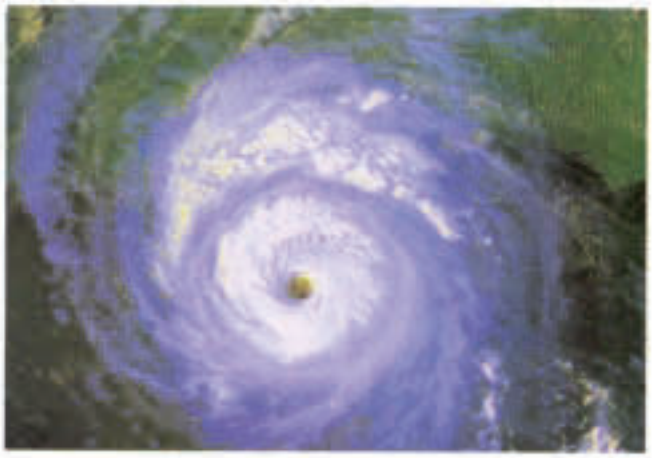
Report of Activities as of November 1, 1999



Florida Commission on Hurricane Loss Projection Methodology

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OF FLORIDA

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November, 1999

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Dear Trustees:

As Chair of the Florida Commission on Hurricane Loss Projection Methodology for the fiscal year 1998/99, I am pleased to present to you the "Report of Activities" of the Commission as of November 1, 1999. This report documents the fourth year of the Commission's work and also part of the Commission's fifth year, in that the dates for the Commission's adoption of standards and for the acceptability process were changed in March 1999. The standards contained herein are effective in November rather than June, as in earlier years.

Section 627.0628, F.S. created the Commission as a panel of experts to be administratively housed in the State Board of Administration but requires the Commission to independently exercise its powers and duties. The Commission is required to annually "... adopt revisions to actuarial methods, principles, standards, models, or output ranges...." Such revisions were made effective November 1, 1999, in compliance with the statute.

If you have any questions or comments as to the work done during the fiscal year 1998/99, please call me at (850) 922-3111.

Sincerely,

Elsie B. Crowell
Chair, Florida Commission on Hurricane
Loss Projection Methodology
Fiscal Year 1998/99

cc: Senate President, Toni Jennings
House Speaker, John Thrasher
Representative Stan Bainter
Senator Jim Scott

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INTRODUCTION

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Legislative Findings and Intent

The Florida Commission on Hurricane Loss Projection Methodology was established by the Legislature during the 1995 session. CS/HB 2619, passed on May 8, 1995, and signed by the Governor on June 14, 1995, created Section 627.0628, Florida Statutes. The Legislature specifically determined, in Section 627.0628(1), Florida Statues, that reliable projections of hurricane losses are necessary to assure that rates for residential insurance are neither excessive nor inadequate, and that in recent years computer modeling has made it possible to improve upon the accuracy of hurricane loss projections. The Legislature found that "it is the public policy of this state to encourage the use of the most sophisticated actuarial methods to assure that consumers are charged lawful rates for residential property insurance coverage," Section 627.0628(1)(a), Florida Statues. The Legislature clearly supports and encourages the use of computer modeling as part of the ratemaking process.

The Legislature intended that the State Board of Administration (SBA) use the findings of the Commission, to the extent feasible, in developing reimbursement premium rates for the Florida Hurricane Catastrophe Fund (FHCF) and that insurers may use those findings in residential property rate filings.

The Role of the Commission

Although the statutory section creating the Commission is in the Florida Insurance Code, the Commission is an independent body and is administratively housed in the (SBA). The role of the Commission is limited to adopting findings relating to the accuracy or reliability of particular methods, principles, standards, models, or output ranges used to project hurricane losses. As noted above, the FHCF must use the Commission's findings, to the extent feasible, in establishing reimbursement premium rates. Individual insurers may or may not take advantage of the Commission's findings. If they do, the findings are admissible and relevant in rate filings and in administrative, arbitration, and judicial proceedings.

The Commission's rejection of a particular method or model has no binding effect upon insurers or the Department of Insurance. The Department of Insurance may still accept a method or model if an insurer decides to use it in a rate filing. It is important to note that the Department of Insurance reviews and approves rates based on the standards and requirements of Section 627.062, Florida Statutes -- not on particular methodologies. The methodology appropriate for one insurer in leading to sound rates may be inappropriate for another insurer. The Department of Insurance has complete authority to review and determine the resolution of a rate filing. The Commission's charge is limited to adopting findings regarding methods or models it reviews. The Commission's findings are not binding on either the SBA as regards the FHCF or on the Department of Insurance. Insurers are not required to use the Commission's findings, but may choose to do so in order to support or justify a rate filing.

