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C-TRAC
Meeting # 1
Topic: TRAC Process and IgCC Overview
Wednesday May 5, 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

Facilitator

Susanne Durkin-Schindler (Absent due to illness)

Consultant

The Brendle Group
Steve Brunner
Julie Sieving

C-TRAC Members

Company	Representative
Aller Lingle Massey Architects PC	Brad Massey
Beaudin-Ganze Consulting Engineers	Corey Rhodes
BHA Design	Angela Milewski
Bellisimo Inc.	Gino Campana
Dohn Construction	Doug Dohn
Institute for the Built Environment	Josie Plaut
Starwood Construction Mgmt	Sandy Willison
Milender White Construction	Ema Rankin
Fisher Architecture	Greg Fisher
IFMA	Matt Horner
Architecture West	Steve Steinbicker
PSD	Pete Hall
Bella Energy	Rick Coen

Key Points:
Presentations are located in Appendix A

Goals, Process and Roles – Gary Schroeder

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 brining 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 Green Building Program (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. **Three absences will result in the end of your participation on the team.**

IgCC Overview & Chapters 1-3 – Felix Lee

It is important to note that this is the first public draft of the IgCC. This code goes through an extensive review process and is reviewed by many different organizations before being released. Public comments are due by May 14 and will be posted in July. The IgCC will be issuing a 2nd revision in November 2010. The code will be going through a revision process (similar to existing ICC codes) which does not mean that we cannot go through the code as written and make a recommendation to council. All of the other I-Codes are revised every three years.

Chapter 3 – Core of the Code

The baseline of the code is the mandatory requirements. Jurisdictions can also choose to adopt their own requirements that fit with their community. Project electives are included to provide a tool for the jurisdiction to push construction to a greener path. It is up to the jurisdiction to customize the program to the needs and culture of the community.

Table 302.1 in the IgCC covers the choices that the jurisdiction has to make about what part of the code they would like to adopt.

Code Review and Development Process – Gary Schroeder

Currently the IgCC is a template for the Fort Collins code development process, it is not going to be as simple as just adopting the code 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.

Committee comments:

- Code needs to have a feedback mechanism so that we can continue to develop the code based on what we have learned.
- Balance and flexibility are important. LEED is currently attractive because it has so many options that allow a builder to get to the same point. A new code should include that flexibility.
- A lot of new construction that is taking place in Fort Collins is going to be redevelopment and infill which can make a project more challenging. Need to keep that in mind.

It is the intent of the City that the new IgCC code will correspond with LEED certification so that there is not a lot of extra work involved to meet code and get LEED certification. Staff is also hoping to have the process and code enriched and informed by LEED and ASHRE.

This is a new code and the City of Fort Collins may be the first jurisdiction that is looking at adopting it. This is a learning process and we will help provide feedback to the ICC. There are several options for us to adopt the code. The ICC tried to create a flexible template that we can adapt to fit our community. The goal of the City is to create a code and GBP that is balanced between what is the best fit for Fort Collins and the alignment with the model code. We want the code to fit, but we don't want to change the code so much that it is unrecognizable.

Planned Approach

The planned approach is to have City staff do a first pass on each chapter in advance using the matrix. We will be looking at language, stringency, existing code, enforcement, etc. We will then do a second pass with City Subject Matter Experts (SME) and develop recommendations. The week before the TRAC meeting we will be sending out a draft for the TRAC to review. TRAC members can provide feedback on the recommendations as well as expressing any concerns about other parts of the chapter.

There will be a July 13th work session with council to check in with them regarding our process. Hopefully they will have a good idea of what is coming before they have to make a final decision.

The IgCC in Perspective
Steve Brunner - The Brendle Group

The Brendle group was hired to assist the green building team with providing a comparison of existing green building standards to the NGBS (residential) and IgCC (commercial). They will also be providing green building cost and benefit data to the team and 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 green building code compare with other, more familiar standards?
  - Does it cover more or less ground?
  - How far does it push in each green building 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:

- Recently Completed Building (w/in past 2-3 yrs)
- Average Sized bldg. (+/- 15,000 sq. ft.)
- 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 10th.

