

FLOOD RESISTANT STANDARDS WORKGROUP REPORT TO THE FLORIDA BUILDING COMMISSION



April 29, 2009

Tallahassee, Florida

Facilitation, Meeting and Process Design By



CONSENSUS SOLUTIONS

Report By Jeff A. Blair
FCRC Consensus Center
Florida Conflict Resolution Consortium
Florida State University



jblair@fsu.edu
<http://consensus.fsu.edu>

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Codes & Standards, 2555 Shumard Oak Blvd., Tallahassee, FL 32399, (850) 487-1824.

FLORIDA BUILDING COMMISSION

FLOOD RESISTANT STANDARDS WORKGROUP REPORT

OVERVIEW

At the request of the Florida Division of Emergency Management (DEM) the Florida Building Commission convened a Flood Resistant Standards Workgroup charged with developing recommendations for integrating the International Code Series (I-Codes: IBC, IRC, etc.) flood damage-resistant provisions (for buildings and structures) in the Florida Building Code. FEMA has worked with ICC for the past 10 years on flood standards for buildings that are consistent with the requirements of the National Flood Insurance Program (NFIP), and the current I-Codes reflects these standards. When the 2001 Florida Building Code (First Edition) was developed a policy decision was made, primarily for administrative reasons, to eliminate flood standards from the foundation model code and continue the practice of relying on Floodplain Management Ordinances adopted by communities participating in the National Flood Insurance Program. In addition, the DEM has requested that the policy be reviewed, that identified administrative issues be resolved, and that the I-Code flood standards be retained in the 2010 FBC. The Commission will conduct this facilitated stakeholder process beginning in March of 2009, with adopted recommendations submitted as code amendments for the 2010 Florida Building Code Update process.

Raul L. Rodriguez, AIA, Chair of the Florida Building Commission, has made the following appointments to the Flood Resistant Standards Workgroup. Members are charged with representing their stakeholder group's interests, and working with other interest groups to develop consensus package(s) of recommendations for submittal to the Commission.

Member	Representation
Tom Allen	Building Officials Association of Florida (BOAF)
Miles Anderson	Florida Department of Emergency Management (FDEM)
Bob Boyer	Local Government
Gene Chalecki	Florida Department of Environmental Protection (FDEP)
Tom Lanese	Florida Floodplain Managers Association (FFMA)
Eddie Fernandez	Miami-Dade County Code Compliance Office
Jack Glenn	Florida Home Builders Association (FHBA)
Bud Plisich	Federal Emergency Management Agency (FEMA Region IV)
Tim Reinhold	Institute of Building Home Safety (IBHS)
Jim Schock	City of Jacksonville
Tim Tolbert	Santa Rosa County

Meeting Schedule, Starting Time, and Location

March 25, 2009	9:00 AM	Tampa, Florida	RACCA Building
April 29, 2009	9:00 AM	Tallahassee, Florida	Betty Easley Conference Center
May 29, 2009	9:00 AM	Tallahassee, Florida	Betty Easley Conference Center

REPORT OF THE APRIL 29, 2009 MEETING

Opening and Meeting Attendance

The meeting started at 9:00 AM, and the following Workgroup members were present: Tom Allen, Miles Anderson, Bob Boyer, Gene Chalecki, Jack Glenn, Tom Lanese, Bud Plisich, Warner Chang alternate for Tim Reinhold, Jim Schock, Tim Tolbert, and Philip Wisely

Members Absent

Eddie Fernandez

DCA Staff Present

Rick Dixon, Mo Madani, and Jim Richmond.

Project Technical Consultant

Rebecca Quinn

Meeting Facilitation

The meeting was facilitated by Jeff Blair from the FCRC Consensus Center at Florida State University. Information at: <http://consensus.fsu.edu/>



Project Webpage

Information on the project, including agenda packets, meeting reports, and related documents may be found in downloadable formats at the project webpage below:

<http://consensus.fsu.edu/FBC/Flood-Resistant-Standards.html>

Agenda Review and Approval

The Workgroup voted unanimously, 11 - 0 in favor, to approve the agenda as presented including the following objectives:

- ✓ To Approve Regular Procedural Topics (Agenda and Summary Report)
- ✓ To Review Draft Code Provisions for Implementing Workgroup's Recommendations
- ✓ To Identify Any Additional Issues and Options Regarding Integrating and Adopting Flood Resistant Standards in the Florida Building Code
- ✓ To Discuss and Evaluate Level of Acceptability of Proposed Options
- ✓ To Consider Public Comment
- ✓ To Identify Needed Next Steps: Information, Assignments, and Agenda Items for Next Meeting

March 25, 2009 Facilitator's Summary Report Review and Approval

Jeff Blair, Commission Facilitator, asked if any members had corrections or revisions to the March 25, 2009 Report, and none were offered.

The Workgroup voted unanimously, 11 - 0 in favor, to approve the March 25, 2009 Facilitator's Summary Report as presented.

Identification, Discussion and Evaluation in Turn of Issues and Options Regarding Integrating Flood Resistant Standards in the Florida Building Code

Members were requested to identify, discuss and evaluate any additional options regarding development of flood resistant standards for the Florida Building Code recommendations for submittal to the Commission. In addition, members of the public were invited to provide input on same.

For each of the key topical issue areas, member's were asked to review the ranking results from Meeting I and to identify any additional options for the Workgroup to consider. Issues and Options were organized to address the key issues regarding integration of Flood Resistant Standards into the Code. A preliminary list of options was drafted using the results of the pre-meeting survey, and the Workgroup was requested to discuss and add any additional relevant options they deem appropriate. Members and staff were encouraged to request any information they feel necessary for evaluating an issue, option or range of options. Options with 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus draft recommendations. Members of the public were also invited to provide feedback and options for evaluation.

The only outstanding key issues was how flood maps should be handled regarding the integration of flood resistant standards in the Code. The members agreed to the following:

Adoption of flood maps and administrative procedures shall be at the local level.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	11	0	0	0

Threshold Issues Evaluation Results

On balance, should the Commission adopt/incorporate Flood Resistant Standards into the Florida Building Code.

Summary of Member's Discussions:

Members felt that the Commission should incorporate flood resistant standards into the Florida Building Code—within each of the respective codes.

What should the Base Code for FBC Flood Provisions be—Should the base standards be the provisions found in the IBC including ASCE 24.

Summary of Member's Discussions:

Members felt that the I-Code provisions should be used as the basis for inclusion of flood provisions relevant to buildings and structures into each of the respective codes (FBC). In addition, Members supported adopting ASCE 24 (Flood Resistant Design and Construction Standards) by reference as the flood provisions in each of the codes (FBC). Members agreed that on balance, ICC provisions should be retained unless there is a real need for a Florida Specific Requirement.

Should the Workgroup focus on only buildings and structures for the 2010 Code Cycle.

Summary of Member's Discussions:

Members felt the Code should only contain provisions for building and structures and other flood provisions should be handled at the local level via a local companion ordinance.

How should Appendix G (IBC—Flood Resistant Construction) be handled.

Summary of Member's Discussions:

Members felt that on balance this is an issue for local jurisdictions and would be handled between the Code flood standards provisions and the companion ordinance approach.

Should local jurisdictions be allowed to adopt higher standards than the base standards.

Summary of Member's Discussions:

Members supported allowing local jurisdictions to adopt higher standards for flood resistance provision to address local concerns within the Code (based on local flood studies), to ensure local's ability to be eligible for the NFIP's Community Rating System.

What should the strategy be for handling inconsistencies between the Coastal Construction Control Line (CCCL) and flood provisions.

Summary of Member's Discussions:

Members felt that inconsistencies between the CCCL and V Zone requirements shall continue to be resolved at the local level, and on a case-by-case basis.

Should variances to flood resistant standards be allowed, and if so how.

Summary of Member's Discussions:

Members agreed that the Code does not allow variances, and local jurisdictions would handle this within the context of the companion ordinance approach.

Should it be permissible for flood resistant standards to be administered outside of building departments.

Summary of Member's Discussions:

Members felt that on balance this is an issue for local jurisdictions and it would be handled by the combination between flood standards provisions incorporated in the Code and the companion ordinance.

Options Achieving Consensus Level of Support

The I-Code provisions should be used as the basis for inclusion of flood provisions relevant to buildings and structures into each of the respective codes (FBC). Members agreed that on balance, ICC provisions should be retained unless there is a real need for a Florida Specific Requirement.

Adopt ASCE 24 (Flood Resistant Design and Construction Standards) by reference as the flood provisions in each of the codes (FBC).

Allow local jurisdictions to adopt higher standards for flood resistance provision to address local concerns within the Code (based on local flood studies), to ensure local's ability to be eligible for the NFIP's Community Rating System.

Seek a legislative exception so that local CRS (higher flood resistant standards) would not be subject to the local technical amendment requirements of the Code, subject to a consistency review with updated editions of the code.

Develop a model “companion” ordinance that includes NFIP-consistent administrative provisions and includes NFIP requirements for development other than buildings and structures that are not within the scope of the Code. Also, include a list of more stringent requirements that local jurisdictions could consider for possible adoption.

Inconsistencies between the CCCL and V Zone requirements shall continue to be resolved at the local level, and on a case-by-case basis.

A interagency group should be formed to develop a strategy for determining whether any inconsistencies between the CCCL and V Zone requirements can be resolved by code changes in the next code cycle (i.e., coordination between FBC, DEP, DEM, FEMA).

Adoption of flood maps and administrative procedures shall be at the local level.

Review and Discussion of Draft Code Language for Implementing Workgroup’s Preliminary Recommendations

Members were provided with proposed draft language for integration of flood resistant standards into the Florida Building Code in advance of the meeting. Drafts were provided as follows: 2009, FBC, Building; 2009 FBC, Residential; 2009 FBC, Existing Building; 2009 FBC, Mechanical; 2009 FBC, Plumbing; and, FBC 2009, Fuel Gas.

During the meeting members were asked to identify any issues regarding the proposed integration text, and then to acceptability rank any issues with the draft integration language by code in turn, and then to vote for approval of the language as modified by code in turn.

Workgroup Actions:

Motion—The Workgroup voted unanimously, 11 – 0 in favor, to approve the draft code integration language as revised by Workgroup actions, for integration of flood resistant standards in the 2009 FBC, Building.

Motion—The Workgroup voted unanimously, 11 – 0 in favor, to approve the draft code integration language as revised by Workgroup actions, for integration of flood resistant standards in the 2009 FBC, Residential.

Motion—The Workgroup voted unanimously, 11 – 0 in favor, to approve the draft code integration language as revised by Workgroup actions, for integration of flood resistant standards in the 2009 FBC, Existing Building.

Motion—The Workgroup voted unanimously, 11 – 0 in favor, to approve the draft code integration language as revised by Workgroup actions, for integration of flood resistant standards in the 2009 FBC, Mechanical, 2009 FBC, Plumbing, and 2009 FBC, Fuel Gas.

Summary of Key Issues Regarding Code Integration:

The Workgroup identified and agreed to a strategy for key issues regarding code language for integrating flood resistant standards in the respective codes (2009 FBC, Building, residential. Existing Building, Mechanical, Plumbing, and Fuel Gas). The issues and respective strategies are as follows:

Integrate flood resistant standards and ASCE 24 in the High Velocity Hurricane Zone (HVHZ).

The Workgroup agreed that staff would consult with representatives from the HVHZ regarding the integration of flood standards in the HVHZ, and bring recommendations to the Workgroup at the May 2009 meeting.

Integrate swimming pools built in flood hazard areas and designated floodways with the flood provisions of the code.

The Workgroup agreed that on balance ICC flood resistant standards language should be used for swimming pools. The Workgroup agreed that staff will consult with pool industry representatives and bring recommendations to the Workgroup at the May 2009 meeting.

Ensure flood resistant standards in the code are integrated within sections 419, 420 and 423 (state agency standards integration).

The Workgroup agreed that on balance flood resistant standards should be integrated in the state agency regulations as appropriate for sections 419, 420 and 423. Staff will consult with relevant state agency representatives and bring recommendations to the Workgroup at the May 2009 meeting.

Provide a tie-back between the Code and the flood maps adopted by local jurisdictions in their floodplain management ordinance.

The Workgroup agreed that on balance there should be a tie-back between the Code and flood maps adopted by local jurisdictions. Staff will provide recommendations to the Workgroup at the May 2009 meeting.

Provide a tie-back between the Code and the floodplain management ordinance adopted by local jurisdictions.

Provide a definition of Floodplain Management Ordinance.

The Workgroup agreed that on balance there should be a tie-back between the Code and floodplain management ordinances adopted by local jurisdictions. Staff will provide recommendations to the Workgroup at the May 2009 meeting.

Evaluate the statutory definition of “Substantial Improvement” for impacts regarding adopting flood resistant standards in the Florida Building Code.

Jim Richmond, DCA attorney, will review the issue and bring recommendations to the Workgroup at the May 2009 meeting.

The results of the ranking exercises and relevant comments and discussion are included as Attachment 3 of this Report.

(Attachment 3—Flood Standards Integration Worksheet)

General Public Comment

Members of the public were invited to provide the Workgroup with general comments. In addition, members of the public spoke on each of the substantive discussion issues before the Workgroup throughout the meeting.

Public Comment:

No public comment was offered.

Review of Workgroup Delivery and Meeting Schedule

The Workgroup will be meeting as follows:

March 25, 2009 in Tampa; April 29, 2009 in Tallahassee; May 29, 2009 in Tallahassee

The delivery schedule is as follows:

Evaluate Adoption of Flood Standards in the Florida Building Code

Schedule:

Workgroup appointed	12/08
DEM contract with FSU/FCRC	1/09
Workgroup meetings	3/25
	4/29
	5/29
Recommendations to Commission	6/09
Proposals for 2010 FBC submitted for adoption	12/09

Staff Assignments

- Flood maps in local ordinance tie-back to the Building Code.
- Floodplain management ordinance definition in Code and provide tie-back with code and local floodplain management ordinances.
- Consult with representatives from the HVHZ regarding the integration of flood standards in the HVHZ.
- Consult with pool industry regarding flood standards and swimming pools.
- Consult with relevant state agency representatives regarding flood standards and state agency regulations.
- Evaluate the statutory definition of “Substantial Improvement” for impacts regarding adopting flood resistant standards.

Adjournment

The Workgroup voted unanimously, 11 – 0 in favor, to adjourn at 3:00 PM.

ATTACHMENT 1

MEETING EVALUATION RESULTS

April 29, 2009—Tallahassee, Florida

Average rank using a 0 to 10 scale, where 0 means totally disagree and 10 means totally agree.

1. Please assess the overall meeting.

- 9.8 The background information was very useful.
- 9.5 The agenda packet was very useful.
- 9.6 The objectives for the meeting were stated at the outset.
- 9.8 Overall, the objectives of the meeting were fully achieved.

2. Do you agree that each of the following meeting objectives was achieved?

- 9.5 Identification of Issues and Options Regarding Incorporating Flood Standards in the Code.
- 9.6 Evaluation of Options Regarding Incorporating Flood Resistant Standards in the Code.
- 9.8 Identification of Next Steps.

3. Please tell us how well the Facilitator helped the participants engage in the meeting.

- 9.7 The members followed the direction of the Facilitator.
- 10.0 The Facilitator made sure the concerns of all members were heard.
- 10.0 The Facilitator helped us arrange our time well.
- 9.8 Participant input was documented accurately.

4. Please tell us your level of satisfaction with the meeting?

- 9.8 Overall, I am very satisfied with the meeting.
- 9.9 I was very satisfied with the services provided by the Facilitator.
- 9.8 I am satisfied with the outcome of the meeting.

