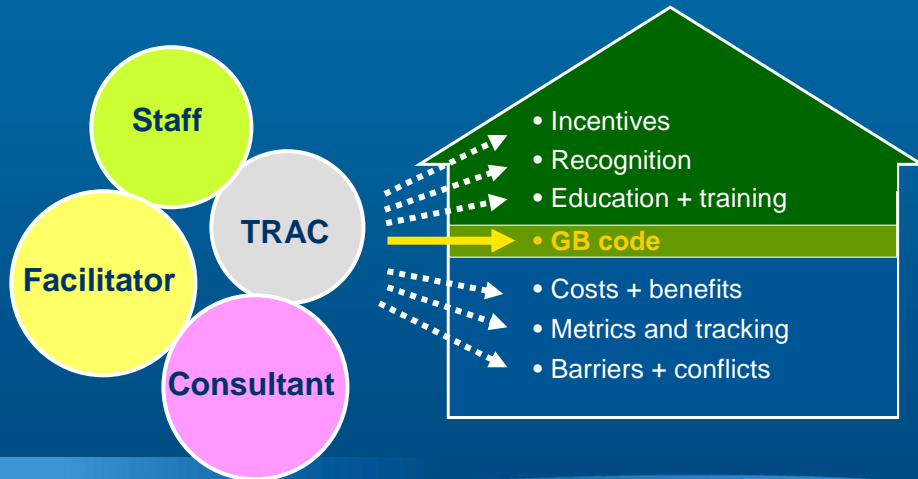
Development Timeline



8

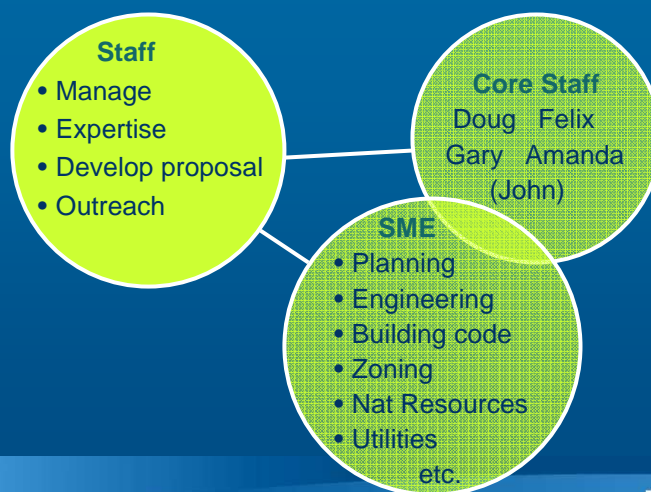


Players + Roles



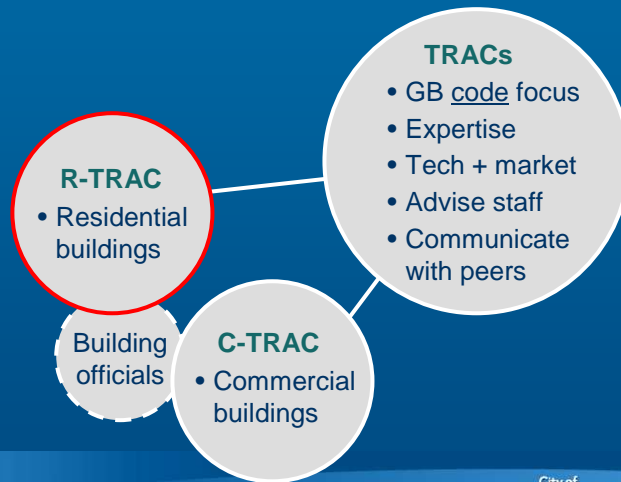
9

Players + Roles



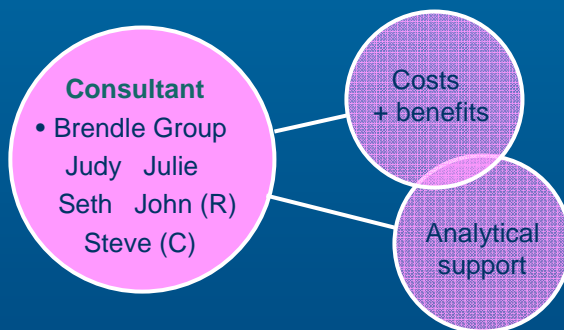
10

Players + Roles



11

Players + Roles



12

Players + Roles

Facilitator

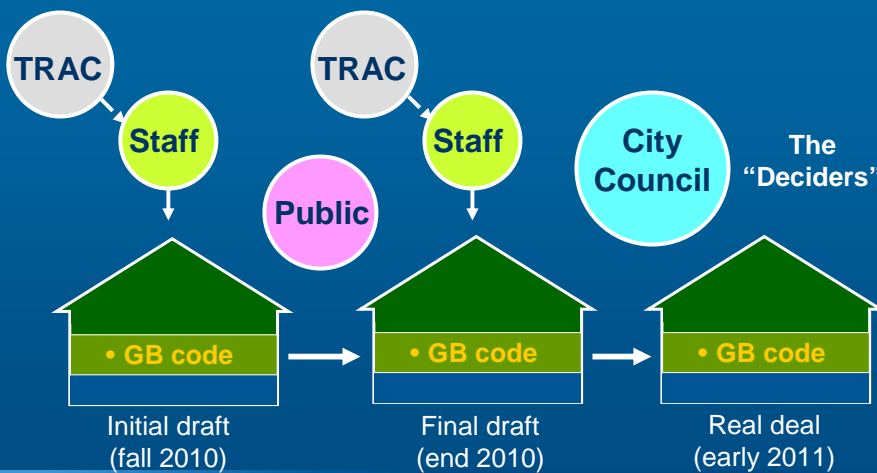
Susanne

- Efficient process
- Participation
- All views heard

13



Players + Roles



14





TRAC Participation Expectations

Participation Expectations

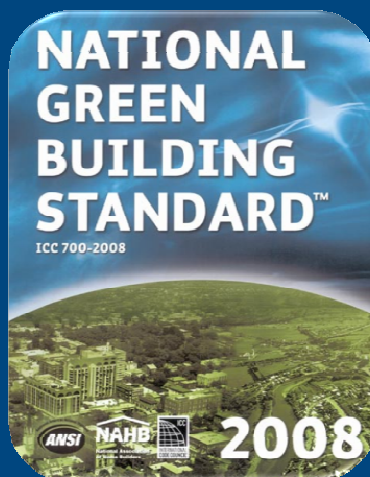
1. Arrive on time.
2. Minimize interruptions by turning off cellphones and avoiding side conversations.
3. Raise your hand to be recognized before speaking.
4. Respect the group's time and meeting timetables.

