

# FLORIDA BUILDING COMMISSION

## HURRICANE RESEARCH ADVISORY COMMITTEE WORKSHEET

OCTOBER 10, 2005

The worksheet is divided into Six (6) categories:

1. Amendments that were approved by the Commission for expedited code adoption.
2. Amendments recommended for expedited code adoption by the Committee, but deferred to the glitch cycle by the Commission.
3. Amendments recommended for expedited code adoption by the Committee, but not approved by the Commission.
4. Amendments proposed by the Committee, that achieved a consensus for adoption in the glitch adoption process.
5. Amendments proposed by the Committee that achieved a consensus for adoption during the glitch amendment process, but have additional research requirements that will not be ready in time for the glitch cycle.
6. Amendments proposed by the Committee that did not achieve a consensus for the amendment in concept.

During the meeting, members will be asked to evaluate options in categories 2 and 4, and following discussions, if refinements are proposed, to do additional rankings of the options as refined. The following scale will be utilized for the ranking exercises:

<b>Acceptability Ranking Scale</b>	<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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## **CATEGORY 1: COMMISSION APPROVED FOR EXPEDITED CODE ADOPTION**

### **WATER INTUSION:**

*FHBA/HBAMO Water Intrusion Study Recommendations.*

- A bond break be provided between primary drainage planes and stucco renderings in drained assemblies. In simple terms this will require two layers of building paper or a layer of building paper over a plastic housewrap. *(with Commission revisions)*
- The specification, rating and testing of WRB's be consistent with their installed exposure – i.e. tested and rated as part of a stucco assembly. Appropriate performance specifications need to be developed for WRB's used with stucco renderings and the Florida Building Code altered to require them. *(with Commission revisions)*
- The Florida Building Code be altered to come into compliance with the International Residential Code to explicitly allow for the construction of unvented roof assemblies.
- Require application of exterior surface coatings to ~~appropriate standard or~~ manufacturer's specification. *(with Commission revisions)*
- Delete the criteria of chapter 14 that deems walls constructed according to the masonry chapter and concrete chapter requirements to be weather resistant. *(with Commission revisions)*

### **ROOFING:**

*FRSA/TRI Clay and Concrete Roof Tile Installation recommendations for Hip and Ridge Tile attachment.*

- Require wood, metal or other structural support “ridge board” for tile attachment methods 1, 2 and 4A
- Require FBC approved pre-bagged mortar to attach hip and ridge tiles attachment methods 3 and 4B (pre-bagged mortar requirement applies to systems where mortar is the attachment component not systems utilizing ridge board and mechanical or adhesive-set)
- Require testing of ridge attachment systems according to SSTD 11 to establish wind up-lift resistance.
- Utilize an additional tile factor of 2-1 above that specified in SSTD 11 or TAS 101 to determine the “allowable overturning moment” or “attachment resistance expressed as a moment (Mf)”
- Prohibit component substitution without proper laboratory testing and FBC Product Approval
- Allow hip and ridge attachment systems with demonstrated performance equal or superior to that required by the identified systems

**WINDOW, DOOR AND SHUTTER (STRUCTURAL)**

*PGT Industries Recommendations*

- ◆ **Address requirements for installation instructions via Product Approval Workgroup Recommendations.**

**CATEGORY 2: COMMISSION DEFERRED AMENDMENTS—NOT APPROVED FOR EXPEDITED CODE ADOPTION**

*FEMA Mitigation Assessment Team Recommendations*

- ◆ **Require compliance with ANSI/SPRI ES-1 for edge flashings and copings.**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

- ◆ **Require compliance with ASTM E-1592 for testing the uplift resistance of metal panel roof systems. (Note: Require ASTM E-1592 for structural metal panel roof systems and UL 580 for non-structural metal panel roof systems)**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

- ◆ **Require asphalt shingles to comply with UL 2390.**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

- ◆ **Require removal of existing roof covering down to the deck and replacement of deteriorated sheathing in areas where basic wind speed is 110mph or greater. If existing sheathing attachment does not comply with loads derived from Chapter 16, require installation of additional fasteners to meet the loads.**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

- ◆ **Make the requirements of 2001 FBC Section 1522 (Rooftop Mounted Equipment) applicable throughout the state for all wind speeds. Include in Mechanical Volume also.**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

### CATEGORY 3: AMENDMENTS NOT APPROVED BY THE COMMISSION

*FHBA/HBAMO Water Intrusion Study Recommendations*

- The moisture storage capacity of mass walls be increased by providing a “seat” at the base of these assemblies.
- Code officials be instructed regarding the correct interpretation of ASTM C1063 and the Florida Building Code be explicitly altered to require drainage where drained assemblies intersect mass assemblies.
- Define the terms “weather resistant” and “weather protection”.