The Work of the Commission

The Commission, a panel of experts, was created to evaluate computer models and other recently developed or improved actuarial methodologies for projecting hurricane losses so as "to resolve conflicts among actuarial professionals" and "to provide both immediate and continuing improvement in the sophistication of actuarial methods used to set rates...." Section 627.0628(1)(b), Florida Statutes. Section 627.0628(3)(a), Florida Statutes, defines the role of the Commission:

> The commission shall consider any actuarial methods, principles, standards, models, or output ranges that have the potential for improving the accuracy of or reliability of the hurricane loss projections used in residential property insurance rate filings. The commission shall, from time to time, adopt findings as to the accuracy or reliability of particular methods, principles, standards, models, or output ranges.

The statutory language is clear in that those methods or models which have the potential for improving the accuracy or reliability of hurricane loss projections are the ones to be considered by the Commission. "Improving" suggests that the methods or models should be an improvement over the then existing current methods or models used in the residential rate filing process prior to the Commission's enactment.

Section 627.0628(3)(d), Florida Statutes, established two deadlines for the Commission to take action. No later than December 31, 1995, the Commission was required to "adopt initial actuarial methods, principles, standards, models, or output ranges . . . .". No later than July 1, 1996, the Commission was required to "adopt revised actuarial methods, principles, standards, models, or output ranges which include specification of acceptable computer models or output ranges derived from computer models." The Commission met both those deadlines. To achieve the requirements of the Florida Statutes, in 1995 the Commission developed the following three-step evaluation process:

1. **Identification of methods or models** -- models were identified in the following ways: (1) by referral after having been rejected by the Department of Insurance; (2) by being submitted directly to the Commission; or (3) by the Commission's soliciting them directly from the sponsor or owner,

2. **Analysis of the method or model --** the Commission adopted Standards and five Modules to assist in its analysis. The Modules are as follows:

   Module 1 - General Description of the Model
   Module 2 - Background and Professional Credentials of the Modeling Firm
   Module 3 - Tests of the Model
   Module 4 - Professional Team On-Site Review
   Module 5 - Modeler Presentation and Discussion of Issues

3. **Adoption of findings --** the Commission may (1) accept a method or model, model

specifications or output ranges derived from computer models; or (2) accept the method or model, model specifications, or output range subject to modification; or (3) reject the method or model, model specifications, or output range.

The Commission adopted standards for the specification of a computer model in June, 1996. Those standards were subsequently revised in May, 1997, in May, 1998, and again in August, 1999.

The Mission Statement

At the September 21, 1995, Commission meeting, the following mission statement was adopted:

> The mission of the Florida Commission on Hurricane Loss Projection Methodology is to assess the efficacy of various methodologies which have the potential for improving the accuracy of projecting insured Florida losses resulting from hurricanes and to adopt findings regarding the accuracy or reliability of these methodologies for use in residential rate filings.

The mission statement closely tracks the statute and restates the critical aspects of the Commission's work. Minor revisions to the mission statement were adopted on November 30, 1995, and can be found in the Principles section of this Report.

Overview

To date, five computer models have been evaluated by the Commission against the standards and have been found acceptable. The AIR model was found to have complied with the 1996, 1997, and 1998 Standards. EQE and RMS were found to have complied with both the 1997 and 1998 Standards. E.W. Blanch and Tillinghast requested review for compliance with the 1998 Standards and were determined acceptable.

PRINCIPLES

PRINCIPLES

1. All adoptions of findings and any other formal action taken by the Commission shall be made at a publicly-noticed meeting, by motion followed by a formal member by member vote, all of which shall be transcribed by a court reporter, such transcription to be made a part of the official record of the proceedings of the Commission. *History-New 11/30/95*

2. The mission of the Florida Commission on Hurricane Loss Projection Methodology is to assess the effectiveness of various methodologies which have the potential for improving the accuracy of projecting insured Florida losses resulting from hurricanes and to adopt findings regarding the accuracy or reliability of these methodologies for use in residential rate filings. *History-New 9/21/95, rev. 11/30/95*

3. The proprietary nature of the computer simulation model being reviewed should be respected; however, the Commission must have sufficient information and access to information and data to make a determination of a model's acceptability. *History-New 11/30/95, rev. 5/20/96*

4. All findings adopted by the Commission are subject to revision at the discretion of the Commission. *History-New 11/30/95*

5. No model or method will be determined to be acceptable by the Commission until it has been evaluated by the Commission in accordance with the process and procedures which the Commission considers appropriate for that model or method. *History-New 11/30/95, rev. 5/20/96*