5. Please tell us how well the next steps were communicated?

- 9.7 I know what the next steps following this meeting will be.
- 9.8 I know who is responsible for the next steps.

6. What did you like best about the meeting?

- Great discussions on the topics
- Great support from staff
- Very smooth meeting
- Knowledge of attendees
- Organization
- Progress toward goal
- Ordered
- Communication was very good

7. How could the meeting have been improved?

- It couldn't
- Time management per item
- Move meeting to Orlando
- Hooters girls

8. Member Evaluation Comments.

- Great job from Jeff and staff
- Jeff, great job again

ATTACHMENT 2
MEETING ATTENDANCE—PUBLIC

Public Meeting Attendance
Name
Chris Jones
Tom Wolf
Joy Duperault

ATTACHMENT 3
FLOOD STANDARDS CODE LANGUAGE INTEGRATION
EVALUATION RESULTS

The following scale was utilized for the ranking exercises:

Acceptability Ranking Scale	<i>4 = acceptable, I agree</i>	<i>3 = acceptable, I agree with minor reservations</i>	<i>2 = not acceptable, I don't agree unless major reservations addressed</i>	<i>1 = not acceptable</i>
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Options with 75% or greater number of 4's and 3's in proportion to 2's and 1's shall be considered consensus draft recommendations.

Add Flood Provisions to the 2009 FBC, Building[®]
(April 29, 2009)

Notes:

- Underlining and ~~strike thru~~ show change to the 2009 IBC
- Text added/deleted by Florida is prefaced with “ADDED IN FBC” or “DELETED IN FBC”
- The handout provided by FEMA showed sections that provided context for the flood provisions; those sections not shown below.
- *Italicized texts are staff notes (shown in blue).*

- Pending a decision on location, for simplicity, the section number 1612 used for the flood provision in the IBC is retained here. Because the flood provisions apply statewide, it may be appropriate that they be retained in Sec. 1612, before the HVHZ sections (which would be renumbered).

Member's Comments and Reservations (April 29, 2009):

MM: I do not recommend renumbering the HVHZ sections. These sections are referenced and used throughout the Code. It will be best to renumber 1612 of the IBC. I am just looking at it from the workload stand point.

Incorporate flood provisions in a separate chapter, with pointers in appropriate places where the base code has flood provisions to point to the separate chapter.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	1	2	5	3

Member's Comments and Reservations (April 29, 2009):

JS – from enforcement perspective, create a new chapter with all the flood provision in one chapter, not throughout. We talked about how the BO isn't always the FPM, and they may not be familiar with the code. Makes simpler for plan reviewer. If code gets modified, more open to modifications and attack. Chapter 1 is the way to lay out how to use the additional chapter.

TT – like chapter idea, but should we put something in other chapters to point back to the flood chapter?

JG – don't disagree, but long range maintenance of FBC is a concern, if we start with IBC every year, where flood language is in IBC, need to point back, easier to maintain the special chapter and make sure all cross references carry forward. Leaning toward using the ICC language with minimal Florida specific requirements, and only when completely necessary.

MM – understand JG, but from staff perspective. Prefer to keep as in I-Codes and not have to modify each edition. If we have separate chapter staff will have to maintain the code. Best to allow ICC to maintain and we update with subsequent code updates.

MA – see both sides. Expect better enforcement with the separate chapter approach.

TA – like chapter section, if see where changes in IBC are. Will eliminate having to track all changes if retain them in base code. Do agree with putting tags in where ever have needed.

TL – reiterate JS, notice that some managers are unaware where to get flood provisions.

BB – like JS's suggestion.

JG – could have conflicting language between them, or create problems for staff to integrate, will have to delete parts.

MM – my understanding of the suggestion is to put all flood provisions into a separate chapter. IBC is formatted in specific section, we'd have to reserve every place or insert pointers. They're coming from everywhere, would have to have scoping language to capture subject matter. Staff will have to maintain. Also, could come up with a reference document, electrical TAC noted there are electrical provisions everywhere, could have a list of sections. They came up with a section that lists where all the requirements are listed. Still, the reference list will have to be maintained.

JG – the reference list MM referred to was originally submitted as a code change, it is an approach. Years to come, as ICC continues to evolve, will make maintenance of special chapter difficult. If talking about 1612, part of it would move, part would stay. If mod 1603 or 1605, would take out part of a section, balance needs to stay for code to work, has content related to design. Have to put a "see also". Prefer let ICC maintain, then we just have to maintaining Florida specifics.

MA – the guide MM mentioned, is it set up with key words. MM – no, it is a list of section numbers and titles, so easy to trace. MA – that would get us what we need to be so people know where the requirements are. JS described the list of sections. Gives a map.

JS – just envisioned a section with pointer to new chapter. Can be persuaded to the cross reference strategy, not quite as happy.

TT – is there a huge difference between IBC and 44 CFR? RQ – no.

Retain ICC format, modify as appropriate for Florida and develop cross-reference list, similar to Chapter 27 for the Electrical Code.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	10	1	0	0

Member's Comments and Reservations (April 29, 2009):

JS – reservation because a little easier to use the separate chapter approach.

This or similar phrasing appears in several places. The last phrase implies a determination has been made that local ordinances that may contain provisions that affect the design and construction of buildings, are not amendments to the code:

This code specifically defers to the authority granted to local government by Title 44 CFR, Sections 59 and 60. This code is not intended to supplant or supercede local ordinances adopted pursuant to that authority, nor are local floodplain management ordinances to be deemed amendments to the code.

Member's Comments and Reservations (April 29, 2009):

JR – once flood is in the code, then modifications in local ordinance would be deemed a modification to the code. Therefore we do need some additional provision to allow modifications through local ordinance. That language has not been tested.

JG – We discussed a statutory change recommendation at the last meeting discussion. Easily could develop consensus to request legislature to provide relief. The commission's report needs to request this authority.

Jeff B – that's consistent with meeting #1 strategy.

TT – in agreement.

Jim R – we'll have two sessions to get it in before the 2010 code. Two things we need are process for local as well as the automatic sunset every three years. Wouldn't expect concerns.

MM: The language with regard to 44 CFR, Section 59 and 60, was included to address and make it clear that the current FBC does not provide for flood requirements and for that amendments at the local level to subjects not addressed by the Code are not considered technical amendment.

However, for the 2010 FBC and by including flood provisions, this language will go away and should be proposed for removal (no longer needed).

Additional review is necessary to determine if sufficient linkage is provided between HVHZ sections and ASCE 24.

Member's Comments and Reservations (April 29, 2009):

MM: HVHZ - currently, there is no special provisions in the FBC for the HVHZ with regard to flood. Item 3 above is applicable to all counties including Miami-Dade and Broward (HVHZ) and I am not sure whether there is a need for special provisions with regard to flood in the HVHZ. The approach to the HVHZ would be to apply the proposed flood provisions to the HVHZ by noting in the scope of the applicable chapters of the code, the application to the HVHZ through and exception. This is similar to the application of the termite provisions to the HVHZ (see below):

1801.1 Scope.

The provisions of this chapter shall apply to building and foundation systems in those areas not subject to scour or water pressure by wind and wave action. Buildings and foundations subject to such scour or water pressure loads shall be designed in accordance with Chapter 16.

Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Sections 1816 through 1834.

JBlair – Eddie said even in HVHZ even residential requires design, so they don't want to have anything that implies that design for flood does not require design.

JG – Commission took position HVHZ was for wind design. Looking at R301.2.4 proposal in FBC,

Residential, where proposal links back to 24 if in HVHZ, think that solves the problem, meets the need Eddie identified for residential design. If they want more, then need to hear from them. Requirement for flood in HVHZ should be consistent for the state.
MM – the exception doesn't obviate requirement to comply with the rest of the code.

Chapter 1 Administrative

ADDED IN FBC: 102.2.2 Residential buildings or structures moved into or within a county or municipality shall not be required to be brought into compliance with the state minimum building code in force at the time the building or structure is moved, provided:

1. The building or structure is structurally sound and in occupiable condition for its intended use;
2. The occupancy use classification for the building or structure is not changed as a result of the move;
3. The building is not **substantially remodeled**; [*“substantially remodeled” is not defined in the FBC nor in statute*] *Note: This Issue has been added to the Worksheet.*
4. Current fire code requirements for ingress and egress are met;
5. Electrical, gas and plumbing systems meet the codes in force at the time of construction and are operational and safe for reconnection; and
6. Foundation plans are sealed by a professional engineer or architect licensed to practice in this state, if required by the Florida Building Code, Building for all residential buildings or structures of the same occupancy class.

Member's Comments and Reservations (April 29, 2009):

MM – whole section came from Florida statute. We looked at what's in 553 and took language verbatim into Chapter 1. “Substantially remodeled” isn't defined in the statute, hasn't been a problem. Opinion that this does not create conflict with SI requirement.

JG – If not defined in code, not defined in statutes – applies only to moved buildings.

MA – we've run into issues, if elevated building on existing lot, Miami-Dade treats it as a “moved” building. We've had grant-funded elevations, that meets the flood requirements, but not all the rest, e.g., wind.

TT – would interpret moving new foundation to have to comply with flood? Yes.

ADDED IN FBC: 102.2.5 Each enforcement district shall be governed by a board, the composition of which shall be determined by the affected localities. At its own option, each enforcement district or local enforcement agency may promulgate rules granting to the owner of a single-family residence one or more exemptions from the Florida Building Code relating to:

Remove Sec. 102.2.5 from the code; jurisdictions that do this can rely on the statute [553.08(2) thru (4)]

	4=acceptable	3= minor reservations	2=major reservations	1= not acceptable
Initial Ranking 4/29/09	2	5	3	0
Revised: ensure remains in statute	5	3	2	0

Member’s Comments and Reservations (April 29, 2009):

MM: This section is outdated. There is no such “board” available at the local level. This is an outdated language. Advise proposing that this section be removed from the Code.

MM this is from 553 (or 489). It calls for a board, but a board is not required. Suggest we take 102.2.5 out if we can.

JR – if still in the statute, could take it out and just rely on the statute if any AHJ wants to do it. No objection to taking it out.

RD – intent is to avoid going to different documents/sources.

TT – am I hearing there are no boards established pursuant to this? RD – don’t think so.

JS – had our attorneys look at it, determined the city council is in essence the board in this capacity.

TT – have heard Board of Adjustments and Appeals making these decisions.

JS – reservation – we have used this provision, as long as in the statute, and as long as the intent is that the Commission would not request remove from the statute, I could support.

TT – if we take out of code, can’t ask for declaratory statement from Commission.

JR – Commission has issued declaratory statement on statute issues.

WC – reservation, if exercised per statute, the home is still subject to damages.

BP – initially, clearer in the code, but this isn’t in ICC.

MM – since it is statute, we shouldn’t amend it at our level. Seems we should only retain it or move it out.

JR – MM right, couldn’t over ride with different language. Maybe recommend a legislative change for this as well, to protect NFIP. If locals use this, could put status at risk. Would be a good recommendation to include this authority shall not be issued to exempt flood standards.

JG – looking at statute – inter-local agreements, form enforcement districts. Seems to require.

JR – further down there’s authority for local enforcement agency (in 3).

JB – summary of issue: decision remove from code, request statutory clarification “not used to deviate from flood” thus not lowering the standards of the state.

Recommend Commission recommend statutory change 553.80 to clarify that this provision not be used to deviate from flood requirements

	4=acceptable	3= minor reservations	2=major reservations	1= not acceptable
Initial Ranking 4/29/09	9	2	0	0

Member’s Comments and Reservations (April 29, 2009):

No additional comments offered.

[Option #1] 1. Addition, alteration or repair performed by the property owner upon his or her own property, provided any addition or alteration shall not exceed 1,000 square feet (93 m2) or the square footage of the primary structure, whichever is less, unless such property is located in a flood hazard area and the addition, alteration or repair is determined to be substantial improvement or

repair of substantial damage, as such terms are defined in the floodplain management ordinance adopted by the local government.

Member’s Comments and Reservations (April 29, 2009):

MM: This section is outdated. There is no such “board” available at the local level. This is an outdated language. Advise proposing that this section be removed from the Code.

*[Option #2]*1. Addition, alteration or repair performed by the property owner upon his or her own property, provided any addition or alteration shall not exceed 1,000 square feet (93 m²) or the square footage of the primary structure, whichever is less, except the exemption shall not apply if such property is located in a flood hazard area and the addition, alteration or repair is determined to be substantial improvement or repair of substantial damage, as such terms are defined in the floodplain management ordinance adopted by the local government.

Member’s Comments and Reservations (April 29, 2009):

MM: This section is outdated. There is no such “board” available at the local level. This is an outdated language. Advise proposing that this section be removed from the Code.

2. Addition, alteration or repairs by an owner within a specific cost limitation set by rule, provided the total cost shall not exceed \$5,000 within any 12-month period.
3. Building and inspection fees.

Each code exemption, as defined in this section, shall be certified to the local board 10 days prior to implementation and shall be effective only in the territorial jurisdiction of the enforcement district or local enforcement agency implementing it.

ADDED IN FBC: 102.7 Relocation of manufactured buildings.

1. Relocation of an existing manufactured building does not constitute an alteration.
2. A relocated building shall comply with wind speed requirements of the new location, using the appropriate wind speed map. If the existing building was manufactured in compliance with the Standard Building Code (prior to March 1, 2002), the wind speed map of the Standard Building Code shall be applicable. If the existing building was manufactured in compliance with the Florida Building Code (after March 1, 2002), the wind speed map of the Florida Building Code shall be applicable.
3. A relocated building shall comply with the flood hazard area requirements of the new location and the FLOOD requirements of THIS CODE.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	11	0	0	0

Member’s Comments and Reservations (April 29, 2009):

MM – reason we included, these buildings permitted for fastest mile, by going to new code with 3 second, how do deal with need to allow to move within wind zone approved at time of permit. If

approved to move in 100 mph, allow to continued.

JG – agree with Mo, #2 is specific for wind. Since this entire section is Florida specific, beneficial to add 3 to make it clear when moved into flood.

JS – agree would be captured anyway, but agree it adds clarity.

MM – if you keep #3– modify to “this code”.

THIS SECTION IS FROM IRC (NOT FBC, RESIDENTIAL): 105.3.1.1 Substantial improvement or substantial damage of Substantially improved or substantially damaged existing buildings in flood hazard areas. For applications for reconstruction, repair, rehabilitation, addition or other improvement of existing buildings or structures located in flood hazard areas an area prone to flooding as established by Section 1612.3 Table R301.2(1), the building official shall examine or cause to be examined the construction documents and shall prepare a finding with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its predamage condition. The finding shall be used to make the determination required in the floodplain management ordinance adopted by the local government. If the building official finds that the value of proposed work equals or exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the finding shall be provided to the board of appeals for a determination of substantial improvement or substantial damage. Applications determined by the board of appeals to constitute substantial improvement or substantial damage shall require all If the resulting determination is that the proposed work constitutes substantial improvement or repair of substantial damage as such terms are defined in the floodplain management ordinance, then the proposed work and the existing portions of the entire building or structure shall comply with to meet the requirements of the Florida Building Code R322.

Members agreed to capture this in the Existing Building Code.

Member’s Comments and Reservations (April 29, 2009):

MM: 105.3.1.1. It is best to include this section in the FBC, Existing Building. There are similar provisions in the Existing Building Code which can be easily modified to add the proposed change.

MM – everything on existing buildings, including additions, go to EB. Will delete the reference to 161 in 3109. SI as defined in the statute will be different than defined in the code?

RQ – definition of SI in statute is inconsistent with NFIP.

RD – still zone in statute.

JR – need to look, definition in the statute is limited application by scope. Will take a look at statutory definition, and recommend back to work group regarding statutory change.