### CATEGORY 4: CONSENSUS FOR AMENDMENT—GLITCH CODE ADOPTION PROCESS

*Water Intrusion General*

- ♣ **Windows and doors be correctly rated and tested according to ANSI/AAMA 101. Muller window units, double windows or composite windows be tested and held to the same requirements as single units.**

**9 – 1 in favor of the recommendation.** (May 10, 2005 vote)

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 6/28/05</i>	<b>7</b>	<b>3</b>	<b>1</b>	<b>0</b>
<i>Revised 6/28/05</i>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>
<i>10/10/05</i>				

**Reservations for Expedited Adoption:**

- Need more time for testing, test standards could be applied, test or standard for multiple units?
- AAMA 101 not multiple units, old AAMA 450 does not cover all products, under revision, will cover testing.

**August Comments:**

- The only standard available, does not cover all products, is being revised, and will be ready in a month or two,
- There is not a standard available, will be AAMA 450-05.
- HVHZ requires testing but not water intrusion testing.
- This will be ready for glitch cycle consideration.

**Assignments:**

Dave Olmstead will monitor and bring details to HRAC for their review and consideration.

- ♣ **Pressure relieved/baffled soffit assemblies be developed for vented roof assemblies and the Florida Building Code altered to require them.**

**8 – 2 in favor of the recommendation. (May 10, 2005 vote)**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

**August Comments:**

- Olmstead, AAMA is developing standards dealing with soffits
- Dixon, soffit space design configuration (not tested).
- Kim, blocking is needed to close baffling, prescriptive idea, not yet ready for this stage.
- Need to identify what research is needed.

- ♣ **Water managed details for dryer vents, electrical panel boxes, electrical boxes, vent fan hoods be developed and the Florida Building Code Altered to require them.**

**10 – 0 in favor of the recommendation. (May 10, 2005 vote)**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

**August Comments:**

- Dixon, does Miami-Dade have detail requirements? Ceiling vent spaces? No (Jaime).

- Dixon, have to seal wherever you punch through the envelope.
- Chris, roofers would be happy if this is required, assuring it is sealed with proper flashings.
- Parrino, incorporate details in products sealing water from the building
- Dick, the way gutters are installed, creates leaks that appear as if the windows are leaking.
- This should be advisory in code, it is too difficult to codify every detail in the Code.
- Glenn, education program is the key, importance of and how to seal penetrations. Jack will draft something for the code.
- Infiltration is addressed in energy code, adopting FRC may solve the problem, 703.8 addresses flashing, but may need some clarifications.

**ROOFING**

- ♣ **Add criteria regarding wind and wind driven rain resistance of ridge vents. Attachment criteria require development but TAS 100A could be referenced for rain resistance.**

**10 – 0 in favor of the recommendation. (May 10, 2005 vote)**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

**August Comments:**

- Gascon, the correct reference is TAS 100A, for ridge vents in Miami-Dade County.
- Schulte, is any amount of wind driven rain allowed through vents? Gascon, certain amount of water is permitted.
- Dixon, does the test apply to wind resistance?
- Gascon, there is a performance test, for 140 mph.
- Madani, product approved under this test, closed vent during wind storm, no standard for vent.
- Bassett, take them off and don't allow them on the roof!
- Gascon working with Commission to review the standard, and develop revisions for the State.
- Ross will work with Gascon, code shows TAS 110
- Kim will work with Gascon

- Jim, include as an assignment to a work group, since volunteers are still accountable to Sunshine Law requirements for meetings.

**Assignments:**

Standards will be reviewed by Miami-Dade (HVHZ requirements) with recommendations for State use for ridgevents and soffits.

- ♣ **Criteria for wind resistance of soffits should be developed and added.**

**10 – 0 in favor of the recommendation.** (May 10, 2005 vote)

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

**August Comments:**

- Need to tie this issue with the ridge vent work.
- Should be tied to soffit baffle criteria.
- Bassett don't put holes in the soffit!
- TAS 110 may be a suitable test method, modified as necessary.