Committee Benchmark Project Suggestions:

- United Way Day Center – Josie Plaut
- New PFA Station – Chris Allison
- Great western Bank Building on JFK pkwy. – Doug D.
- Custom Blending Bldg - mixed use (on Harmony)

Want a building that is in between minimally code compliant and best practices. Want to get a "real life" example of a building built in the City of Fort Collins using mainstream construction practices. This Pilot is going to be used to establish the process for future benchmarking.

Committee Comments:

- Need to consider the difference between buildings that were built by the owner to inhabit vs. buildings that are built for tenant occupation. Can make a difference in costs and benefits.
- Need to look at existing buildings and how this code will apply to them – need to keep in mind of how we would handle future code enforcement for existing buildings.

Homework:

Review Chapter 4 in the IgCC.

NEXT MEETING

May 19th – C-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.

Appendix A
Staff Presentations

Fort Collins
Green Building Program

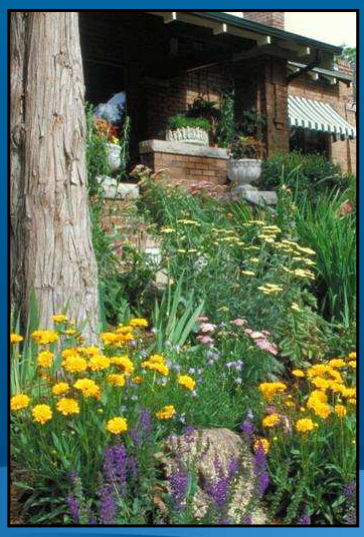
C-TRAC Meeting
May 5, 2010

Agenda

- Welcome
- Goals, Process, Roles
- The Team
- Meeting Ground Rules
- IgCC Overview: Chapters 1-3
- Code Review + Development Process
- IgCC 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.



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

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

GB Program Guiding Principles

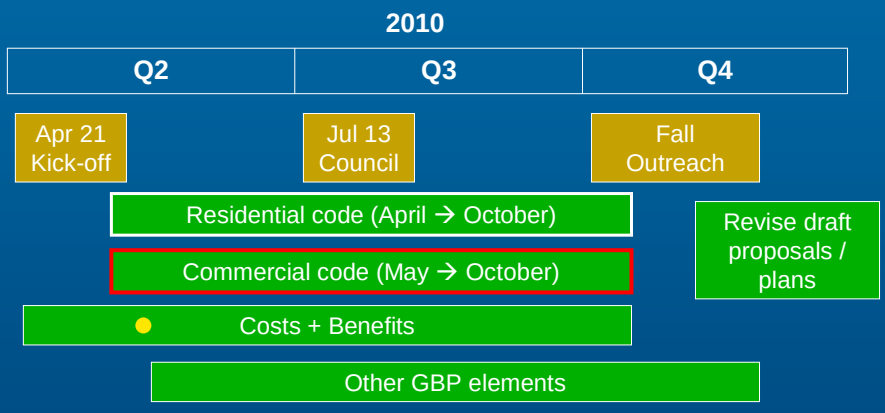
- Support GB transition actively underway in marketplace
- Support quality building projects that can demonstrate substantive, measurable results.

- Support the development of City processes that are relatively simple and easily navigated.