6. The Commission's determination of acceptability of a specific model or method does not constitute determination of acceptability of other versions or variations of that model or method; however, the Commission will attempt to accommodate routine updating of acceptable models or methods. *History-New 11/30/95, rev. 5/20/96*

7. The Commission's process for determination of acceptability of models should, as far as possible, not restrict competition in the catastrophe modeling industry or thwart innovation in that industry. *History-New 11/30/95, rev. 5/20/96*

8. All models or methods should be theoretically sound. *History-New 9-21-95*

9. The output of a computer simulation model should be reasonable and the modeler should demonstrate their reasonableness. *History-New 9-21-95*

10. Insurers should not improperly manipulate or control computer simulation model results. *History-New 9-21-95*

11. Models or methods should not be biased to overstate or understate results. *History-New 9-21-95*

12. All sensitive components of the computer simulation model should be identified. *History-New 9-21-95*

FINDINGS OF THE COMMISSION

Findings of the Commission

Concerning Model Accuracy and Reliability

Background

Section 627.0628(3)(a), Florida Statutes, instructs the Commission to make findings from time to time as to the accuracy or reliability of standards and models, among other things. The following findings address the accuracy or reliability of the standards that the Commission has adopted over the past four years and the accuracy or reliability of the several computer simulation models which the Commission has reviewed.

The Commission finds that the terms "accurate" or "reliable" as they are used in Section 627.0628, Florida Statutes, are vague and hence, may be misunderstood by the general public. The Legislature did not define those terms when the statute was enacted. The Commission was constituted to review a potentially wide range of methods designed to produce loss costs as related to hurricanes for purposes of residential rate filings in Florida. The Commission thus far has reviewed computer simulation models exclusively because these constitute the only widely accepted approach to estimate residential loss costs.

The Commission finds that the computer simulation models which it has reviewed are stochastic forecasting models. This means that future hurricane events are stochastically generated and the associated loss costs are accumulated. By generating a sufficient body of future events, the sampling uncertainty in the output ranges owing to the random variate generation process becomes negligible. The Commission finds that the accepted models produce statistically sound loss costs for the entire state of Florida.

Accurate and Reliable - Defined

The Commission finds that using "accurate" or "reliable" in the necessarily narrow context of computer simulation models means that the definitions of those terms must be related to those models and the output that they produce. "Accurate" is defined for computer simulation models as meaning that the models have been designed and constructed in a careful, sensible, and generally accepted scientifically grounded manner. "Reliable" is defined for computer simulation models as meaning that they consistently produce dependable results.

The Commission finds that the computer simulation models which have been reviewed by the Commission and found acceptable include appropriate model representations to simulate hurricanes and the induced damage on residential property in Florida. The basic features of the model construction are reflected in the five sections of standards established and refined since June of 1996: general standards reflecting the professional status of the model designers and testers; meteorological standards covering all aspects of this infrequent weather phenomenon; vulnerability standards assessing the impact of the storm on residential property; actuarial standards assessing the damage impact in insurance terms; and the computer standards providing

the overall design, construction, and execution of the model.

The Commission finds and recognizes that the scientific fields underlying loss projection models continue to evolve providing further insights into property damage and insurance implications. As a direct consequence, the Commission annually reviews and revises the standards comprising its yearly report of activities. The Commission finds that the standards adopted each year represent the current state-of-the-art in computer simulation modeling for purposes of producing loss costs for residential property in Florida that are accurate and reliable.

Findings of the Commission

Concerning Proprietary Information

The Commission finds the following with respect to Principle #3:

The Commission finds that each of the companies which owns a computer simulation model reviewed by the Commission has proprietary information regarding the design and construction of that model. The Commission finds that the modeling companies are unwilling to reveal that proprietary information to the Commission in the context of the public meetings which the Commission holds because their competitors are part of the audience or can get a copy of the publicly available transcript of the meeting. The Commission finds that the modeling companies are willing to reveal all of their proprietary information if that information can remain confidential. Since that information would become publicly available in the context of a meeting in the sunshine, the Commission has authorized the assembling of the Professional Team to review the models on-site on behalf of the Commission. The Commission finds and recognizes that some or all of the models have been reviewed by various state departments of insurance, by various credit rating agencies, by their direct writer clients, and by their reinsurance clients.

PROCESS FOR DETERMINING THE ACCEPTABILITY OF A COMPUTER SIMULATION MODEL

PROCESS FOR DETERMINING THE ACCEPTABILITY OF A COMPUTER SIMULATION MODEL

This section sets out the Commission's process for the determination of acceptability of a computer simulation model. Although the Commission's charge is to review *any* method or model which has the potential for improving the accuracy or reliability of hurricane loss projections for purposes of residential property ratemaking in Florida, the Commission's focus has been computer simulation models. When the Commission undertakes the review of other methods, the acceptability process will be revised accordingly.