- ♣ **Require use of roof cement for asphalt shingles at eaves, rakes, hips, and ridges where basic wind speed is 110 mph or greater.**

**6 – 4 in favor of the recommendation.** (May 10, 2005 vote)

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 6/28/05</i>	<b>6</b>	<b>2</b>	<b>2</b>	<b>1</b>
<i>Revised 6/28/05</i>	<b>7</b>	<b>1</b>	<b>1</b>	<b>2</b>

**Reservations from the June Meeting:**

- In certain areas do not want roofing cement – such as the eaves.
- I agree with above comment.



- No data supporting this change, is this a real requirement?
- Preventing uplift out weighs, this had already been required for years.
- Have not seen supporting data.
- Asphalt, slope, interlayer, installation.
- The recommendations is too vague.

**August Comments:**

- Glenn, this recommendation needs to go away.
- Hurricane Charley reports are well documented, vulnerability of hips and eaves was demonstrated.
- Gascon, this is required for HVHZ.
- Wiggins, we have the standards from the HVHZ and should use for the State.
- Rodriguez, we should do this for the glitch cycle.
- Dixon, pull the information together for the December meeting for proposed amendments.
- FEMA will bring supporting data and a summary of this issue for the upcoming meeting.
- Schulte, slip and falls from eaves, mastic is dangerous to workers, and starter strips to hold the eaves down.

**Assignments:**

John Ingargiola and Tom Smith will compile and bring information to the next meeting.

**WINDOW, DOOR AND SHUTTER (STRUCTURAL)**

- ♣ **Revise the Florida panhandle criteria to match ASCE 7 wind borne debris region.**

**8 – 2 in favor of the recommendation.** *(May 10, 2005 vote)*

**August Comments:**

This issue is being handled by the Panhandle Study workshop process.

- ♣ **Develop standard for water intrusion appropriate to hurricane prone regions for windows and doors.**

**9 – 1 in favor of the recommendation.** *(May 10, 2005 vote)*

**August Comments:**

This issue is already being addressed under the rating and testing for windows and doors topic, and Dave Olmstead will monitor and bring details to HRAC for their review and consideration.

- ❖ **Remove partially enclosed option during the next residential code cycle.**

**8 – 2 in favor of the recommendation.** (May 10, 2005 vote)

**August Comments:**

Thos requirement is already mandated in law and requires implementation with the development and adoption of the 2006 IRC.

**EXTERIOR EQUIPMENT**

- ❖ **Make the requirements of 2001 FBC Section 1522 (Rooftop Mounted Equipment) applicable throughout the state for all wind speeds. Include in Mechanical Volume also.**

**8 – 2 in favor of the recommendation.** (May 10, 2005 vote)

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 6/28/05</i>	<b>8</b>	<b>3</b>	<b>0</b>	<b>0</b>
<i>Revised</i>				

**June Reservations:**

- HVHZ used to determine tie down in fastening system in the State as well as HVHZ.
- Not needed, this is already in the Code.
- Put more explicitly in the code.
- ASCE 7 2002 provides for more explicit designing, table on coefficients,
- Need to amend the code to allow for this provision.
- Cannot adopt outright but can pull in specific requirements
- Need to modify to make more explicit.
- Follow existing code process for this issue.
- Disservice copying from one code to another code.
- Take out of the mechanical code then put in building code.

**August Comments:**

- Glenn, moves 1508 to 1522
- Madani, do not use 1522 wind speed, use local jurisdiction’s adopted speeds.
- This is already accomplished as a result of local jurisdictions adoption (Chapter 16).

- ♣ **Develop criteria that pertain to attaching lightning protection systems. Include in the Electrical Volume also.**

**8 – 2 in favor of the recommendation.** (*May 10, 2005 vote*)

**Committee Action (August 2005):**

The Committee voted unanimously, 10 – 0 in favor, to convene a workgroup to develop recommendations on this issue.

Tom Smith will work with the workgroup.

**August Comments:**

- Dixon, changing from mechanical to roof top equipment addresses the attachment.
- Glenn, it does not address lightening protection, only building protection.
- Dixon, lightening protection attaches to the building.
- Bassett, it address wiring and conduits, properly tied down for wind resistance, reference in electrical back to the 15xx section.
- FEMA, lightening protection fails at low wind speeds, 3 national standards are silent on how to attach to the building, and this needs attention, NFPA committee is looking, and best practices are being developed, dynamic loads for cables.
- Madani, roof mounted equipment covers this already.
- Schulte, why was this brought forward?
- Bassett, South Florida, lightening protection not fastened well, need to go to the electrical chapter for proper installation requirements.
- Schulte, roofing attachments need to be considered.
- Dixon, should we convene a volunteer work group?
- FEMA, we need a work group, hospitals lost protection last year.