JS – EB is area definition.

TT – concern that building code has “substantial structural damage” flood has SI. Has gotten better, but still inconsistent.

DELETED IN FBC: 406.2.5 Site plan. ~~The construction documents submitted with the application for permit shall be accompanied by a site plan showing to scale the size and location of new construction and existing structures on the site, distances from lot lines, the established street grades and the proposed finished grades and, as applicable, flood hazard areas, floodways, and design flood elevations; and it shall be drawn in accordance with an accurate boundary line survey. In the case of demolition, the site plan shall show construction to be demolished and the location~~

and size of existing structures and construction that are to remain on the site or plot. The building official is authorized to waive or modify the requirement for a site plan when the application for permit is for alteration or repair or when otherwise warranted.

~~**106.2.5.1 Design flood elevations.** Where design flood elevations are not specified, they shall be established in accordance with Section 1612.3.1.~~

Commission should retain this section from the I-Codes, 106.2.4 Site plan.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	11	0	0	0

Member’s Comments and Reservations (April 29, 2009):

JG – prefer to keep as much consistency with I-Codes as possible, why delete.

MM – authority to waive may be questionable.

TA – we have similar language in model administrative chapter by BOAF, there are numerous times that a site plan isn’t needed, small accessory. Doesn’t reduce the requirement to comply, just what is submitted for site plan.

JG – waive option is very limited, agree “otherwise warranted” maybe a problem. EB uses Ch. 1.

MA – when we do wind retrofit mitigation, don’t need a site plan.

GC – what happens to 106.3.5.1 – keep it? Yes.

In section on construction documents, have a pointer to 1612 for flood standards.

ADDED IN FBC: 106.3.5 Minimum plan review criteria for buildings. The examination of the documents by the building official shall include the following minimum criteria and documents: a floor plan; site plan; foundation plan; floor/roof framing plan or truss layout; and all exterior elevations:

Commercial Buildings:

Building

1. Site requirements:

Parking

Fire access

Vehicle loading

Driving/turning radius

Fire hydrant/water supply/post indicator valve (PIV)

Set back/separation (assumed property lines)

Location of specific tanks, water lines and sewer lines

Flood hazard areas, flood zones, and DESIGN flood elevations

8. Structural requirements shall include:

Soil conditions/analysis

Termite protection

Design loads

Wind requirements

Building envelope

Structural calculations (if required)

Foundation

Flood requirements, lowest floor elevations, enclosures, materials

Wall systems

Floor systems

Roof systems

Threshold inspection plan

Stair systems

Given the nature of the following lists, adding plan review criteria related to flood requirements for electrical, plumbing, and mechanical isn't easy. Simply stating "flood elevation" should be enough to trigger check of the requirements.

Electrical

1. Electrical:

Wiring

Services

Feeders and branch circuits

Overcurrent protection

Grounding

Wiring methods and materials

GFCIs

2. Equipment

3. Special occupancies

4. Emergency systems

5. Communication systems

6. Low voltage

7. Load calculations

8. DESIGN Flood elevation

Plumbing

1. Minimum plumbing facilities

2. Fixture requirements

3. Water supply piping

4. Sanitary drainage

5. Water heaters

6. Vents

7. Roof drainage

8. Back flow prevention

9. Irrigation

10. Location of water supply line

11. Grease traps

12. Environmental requirements

13. Plumbing riser

14. DESIGN Flood elevation

Mechanical

1. Energy calculations

2. Exhaust systems:

- Clothes dryer exhaust
- Kitchen equipment exhaust
- Specialty exhaust systems
- 3. Equipment
- 4. Equipment location
- 5. Make-up air
- 6. Roof-mounted equipment
- 7. Duct systems
- 8. Ventilation
- 9. Combustion air
- 10. Chimneys, fireplaces and vents
- 11. Appliances
- 12. Boilers
- 13. Refrigeration
- 14. Bathroom ventilation
- 15. Laboratory
- 16. DESIGN Flood elevation

Gas

- 1. Gas piping
- 2. Venting
- 3. Combustion air
- 4. Chimneys and vents
- 5. Appliances
- 6. Type of gas
- 7. Fireplaces
- 8. LP tank location
- 9. Riser diagram/shutoffs
- 10. DESIGN Flood elevation

Residential (one- and two-family)

- 1. Site requirements
- Set back/separation (assumed property lines)
- Location of septic tanks
- 2. Fire-resistant construction (if required)
- 3. Fire
- 4. Smoke detector locations
- 5. Egress
- Egress window size and location stairs construction requirements
- 6. Structural requirements shall include:
 - Wall section from foundation through roof, including assembly and materials connector tables
 - wind requirements structural calculations (if required)
 - Flood hazard areas, flood zones, DESIGN flood elevations, lowest floor elevations, enclosures, equipment, and materials
- 7. Accessibility requirements: show/identify accessible bath

109.3 Required inspections. The building official upon notification from the permit holder or his or her agent shall make the following inspections, and shall either release that portion of the construction or shall notify the permit holder or his or her agent of any violations which must be corrected in order to comply with the technical codes. The building official shall determine the timing and sequencing of when inspections occur and what elements are inspected at each inspection.

Building

1. Foundation inspection. To be made after trenches are excavated and forms erected and shall at a minimum include the following building components:

- Stem-wall
- Monolithic slab-on-grade
- Piling/pile caps
- Footers/grade beams

1.1. In flood hazard areas, upon placement of the lowest floor and prior to further vertical construction, the elevation certification shall be submitted to the building official.

2. Framing inspection. To be made after the roof, all framing, fireblocking and bracing is in place, all concealing wiring, all pipes, chimneys, ducts and vents are complete and shall at a minimum include the following building components:

- Window/door framing
- Vertical cells/columns
- Lintel/tie beams
- Framing/trusses/bracing/connectors
- Draft stopping/fire blocking
- Curtain wall framing
- Energy insulation
- Accessibility.

3. Sheathing inspection. To be made either as part of a dry-in inspection or done separately at the request of the contractor after all roof and wall sheathing and fasteners are complete and shall at a minimum include the following building components:

- Roof sheathing
- Wall sheathing
- Sheathing fasteners
- Roof/wall dry-in.

4. Roofing inspection. Shall at a minimum include the following building components:

- Dry-in
- Insulation
- Roof coverings
- Flashing

5. Final inspection. To be made after the building is completed and ready for occupancy.

5.1. In flood hazard areas, as part of the final inspection, a final certification of the lowest floor elevation shall be submitted to the building official.

Member's Comments and Reservations (April 29, 2009):

JS – may not be the BO that collects, add to the BO or FPM.

THROUGHOUT, USE "AUTHORITY HAVING JURISDICTION".

~~**DELETED IN FBC: 109.3.3 Lowest floor elevation.** In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the elevation certification required in Section 1612.5 shall be submitted to the building official.~~

110.2 Certificate issued. After the building official inspects the building or structure and finds no violations of the provisions of this code or other laws that are enforced by the department of building safety, the building official shall issue a certificate of occupancy that contains the following:

1. The building permit number.
2. The address of the structure.
3. The name and address of the owner.
4. A description of that portion of the structure for which the certificate is issued.
5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.

X. For buildings and structures in flood hazard areas, a statement that documentation of the as-built lowest floor elevation has been provided and is retained in the records of the department of building safety.

6. The name of the building official.
7. The edition of the code under which the permit was issued.
8. The use and occupancy, in accordance with the provisions of Chapter 3.
9. The type of construction as defined in Chapter 6.
10. The design occupant load.
11. If an automatic sprinkler system is provided, whether the sprinkler system is required.

Chapter 2 Section 202 Definitions

BASEMENT (for other than flood loads). See Section 502.1.

BASEMENT (for flood loads). See Section 1612.2.

[202] BASEMENT. A story that is not a story above grade plane (See “Story above grade plane” in Section 202). The definition of “Basement” does not apply to the provisions of Section 1612 for flood loads (see “Basement” in Section 1612.2).

[1612.2] BASEMENT. The portion of a building having its floor subgrade (below ground level) on all sides. The definition of “Basement” is limited in application to the provisions of Section 1612 (see “Basement” in Section 502.1).

FLOODPLAIN MANAGEMENT ORDINANCE. An ordinance or regulation adopted pursuant to the authority granted to local governments by Title 44 CFR, Sections 59 and 60 for participation in the National Flood Insurance Program.

Member's Comments and Reservations (April 29, 2009):

MM: We need to make-up our mind with regard to the flood requirements for inclusion in the Code. Either we adopt the I-Codes Standards or defer to the local floodplain management ordinance. We can not have it both ways. Also, the Commission has no authority to enforce local ordinance which may include zoning requirements. The current proposal will take us back to where we started "more confusion". It is my understanding that the intent of this project is to retain the flood construction standards currently exist in the 2009 I-Codes and do away with floodplain management ordinance establishing flood construction requirements and in this case flood management ordinances will be limited to zoning and administrative program requirements. The flood management ordinance will reference the FBC as the minimum construction standards. Adopting more stringent flood construction standards for the purpose of obtaining a higher CRS rating will be subject to the F.S. - technical amendment criteria.

MM – recommend see how it is used before we define it.

JG - already made the determination needed at least to adopt the maps. By defining it, when we make reference the users know where to go. Ordinance has to be consistent with 44 CFR.

MM – suggestion is to not refer to the ordinance, we have no control over local ordinances.

Envision, establish requirement how to build in the code. Local ordinance has to reference the code for design and construction. Ordinance can't revise building requirements. Have to resolve how that will be done for "higher standards". If reference it from the code, should be part of the code.

JR – anything referenced in the code, refers to the date of the ordinance in effect. Current references to ordinances will go away.

RQ – if not through local ordinance, then how to reference the maps?

MM – how adopt the maps? How frequently do they change? The FIRMs are referred to in the definition?

JR – wind map example, refer to local through the definition of Flood Hazard Area

TT – how IBC references the map (1612.3).

JS – concern about flood maps like wind maps, there are more revisions of the flood maps than of the wind maps.

CJ – the IRC has a footnote.

MM – let's look at how handled for wind, come up with language to defer to locals for delineation of lines. Next meeting, some way to tie ordinance with respect to the maps.

RQ – will have to discuss reference to ordinance for any administrative requirements.

MM – SI/SD administrative requirement in the Existing Building.

JG – the ability to adopt CRS requirements may be in the ordinance, so need a link to the local ordinance.

MM – the "harm" of referencing an ordinance, when issue comes up or request for opinion, the Commission has no control over referenced document.

JB: on balance, the sense of the workgroup is there should be a tie-back from the Code to the local floodplain management ordinance, including flood maps.

Sections 419, 420 and 423 are Florida-specific modifications written by the respective State Agency based on rules in place at the time the FBC was developed.

Proposed changes to 419, 420 and 423 will have to be coordinated with the appropriate agencies.

From Classification of Structures table in Table 1604.5 (also in ASCE 24: Category III:

- Buildings and other structures with elementary school or secondary school facilities with capacity greater than 250
- Buildings and other structures with a capacity greater than 500 for colleges or adult education facilities
- Health care facilities with a capacity of 50 or more resident patients but not having surgery or emergency treatment facilities

The change from “100-year flood plain” to “base flood elevation plus X-ft” is consistent with the requirements of the code for flood hazard areas, and reflects the A Zone elevation requirements in ASCE 24 for:

- *Hospitals (Category IV), ASCE 24 requires BFE+2 ft.*
- *Nursing Homes (Category III for most schools), ASCE requires BFE+1 ft.*
- *Educational Facilities (Category III most schools), ASCE 24 requires BFE+1 ft.*

DCA to coordinate with the pertinent state agencies for 419, 420 and 423 to resolve issues.

Member’s Comments and Reservations (April 29, 2009):

MM – the reason these are in the code, come from state agency rules. Assume they no longer reference in their rules now that in the code. Best to consult with them with any changes.

RD – we can use FBC channels, have a technical advisory committee to coordinate & review support.

FBC: Section 419 Hospitals

419.2 Disaster preparedness construction standards.

419.2.2 Site standards.

419.4.2.2.1 All new facilities and additions to existing facilities shall be located above the base flood elevation plus 2 ft ~~100-year flood plain~~ or hurricane Category 3 (Saffir-Simpson scale) hurricane surge inundation elevation, whichever requires the highest elevation; or *[Request clarification from the Health Care Administration whether “shall be located” implies the whole building shall be located on higher ground – or does it mean the floor shall be located above (i.e., an elevated building).]*

419.4.2.2.2 The floor elevation of all new occupied patient area(s) and all patient support area(s) and patient support utilities, including mechanical, electrical (except fuel storage as noted in Section 419.4.2.9.3 of this code) and food services shall be located above the base flood elevation plus 2 ft ~~100-year flood plain~~ or hurricane Category 3 (Saffir-Simpson scale) hurricane surge inundation elevations, whichever requires the highest elevation. *[Request clarification from the Health Care Administration why is fuel storage exempt from flood requirements; not only is it in – won’t this likely put fuel storage below the flood level and not available post-flood?]*

419.4.2.2.3 New additions or floors added to existing facilities, as determined by their site locations, shall meet either the requirements of Section 419.4.2.2.1 or 419.4.2.2.2 of this Code, or be so

designed and constructed as to be in compliance with Section 1612, ~~the current standards of the National Flood Insurance Program of the Federal Emergency management Agency, incorporated by reference and available from Federal Emergency management Agency, Federal Insurance Administration, Attn. Publications, P.O. Box 70274, Washington, D.C. 20024.~~

419.4.2.2.4 Where an off-site public access route is available to the new facility at or above the base flood elevation ~~100-year flood plain~~, a minimum of one on-site emergency access route shall be provided that is located at the same elevation as the public access route.

FBC: Section 420 Nursing Homes

420.4.2 Disaster preparedness construction standards.

420.4.2.2 Site standards.

420.4.2.2.1 All new facilities and additions to existing facilities shall be located above the base flood elevation plus 2 ft ~~100-year flood plain~~ or hurricane Category 3 (Saffir-Simpson scale) hurricane surge inundation elevation, whichever requires the highest elevation, or *[Same question as 419.4.2.2.1.]*

420.4.2.2.2 The floor elevation of all new occupied resident area(s) and all resident support area(s) and resident support utilities, including mechanical, electrical (except fuel storage as noted in Section 420.4.2.9.3 of this code) and food services shall be located above the base flood elevation plus 2 ft ~~100-year flood plain~~ or hurricane Category 3 (Saffir-Simpson scale) hurricane surge inundation elevations, whichever requires the highest elevation. *[Same question as 419.4.2.2.2.]*

420.4.2.2.3 New additions or floors added to existing facilities, as determined by their site locations, shall meet either the requirements of Section 420.4.2.2.1 or 420.4.2.2.2 of this code, or be so designed and constructed as to be in compliance with Section 1612, ~~the current standards of the National Flood Insurance Program of the Federal Emergency management Agency, incorporated by reference and available from Federal Emergency management Agency, Federal Insurance Administration, Attn. Publications, P.O. Box 70274, Washington, D.C. 20024.~~

420.4.2.2.4 Where an off-site public access route is available to the new facility at or above the base flood elevation ~~100-year flood plain~~, a minimum of one on-site emergency access route shall be provided that is located at the same elevation as the public access route.

FBC: Section 423 State Requirements for Educational Facilities

423.4.2 [Referenced Documents] FEMA. Federal Emergency Management Agency. Rules and Regulations 44 CFR, Parts 59 and 60, Revised as of October 1, 1995. In Flood Zones A1 through A30, AE, AH, and AO (100-year flood plain) the finished floor at the lowest entry level shall be a minimum 1 foot (305 mm) above the base flood elevation. *[This can be deleted because compliance with the code is required and by reference to ASCE 24, the lowest floors of schools shall be at BFE+1'.]*

Chapter 8 Interior Finishes

801.1.3 Applicability. For buildings in flood hazard areas as established in Section 1612.3, interior finishes, trim and decorative materials SHALL COMPLY WITH SECTION 1612.4. 4- that extend below the design flood elevation shall be flood-damage-resistant materials.

