



February 26, 2007

To: Windstorm Mitigation Study Committee

From: L. A. Twisdale, Jr.

Re: Comments following 22 February Meeting

Thank you for the opportunity to meet with the committee. I was impressed with the level of detail in your questions and deliberations.

My quick follow-up comments are listed below and relate to some of the issues we discussed as well as items in the draft outline.

1. Florida Building Code

a. Please consider recommending that the Florida Building Commission:

- i. **Make cost-effective loss reduction (CELR) a priority second only to the life safety mission of the building code.** (This needs to be emphasized as part of the FBC mission, whereas now it is not clear how important CELR really is.)
- ii. Consider setting a goal that can be easily said and understood by all. Like, ***“At least 20% further loss reduction from 2006 new code homes to 2012 new code built houses.”*** This should be a key piece of the state’s recommendations. It is the most painless, direct, and cost effective way of achieving mitigation
- iii. Develop quantitative assessments of post 2002 code construction performance, including:
 1. Detailed, statistically-valid field surveys in multiple wind zones to document damage and failure modes.
 2. Follow-up analysis of insurance claims and loss information
 3. Comparison of modeled and actual losses on the sampled buildings
- iv. Undertake an aggressive approach to determining CELR code improvements, including:
 1. Research and testing
 2. Field observations per above
 3. CELR cost-benefit analysis to ensure affordability balance with loss reduction.
 4. Note 1: For example, while the FBC may have discussed secondary water protection at a meeting or two, the above approach is intended to promote work to aggressively test, research, and present data so that decisions can be made. It is one thing to discuss something and leave it open indefinitely, and another to develop a research program to address the concerns of building officials, builders, insurers, etc and then present the data and findings so that the best decision can be made. I am clearly talking about the latter approach.
 5. Note 2: The only thing worse than slow building code actions on potential improvements that can make a real difference, are building code actions that

unknowingly make the problem worse, or actions require a certain “thing” to be used in a prescriptive measure, when there may be better or more innovative solutions out there.

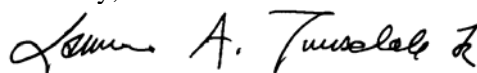
- v. Produce an annual report on these items and ranking of findings of new code performance and CELR status and priorities for the next year.
 - vi. **This effort should be funded to somewhere around \$5+Million per year for a 3 to 5 year period and then reassessed based on remaining work.** This will be some of the best money you can spend if it results in wringing out 10- 25% more loss reduction in new code buildings.
- b. An emphasis on repairs of damage buildings to take advantage of CELR. As the code adapts more CELR, then repairs to code minimum would include such measures. Otherwise, the homeowner should be made aware of CELR and insurance credits prior to making the repairs.
- c. A quality goal should be developed and recommended for new construction, say XX% of homes without material defects for the wind resistant provisions. This, again, is something builders can understand and it comes at a very small cost. Say, you recommend program funded at about \$250,000 per year to measure and improve quality. That would allow a valid statistical survey sample of new code homes every year. This would be a huge step and further assurance the state is serious.
- d. The committee should point out that the FBC should be guided by science with no legislative interference. The recent efforts by the legislature to become a code writing body are a good examples of potential problems caused by legislative interference:
- i. Regarding eliminating the panhandle WBD exemption:
 - 1. The Panhandle WBD study was only ½ complete and hence the study was not allowed to go to completion. However the evidence was significant, showing that:
 - 2. The 120 mph designation is not optimal and is based on judgment from the 1996-7 era.
 - 3. The effect of terrain is as important as wind speed in determining WBD risk. For example, 110 mph regions with suburban terrain were more at risk than 130 mph regions with tall trees, typical of the inland Panhandle area.
 - 4. 100 mph regions in open terrain were also at risk, yet the current WBD criteria does not consider this.
 - 5. More houses are being built in Florida in the 110 to 120 area outside the Panhandle without required WBD protection than are being built in the Panhandle exemption area. Hence, it doesn't appear that the legislature actually reduced risk. The research says they probably increased risk, if you consider that the completed research could have potentially indicated WBD protection is needed in suburban terrains in the 110-120 mph region.
 - 6. Tree fall on buildings is a greater risk to houses in dense, tall treed environments than WBD. Mitigation research against tree fall is needed.
 - 7. The second phase of the WBD would have addressed these issues and could have led to enough real data and science to;
 - a. Reevaluate the 120mph criteria throughout the state.
 - b. Potential strengthening of the code in terms of what the WBD region should be based on terrain.
 - c. Determine if the current test standard is adequate in terms of the design missile impact.
 - ii. Comments made that the legislature did a lot of good are, unfortunately misinformed. The potential damage by the legislature includes:

1. Steps backward within the FBC parties in terms of builders and insurers working together for the common good. The parties to the FBC had agreed to let science determine the issue and then the press and insurance industries misinterpreted the results and made inflammatory public statements.
 2. Cut off research that would potentially significantly improve the standard and reduce losses in the state. The state is now stuck with a 1996 era standard and continuing to build houses at a rapid pace, with more of them at risk outside the Panhandle than were at risk with the previous exemption.
 3. I would say the legislative action was a clear loser and was a step backward. The committee has a chance to make a significant statement about this. The technical work should go forward as shutters are one of the most cost effective mitigation measures available.
- iii. The elimination of the partially enclosed design option by the legislature was a reasonable move, but this was underway in the international standard. I think if the FBC had a CELR mission, they would have acted sooner on this.
1. Note; please be aware that the strongest code built house actually consists of a partially enclosed design that has opening (shutter protection). A partially enclosed building is one that is designed against higher pressures. If you protect the openings of such a building, it is clearly stronger than an enclosed design.
 2. If the legislatures would give the FBC a CELR mission option, the partially enclosed design with opening protection becomes a viable code plus design option
2. Flood Maps
- a. Consider making a statement to encourage industry to:
 - i. Develop a combined wind and coastal flooding insurance coverage policy for residences.
 - ii. This would have many benefits, including the litigation effects of separate wind and flood coverages and/or no flood coverage.
3. Existing Construction
- a. Wind inspections
 - i. The current inspection program deals with site built single family homes. Modular houses are considered site built and must comply with FBC.
 - ii. Manufactured housing is a totally different type of building. Without further research into CELR, it would be a mistake to undertake manufactured housing.
 1. The industry's approach has been to tie down these houses.
 2. The attached structures to these houses are highly vulnerable to damage.
 3. Research is needed to find out what is cost effective and what isn't.
 4. You could recommend such research with findings and recommendation due in say 18 months. I'd say the research is a \$1M to \$2M effort, including testing.
 - b. Moving MFSH
 - i. Should reside with an agency with some technical and IT capability. Ideally, a non-political environment. It seems like whoever gets it should have knowledge of construction and building codes.
4. Certified Wind Inspection Characteristics
- a. The MFSH inspections need to be coordinated with what the recommendation is for insurance companies doing inspections.
 - b. If you go with insurance inspections, then the MFSH inspections could be for those without insurance. The MFSH grants should be for low income folks.
 - c. Updating the inspection form annually should be recommended

- i. Improved rating system demands it.
 - d. Statistical report on inspection program and inspection quality should be produced annually. Otherwise, who know what the quality will end up being.
- 5. HSRS
 - a. The system must be updated, maintained, and validated.
 - b. There will likely be attacks on the system, especially if insurers feel the discounts are too large.
 - c. There are additional house features that need to be included and a major update is needed over the next year.
 - d. Budgets need to be adequate to update and validate, including collecting damage and loss information from annual storms. About \$1 Million is needed for the first redo and updating, including validation and new inspection form update development and testing.
 - e. If the system is the lynchpin of information to the public, it needs to be right.
 - f. You might consider making a comment on development of a second rating system for in home sheltering. This has to be a separate rating since it is life safety oriented, not just loss reduction. This type of rating system would likely be an I, II, III, IV, or V, perhaps tied to Hurricane or Tornado categories. Such a system would be useful for public announcements on need to evacuate (this would not apply to barrier islands, where evacuations must be mandatory).
 - g. The HSRS data on a property needs more data fields than just the score. The loss relativity needs to be included, the terrain, and wind zone and the version number. I would recommend a statewide database, like DBDDS, keep this info, along with all inspection information, and periodically pass to other agencies.
 - i. How to get insurance inspection data into the system? You might want to require insurance HRSR inspection data be shared into the system. That way, the entire statewide building stock can be located in one place. Cat fund needs this info as well.
- 6. Making it Happen
 - a. How to get insurers to go along is the big question. I think they will balk at picking up the tab on inspections without some hope of recovery of costs.
 - b. I still think that the simplest thing would be to:
 - i. Require inspections by all insurers for homes built prior to 2002.
 - ii. Do it over, say a 7 year period, focusing on high hazard areas initially.
 - iii. Allow a policy charge of \$XX per year, say \$15 to \$20 for 7 years on all policies and then a reduced amount after that for new business only.
 - iv. This approach can be easily boiled down into a goal everyone understands and simplifies everything else, including MFSH.
 - v. The credits and cost of not mitigation will push the market. MFSH can then be the grant vehicle for low income and folks without insurance. You could continue MFSH through Mar 2008 with the insurance inspection program mandated to be started by then.

I hope you will find this list of comments useful, and please ignore my typos. Please give me a call or email if you have any questions on these suggestions.

Sincerely,



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