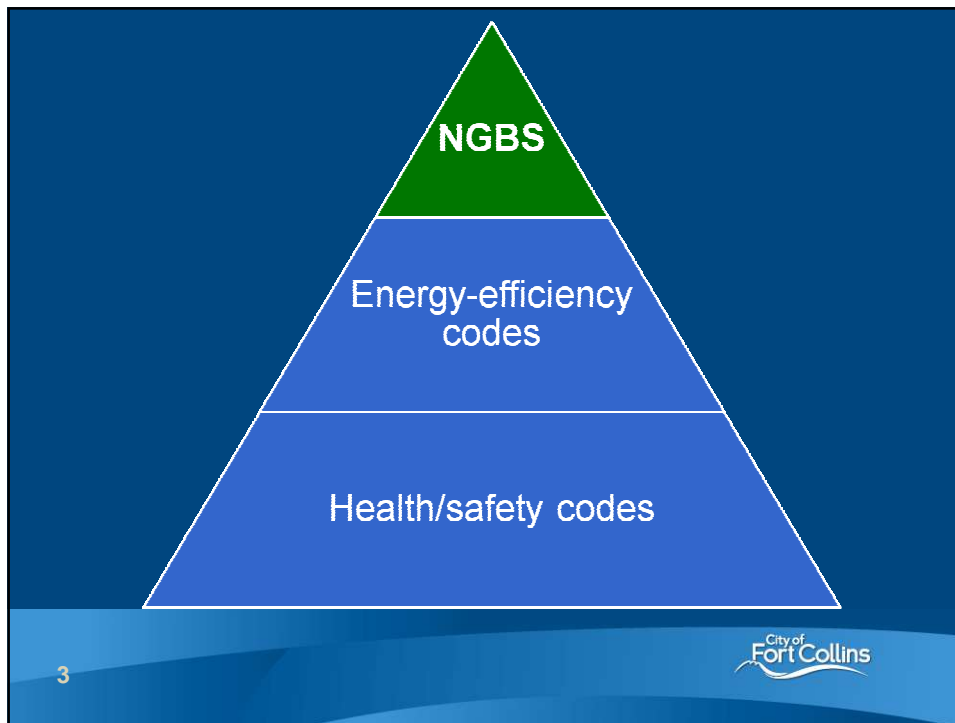
Participation Expectations

5. Listen as allies, giving your undivided attention to the speaker.
6. Treat all participants with respect even in the face of disagreement. Ideas may be challenged – not the speaker.
7. Notify a staff team member in advance of any absence and give them your input about that week's assignment. Three absences will result in the end of your participation on the team.

NGBS: Overview Administration, Definitions & Compliance Methods

Felix Lee
City of Fort Collins
4/28/10





Green Building Categories

- ✓ Chap 4 - Site (land use and development)
- ✓ Chap 5 - Lot (individual land parcel)
- ✓ Chap 6 - Resource efficiency
- ✓ Chap 7 - Energy efficiency
- ✓ Chap 8 - Water efficiency
- ✓ Chap 9 – Indoor environmental quality (IEQ)
- ✓ Chap 10 - Education/O & M

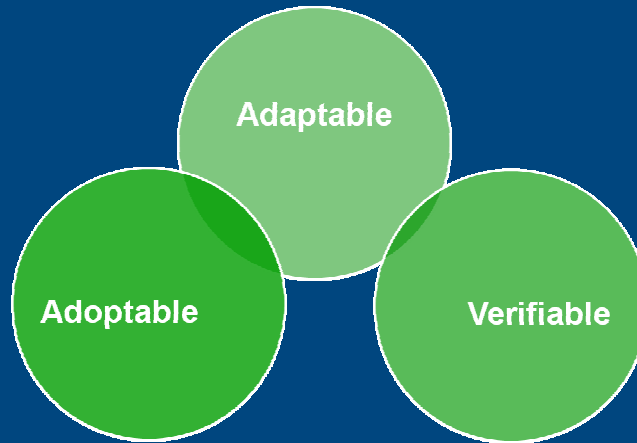
5



6



NGBS



NGBS

The City (adopting entity):

1. specifies performance level(s) to be achieved (as identified in Chapter 3 of the NGBS); and
2. provides a verification process to ensure compliance with the standard.

Definitions

Refer to Chapter 2 for
definitions of frequently
used terms

NGBS – how does it work?