Member's Comments and Reservations (April 29, 2009):

CJ – issue that may come up again. If the FBC picks up ASCE 24 in total, 24 has some slight differences.

RD – if the code changes something in a reference standard, then the code prevails. There can be differences. Presumably if there is a Florida specific, it will say the standard is modified.

CJ – this provides less protection than ASCE 24 and less than recommended by Hurricane Resistant advisory committee.

MM – in this case the code would supersede 24.

RD – the law says if a reference standard is amended, have to be specific.

Options: point to 24, strike entirely if covered by 24, or point to 1612.4.

MM – since in chapter 12, refers to 24 as the min, aren't we using 24 as the standard?

DECISION: AS MODIFIED AS SHOWN

Chapter 11 Accessibility

[FBC SUBSTITUTED ENTIRE CHAPTER] 1107.7.5 ~~Design flood elevation.~~ The required number of Type A units and Type B units shall not apply to a site where the required elevation of the lowest floor or the lowest horizontal structural building members of nonelevator buildings are at or above the design flood elevation resulting in:

1. A difference in elevation between the minimum required floor elevation at the primary entrances and vehicular and pedestrian arrival points within 50 feet (15,240 mm) exceeding 30 inches (762 mm), and
2. A slope exceeding 10 percent between the minimum required floor elevation at the primary entrances and vehicular and pedestrian arrival points within 50 feet (15,240 mm).

~~Where no such arrival points are within 50 feet (15,240 mm) of the primary entrances, the closest arrival point shall be used.~~

Member's Comments and Reservations (April 29, 2009):

JS – statement fair housing, site impracticability. Not exactly like IBC. Cites unusual characteristics, including federal floodplain, HHA, cites Chapter 11, part 7, sec 5 of guidelines, requirement 1B.

OK to eliminate as shown, and cover in accessibility code

Chapter 12 Interior Environment

1203.3 Under-floor ventilation.

1203.3.2 Exceptions.

5. For buildings in flood hazard areas as established in Section 1612.3, the openings for under-floor ventilation shall be deemed as meeting the flood opening requirements of ASCE 24

provided that the ventilation openings are designed and installed in accordance with ASCE 24.

Chapter 14 Exterior Walls

1403.5 Flood resistance. For buildings in flood hazard areas as established in Section 1612.3, exterior walls ~~extending below the design flood elevation shall COMPLY WITH SECTION 1612.4~~ ~~be resistant to water damage.~~ Wood shall be pressure-preservative treated in accordance with AWPAC U1 for the species, product and end use using a preservative listed in Section 4 in APWA Standard U1 or decay-resistant heartwood of redwood, black locust or cedar.

Modify as shown

1403.6 Flood resistance for high-velocity wave action areas. For buildings in flood hazard areas subject to high-velocity wave action as established in Section 1612.3, electrical, mechanical and plumbing system components shall not be mounted on or penetrate through exterior walls that are designed to break away under flood loads.

Member's Comments and Reservations (April 29, 2009):

CJ: clarify, does Florida interpret this to mean if less restrictive, which prevails?

RD – when we deliberately amend a reference standard. If we have a difference between the two.

MM – example, wind. ASCE 7 Chapter 6 minimum standards. We do have specific provision to specific definitions, like Exposure C which then supersedes the definition in reference standard. If the specific requirement is in the code.

Chapter 16 Structural Design Requirements

1601.1 Scope. The provisions of this chapter shall govern the structural design of buildings, structures and portions thereof regulated by this code.

ADDED IN FBC: Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Sections 1612 through 1626. *ALSO POINT TO SECTION FOR FLOOD (MM to discuss)*

Member's Comments and Reservations (April 29, 2009):

RQ: in HVHZ if 1612-1626, make sure that flood isn't "skipped".

JG – maybe time to change the exception.

CJ - clarify only Miami-Dade and Broward counties is the HVHZ.

NOTATIONS.

Fa = Flood load in accordance with Chapter 5 of ASCE 7.

1603.1 General. Construction documents shall show the size, section and relative locations of

structural members with floor levels, column centers and offsets fully dimensioned. The design loads and other information pertinent to the structural design required by Section 1603.1.1 through Section 1603.1.8 shall be indicated on the construction documents.

Exception: Construction documents for buildings constructed in accordance with the conventional light-frame construction provisions of Section 2308 shall indicate the following structural design information:

1. Floor and roof live loads.

~~[DELETED IN FBC] 2. Ground snow load, P_g .~~

3. Basic wind speed (3-second gust), miles per hour (km/hr) and wind exposure.

~~[DELETED IN FBC] 4. Seismic Design Category and Site Class.~~

5. Flood design data, if located in flood hazard areas established in Section 1612.3.

1603.1.6 Flood design data. For buildings located in whole or in part in flood hazard areas as established in Section 1612.3, the documentation pertaining to design, if required in Section 1612.5, shall be included and the following information, referenced to the datum on the community's Flood Insurance Rate Map (FIRM), shall be shown, regardless of whether flood loads govern the design of the building:

1. In flood hazard areas not subject to high-velocity wave action, the elevation of proposed lowest floor, including basement.
2. In flood hazard areas not subject to high-velocity wave action, the elevation to which any non-residential building will be dry floodproofed.
3. In flood hazard areas subject to high-velocity wave action, the proposed elevation of the bottom of the lowest horizontal structural member of the lowest floor, including basement.

1605.2.2 [Load combinations using strength design or load and resistance factor design]

Flood loads. Where flood loads, F_a , are to be considered in the design, the load combinations of Section 2.3.3 of ASCE 7 shall be used.

1605.3.1.2 [Load combinations using allowable stress design] Flood loads. Where flood loads, F_a , are to be considered in design, the load combinations of Section 2.4.2 of ASCE 7 shall be used.

[IBC section numbering (1612) is retained in the draft pending decision on location in the FBC]

SECTION 1612 FLOOD LOADS

1612.1 General. Within flood hazard areas as established in Section 1612.3, all new construction of buildings, structures and portions of buildings and structures, including substantial improvement and restoration of substantial damage to buildings and structures, shall be designed and constructed to resist the effects of flood hazards and flood loads. For buildings that are located in more than one flood hazard area, the provisions associated with the most restrictive flood hazard area shall apply.

1612.2 Definitions. For the purposes of this section, the terms, phrases and words listed herein and their derivations shall have the indicated meanings.

BASEMENT. The portion of a building having its floor subgrade (below ground level) on all sides. The definition of “Basement” is limited in application to the provisions of Section 1612 (see “Basement” in Section 502.1).

BASE FLOOD. The flood having a 1-percent chance of being equaled or exceeded in any given year.

BASE FLOOD ELEVATION. The elevation of the base flood, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North American Vertical Datum (NAVD) or other datum specified on the Flood Insurance Rate Map (FIRM).

Member’s Comments and Reservations (April 29, 2009):

BP – add definition of Coastal A Zone, everything else is defined, even though defined in ASCE 24, propose adding it here.

JG – if defined in the standards and not used in this code, leave it defined in the standard.

CJ – CAZ is used in the IRC.

Straw vote – leave in standard.

DESIGN FLOOD. The flood associated with the greater of the following two areas:

1. Area with a floodplain subject to a 1-percent or greater chance of flooding in any year; or
2. Area designated as a flood hazard area on a community’s flood hazard map, or otherwise legally designated.

DESIGN FLOOD ELEVATION. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map. In areas designated as Zone AO, the design flood elevation shall be the elevation of the highest existing grade of the building’s perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where the depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610mm).

DRY FLOOD PROOFING. A combination of design modifications that results in a building or structure, including the attendant utility and sanitary facilities, being water tight with walls substantially impermeable to the passage of water and with structural components having the capacity to resist loads as identified in ASCE 7.

Because existing buildings are handled in the Existing Building Code, these definitions are deleted (as is “start of construction”)

~~EXISTING CONSTRUCTION.~~ Any buildings and structures for which the “start of construction”²² commenced before the effective date of the community’s first floodplain management code, ordinance, or standard. ~~“Existing construction” is also referred to as “existing structures.”~~

Member’s Comments and Reservations (April 29, 2009):

JG – FBC, B and FBC, EB have different definitions.

JS – the FBC, B, definition of “existing building” we added “legally” to the I-Code definition.

CJ – the above definition essentially defines “pre-FIRM”

TA – this is specific to flood, only applies here.

RQ – rationale was because Florida deleted chapter 34.

JG – fact that appears in 16 and differs from Chapter 2, tells user applicable to chapter 16. And EB sends back to chapter 16 for flood provisions for Existing Buildings

MM – we deleted Chapter 34, FBC, B no longer addresses. If retain here, should have something in FBC, EB to point.

Decision is to leave in Existing Constr, Existing Strs, and in FBC, EB point back here.

~~EXISTING STRUCTURES.~~ See “Existing construction.”

FLOOD or FLOODING. A general and temporary condition of partial or complete inundation of normally dry land from:

1. The overflow of inland or tidal waters.
2. The unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD DAMAGE-RESISTANT MATERIALS. Any construction material capable of withstanding direct and prolonged contact with floodwaters without sustaining any damage that requires more than cosmetic repair.

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a floodplain subject to a 1-percent or greater chance of flooding in any year.
2. The area designated as a flood hazard area on a map adopted in the floodplain management ordinance ~~community’s flood hazard map~~, or otherwise legally designated.

Member’s Comments and Reservations (April 29, 2009):

MM: We need to make-up our mind with regard to the flood requirements for inclusion in the Code. Either we adopt the I-Codes Standards or defer to the local floodplain management ordinance. We can not have it both ways. Also, the Commission has no authority to enforce local ordinance which may include zoning requirements. The current proposal will take us back to where we started “more confusion”. It is my understanding that the intent of this project is to retain the flood construction standards currently exist in the 2009 I-Codes and do away with floodplain management ordinance establishing flood construction requirements and in this case flood management ordinances will be limited to zoning and administrative program requirements. The flood management ordinance will reference the FBC as the minimum construction standards. Adopting more stringent flood construction standards for the purpose of obtaining a higher CRS rating will be subject to the F.S. – technical amendment criteria.

Covered by previous decision on references to the model ordinance.

FLOOD HAZARD AREA SUBJECT TO HIGH VELOCITY WAVE ACTION. Area within the flood hazard area which is subject to high velocity wave action, and shown on a Flood Insurance Rate Map (FIRM) or other flood hazard map as Zone V, VO, VE or V1-30.

These definitions are deleted because adoption of the FIRMs & FIS will be done in the ordinance:

~~FLOOD INSURANCE RATE MAP (FIRM). An official map of a community on which the Federal Emergency Management Agency (FEMA) has delineated both the special flood hazard areas and the risk premium zones applicable to the community.~~

~~FLOOD INSURANCE STUDY. The official report provided by the Federal Emergency Management Agency containing the Flood Insurance Rate Map (FIRM), the Flood Boundary and Floodway Map (FBFM), the water surface elevation of the base flood and supporting technical data.~~

Decision – retain FIRM & FIS, avoid tracking and modifiaion

Add this definition here or in Sec. 202 and use throughout instead of the long phrase used now in FBC:

FLOODPLAIN MANAGEMENT ORDINANCE. An ordinance or regulation adopted pursuant to the authority granted to local governments by Title 44 CFR, Sections 59 and 60 for participation in the National Flood Insurance Program.

Member’s Comments and Reservations (April 29, 2009):

MM: We need to make-up our mind with regard to the flood requirements for inclusion in the Code. Either we adopt the I-Codes Standards or defer to the local floodplain management ordinance. We can not have it both ways. Also, the Commission has no authority to enforce local ordinance which may include zoning requirements. The current proposal will take us back to where we started “more confusion”. It is my understanding that the intent of this project is to retain the flood construction standards currently exist in the 2009 I-Codes and do away with floodplain management ordinance establishing flood construction requirements and in this case flood management ordinances will be limited to zoning and administrative program requirements. The flood management ordinance will reference the FBC as the minimum construction standards. Adopting more stringent flood construction standards for the purpose of obtaining a higher CRS rating will be subject to the F.S. - technical amendment criteria.

~~FLOODWAY. The channel of the river, creek, or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.~~

~~LOWEST FLOOR. The floor of the lowest enclosed area, including basement, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the structure in violation of this section.~~

The code uses “flood hazard area,” delete this definition because it is no longer referred to in the code (it will be defined and used in the ordinance).

~~SPECIAL FLOOD HAZARD AREA. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE, or V1-30.~~

Member’s Comments and Reservations (April 29, 2009):

JG – keep in, informational even if not used in the text, avoids having Florida specific amendment.
Retain SFHA.

~~START OF CONSTRUCTION. The date of permit issuance for new construction and substantial improvements to existing structures, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building (including a manufactured home) on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns.~~

~~Permanent construction does not include land preparation (such as clearing, excavation, grading or filling), or the installation of streets or walkways, excavation for a basement, footings, piers or foundations, the erection of temporary forms or the installation of accessory buildings such as garages or sheds not occupied as dwelling units or not part of the main building. For a substantial improvement, the actual “start of construction” means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alteration affects the external dimensions of the building.~~

Member’s Comments and Reservations (April 29, 2009):

JG – conflicts with existing, which deals with date of application.
Delete because code refers to the date of application, not date of permit.

[Options for the definitions of Substantial Damage and Substantial Improvement:

- 1. Delete here and where used, defer to the definitions in local floodplain management ordinances (thus allowing for CRS-eligible definitions). These are terms used administratively to determine when existing buildings must comply, they do not affect the design of buildings that must be brought into compliance.]*
- 2. Retain definition here, modified with “or as defined in local ordinance”*

Agreement is to use Option 2.

SUBSTANTIAL DAMAGE. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Member’s Comments and Reservations (April 29, 2009):

MM: Substantial Damage and Substantial improvement – defined in the FBC, Existing Building. See about deleting them from 1612 and deferring to the Code for Existing Building.

SUBSTANTIAL IMPROVEMENT. Any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include either:

#1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to assure safe

living conditions.

#2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

Member's Comments and Reservations (April 29, 2009):

MM: Substantial Damage and Substantial improvement – defined in the FBC, Existing Building.

See about deleting them from 1612 and deferring to the Code for Existing Building.

PW – we use “historic building” not structure, for consistency.

TA – there are historic structures that aren't buildings.

RQ – federal definition.

MM- is the DHR's concern about buildings?

JG – structure is broader, eliminate the need to changes to the base model.

PW – withdraw concerns based on consistency with the federal definition. There are other things that are historic that aren't buildings.

Decision – leave as-is.

This change refers to the local ordinance for adoption of the maps and other requirements related to determining the BFE and impacts, which should be done prior to designing the building

1612.3 Establishment of flood hazard areas. Flood hazard maps that establish flood hazard areas, base flood elevations, and supporting data, are adopted in the floodplain management ordinance. ~~To establish flood hazard areas, the governing body shall adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled “The Flood Insurance Study for [INSERT NAME OF JURISDICTION],” dated [INSERT DATE OF ISSUANCE], as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this Section.~~

Decision – previous discussion regarding how maps are handled.