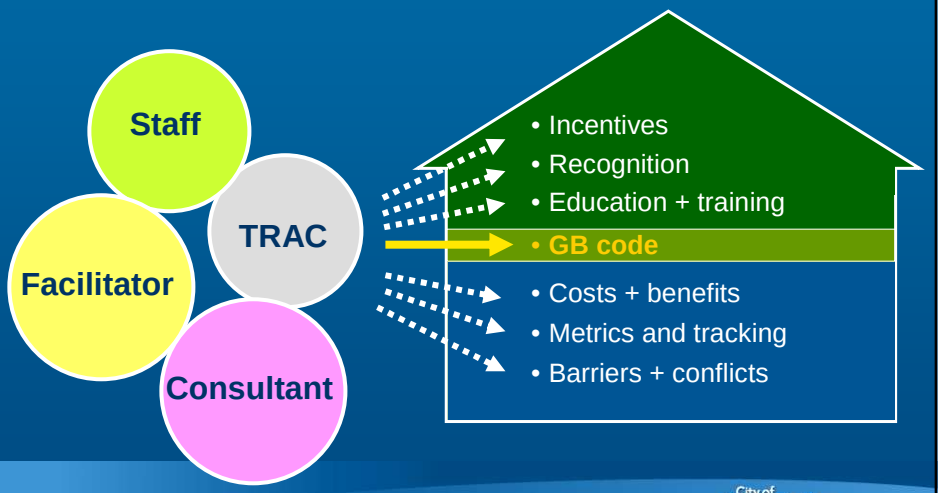
GB Program Guiding Principles

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

Development Timeline



Players + Roles



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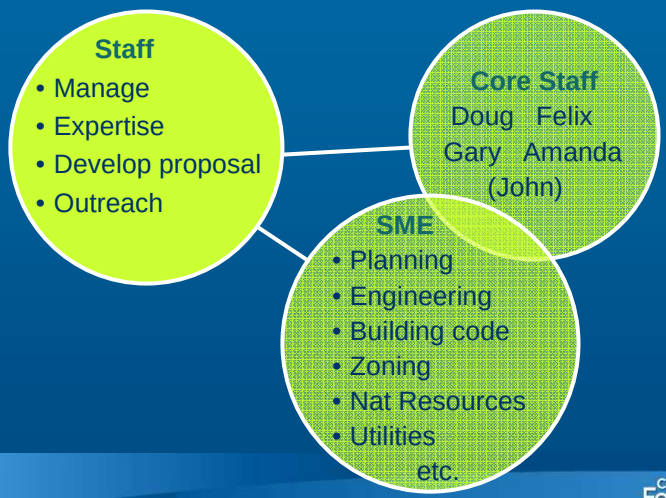

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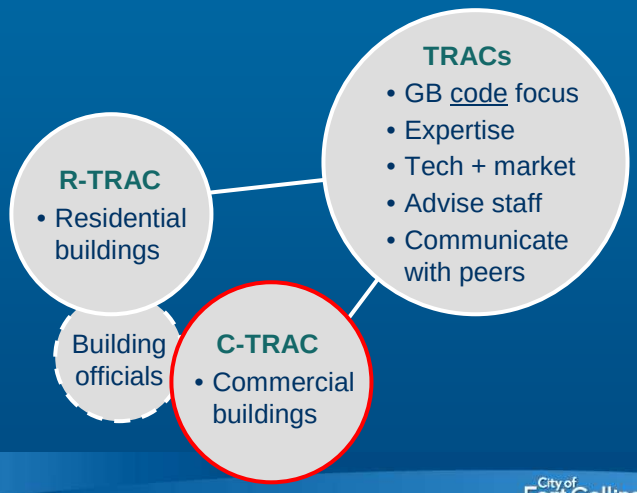
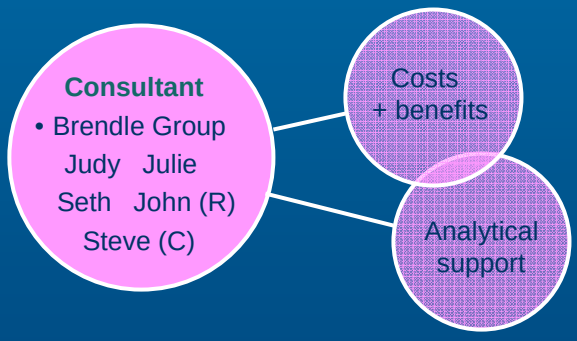