Menu to achieve specified
performance levels

Some
mandatory
provisions

Many
voluntary
options

Alternate
compliance
for energy

Compliance for new construction

Performance rating system

Compliance for renovations/additions

Green Building Path

Green Remodel Path

Chap 4: Site Design & Land Development

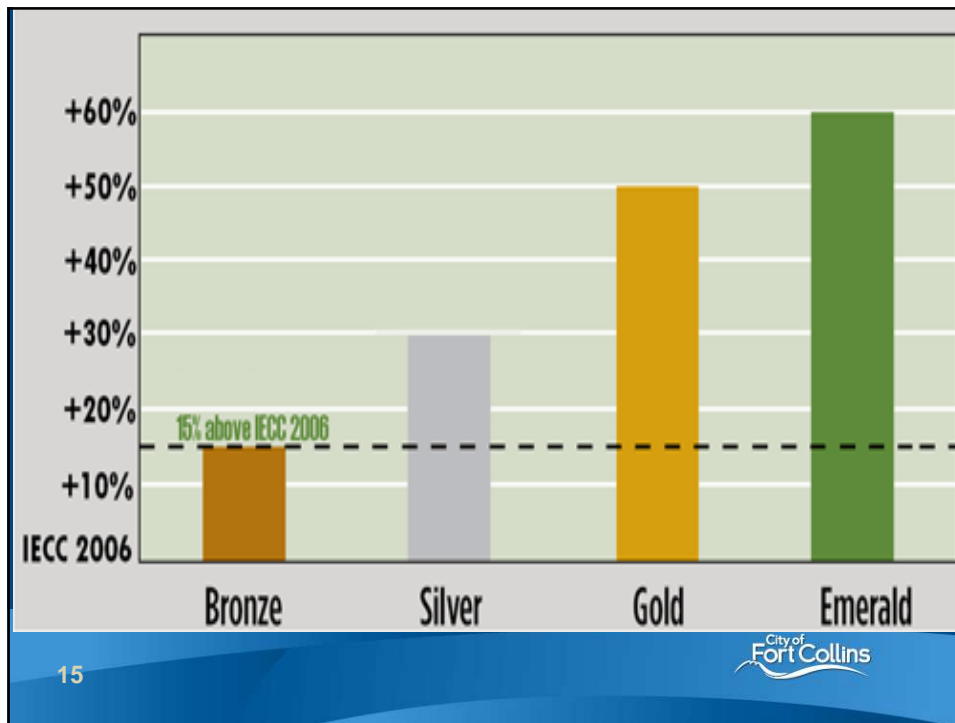
Green Subdivision

Performance Level Points – one to four star status can be earned

One Star	Two Stars	Three Stars	Four Stars
79	104	134	175

Chaps 5 - 10

NGBS Categories	Performance Level Points			
	Bronze	Silver	Gold	Emerald
Lot Design, Prep, Develop	39	66	93	119
Resource Efficiency	45	79	113	146
Energy Efficiency	30	60	100	120
Water Efficiency	14	26	41	60
IEQ	36	65	100	140
O+M, Owner Education	8	10	11	12
Additional Pts - any category	50	100	100	100
Total Points:	222	406	558	697



Next R-TRAC meeting

Wednesday May 12th
Streets Training Room
625 9th Street
3 – 5:30 pm

Assignment: NGBS Chapters 4 & 5

Questions?

NAHB Green Scoring Tool

NAHB Green Scoring Tool

- Login to Green Scoring Tool

<http://www.nahbgreen.org/ScoringTool.aspx>

Code Review + Development Process

R-TRAC Meeting
April 28, 2010



GB Code Goals



Code is
good fit
for Fort
Collins

+ has characteristics
of a "good code."



Characteristics of a Good Code

- Requirements support intent
- Unambiguous language (applicants, enforcers)
- Supporting materials clearly convey
 - Intent
 - What meets code
 - What doesn't

3



Characteristics of a Good Code

- Effective verification mechanisms
- No unintended consequences
- No conflicts with other regulations
- Straightforward to navigate: paper and field

4



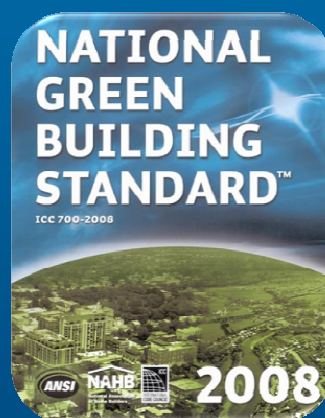
Characteristics of a Good Code

- Effective verification mechanisms
- No unintended consequences
- No conflicts with other regulations
- Straightforward to navigate: paper and field

(+ consistently enforced)

Residential Template: NGBS

- “Guide” to green building practices
- Vetted at national level
- Expectation: accept NGBS as written, with the following adaptations . . .



Options for Adaptation

- Which GB Categories are included?
- How far in each category? (How high is the bar?)