1612.3.1 Design flood elevations. Where design flood elevations are not included in the flood hazard areas established in Section 1612.3, or if floodways are not designated, the applicant shall determine the design flood elevation as specified in the floodplain management ordinance adopted by the local government. ~~building official is authorized to require the applicant to:~~

- ~~1. Obtain and reasonably utilize any design flood elevation and floodway data available from a federal, state, or other source, or~~
- ~~2. Determine the design flood elevation and/or floodway in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a registered design professional who shall document that the technical methods used reflect currently accepted engineering practice.~~

1612.3.2 Determination of impacts. In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis as specified in the floodplain management ordinance adopted by the local government, ~~that demonstrates that the proposed work will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction of the applicable governing authority.~~

Member's Comments and Reservations (April 29, 2009):

JG – likes as IBC wrote it.

TA – agree.

MM – still needs some revision.

Will be a modification, not this extensive, it will be modified to be consistent with discussion about referring to the local ordinance for adoption of the maps.

1612.4 Design and construction. The design and construction of buildings and structures located in flood hazard areas, including flood hazard areas subject to high velocity wave action, shall be in accordance with Chapter 5 of ASCE 7 and with ASCE 24.

1612.5 Flood hazard documentation. The following documentation shall be prepared and sealed by a registered design professional and shall be submitted to the building official:

1. For construction in flood hazard areas not subject to high-velocity wave action:
 - 1.1. The elevation of the lowest floor, including basement, as required by the foundation inspection and the final inspection in Section 109.3. ~~lowest floor elevation inspection in Section 109.3.3.~~
 - 1.2. For fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.6.2.1, ASCE 24, construction documents shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.6.2.2 of ASCE 24.
 - 1.3. For dry floodproofed nonresidential buildings, construction documents shall include a statement that the dry floodproofing is designed in accordance with ASCE 24.
2. For construction in flood hazard areas subject to high-velocity wave action:
 - 2.1. The elevation of the bottom of the lowest horizontal structural member as required by the foundation inspection and the final inspection in Section 109.3. ~~lowest floor elevation inspection in Section 109.3.3.~~
 - 2.2. Construction documents shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components, and other load requirements of Chapter 16.
 - 2.3. For breakaway walls designed to resist a nominal load of less than 10 psf (0.48 kN/m²) or more than 20 psf (0.96 kN/m²), construction documents shall include a statement that the breakaway wall is designed in accordance with ASCE 24.

The High-Velocity Hurricane Zone requirements (Sec. 1612 through Sec 1626) were part of the South Florida Building Code developed by Miami Dade County. Additional review is necessary to determine if linkage to ASCE 24 should be made in places in addition to as shown.

**[ADDED IN FBC] SECTION 1612
HIGH-VELOCITY HURRICANE ZONES-GENERAL**

1612.1 General design requirements.

1612.1.1 Any system, method of design or method of construction shall admit of a rational analysis in accordance with well-established principles of mechanics and sound engineering practices.

1612.1.2 Buildings, structures and all parts thereof shall be designed and constructed to be of sufficient strength to support the estimated or actual imposed dead, live, wind, flood, and any other loads, both during construction and after completion of the structure, without exceeding the allowable materials stresses specified by this code.

1612.1.3 No building structure or part thereof shall be designed for live loads less than those specified in this Chapter or ASCE 7 with commentary, except as otherwise noted in this code.

1612.1.4 The live loads set forth herein shall be assumed to include the ordinary impact but where loading involves unusual impact, provision shall be made by increasing the assumed live load.

1612.1.5 Buildings and structures in flood hazard areas, including substantial improvement of or repair of substantial damage sustained by existing buildings and structures, as such terms are defined in the floodplain management ordinance of the local government, shall be designed and constructed to resist the effects of flood hazards and flood loads in accordance with Chapter 5 of ASCE 7, ASCE 24, and the floodplain management ordinance of the local government.

1612.1.5 Nonresidential buildings or nonresidential portions of mixed use buildings shall not have any floor or portion of a floor subgrade on all sides, unless located in flood hazard areas not subject to high velocity wave action (A Zones) and designed to be dry floodproofed in accordance with ASCE 24. [This is suggested because of 1618.2 Below-grade structures.]

Member's Comments and Reservations (April 29, 2009):

MM: HVHZ - currently, there is no special provisions in the FBC for the HVHZ with regard to flood. Item 3 above is applicable to all counties including Miami-Dade and Broward (HVHZ) and I am not sure whether there is a need for special provisions with regard to flood in the HVHZ. The approach to the HVHZ would be to apply the proposed flood provisions to the HVHZ by noting in the scope of the applicable chapters of the code, the application to the HVHZ through and exception. This is similar to the application of the termite provisions to the HVHZ (see below):

1801.1 Scope.

The provisions of this chapter shall apply to building and foundation systems in those areas not subject to scour or water pressure by wind and wave action. Buildings and foundations subject to such scour or water pressure loads shall be designed in accordance with Chapter 16.

Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Sections 1816 through 1834.

MM – approach Miami-Dade & Broward.
MM – under the exception at the top of Chapter 16.

Do not include here.

1612.1.6 ~~1612.1.5~~ In the design of floors, not less than the actual live load to be imposed shall be used. Special provisions shall be made for machine or apparatus loads where applicable.

1612.1.7 ~~1612.1.6~~ Floor and roof systems shall be designed and constructed to transfer horizontal forces to such parts of the structural frame as are designed to carry these forces to the foundation. Where roofs or floors are constructed of individual prefabricated units and the transfer of forces to the building frame and foundation is totally or partially dependent on such units, the units and their attachments shall be capable of resisting applied loads in both vertical and both horizontal directions. Where roofs or floors are constructed of individual prefabricated units and the transfer of forces to the building frame and foundation is wholly independent of such units, the units and their attachments shall be capable of resisting applied loads normal to the surface, in and out.

[ADDED IN FBC] SECTION 1624 HIGH-VELOCITY HURRICANE ZONES-FOUNDATION DESIGN

1624.1 Design procedure. The minimum area of a footing or number of piles under a foundation shall be determined in the following manner:

1624.1.1 The total load of the column that has the largest percentage of the live load to the total load shall be divided by the allowable soil pressure or pile capacity.

1624.1.2 The balance soil pressure or pile capacity shall be determined by dividing the total dead load by the area of the footing or the number of piles.

1624.1.3 The minimum area of other footings or number of piles shall be designed on the basis of their respective dead loads only.

1624.1.4 In no case shall the total load of the combined dead, live, wind, flood, and any other loads exceed the allowable bearing pressure of the soil for capacity of any pile upon which the foundation is supported.

1624.1.5 The live load used in the above calculations may be the total reduced live load in the member immediately above the foundation.

1624.1.6 The building official may require submittal of design computations employed in foundation design.

1624.2 Wind effects. Reserved.

1624.2.1 Reserved.

1612.3 Flood resistance. Where the building or structure is located in a flood hazard area, the foundation, including enclosures below elevated buildings, shall be designed and constructed in accordance with ASCE 24.

Will be part of the staff discussions with HVHZ representatives.

Chapter 18 Soils and Foundations

1801.1 Scope. The provisions of this chapter shall apply to building and foundation systems.

ADDED IN FBC: Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Sections 1816 through 1834. *ADD POINTER TO FLOOD; part of MM discussion with M-D & B*

Option shown refers to ordinance for requirements related to assessing the impact of the placement of fill should be done prior to designing the building

1803.4 Grading and fill in flood hazard areas. In flood hazard areas established in Section 1612.3, grading and/or fill shall not be approved:

1. Unless fill is placed, compacted and sloped to minimize shifting, slumping and erosion during the rise and fall of flood water and, as applicable, wave action; and
2. The grading and/or fill are approved as conforming with the applicable provisions of the floodplain management ordinance.
- ~~2. In floodways, unless it has been demonstrated through hydrologic and hydraulic analyses performed by a registered design professional in accordance with standard engineering practice that the proposed grading or fill, or both, will not result in any increase in flood levels during the occurrence of the design flood.~~
- ~~3. In flood hazard areas subject to high-velocity wave action, unless such fill is conducted and/or placed to avoid diversion of water and waves toward any building or structure.~~
- ~~4. Where design flood elevations are specified but floodways have not been designated, unless it has been demonstrated that the cumulative effect of the proposed flood hazard area encroachment, when combined with all other existing and anticipated flood hazard area encroachment, will not increase the design flood elevation more than one foot (305mm) at any point.~~

Retain per previous discussion to retain IBC, not refer to ordinance.

Member's Comments and Reservations (April 29, 2009):

MM: We need to make-up our mind with regard to the flood requirements for inclusion in the Code. Either we adopt the I-Codes Standards or defer to the local floodplain management ordinance. We can not have it both ways. Also, the Commission has no authority to enforce local ordinance which may include zoning requirements. The current proposal will take us back to where we started "more confusion". It is my understanding that the intent of this project is to retain the flood construction standards currently exist in the 2009 I-Codes and do away with floodplain management ordinance establishing flood construction requirements and in this case flood management ordinances will be limited to zoning and administrative program requirements. The flood management ordinance will reference the FBC as the minimum construction standards. Adopting more stringent flood

construction standards for the purpose of obtaining a higher CRS rating will be subject to the F.S. - technical amendment criteria.

1807.1.2.1 Flood hazard areas. For buildings and structures in flood hazard areas as established in Section 1612.3, the finished ground level of an under-floor space such as a crawl space shall be equal to or higher than the outside finished ground level on at least one side.

Exception: **Under-floor spaces of Group R-3 buildings that meet the requirements of FEMA/FIA TB 11.**

Chapter 30 Elevators and Conveying Systems

[Modified in FBC] 3001.2 Referenced standards. Except as otherwise provided for in this code, the design, construction, installation, alteration, repair and maintenance of elevators and conveying systems and their components shall conform to ASME A17.1, ASME A17.1S, ASME A90.1, ASME B20.1, ALI ALCTV, ASME A17.3 and ASME A18.1 and for construction in flood hazard areas, ASCE 24.

Member's Comments and Reservations (April 29, 2009):

MM: read 2009 text – keep IBC language.

Chapter 31 Special Construction

[Modified in FBC] 3102.7 Engineering design. The structure shall be designed and constructed to sustain dead loads; loads due to tension or inflation; live loads including wind loads and flood loads, in accordance with Chapter 16.

If flood provisions are accepted, FBC Section 3110 Flood-Resistant Construction will be deleted.

Florida modified Chapter 34 to refer to the Florida Existing Building Code; these requirements need to be captured.

Chapter 34 Existing Structures

~~**3403.1 Existing buildings or structures.** Additions or alterations to any building or structure shall comply with the requirements of the code for new construction. Additions or alterations shall not be made to an existing building or structure which will cause the existing building or structure to be in violation of any provisions of this code. An existing building plus additions shall comply with the height and area provisions of Chapter 5. Portions of the structure not altered and not affected by the alteration are not required to comply with the code requirements for a new structure.~~

3403.2 [Additions] Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3, any addition that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612.3, any additions that do not constitute substantial improvement or substantial damage of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

3404.2 [Alterations] Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3, any alteration that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612.3, any alterations that do not constitute substantial improvement or substantial damage of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

3405.5 [Repairs] Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3, any repair that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612.3, any repairs that do not constitute substantial improvement or substantial damage of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

3409

Historic Buildings

~~3409.1 Historic Buildings. The provisions of this code relating to the construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard.~~

~~3409.2 Flood hazard areas. Within flood hazard areas established in accordance with Section 1612.3, where the work proposed constitutes substantial improvement as defined in Section 1612.2, the building shall be brought into conformance with Section 1612.~~

~~Exception: Historic buildings that are:~~

- ~~1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or~~
- ~~2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or~~
- ~~3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.~~

3412

~~Compliance Alternatives~~

~~3412.2.4 Alterations and repairs.~~ An existing building or portion thereof, which does not comply with the requirements of this code for new construction shall not be altered or repaired in such a manner that results in the building being less safe or sanitary than such building is currently. If, in the alteration or repair, the current level of safety or sanitation is to be reduced, the portion altered or repaired shall conform to the requirements of Chapter 2 through Chapter 12 and Chapter 14 through Chapter 33.

~~3412.2.4.1 Flood hazard areas:~~ For existing buildings located in flood hazard areas established in Section 1612.3, if the alterations and repairs constitute substantial improvement of the existing building, the existing building shall be brought into compliance with the requirements for new construction for flood design.

Chapter 35

Referenced Standards

FEMA Federal Emergency Management Agency
 Federal Center Plaza
 500 C Street S.W.
 Washington, DC 20472

Standard Reference Number	Title	Referenced in Code Section Number
FEMA/FIA TB-11	Crawlspace Construction for Buildings Located in Special Flood Hazard Areas	1807.1.2.1

Building Code Integration as revised by Workgroup.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	11	0	0	0

Note: Members agreed that on balance, ICC provisions should be retained unless there is a real need for a Florida Specific Requirement.

Add Flood Provisions to the 2009 FBC, Residential® (April 29, 2009)

Notes:

- Underlining and ~~strike-thru~~ show change to the 2009 IRC
- The handout provided by FEMA showed sections that provided context for the flood provisions; those sections not shown below.
- *Italicized texts are staff notes (shown in blue in the PDF).*

The IRC administrative provisions are not retained in the FBC, Residential; Chapter 1 Administration of the FBC, Building is applicable.

Additional review necessary to determine if sufficient linkage is provided between HVHZ sections in Chapter 44 and ASCE 24.

Member's Comments and Reservations (April 29, 2009):

MM: HVHZ - currently, there is no special provisions in the FBC for the HVHZ with regard to flood. Item 3 above is applicable to all counties including Miami-Dade and Broward (HVHZ) and I am not sure whether there is a need for special provisions with regard to flood in the HVHZ. The approach to the HVHZ would be to apply the proposed flood provisions to the HVHZ by noting in the scope of the applicable chapters of the code, the application to the HVHZ through and exception. This is similar to the application of the termite provisions to the HVHZ (see below):

1801.1 Scope.

The provisions of this chapter shall apply to building and foundation systems in those areas not subject to scour or water pressure by wind and wave action. Buildings and foundations subject to such scour or water pressure loads shall be designed in accordance with Chapter 16.

Exception: Buildings and structures located within the high-velocity hurricane zone shall comply with the provisions of Sections 1816 through 1834.

See previous decision.

Chapter 1 Administration

~~R102.7 Existing structures.-~~

~~R102.7.1 Additions, alterations or repairs.~~ Additions, alterations or repairs to any structure shall conform to the requirements for a new structure without requiring the existing structure to comply with all of the requirements of this code, unless otherwise stated. Additions, alterations or repairs shall not cause an existing structure to become unsafe or adversely affect the performance of the building.

~~R104.10.1 [Modifications] Areas prone to flooding.~~ The building official shall not grant modifications to any provision related to flood hazard areas as established by Table R301.2(1) without the granting of a variance to such provisions by the board of appeals.

~~R105.2 Work exempt from permit.~~

~~(1) One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 200 square feet.~~

~~R105.3.1.1 Substantially improved or substantially damaged existing buildings in flood hazard areas.~~ For applications for reconstruction, rehabilitation, addition or other improvement of existing buildings or structures located in an area prone to flooding as established by Table R301.2(1), the building official shall examine or cause to be examined the construction documents and shall prepare a finding with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its predamage condition. If the building official finds that the value of proposed work equals or exceeds 50 percent of the market value of the building or structure before the damage has occurred or the improvement is started, the finding shall be provided to the board of appeals for a determination of substantial improvement or substantial damage. Applications determined by the board of appeals to constitute substantial improvement or substantial damage shall require all existing portions of the entire building or structure to meet the requirements of R322.