**ADDITIONAL ISSUES IDENTIFIED AT THE AUGUST 2005 MEETING**

**Collection and Compilation of Available Data:**

John Burton recommended that a research investigation should be organized and funded to catalog the data collected by Charlotte County, Punta Gorda. Some of the issues with data include: pressure rating off garage doors, attachment of tile roofs, and residential cages.

**Form a Taskforce of Stakeholders to Coordinate and Conduct Research on Future Hurricanes:**

Stakeholder include building officials, GIS, property appraisers, builders, manufactures, etc. Their task would be to identify and enhance data that largely already exists and needs to be compiles and organized.

**Labeling of Shutters and Garage Doors:**

Work with manufactures and associations to develop and implement a system.

**CATEGORY 5. AMENDMENTS WITH CONSENSUS FOR GLITCH ADOPTION, BUT REQUIRE ACTION THAT WILL NOT BE READY IN TIME FOR THE GLITCH CYCLE**

- ♣ **Water managed window and door installation requirements be developed and the Florida Building Code altered to require them.**

**8 – 2 in favor of the recommendation.** (*May 10, 2005 vote*)

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

**Committee Action (August 2005):**

The Committee voted unanimously, 10 – 0 in favor, that the Window Labeling Workgroup should work to coordinate and develop recommendations on this issue with the various associations.

Roland Temple volunteered to be on the work group.

**August Comments:**

- This comes from the home builders water intrusion study and research is needed.
- Need to develop prescriptive guidance and add to the Code.
- (Olmstead) AAMA is working on better water intrusion requirements (1-2 years away) but this will not be ready for the glitch process.
- This is a residential construction issue (commercial does not have this problem).
- Architectural details should be provided and required.
- Manufacturers are working on installation instructions for flashing.
- SEAAMA is working on it.
- Installation committee is working on it.

- ❖ **It is unlikely that a practical paint specification can be developed in the short term to address micro-cracking stucco issues as the relationships among water vapor permeability, mil thickness and elasticity are not known. It is recommended that these relationships be explored and that until these relationships are understood the Florida Building Code not be altered to require “elastomeric paints” on stucco renderings.**

**10 – 0 in favor of the recommendation. (May 10, 2005 vote)**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

**Committee Action (August 2005):**

The Committee voted unanimously, 10 – 0 in favor, to convene a workshop to address the coatings issue and determine whether Code amendment/s are needed.

**August Comments:**

- Glenn, walls need to breathe, requiring houses to be sealed with paint may produce more damage than good.
- Dixon, need further research on coatings.
- Glenn, quality of paint varies, and workmanship issues are the primary issue, contractors need to be aware of quality of product and installation.
- Browdy, in order to ensure a level of importance, write a letter to paint companies, and convene a workshop to better understand qualities and performance standards of coatings ( for spray on vinyl coatings as well).
- Manufacturers and installers are making unrealistic claims to the public, application techniques should be evaluated.
- Glenn, need workshops to delineate practices prior to any code change, paint manufacturers want to help get information out, and want to work with the Commission, do we need code action, no, instead need to train applicators to use the products correctly.
- Madani, recommended statement for expedited adoption: “finishes shall be applied correctly”.
- Dixon, this would help building officials to determine whether they are applied correctly.

- ❖ **Add technically-based criteria regarding blow-off resistance of aggregate on built-up and sprayed polyurethane foam roofs (Roof Coverings for Roofs with Slopes Less than 2:12).**

**10 – 0 in favor of the recommendation.** (May 10, 2005 vote)

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 10/10/05</i>				
<i>Revised</i>				

**Reservations:**

**Comments:**

**August Comments:**

- Schulte, FRSA needs to speak to this, 50% embedment required, makes is feasible to blow around, cannot expect 100%, most polyurethanes require paint coating on top.
- As wind speed increases, parapet heights must change to correlate with wind speeds, we do not have guidance on the necessary heights, a table should be developed, but we need research funding to accomplish this.
- Dixon, need to defer this issue for further research.