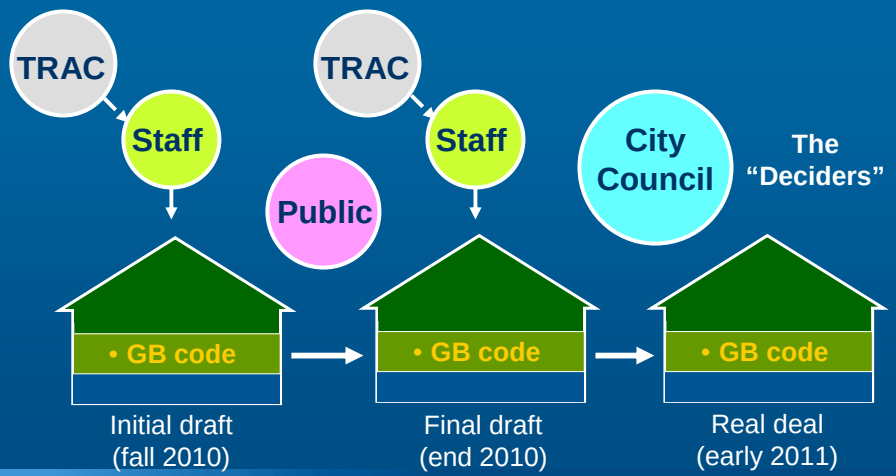
Players + Roles

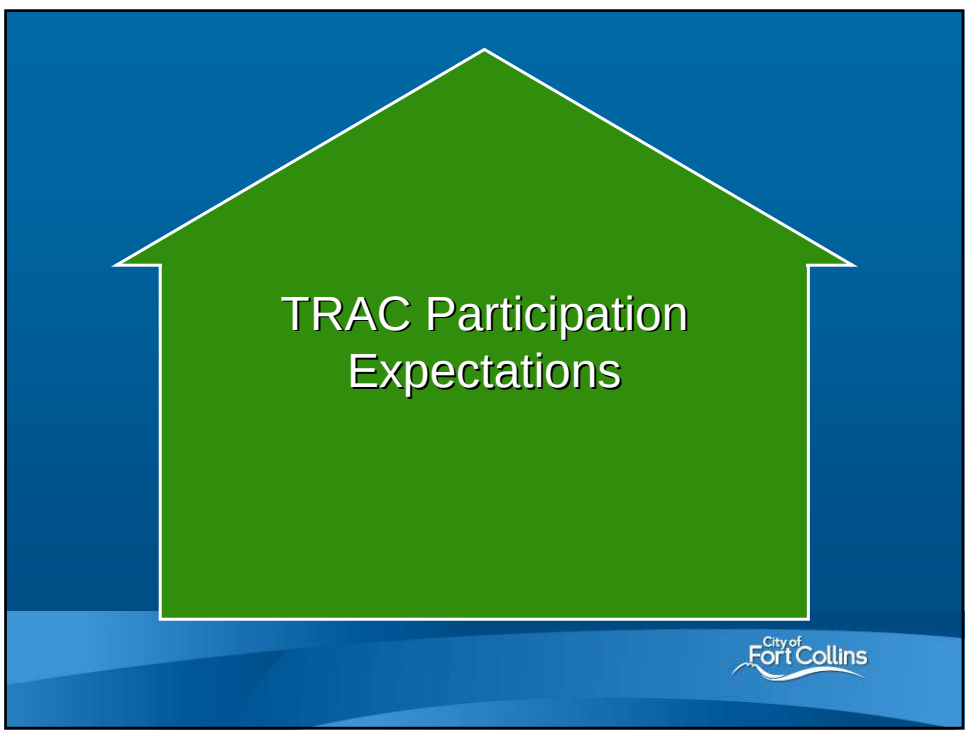


Players + Roles

Facilitator
Susanne
- Efficient process
- Participation
- All views heard

Players + Roles




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.

Code Review + Development Process

C-TRAC Meeting
May 5, 2010

GB Code Goals

+ 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

Characteristics of a Good Code (cont.)

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

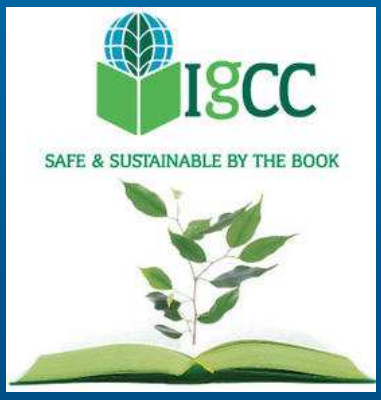
Characteristics of a Good Code (cont.)