~~R106.1.2 Information for construction in flood hazard areas.~~ For buildings and structures located in whole or in part in flood hazard areas as established by Table R301.2(1), construction documents shall include:

- ~~1. Delineation of flood hazard areas, floodway boundaries and flood zones and the design flood elevation, as appropriate;~~
- ~~2. The elevation of the proposed lowest floor, including basement; in areas of shallow flooding (AO zones), the height of the proposed lowest floor, including basement, above the highest adjacent finished grade; and~~
- ~~3. The elevation of the bottom of the lowest horizontal structural member in coastal high-hazard areas (V Zone); and~~
- ~~4. If design flood elevations are not included on the community's Flood Insurance Rate Map (FIRM), the building official and the applicant shall obtain and reasonably utilize any design flood elevation and floodway data available from other sources.~~

~~R106.2 Site plan.~~ The construction documents submitted with the application for permit shall be accompanied by a site plan showing the size and location of new construction and existing structures on the site and distances from lot lines. In the case of demolition, the site plan shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot.

~~R109.1.3 Floodplain inspections.~~ For construction in areas prone to flooding as established by Table R301.2(1), upon placement of the lowest floor, including basement, and prior to further

vertical construction, the building official shall require submission of documentation, prepared and sealed by a registered design professional, of the elevation of the lowest floor, including basement, required in Section R322.

R112.2.1 Determination of substantial improvement in areas prone to flooding. ~~When the building official provides a finding required in Section R105.3.1.1, the board of appeals shall determine whether the value of the proposed work constitutes a substantial improvement. A substantial improvement means any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the building or structure before the improvement or repair is started. If the building or structure has sustained substantial damage, all repairs are considered substantial improvement regardless of the actual repair work performed. The term does not include:~~

- ~~1. Improvements of a building or structure required to correct existing health, sanitary or safety code violations identified by the building official and which are the minimum necessary to assure safe living conditions; or~~
- ~~2. Any alteration of a historic building or structure, provided that the alteration will not preclude the continued designation as a historic building or structure. For the purposes of this exclusion, a historic building is:
 - ~~2.1 Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or~~
 - ~~2.2 Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or~~
 - ~~2.3 Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.~~~~

See Chapter 1 of the FBC, B [and recommend to BOAF for model).

R112.2.2 Criteria for issuance of a variance for areas prone to flooding. ~~A variance shall only be issued upon:~~

- ~~1. A showing of good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render the elevation standards of Section 322 inappropriate.~~
- ~~2. A determination that failure to grant the variance would result in exceptional hardship by rendering the lot undevelopable.~~
- ~~3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, cause fraud on or victimization of the public, or conflict with existing laws or ordinances.~~
- ~~4. A determination that the variance is the minimum necessary to afford relief, considering the flood hazard.~~
- ~~5. Submission to the applicant of written notice specifying the difference between the design flood elevation and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation, and stating that construction below the design flood elevation increases risks to life and property.~~

Chapter 3 Building Planning

R301.1 Application. Buildings and structures, and all parts thereof, shall be constructed to safely support all loads, including dead loads, live loads, roof loads, flood loads and wind loads as prescribed by this code. The construction of buildings and structures in accordance with the provisions of this code shall result in a system that provides a complete load path that meets all requirements for the transfer of all loads from their point of origin through the load-resisting elements to the foundation. Buildings and structures constructed as prescribed by this code are deemed to comply with the requirements of this section.

Added by FBC: EXCEPTION: Buildings and structures located within the High Velocity Hurricane Zone shall comply only with Sections R302 to R325, inclusive and the provisions of Chapter R44.

Member’s Comments and Reservations (April 29, 2009):

MM: discussion with M-D & B re flood.

MM: Expand the exception to include R322. Table R301.2 – We should only refer to the FIRM.

R301.2 Climatic and geographic design criteria. Buildings shall be constructed in accordance with the provisions of this code as limited by the provisions of this section. Additional criteria shall be as set forth in Table R301.2(1).

Table R301.2(1) Climatic and Geographic Design Criteria:

Ground Snow Load	Wind Design		Seismic Design Category ^{f,g}	Subject To Damage From			Winter Design Temp ^e	Ice shield underlayment Required ^h	Flood Hazards ^g	Air Freezing Index ⁱ	Mean Annual Temp
	Speed ^d (mph)	Topographic Effects ^k		Weathering ^a	Frost line depth ^b	Termite ^c					
									See Options		

Option #1: modify the footnote to refer to local ordinance, where the details will be specified.

g. ~~The jurisdiction shall fill in this part of the table with (a) the date of the jurisdiction’s entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of flood hazard areas), (b) the date(s) of the Flood Insurance Study and (c) the panel numbers and dates of all currently effective FIRM and FBFM, or other flood hazard map adopted by the authority having jurisdiction, as amended.~~ See the floodplain management ordinance adopted pursuant to the authority granted to local governments by Title 44 CFR, Sections 59 and 60 for participation in the National Flood Insurance Program.

Previous discussion/strategy for referencing the maps/ordinances.

Option #2: retain the FBC's "See Section 322" in the box, modify 322 with the language shown in the above footnote, and change all references to Table R301.2(1) to point to the ordinance; the table is referenced about 15 times.

NOTE: pending decision on these options, the texts below retain references to Table R301.2(1) except in R322.1.

R301.2.4 Floodplain construction. Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in Table R301.2(1) shall be designed and constructed in accordance with Section R322.

Option #1: Exception: Buildings and structures located in whole or in part in identified floodways and flood hazard areas in the High Velocity Hurricane Zone shall be designed and constructed in accordance with *Flood Resistant Design and Construction* (ASCE 24).

Member's Comments and Reservations (April 29, 2009):

MM: Why not apply R322 to the HVHZ.

Option #2: Exception: Buildings and structures shall be designed and constructed in accordance with *Flood Resistant Design and Construction* (ASCE 24) if located in whole or in part in:

1. Identified floodways. shall be designed and constructed in accordance with *Flood Resistant Design and Construction* (ASCE 24)
2. Flood hazard areas in the High Velocity Hurricane Zone.

R301.2.4.1 Alternative provisions. As an alternative to the requirements in Section R322.3 for buildings and structures located in whole or in part in coastal high-hazard areas (V Zones), ASCE 24 is permitted subject to the limitations of this code and the limitations therein.

Added by FBC: R301.2.5 Structures seaward of a coastal construction line. Structures located seaward of the coastal construction line shall be designed to resist the predicted forces of a 100-year storm event in accordance with Section 3109 of the *Florida Building Code, Building*. *[Needs to be sure that structures seaward ALSO have to comply with R322]*

R309.5 [Garages] Flood hazard areas. For buildings located in flood hazard areas as established by Table R301.2(1), garage floors shall be:

1. Elevated to or above the design flood elevation as determined in Section R322; or
2. Located below the design flood elevation provided they are at or above grade on at least one

side, are used solely for parking, building access, or storage, meet the requirements of Section R322, and are otherwise constructed in accordance with this code.

[2009 IRC CHAPTER 3 SECTIONS are renumbered; 2009 IRC has flood provision in Sec. 322]

SECTION R322 FLOOD-RESISTANT CONSTRUCTION

Option #1: retaining the reference to Table R301.2(1):

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in Table R301.2(1) shall be designed and constructed in accordance with the provisions contained in this section.

[see R301.2.4 for alternate format] **Exception:** Buildings and structures located in whole or in part in identified floodways and in flood hazard areas in the High Velocity Hurricane Zone shall be designed and constructed in accordance with ASCE 24.

Option #2: retain "See Sec. 322" in Table R301.2(1) and modify all references to the table to point to this:

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas (including A or V Zones) as established in ~~Table R301.2(1)~~ the floodplain management ordinance adopted pursuant to the authority granted to local governments by Title 44 CFR, Sections 59 and 60 for participation in the National Flood Insurance Program shall be designed and constructed in accordance with the provisions contained in this section.

[see R301.2.4 for alternate format] **Exception:** Buildings and structures located in whole or in part in identified floodways and in flood hazard areas in the High Velocity Hurricane Zone shall be designed and constructed in accordance with ASCE 24.

Option #3: add a definition in Sec. 202 and use throughout, rather than the long phrase shown above (underlined). The definition would be:

FLOODPLAIN MANAGEMENT ORDINANCE. An ordinance or regulation adopted pursuant to the authority granted to local governments by Title 44 CFR, Sections 59 and 60 for participation in the National Flood Insurance Program.

R322.1.1 Alternative provisions. As an alternative to the requirements in Section R322.3 for buildings and structures located in whole or in part in coastal high-hazard areas (V Zones), ASCE 24 is permitted subject to the limitations of this code and the limitations therein.

R322.1.2 Structural systems. All structural systems of all buildings and structures shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses from flooding equal to the design flood elevation.

R322.1.3 Flood-resistant construction. All buildings and structures erected in flood hazard areas shall be constructed by methods and practices that minimize flood damage.

R322.1.4 Establishing the design flood elevation. The design flood elevation shall be used to define areas prone to flooding. At a minimum, the design flood elevation is the higher of:

1. The base flood elevation at the depth of peak elevation of flooding (including wave height) which has a 1 percent (100-year flood) or greater chance of being equaled or exceeded in any given year; or
2. The elevation of the design flood associated with the area designated on a flood hazard map adopted by the community, or otherwise legally designated.

R322.1.4.1 Determination of design flood elevations. If design flood elevations are not specified, the building official is authorized to require the applicant to:

1. Obtain and reasonably utilize data available from a federal, state or other source; or
2. Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas.

Determinations shall be undertaken by a registered design professional who shall document that the technical methods used reflect currently accepted engineering practice. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.

R322.1.4.2 Determination of impacts. In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall demonstrate that the effect of the proposed buildings and structures on design flood elevations, including fill, when combined with all other existing and anticipated flood hazard area encroachments, will not increase the design flood elevation more than one foot (305 mm) at any point within the jurisdiction.

R322.1.5 Lowest floor. The lowest floor shall be the floor of the lowest enclosed area, including basement, but excluding any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the building or structure in violation of this section.

R322.1.6 Protection of mechanical and electrical systems. Electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment shall be located at or above the elevation required in Section [R322.2.1](#) (flood hazard areas including A Zones) or R322.3.2 (coastal high-hazard areas including V Zones). If replaced as part of a substantial improvement, electrical systems, equipment and components, and heating, ventilation, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment shall meet the requirements of this section. Systems, fixtures, and equipment and components shall not be mounted on or penetrate through walls intended to break away under flood loads.

Exception: Electrical systems, equipment and components, and heating, ventilating, air conditioning and plumbing appliances, plumbing fixtures, duct systems, and other service equipment are permitted to be located below the elevation required in Section [R322.2.1](#) (flood hazard areas including A Zones) or R322.3.2 (coastal high-hazard areas including V Zones) provided that they are designed and installed to prevent water from entering or

accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation in accordance with ASCE 24 . Electrical wiring systems are permitted to be located below the required elevation provided they conform to the provisions of the electrical part of this code for wet locations.

Catch possible error in cross sections in two places, R322.

R322.1.7 Protection of water supply and sanitary sewage systems. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems in accordance with the plumbing provisions of this code. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters in accordance with the plumbing provisions of this code and approved xxx [consistent with where used elsewhere to refer to Dept of Health] and Chapter 3 of the International Private Sewage Disposal Code.

Member’s Comments and Reservations (April 29, 2009):

MM: We need to make-up our mind with regard to the flood requirements for inclusion in the Code. Either we adopt the I-Codes Standards or defer to the local floodplain management ordinance. We can not have it both ways. Also, the Commission has no authority to enforce local ordinance which may include zoning requirements. The current proposal will take us back to where we started “more confusion”. It is my understanding that the intent of this project is to retain the flood construction standards currently exist in the 2009 I-Codes and do away with floodplain management ordinance establishing flood construction requirements and in this case flood management ordinances will be limited to zoning and administrative program requirements. The flood management ordinance will reference the FBC as the minimum construction standards. Adopting more stringent flood construction standards for the purpose of obtaining a higher CRS rating will be subject to the F.S. - technical amendment criteria.

JG – stay with IRC language, but delete “and Chapter 3 . . . ‘ as shown.

R322.1.8 Flood-resistant materials. Building materials used below the elevation required in Section R322.2 (flood hazard areas including A Zones) or R322.3 (coastal high-hazard areas including V Zones) shall comply with the following:

1. All wood, including floor sheathing, shall be pressure-preservative-treated in accordance with AWP A U1 for the species, product, preservative and end use or be the decay-resistant heartwood of redwood, black locust or cedars. Preservatives shall conform to Section 4 of AWP A U1.
2. Materials and installation methods used for flooring and interior and exterior walls and wall coverings shall conform to the provisions of FEMA/FIA-TB-2.

The NFIP requirements apply to installation of manufactured homes. Need to coordinate with the Department of Highway Safety and Motor Vehicles, may be appropriate to put NFIP requirements in the companion ordinance.

Member's Comments and Reservations (April 29, 2009):

MM there's an exemption for MFH.

TT – 15C deals with it, from the Div of Motor Vehicles, for putting MFH in SFHA.

DEM *should check that DMV is consistent with NFIP (local ordinances, too)*

R322.1.9 – *delete the text & reserve the section*

MM – “modular building” is not the same as MFH; modular is per IRC.

JS – put flood requirement in local ordinance.

TA – modular may be IBC, depending on use.

Option #1: are permanent foundations for MFH regulated by the FBC, Residential? If yes, retain this section and modify to refer to appropriate anchor and tie-down requirements (rather than IRC Appx E).

R322.1.9 Manufactured homes. New or replacement manufactured homes shall be elevated in accordance with Section R322.2 (flood hazard areas including A Zones) or Section R322.3 in coastal high-hazard areas (V Zones). The anchor and tie-down requirements of *[citation to rules of Dept of Highway Safety & Motor Vehicles?]* Sections AE604 and AE605 of Appendix E shall apply. The foundation and anchorage of manufactured homes to be located in identified floodways shall be designed and constructed in accordance with ASCE 24.

Option #2: if no part of MFH foundation/installation is regulated in the FBC, Residential, then either “reserve” R322.1.9 or modify as follows:

R322.1.9 Manufactured homes. New or replacement manufactured homes shall be comply with the applicable provisions of the floodplain management ordinance adopted pursuant to the authority granted to local governments by Title 44 CFR, Sections 59 and 60 for participation in the National Flood Insurance Program. ~~elevated in accordance with Section R322.2 (flood hazard areas including A Zones) or Section R322.3 in coastal high-hazard areas (V Zones). The anchor and tie-down requirements of Sections AE604 and AE605 of Appendix E shall apply. The foundation and anchorage of manufactured homes to be located in identified floodways shall be designed and constructed in accordance with ASCE 24.~~

Member's Comments and Reservations (April 29, 2009):

MM: Use this option. MFH is not covered by the FBC.

R322.1.10 As-built elevation documentation. A registered design professional shall prepare and seal documentation of the elevations specified in Section R322.2 or R322.3.

R322.2 Flood hazard areas (including A Zones). All areas that have been determined to be prone to flooding but not subject to high velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights between 1.5 feet and 3 feet shall be designated as Coastal A Zones. All buildings and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R322.2.1 through R322.2.3.

R322.2.1 Elevation requirements.

1. Buildings and structures in flood hazard areas not designated as Coastal A Zones shall have the lowest floors elevated to or above the design flood elevation.

2. Buildings and structures in flood hazard areas designated as Coastal A Zones shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or to the design flood elevation, whichever is higher.
3. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet (mm) on the FIRM, or at least 2 feet (610 mm) if a depth number is not specified.
4. Basement floors that are below grade on all sides shall be elevated to or above the design flood elevation.

Exception: Enclosed areas below the design flood elevation, including basements whose floors are not below grade on all sides, shall meet the requirements of Section R322.2.2.

Member's Comments and Reservations (April 29, 2009):

CJ: ASCE 24 for elevations? Only difference is in A Zone.