**FLOOD HAZARD**

- ❖ **Adopt ASCE 24-05 for elevation requirements and flood resistant materials, equipment.**

**9 – 1 in favor of the recommendation.** (May 10, 2005 vote)

**Committee Action (August 2005):**

The Committee agreed that staff will work with DCA and FEMA to develop a State policy on this issue.

**August Comments:**

- FEMA, ASCE 24-05 is flood resistance design guidelines, materials are available.
- Glenn, we have deferred to federal programs, cities subject to program.
- Dixon, state policy, flood resistant construction exempt, local amendments.
- Ingargiola, ASCE 24-05 is not in conflict with elevations, allows additional elevation.
- Include all, consensus standard already developed.
- Dixon, need to facilitate discussions and find out the State’s policy.

- Jim, contact local governments, and determine who enforces. NFIP building official don't enforce, including this in the law makes it the building official's responsibility, may need legislative change to allow.
- Ingargiola, deals with flood maps, coastal zones, observations from storms, normal flood plain.
- Rodriguez, defer to staff to work with DCA and FEMA.

♣ **Re-evaluate the hazard identification/mapping approaches in Coastal A/V Zones.**

**8 – 2 in favor of the recommendation.** *(May 10, 2005 vote)*

**Committee Action (August 2005):**

The Committee agreed this is a FEMA development issue, and reflected in ASCE documents.

**August Comments:**

- Ingargiola, evaluate maps, loads, flood impacts, this is reflected in ASCE7-24.

**CRITICAL AND ESSENTIAL FACILITIES**

- ♣ **For hurricane shelters and EHPA, adopt wind speed recommended by Florida DCA in the State Emergency Shelter Program and the ASCE 7-02/2001 FBC wind speed map design wind speed plus 40 mph using Performance Criteria 3.**

**10 – 0 in favor of the recommendation.** *(May 10, 2005 vote)*

**Committee Action (August 2005):**

The Committee agreed that staff should work with DCA, DEM, and DOE to coordinate this issue.

**August Comments:**

- Madani, there is a shelter program that is designed for higher wind speeds.
- Ingargiola, does not require higher than 140 mph wind speed for hurricane protection for shelters.
- Dixon, need to coordinate with agencies, DEM and Education.

**CATEGROY 6: ADDITIONAL RECOMMENDATIONS CONSIDERED AT THE MAY MEETING FAILING TO ACHIEVE A CONSENSUS FOR THE AMENDMENT IN CONCEPT**

- ♣ **Repeal of Section 1518.3 of the Florida Building Code requiring a mechanically attached anchor sheet between a self-adhering membrane and roof sheathing.**

**1 – 9 in favor of the recommendation. No support. (May 10, 2005 vote)**

- ♣ **Develop and add criteria regarding uplift resistance of gutters.**

**6 – 4 in favor of the recommendation. (May 10, 2005 vote)**

- ♣ **Require six nails per shingle.**

**1 – 9 in favor of the recommendation. (May 10, 2005 vote)**

- ♣ **Add requirement to label shutters (other than wood) because without labels, building owner does not know if shutters are suitable. This requirement will have a stipulated implementation date.**

**7 – 3 in favor of the recommendation. (May 10, 2005 vote)**

	<i>4=acceptable</i>	<i>3= minor reservations</i>	<i>2=major reservations</i>	<i>1= not acceptable</i>
<i>Initial Ranking 6/28/05</i>	<b>5</b>	<b>4</b>	<b>2</b>	<b>0</b>
<i>Revised 6/28/05</i>	<b>6</b>	<b>2</b>	<b>3</b>	<b>0</b>

**June 2005 Reservations:**

- Shutters are required by the code.
- Label, stamped on, product approval number?
- Rule Development Workshop for this.
- Shutters required by the building code, not product approval.
- Not for expedited code adoption.
- Manufacturer not able to make timeline for labels, need time to develop standards.
- Time frame is not practical,
- Need more clarification.
- Adopt with 6 months delay for manufacturers preparation to comply
- Write date into code rather than rule for compliance.



- May not be able to do in glitch amendment cycle.
- Amend to delay implementation date in the code.

- ♣ **For all critical and essential facilities require minimum debris impact protection per ASTM E 1996 Category E, (9-pound 2x4 nominal missile traveling at 50 mph).**

**6 – 4 in favor of the recommendation.** *(May 10, 2005 vote)*

- ♣ **Adopt the International Code Council’s High Wind Shelter Standard when available (estimated 2006/2007).**

**6 – 4 in favor of the recommendation.** *(May 10, 2005 vote)*