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

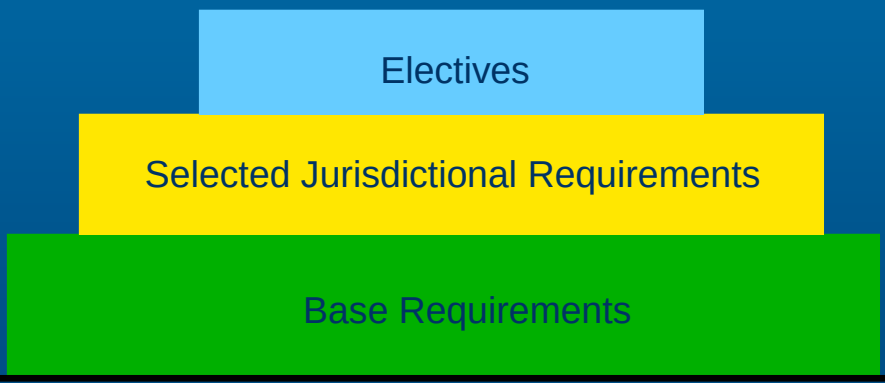
(+ consistently enforced)

Commercial Template: IGCC

- Current approach: use IGCC as template with ASHRAE 189.1 and LEED NC as references
- Working with first public draft
- Comments to ICC due 5/14/2010
- First jurisdiction?



Options for Adaptation



Options for Adaptation

603.1.2 Peak energy demand. Documentation shall be provided to demonstrate that the *proposed design* has a peak energy demand not greater than 0.90 times that of the *standard reference design*.

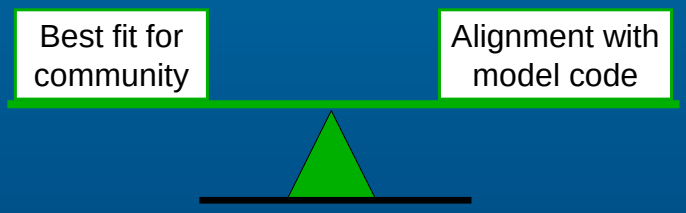
603.1.3 Annual direct and indirect CO2e emissions associated with on-site electricity. Where emissions calculations are required by the *jurisdiction* in Table 302.1, the emissions calculations shall be based on electric power for *building* functions covered by this code minus any renewable or recovered waste energy covered under Section 602.1.2. Emissions associated with electric power use shall be calculated by multiplying the electric power used by the *building* at the electric utility *meter* by the *CO2e* conversion factor in Table 603.1.3 based on the eGRID Sub-region in which the *building* is located.

603.1.4 Annual direct and indirect CO2e emissions associated with on-site use of non-renewable fuels. Emissions associated with the use of non-renewable fuels such as natural gas, fuel oil and, propane shall be calculated by multiplying the fossil fuel energy used by the *building* at the utility *meter* by the national emission factors in Table 603.1.4. Emissions associated with fossil fuels not listed shall be calculated by multiplying the fossil fuel used by the *building* at the utility *meter* by 250. Emissions associated with purchased district energy shall be calculated by multiplying the energy used by the *building* at the utility *meter* by 150 for hot water and steam, and for district cooling, the factors from Table 603.1.3 based on the eGRID Sub-region in which the *building* is located.

For each GB Practice:

- Use as-is
- Change requirement details
- Mandatory ←→ Elective
- Insert new requirement
- Eliminate requirement

Balance



Planned Approach

Pass 1: Staff
- Core team
- Quick screen
- ID SMEs, questions

Screening Matrix

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

Evaluation Matrix for IgCC 5/3/2010

GB Practice	Addressed in existing regulation?	Language + procedures unambiguous? (little room for varying interpretation)			Will adherence to language produce desired outcome?		Qualitative TBL Benefits			X-ref to other GB Practices				
# Pg Item	If yes: where, intent clear, who enforces, effectiveness?	Requirement to satisfy GB Practice	Required submittal info	Enforcement (plan rvw, field inspection)	Is the intent clear?	Will language get you there? (e.g. Does it work?)	People	Economy	Environment	# Pg Item	Recommendation*	Is this trackable?	Should we track?	Other Notes