JS: previous discussion to stay with minimums in I-Code.

TT: in 24, depends on category, category II is BFE+1 or DFE.

R322.2.2 Enclosed area below design flood elevation. Enclosed areas, including crawl spaces, that are below the design flood elevation shall:

1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings which shall meet the following criteria:
 - 2.1. There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on exterior walls.
 - 2.2. The total net area of all openings shall be at least 1 square inch (645 mm²) for each square foot (0.093 m²) of enclosed area, or the openings shall be designed and the construction documents shall include a statement by a registered design professional that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.6.2.2 of ASCE 24.
 - 2.3. The bottom of each opening shall be 1 foot (305 mm) or less above the adjacent ground level.
 - 2.4. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.
 - 2.5. Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.
 - 2.6. Openings installed in doors and windows, that meet requirements 2.1 through 2.5, are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.

R322.2.3 Foundation design and construction. Foundation walls for all buildings and structures erected in flood hazard areas shall meet the requirements of Chapter 4.

Exception: Unless designed in accordance with Section 404:

1. The unsupported height of 6-inche (152 mm) plain masonry walls shall be no more than 3 feet (914 mm).
2. The unsupported height of 8-inche (203 mm) plain masonry walls shall be no more than 4 feet (1219 mm).

3. The unsupported height of 8 inches (203 mm) reinforced masonry walls shall be no more than 8 feet (2438 mm).

For the purpose of this exception, unsupported height is the distance from the finished grade of the under-floor space to the top of the wall.

R322.3 Coastal high-hazard areas (including V Zones). Areas that have been determined to be subject to wave heights in excess of 3 feet (914 mm) or subject to high-velocity wave action or wave-induced erosion shall be designated as coastal high-hazard areas. All buildings and structures constructed in whole or in part in coastal high-hazard areas shall be designed and constructed in accordance with Sections R322.3.1 through R322.3.6.

R322.3.1 Location and site preparation.

1. New buildings and buildings that are determined to be substantially improved pursuant to Section R105.3.1.1 shall be located landward of the reach of mean high tide.
2. For any alteration of sand dunes and mangrove stands the building official shall require submission of an engineering analysis which demonstrates that the proposed alteration will not increase the potential for flood damage. *[Are all sand dunes and mangrove stands seaward of the CCCL? If yes, then does the DEP permit satisfy the NFIP requirement shown here? If yes, then use language in 3109.1.1(3) to refer to DEP permit. Or, this could be modified to refer to the floodplain management ordinance for requirements related to alteration of sand dunes and mangrove stands – since the analysis should be done prior to designing the building.]*

Member's Comments and Reservations (April 29, 2009):

GC: first question, no. In fact, CCCL captures only 25 of the coastal counties.

322.3.1(2) needs to remain unchanged.

R322.3.2 Elevation requirements.

1. All buildings and structures erected within coastal high-hazard areas shall be elevated so that the lowest portion of all structural members supporting the lowest floor, with the exception of mat or raft foundations, piling, pile caps, columns, grade beams and bracing, is:
 - 1.1 Located at or above the design flood elevation, if the lowest horizontal structural member is oriented parallel to the direction of wave approach, where parallel shall mean less than or equal to 20 degrees from the direction of approach, or
 - 1.2 Located at the base flood elevation plus one foot (305 mm), or the design flood elevation, whichever is higher, if the lowest horizontal structural member is oriented perpendicular to the direction of wave approach, where perpendicular shall mean greater than 20 degrees from the direction of approach.
2. Basement floors that are below grade on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings, and for support of parking slabs, pool decks, patios, and walkways.

Exception: Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.

R322.3.3 Foundations. All buildings and structures erected in coastal high-hazard areas shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. Piling shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water loading values used shall be those associated with the design flood. Wind loading values shall be those required by this code. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundation are designed to resist the additional flood load.

R322.3.4 Walls below design flood elevation. Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are not part of the structural support of the building or structure and:

1. Electrical, mechanical, and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and
2. Are constructed with insect screening or open lattice; or
3. Are designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a design safe loading resistance of not less than 10 (470 Pa) and no more than 20 pounds per square foot (958 Pa); or
4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), the construction documents shall include documentation prepared and sealed by a registered design professional that:
 - 4.1. The walls and partitions below the design flood elevation have been designed to collapse from a water load less than that which would occur during the design flood.
 - 4.2. The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the design flood. Wind loading values used shall be those required by this code.

R322.3.5 Enclosed areas below design flood elevation. Enclosed areas below the design flood elevation shall be used solely for parking of vehicles, building access or storage.

R322.3.6 Construction documents. The construction documents shall include documentation that is prepared and sealed by a registered design professional that the design and methods of construction to be used meet the applicable criteria of this section.

CHAPTER 4 FOUNDATIONS

R401.1 [General] Application. The provisions of this chapter shall control the design and construction of the foundation and foundation spaces for all buildings. In addition to the provisions

of this chapter, the design and construction of foundations in areas prone to flooding as established by Table R301.2(1) shall meet the provisions of Section R323. Wood foundations shall be designed and installed in accordance with AF&PA Report No. 7 (see Section R301.2.1.1).

[Modified by FBC] Exceptions:

1. The provisions of this chapter shall be permitted to be used for wood foundations subject to the following:
 - 1.1. Buildings shall have no more than two floors and a roof.
 - 1.2. Interior basement and foundation walls shall be provided at intervals not exceeding 50 feet.
 - 1.3. When the foundation uplift loads determined from Table R401.1 exceed 0 or when such uplift loads cannot be determined from Table R401.1, an engineered design shall be required.
2. In addition to the provisions of this chapter, the design and construction of foundations in areas prone to flooding shall meet the provisions of Section R323.
3. Buildings and structures located within the High-Velocity Hurricane Zone shall comply with the provisions of Chapter 44.

R408.7 [Under-Floor Space] Flood resistance. For buildings located in areas prone to flooding as established in Table R301.2(1):

1. Walls enclosing the under-floor space shall be provided with flood openings in accordance with Section R322.2.2.
2. The finished ground level of the under-floor space shall be equal to or higher than the outside finished ground level on at least one side.

Exception: Underfloor spaces that meet the requirements of FEMA/FIA TB 11-01.

M1301.1.1 [General Mechanical System Requirements] Flood-resistant installation. In areas prone to flooding as established by Table R301.2(1), mechanical appliances, equipment and systems shall be located or installed in accordance with Section R322.1.6

M1401.5 [Heating and Cooling Equipment] Flood hazard. In areas prone to flooding as established by Table R301.2(1), heating and cooling equipment and appliances shall be located or installed in accordance with Section R322.1.6

M1601.3.8 [Duct Construction] Flood hazard areas. In areas prone to flooding as established by Table R301.2(1), duct systems shall be located or installed in accordance with Section R322.1.6.

M1701.6 [Combustion air] Opening location. In areas prone to flooding as established by Table R301.2(1), openings shall be located at or above the elevation required in Section R322.3.1 (flood hazard areas including A Zones) or R322.3.2 (coastal high-hazard areas including V Zones).

M2001.4 [Boilers and Water Heaters] Flood-resistant installation. In areas prone to flooding as established in Table R301.2(1), boilers, water heaters and their control systems shall be located or

installed in accordance with Section R322.1.6.

M2201.6 [Special Piping and Storage Systems] Flood resistant installation. In areas prone to flooding as established by Table R301.2(1), tanks shall be installed at or above the elevation required in Section R322.3.1 (flood hazard areas including A Zones) or R322.3.2 (coastal high-hazard areas including V Zones) or shall be anchored to prevent flotation, collapse and lateral movement under conditions of the design flood.

G2404.7 (301.11) [Fuel Gas] Flood hazard. For structures located in flood hazard areas, the appliance, equipment and system installations regulated by this code shall be located or installed at or above the design flood elevation and shall comply with the flood-resistant construction requirement of Section R322.

Exception: The appliance, equipment and system installations regulated by this code are permitted to be located below the design flood elevation provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation and shall comply with the flood-resistant construction requirements of Section R322.

P2601.3 [General Plumbing Requirements] Flood hazard area. In areas prone to flooding as established by Table R301.2(1), plumbing fixtures, drains, and appliances shall be located or installed in accordance with Section R322.1.6.

P2602.2 [Individual Water Supply and Sewage Disposal] Flood resistant installation. In areas prone to flooding as established by Table R301.2(1):

1. Water-supply systems shall be designed and constructed to prevent infiltration of floodwaters.
2. Pipes for sewage disposal systems shall be designed and constructed to prevent infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

P2705.1 [Plumbing Fixtures, Installation] General.

7. In areas prone to flooding as established by Table R301.2(1), plumbing fixtures shall be located or installed in accordance with Section R322.1.6.

P3001.3 [Sanitary Drainage] Flood resistant installation. In areas prone to flooding as established by Table R301.2(1), drainage, waste and vent systems shall be located and installed to prevent infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

P3101.5 [Vent Systems] Flood resistance. In areas prone to flooding as established by Table R301.2(1), vents shall be located at or above the elevation required in Section R322.3.1 (flood hazard areas including A Zones) or R322.3.2 (coastal high-hazard areas including V Zones).

[The High-Velocity Hurricane Zone requirements in Chapter 44 were part of the South Florida Building Code developed by Miami Dade County. Additional review of Chapter 44 is necessary to determine appropriate linkage to ASCE 24 for flood hazard areas.]

SECTION R4403.14 HIGH-VELOCITY HURRICANE ZONES — FOUNDATION DESIGN

R4403.14.1 Design procedure. The minimum area of a footing or number of piles under a foundation shall be determined in the following manner:

R4403.14.1.1 The total load of the column that has the largest percentage of the live load to the total load shall be divided by the allowable soil pressure or pile capacity.

R4403.14.1.2 The balance soil pressure or pile capacity shall be determined by dividing the total dead load by the area of the footing or the number of piles.

R4403.14.1.3 The minimum number of other footings or number of piles shall be designed on the basis of their respective dead loads only.

R4403.14.1.4 In no case shall the total load of the combined dead, live, wind, flood, and any other loads exceed the allowable bearing pressure of the soil for capacity of any pile upon which the foundation is supported.

R4403.14.1.5 The live load used in the above calculations may be the total reduced live load in the member immediately above the foundation.

R4403.14.1.6 The building official may require submittal of design computations employed in foundation design.

R4403.14.2 Wind effects. Where the pressure on the foundation from wind is less than 25 percent of that resulting from dead or other live loads, wind pressure may be neglected in the footing design.

R4403.14.2.1 Where this percentage exceeds 25 percent, foundations shall be so designed that the pressure resulting from combined dead, live and wind loads shall not exceed the allowable soil bearing values or allowable loads per pile by more than 25 percent.

R4403.14.3 Flood resistance. Where the building or structure is located in a flood hazard area, the foundation, including enclosures below elevated buildings, shall be designed and constructed in accordance with ASCE 24.

Per previous discussion, staff to discuss.

Florida did not adopt IRC Appendix E. See comments on R322.1.9.

Appendix E Manufactured Housing

AE101 Scope.

Exception: In addition to these provisions, new and replacement manufactured homes to be located in flood hazard areas as established by Table R301.2(1) of the *International Residential Code* shall meet the applicable requirements of Section R322 of the *International Residential Code*.

AE502.3 Footings and foundations. Footings and foundations, unless otherwise specifically provided, shall be constructed of materials specified by this code for the intended use and in all cases shall extend below the frost line. Footings of concrete and masonry shall be of solid material. Foundations supporting untreated wood shall extend at least 8 inches (203 mm) above the adjacent finish grade. Footings shall have a minimum depth below finished grade of 12 inches (305 mm) unless a greater depth is recommended by a foundation investigation.

Piers and bearing walls shall be supported on masonry or concrete foundations or piles, or other approved foundation systems which shall be of sufficient capacity to support all loads.

Florida did not adopt IRC Appendix G. Florida adopted Chapter 41 Swimming Pools, but it does not address these siting requirements. If pools are proposed in seaward of the CCCL, they're subject to Building 3109.1.1(3). Options:

Integrate these pool provisions into Sec. R322

Member's Comments and Reservations (April 29, 2009):

JG – should look as it relates to Chapter 41, should any of this pool requirements be back into chapter 41 (swimming pool in FBC).

MM . . (.1) public, (.2) private. How we did 424.2, we took Standard Bldg Code and incorporated into it certain requirements .

Evaluate adding to include 424 (building Code) and chapter 41 in Residential

TA – important for siting, explain problems you get with pools in flood zone, need to capture.

JG – Get Florida Pool & Spas Association and review for feedback about putting into the code.

Include requirements for siting for pools in the model ordinance.

Appendix G, Swimming Pools, Spas and Hot Tubs

~~**AG101.2 Pools in flood hazard areas.** Pools that are located in flood hazard areas established by Table R301.2(1), including above-ground pools, on-ground pools, and in-ground pools that involve placement of fill, shall comply with Sections AG101.2.1 or AG101.2.2.~~

~~**Exception:** Pools located in riverine flood hazard areas which are outside of designated floodways.~~

~~**AG101.2.1 Pools located in designated floodways.** Where pools are located in designated floodways, documentation shall be submitted to the building official, which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the jurisdiction.~~

~~**AG101.2.2 Pools located where floodways have not been designated.** Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.~~

~~**AG103.3 Pools in flood hazard areas.** In flood hazard areas established by Table R301.2(1), pools in coastal high-hazard areas shall be designed and constructed in conformance with ASCE 24.~~

Member's Comments and Reservations (April 29, 2009):

MM: Integrate applicable pool provisions into sec. R322. Local ordinance should be limited to admin. Requirements. All construction requirements should be in the Code.

Per R101.2, existing buildings are handled under the Florida Existing Building Code

Appendix J Existing Buildings and Structures

~~**AJ102.5 Flood hazard areas.** Work performed in existing buildings located in a flood hazard area as established by Table R301.2(1) shall be subject to the provisions of R105.3.1.1.~~

Residential Code Integration as revised by Workgroup.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	11	0	0	0

Note: Members agreed that on balance, ICC provisions should be retained unless there is a real need for a Florida Specific Requirement.

Add Flood Provisions to the 2009 FBC, Existing Building[®] (April 29, 2009)

Notes:

- Underlining and ~~strike thru~~ show change to the 2009 IBC
- Text added/deleted by Florida is prefaced with “ADDED IN FBC” or “DELETED IN FBC”
- *Italicized texts are staff notes (shown in blue in the PDF).*

FBC, Residential refers to the Florida Building Code, Existing Building (Sec. 101.2, Exception).

101.5 Compliance methods. The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with one of the methods listed in Sections 101.5.1 through 101.5.3 as selected by the applicant. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the code official. Sections 101.5.1 through 101.5.3 shall not be applied in combination with each other.

[Modified in FBC] Exception: Alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building has sustained substantial structural damage as defined in Section 506.2, or the building is undergoing more than a limited structural alteration as defined in Section 807.5.3. New structural members added as part of the repair or alteration shall comply with the Florida Building Code, Building. **Repairs and alterations** of existing buildings in flood hazard areas shall comply with Sections 501.4 and 601.3, respectively.

Member’s Comments and Reservations (April 29, 2009):

CJ: Is this really an exception? Why are additions left out?

MM: the above language in the exception is not the same as 2009, (it is shown as the 2007 FBC, EB need to show how it was modified in 2009, to fix the last sentence (delete “repairs/501.4” for flood)

BP: the exception is ONLY applicable to alterations; for flood, the forward reference to 501.4 and 601.3.

Double check the section numbering

TT: difference between substantial structural damage and SD.