NGBS Categories	Performance Level Points			
	Bronze	Silver	Gold	Emerald
Lot Design, Prep, Develop	39	66	93	119
Resource Efficiency	45	79	113	146
Energy Efficiency	30	60	100	120
Water Efficiency	14	26	41	60
IEQ	36	65	100	140
O+M, Owner Education	8	10	11	12
Additional Pts - any category	50	100	100	100
Total Points:	222	406	558	697

7

Options for Adaptation

504 LCI CONSTRUCTION	
504.0 Intent: Environmental impact during construction is avoided to the extent possible; impacts that do occur are minimized, and any significant impacts are mitigated.	
504.1 On-site supervision and coordination. On-site supervision and coordination is provided during clearing, grading, trenching, paving, and installation of utilities to ensure that specified green development practices are implemented. (also see Section 503.3)	4
504.2 Trees and vegetation. Designated trees and vegetation are preserved by one or more of the following:	
(1) Fencing or equivalent is installed to protect trees and other vegetation.	3
(2) Trenching, significant changes in grade, and compaction of soil and critical root zones in "tree save" areas are avoided.	4
(3) Damage to designated existing trees and vegetation is mitigated during construction through pruning, root pruning, fertilizing, and watering.	4
504.3 Soil disturbance and erosion. On-site soil disturbance and erosion are minimized by one or more of the following: (also see Section 503.3)	
(1) Limits of clearing and grading are staked out.	5
(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas from construction activity.	5
(3) Sediment and erosion controls are installed and maintained in accordance with the storm water pollution prevention plan, where required.	5
(4) Topsoil is stockpiled and stabilized for later use to establish landscape plantings.	5
(5) Soil compaction from construction equipment is reduced by distributing the weight of the equipment over a larger area (laying lightweight geotextile, mulch, chipped wood, plywood, OSB, metal plates, or other materials capable of weight distribution in the pathway of the equipment).	3

For each GB Practice

- Details of requirement
- Change points
- Optional \leftrightarrow Mandatory
- Eliminate the option

8

Balance

Best fit for
community

Alignment with
model code

9

Planned Approach

Pass 1: Staff

- Core team
- Quick screen
- ID SMEs, questions

10

Screening Matrix

- GB Practice
- Cross-reference
- Existing City regs?
- Language
- Qualitative TBL benefits
- Metrics + tracking
- Recommendation

NGBS Review Guide – Draft 4/28/2010										
NGBS GB Practice	X ref to other GB Practices	Intent	Addressed in existing regulation?	Language • procedures unambiguous? (little room for varying interpretation) Will they produce desired outcome?			Qualitative TBL benefits (+ notes why)	Metrics + Tracking	Recommendation (+ notes why) (Different for new vs. renovation?)	Other Notes
# Pg Item	# Pg Item		If yes: Where? Who enforces? Effectiveness?	Requirement to satisfy GB Practice	Required submittal info	Verification, enforcement (plan row, field inspection) "Does it work?"	<ul style="list-style-type: none"> • People • Economy • Environment 0 = none 1 = small 2 = moderate 3 = large	Is this important to track? How to track?	<ul style="list-style-type: none"> • Use NGBS as-is • Change optional to mandatory • Change mandatory to optional • Modify GB Practice details • Change points available • <u>Elim</u> the GB Practice 	

11



Planned Approach

Pass 1: Staff

- Core team
- Quick screen
- ID SMEs, questions

Pass 2: Staff +

- Core team + SMEs
- Develop recommendations
- Document

12



Planned Approach

Pass 1: Staff

- Core team
- Quick screen
- ID SMEs, questions

Pass 2: Staff +

- Core team + SMEs
- Develop recommendations
- Document

Pass 3: Staff + R-TRAC

- Discuss + refine Pass 2 recommendations
- Discuss other GB Practices

13

Responsibilities

- Staff
 - Initial screening
 - Deliver Pass 2 recommendations (Goal: 1 week before TRAC meeting)
- Members
 - Review recommendations, prepare to discuss
 - Read ahead, flag issues of note
 - Contribute ideas regarding other GBP elements
- Staff
 - Assemble code proposal
 - Evolve other GBP elements

- Incentives
- Recognition
- Education + training

• GB code

- Costs + benefits
- Metrics and tracking
- Barriers + conflicts

14

Players + Roles