City of Fort Collins

Planned Approach

Pass 1: Staff
- Core team
- Quick screen
- ID SMEs, questions

Pass 2: Staff +
- Core team + SMEs
- Develop recommendations
- Document

City of Fort Collins

Planned Approach

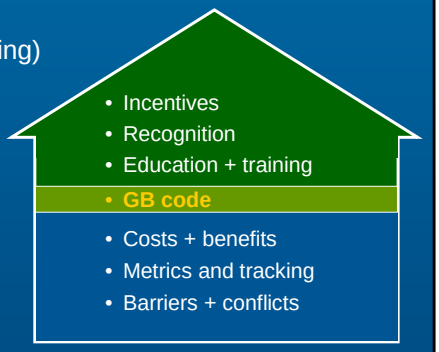
Pass 1: Staff
- Core team
- Quick screen
- ID SMEs, questions

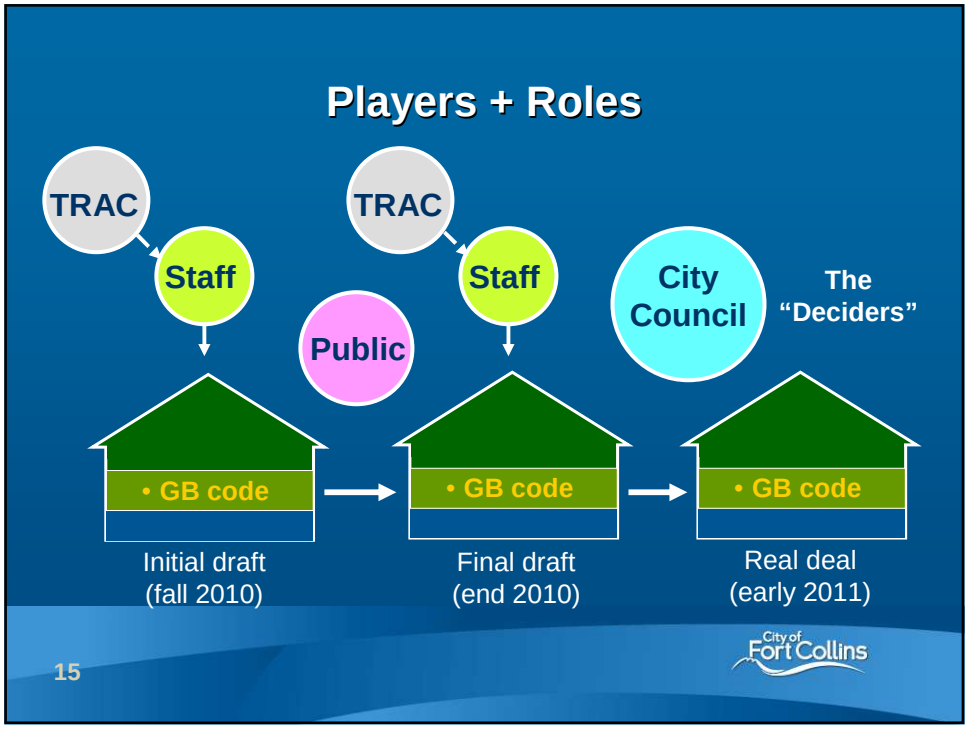
Pass 2: Staff +
- Core team + SMEs
- Develop recommendations
- Document

Pass 3: Staff + C-TRAC
- Discuss + refine Pass 2 recommendations
- Discuss other GB Practices

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




Players + Roles
TRAC
Staff
TRAC
Staff
Public
City Council
The "Deciders"
• GB code
• GB code
• GB code
Initial draft (fall 2010)
Final draft (end 2010)
Real deal (early 2011)
15
City of Fort Collins

IgCC in Perspective

1. Standards/ Codes Comparisons

2. Benchmark Project Pilot

C-TRAC Meeting
May 5, 2010

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Engineering Sustainable Change

Standards Comparison Process and Follow-Up

Today	• Introduce 2 tasks and encourage feedback; email tool for review
May 10	• TRAC feedback deadline
May 12	• BG emails next iteration for review
May 19	• BG presents next iteration

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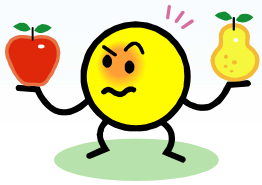
Task 1. Standards Comparison

- Intent: Grounding/Orientation
  - How does IgCC compare with more familiar references?
  - Where are the similarities?
  - Where are the differences?