~~**[DELETED IN FBC] 404.10 Modifications.** Wherever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, upon application of the owner or owner’s representative, provided the code official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, accessibility, life and fire safety, or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the Department of Building Safety.~~

Member's Comments and Reservations (April 29, 2009):

JR: think this was deleted because covered by alternate means & methods.

RD: not listed as one of the three things the Commission has the authority to establish in administrative provisions

JG: if JR thinks it is covered, why not leave 104.10 there and add guidance?

JR: if needed, consider expanding the alternate methods & materials.

RQ: following language needed in ordinance to capture non-building variances.

~~**104.10.1 Flood hazard areas.** For existing buildings located in flood hazard areas for which the repairs, alterations, and additions constitute substantial improvement, the code official shall not grant modifications to provisions related to flood resistance unless a determination is made that~~

- ~~1. The applicant has presented good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render compliance with the flood-resistant construction provisions inappropriate.~~
- ~~2. Failure to grant the modification would result in exceptional hardship.~~
- ~~3. The granting of the modification will not result in increased flood heights, additional threats to public safety, extraordinary public expense nor create nuisances, cause fraud on or victimization of the public or conflict with existing laws or ordinances.~~
- ~~4. The modification is the minimum necessary to afford relief, considering the flood hazard.~~
- ~~5. A written notice will be provided to the applicant specifying, if applicable, the difference between the design flood elevation and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation and that construction below the design flood elevation increases risks to life and property.~~

~~**[DELETED BY FBC] 109.3.3 Lowest floor elevation.** For additions and substantial improvements to existing buildings in flood hazard areas, upon placement of the lowest floor, including basement, and prior to further vertical construction, the elevation documentation required in the *International Building Code* shall be submitted to the code official.~~

Member's Comments and Reservations (April 29, 2009):

MM – covered by the Chapter 1 of the FBC, Building.

MM: Retain 109.3.3. Definitions for Substantial Damager and Substantial Improvement should be retained in the code.

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a flood plain subject to a 1-percent or greater chance of flooding in any year, or
2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

~~[REPLACED in FBC by definition in Sec. 1102] HISTORIC BUILDING. Any building or structure that is listed in the State or National Register of Historic Places; designated as a historic property under local or state designation, law, or survey; certified as a contributing resource within a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer or the Keeper of the National Register of Historic Places.~~

Member's Comments and Reservations (April 29, 2009):

TA & JG: retain definition here, less to have to modify, provided it is consistent with the Chapter 11 definition (not related to flood).

[May decide to defer the definitions for Substantial Damage and Substantial Improvement to the definitions in local floodplain management ordinances (thus allowing for CRS-eligible definitions). These are terms used administratively to determine when existing buildings must comply, they do not affect the design of buildings brought into compliance.]

Previous decision: have definitions in both codes as long as the same as 2009 FBC, Building.

SUBSTANTIAL DAMAGE. For the purpose of determining compliance with the flood provisions of this code, damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENT. For the purpose of determining compliance with the flood provisions of this code, any repair, alteration, addition, or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure, before the improvement or repair is started. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the code official and that is the minimum necessary to assure safe living conditions, or
2. Any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.

CHAPTER 3 PRESCRIPTIVE COMPLIANCE METHOD

Section 302 Additions, Alterations or Repairs

302.1.1 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the Florida Building Code, Building. *International Building Code*, any additions, alterations or repairs that constitute substantial improvement of the existing structure, as defined in Section 1612.2 of the Florida Building Code, Building. *International Building Code*, shall comply with the flood design requirements for new construction and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

302.1.2 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3, any additions, alterations or repairs that do not constitute substantial improvement or substantial damage of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

Section 306 Historic Buildings [FBC REFERS TO CHAPTER 11, HISTORIC BUILDINGS]

~~**306.2 Flood hazard areas.** Within flood hazard areas established in accordance with Section 1612.3 of the *International Building Code*, where the work proposed constitutes substantial improvement as defined in Section 1612.2 of the *International Building Code*, the building shall be brought into conformance with Section 1612 of the *International Building Code*.~~

~~**Exception:** Historic buildings that are:~~

- ~~1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or~~
- ~~2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or~~
- ~~3. Designed as historic under a state or local historic preservation program that is approved by the Department of Interior.~~

Member's Comments and Reservations (April 29, 2009):

PW: the FEMA definition is more restrictive; for determinations of eligibility, those that are not federally approved, would have come to us.

RQ: need to retain the limitations for flood.

PW: the language in Chapter 11 will take care of it, if we retain it.

PW: retain the I-Code definition in 1101.4 (use the language in the exception shown in 11 in both places).

Chapter 5 Repairs

[MODIFIED BY FBC (by addition of 501.4.1 CCCL) and by deletion of text in 501.4 in the 2009 Supplement]

~~**501.4 Flood hazard areas.** In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1612 of the Florida Building Code, Building.~~

Member's Comments and Reservations (April 29, 2009):

MM: 501.3 flood hazard areas will be retained.

Check previous cite to 506.2, check numbering.

[ADDED BY FBC] 501.4.1 Structure seaward of a coastal construction line. Structures located seaward of the coastal construction line shall be designed to resist the predicted forces of a 100-year storm event in accordance with Section 3109 of the Florida Building Code, Building.

~~**[From FBC] 501.4.2 Floodplain construction.** This code specifically defers to the authority granted to local government by Title 44 CFR, Sections 59 and 60. This code is not intended to supplant or supersede local ordinances adopted pursuant to that authority, nor are local floodplain management ordinances to be deemed amendments to the code.~~

Member's Comments and Reservations (April 29, 2009):

Retain the 2009 language.

[IN IEBC] 506.2.5 [Repairs to damaged buildings] Flood hazard areas. In flood hazard areas, buildings that have sustained substantial damage shall be brought into compliance with Section 1612 of the Florida Building Code, Building. ~~*International Building Code.*~~

Chapter 6 Alterations – Level 1

601.3 Flood hazard areas. In flood hazard areas, alterations that constitute substantial improvement shall require that the building comply with Section 1612 of the Florida Building Code, Building. ~~*International Building Code*~~

Chapter 9 Change of Occupancy

901.1 Scope. The provisions of this chapter shall apply where a change of occupancy occurs, as defined in Section 202, including:

1. Where the occupancy classification is not changed, or
2. Where there is a change in occupancy classification or the occupancy group designation changes.

Chapter 10 Additions

1001.1 Scope. An addition to a building or structure shall comply with the Florida Building Code, Building. ~~*International Building Code*~~ as adopted for new construction without requiring the existing building or structure to comply with any requirements of those codes or of these provisions, except as required by this chapter. Where an addition impacts the existing building or structure, that portion shall comply with this code.

1003.1 Compliance with [CORRECT TITLE] *International Building Code.*

1003.5 Flood Hazard Areas. Additions and foundations in flood hazard areas shall comply with the following requirements:

1. For horizontal additions that are structurally interconnected to the existing building:
 - 1.1 If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the Florida Building Code, Building. ~~*International Building Code.*~~
 - 1.2 If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612 of the Florida Building Code, Building. ~~*International Building Code*~~
2. For horizontal additions that are not structurally interconnected to the existing building:
 - 2.1 The addition shall comply with Section 1612 of the Florida Building Code, Building. ~~*International Building Code.*~~
 - 2.2 If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the Florida Building Code, Building. ~~*International Building Code*~~
3. For vertical additions and all other proposed work, when combined, that constitute substantial improvement, the existing building shall comply with Section 1612 of the ~~*International Building Code.*~~
4. For a new, replacement, raised, or extended foundation, if the foundation work and all other proposed work, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the Florida Building Code, Building. ~~*International Building Code.*~~

Member's Comments and Reservations (April 29, 2009):

CJ: 1001.1 scope.

Chapter 11 Historic Buildings, is not taken from the IEBC. Suggested language Chapter 11 Historic Buildings is not offered at this time; additional evaluation is necessary. The Commission has contacted the Department of State, Historic Buildings, for coordination.

The FBC definition of "historic structure" is inconsistent with the NFIP's definition. Additional review is necessary to determine how best to capture difference in definition. It may be easiest to require historic structures to be reviewed under the ordinance to determine if they may be repaired or altered without full compliance (i.e., not substantial improvement/substantial damage).

The current Florida model floodplain management ordinance allows variances to be granted upon a determination that the proposed work will not preclude the structure's continued listing as a historic structure. If continued listing is ensured, the NFIP does not require full compliance. The variance process allows consideration of measures to reduce future flood damage which provides some protection to historic resources. Historic structures have been elevated (even if not required). Other measures that have been applied to protect historic structures include dry floodproofing, elevation of equipment, use of flood damage-resistant materials, changes in how flood-prone spaces are used.

The FBC, Existing Building refers to The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings which is included in Appendix B. It does not contain any provisions to address flood vulnerability. FEMA has a guidance document, FEMA P-467-2 which could be referenced.

Chapter 11 Historic Building

~~[DELETED BY FBC] 1101.4 Flood hazard areas. In flood hazard areas, if all proposed work, including repairs, work required because of a change of occupancy, and alterations, constitutes substantial improvement, then the existing building shall comply with Section 1612 of the International Building Code.~~

~~**Exception:** If a historic building will continue to be a historic building after the proposed work is completed, then the proposed work is not considered to be a substantial improvement. For the purposes of this exception, a historic building is:~~

- ~~1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; or~~
- ~~2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or~~
- ~~3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.~~

Member’s Comments and Reservations (April 29, 2009):

PW: retain this to preserve the NFIP more restrictive definition (above shown as strike-thru).

JB: members agreed to retain the I-Code definition in 1101.4 (use same in both places).

[The definition of “historic structure” that is in the NFIP rules (see exemption above) differs from this definition.]

[ADDED BY FBC] HISTORIC BUILDING. For the purposes of this code and the referenced documents, an historic building is defined as a building or structure that is:

1. Individually listed in the National Register of Historic Places; or
2. A contributing property in a National Register of Historic Places listed district; or
3. Designated as historic property under an official municipal, county, special district or state designation, law, ordinance or resolution either individually or as a contributing property in a district; or
4. Determined eligible by the Florida state historic preservation officer for listing in the National Register of Historic Places, either individually or as a contributing property in a district.

Chapter 12 Relocated or Moved Buildings

1202.6 Flood hazard areas. If relocated or moved into a flood hazard area, structures shall comply with Section 1612 of the Florida Building Code, Building. *International Building Code*.

Chapter 13 Compliance Alternatives

1301.3 Acceptance. For repairs, alterations, additions, and changes of occupancy to existing buildings that are evaluated in accordance with this section, compliance with this section shall be accepted by the code official.

1301.3.3 Compliance with flood hazard provisions. In flood hazard areas, buildings that are evaluated in accordance with this section shall comply with Section 1612 of the Florida Building Code, Building. *International Building Code*: if the work covered by this section constitutes substantial improvement.

Existing Building Code Integration as revised by the Workgroup.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	11	0	0	0

Note: Members agreed that on balance, ICC provisions should be retained unless there is a real need for a Florida Specific Requirement.

**Add Flood Provisions to the 2009 FBC, Mechanical®
(April 29, 2009)**

Note: Underlining and ~~strike-through~~ show change to the 2009 IBC

DESIGN FLOOD ELEVATION. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard area map.

[B] M301.13 [General Regulations] Flood hazard. For structures located in flood hazard areas, mechanical systems, equipment and appliances shall be located at or above the design flood elevation.

Exception: Mechanical systems, equipment and appliances are permitted to be located below the design flood elevation provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation in compliance with the flood-resistant construction requirements of the *International Florida Building Code, Building*.

M301.13.1 High-velocity wave action. In flood hazard areas subject to high velocity wave action, mechanical systems and equipment shall not be mounted on or penetrate walls intended to break away under flood loads.

M401.4 [Ventilation, General] Intake opening location. Air intake openings shall comply with all of the following:

4. Intake openings on structures in flood hazard areas shall be at or above the design flood level.

M501.2.1 [Exhaust Systems, General] Location of exhaust outlets. The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances:

4. Exhaust outlets serving structures in flood hazard areas shall be installed at or above the design flood level.

M602.4 [Duct Systems, General] Flood hazard. For structures located in flood hazard areas, plenum spaces shall be located above the design flood elevation or shall be designed and constructed to prevent water from entering or accumulating within the plenum spaces during floods up to the design flood elevation. If the plenum spaces are located below the design flood elevation, they shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

M603.13 [Duct Construction and Installation] Flood hazard areas. For structures in flood hazard areas, ducts shall be located above the design flood elevation or shall be designed and constructed to prevent water from entering or accumulating within the ducts during floods up to the

design flood elevation. If the ducts are located below the design flood elevation, the ducts shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

M1206.9.1 [Hydronic Piping, Piping installation] Flood hazard. Piping located in a flood hazard area shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

M1305.2.1 [Fuel Oil System Installation] Flood hazard. All fuel oil pipe, equipment and appliances located in flood hazard areas shall be located above the design flood elevation or shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

Add Flood Provisions to the 2009 FBC, Plumbing[®]
(First Draft, April 13, 2009)

DESIGN FLOOD ELEVATION. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map.

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a flood plain subject to a 1-percent or greater chance of flooding in any given year.
2. The area designated as a flood hazard area on a community’s flood hazard map, or otherwise legally designated.

P309
FLOOD HAZARD RESISTANCE

P309.1 General. Plumbing systems and equipment in structures erected in flood hazard areas shall be constructed in accordance with the requirements of this section and the *International Florida Building Code, Building*.

P309.2 Flood hazard. For structures located in flood hazard areas, the following systems and equipment shall be located at or above the design flood elevation:

Exception: The following systems are permitted to be located below the design flood elevation provided that the systems are designed and installed to prevent water from entering or accumulating within their components and the systems are constructed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation.

1. All water service pipes.

2. Pump seals in individual water supply systems where the pump is located below the base flood elevation.
3. Covers on potable water wells shall be sealed, except where the top of the casing well or pipe sleeve is elevated to at least 1 foot (304.8 mm) above the design flood elevation.
4. All sanitary drainage piping.

5. All storm drainage piping.
6. Manhole covers shall be sealed, except where elevated to or above the design flood elevation.
7. All other plumbing fixtures, faucets, fixture fittings, piping systems and equipment.
8. Water heaters.
9. Vents and vent systems.

309.3 Flood hazard areas subject to high-velocity wave action. Structures located in flood hazard areas subject to high-velocity wave action shall meet the requirements of Section 309.2. The plumbing systems, pipes and fixtures shall not be mounted on or penetrate through walls intended to breakaway under flood loads.

**Add Flood Provisions to the 2009 FBC, Fuel Gas®
(First Draft, April 13, 2009)**

**SECTION 202 (IFGC)
GENERAL DEFINITIONS**

DESIGN FLOOD ELEVATION. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map.

FLOOD HAZARD AREA. The greater of the following two areas:

1. The area within a floodplain subject to a 1 percent or greater chance of flooding in any given year.
2. The area designated as a flood hazard area on a community’s flood hazard map, or otherwise legally designated.

FG301.11 [General] Flood hazard. **For structures located in flood hazard areas, the appliance, equipment and system installations regulated by this code shall be located at or above the design flood elevation and shall comply with the flood-resistant construction requirements of the *International Florida Building Code, Building*.**

Exception: **The appliance, equipment and system installations regulated by this code are permitted to be located below the design flood elevation provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation and shall comply with the flood-resistant construction requirements of the *International Florida Building Code, Building*.**

Mechanical Code, Plumbing Code, and Fuel Gas Code Integration as revised by the Workgroup.

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 4/29/09</i>	11	0	0	0

Note: Members agreed that on balance, ICC provisions should be retained unless there is a real need for a Florida Specific Requirement.