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Standards/Codes/Rating Systems

- 2009 International Green Construction Code
- ASHRAE 189.1
- LEED Version 3.0
- ASHRAE 90.1-2007
- 2009 International Energy Conservation Code
- Other City codes/regulations with content overlap

IgCC
SAFE & SUSTAINABLE BY THE BOOK

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Comparison Overview

- Spreadsheet tool tour
- Evolving process
- Key questions for feedback:
  - *Does the comparison structure make sense?*
  - *Have we included the key points of comparison?*
  - *Is this helpful?*

Commercial Standards Comparison Summary

	International Green Construction Code	ASHRAE 189.1	LEED Version 3.0	IECC
GENERAL/PROCESS CATEGROIES				
Summary: objectives, history, players				
Structure: points, paths, compliance				
Open to Non-conventional				
Renovations/Additions				
Subdivisions				
Size Adjustments				
Tiers				
Documentation/ verification testing				
Local Adjustments				
GREEN BUILDING CATEGORIES				
I. Site Development/Land Use				
Mandatory				
Options				
II. Material Resource Efficiency				
Mandatory				
Options				
III. Energy Efficiency/Atmospheric Quality				
Mandatory				
Options				
IV. Water Efficiency				
Mandatory				
Options				
V. Indoor Environmental Quality				
Mandatory				
Options				
VI. Education/O&M				
Mandatory				
Options				

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Task 2. Benchmark Project Pilot

- Intent: Grounding/orientation/quantification
  - Where does a real FC project rank compared to various standards?
  - What is necessary to comply with IgCC?
  - Where are the biggest challenges?
  - What are the impacts on design/construction costs?
  - How would the performance change?

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Task 2. Benchmark Project Pilot, cont'd

- Inform mechanics, identify glitches in IgCC
- Develop process for benchmarking
- Also an evolving project

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Performance Categories

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Performance References

- Existing City codes and regulations
- 2009 International Codes – 2010 adoption by City
- Actual practice (as designed and/or built) for each project
- IgCC compliance

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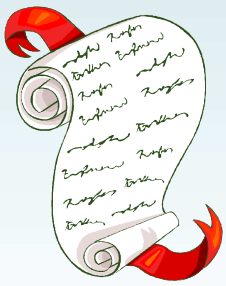
Wish List: Pilot Project Characteristics

- Built
- Medium-sized (25,000 - 50,000 sf) Office Building
- Today's mainstream construction practices



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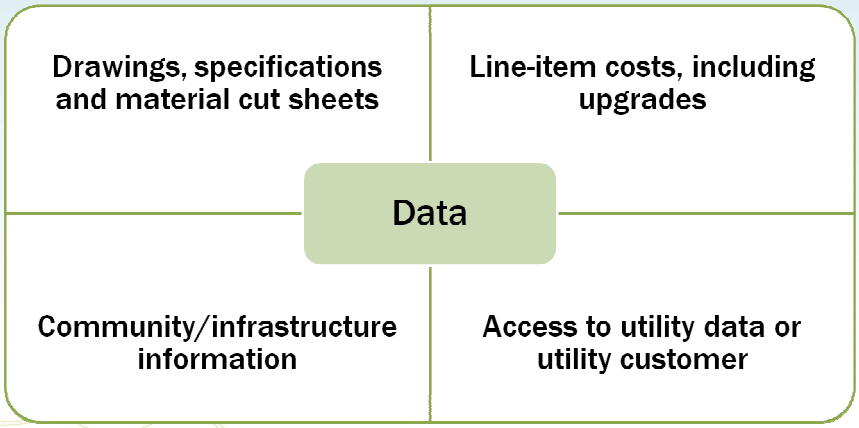
Wish List: Pilot Project Characteristics, cont'd



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Commercial Pilot Project Selection

- Today??
- Or follow-up no later than Wednesday, May 12th

Steve Brunner
Brendle Group
970-207-0058
sbrunner@brendlegroup.com

- Brownie points available!!!

brendle GROUP

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