The Commission has determined that prior to November 1 of each year, it will adopt new standards, revise existing standards, and, if necessary, revise this process. The effective date of new or revised standards will be November 1 unless otherwise specified by the Commission.

The Commission has determined that <u>significant changes</u> are those changes to the standards or any changes to the model which result in changes to loss costs. **Any minor revisions or changes to the standards or any changes to the model by the modeler which do not result in changes to loss costs are not considered significant.**

The Commission has determined that any modeling company that wishes to be reviewed for compliance with the standards adopted by the Commission shall notify the Commission in accordance with the requirements set out below by February 28 following the adoption of each year's standards. Any modeling company which fails to notify the Commission by February 28 for consideration under the most recently adopted standards or fails to be found acceptable in accordance with those standards shall not be considered for review until the standards are again revised.

The Commission has further determined that the period between November 1, the effective date of new and revised standards, and February 28, the deadline for notification by the modeler, is a reasonable amount of time for any modeler to comply with the standards adopted by the Commission. If the Commission determines that four months is not sufficient, based on the nature of the changes to the standards or based on other circumstances which might necessitate a longer period of time for compliance, then the Commission can adjust this period of time accordingly. If requested by a modeler, the Chair shall have the authority to grant a reasonable extension, on a case by case basis, should the Chair determine that an emergency situation exists.

I. Notification Requirements for New and Existing Modeling Companies

A. Notification

1. Notification of readiness for review by a **new** modeling company. By February 28 of each year, any new modeling company wishing to have its model reviewed for the first time for acceptability by the Commission shall notify the Chair of the Commission in writing that the company is prepared for review. The notification shall consist of (1) a letter; (2) a summary statement of compliance with each individual standard; (3) the data and analyses required by Module 1, Module 2, and Module 3; and (4) a general description of the information to be presented to the Professional Team and to the Commission.

   More specifically,

   a. The letter will state that professionals having credentials and/or experience in the areas of meteorology, statistics, actuarial science, engineering, and computer science have reviewed the model for compliance with the standards and that the model is ready to be reviewed by the Professional Team. Any exceptions to this statement will be noted in the letter and accompanied by a complete explanation.

   b. A summary statement of compliance with each standard and the data and analyses required by Modules 1, 2, and 3 shall be enclosed with the letter referenced in 1, above.

   c. A copy of any non-proprietary information and documentation which the modeler anticipates presenting to the Commission in connection with the acceptability process, and a general description of any proprietary information which the modeler intends to present to the Professional Team in connection with the acceptability process.

   d. Twenty-five (25) bound copies of all documentation with one additional unbound copy (for the purpose of making additional copies) will be provided to the Commission, together with an electronic copy submitted either on a diskette or CD Rom.

2. Notification of readiness for review by an **existing** modeling company. By February 28 of each year, any existing modeling company wishing to have its model reviewed for acceptability by the Commission shall notify the Chair of the Commission in writing that the company is prepared for review. The notification shall consist of (1) a letter; (2) a summary statement of compliance with each individual standard; (3) the data and analyses required by Module 1, Module 2, and Module 3; and (4) a general description of the information to be presented to the Professional Team and to the Commission.

More specifically,

a. The letter will state that professionals having credentials and/or experience in the areas of meteorology, statistics, actuarial science, engineering, and computer science have reviewed the model for compliance with the standards and that the model is ready to be reviewed by the Professional Team. Any exceptions to this statement will be noted in the letter and accompanied by a complete explanation. The letter must also identify any changes made to Modules 1, 2, and 3 which were submitted the previous year.

b. The data and analyses required by Modules 1, 2, and 3 shall be enclosed with the letter referenced in 2. **For existing modeling companies, the material must be updated as appropriate to reflect compliance with the new or revised standards even though the modeling company submitted this material as part of a determination of acceptability under the previous years' standards.**

c. A copy of any non-proprietary information and documentation which the modeler anticipates presenting to the Commission in connection with the acceptability process and a general description of any proprietary information which the modeler intends to present to the Professional Team in connection with the acceptability process.

d. Twenty-five (25) bound copies of all documentation with one additional unbound copy (for the purpose of making additional copies) will be provided to the Commission, together with an electronic copy submitted either on a diskette or CD Rom.

Revisions to the Standards or the Model - **Not Significant**. If the Commission does not revise some standards or makes only minor revisions to some standards so that existing models are still in compliance with all the standards, then the modeling company will notify the Commission in writing that there have been no significant changes to the model previously determined acceptable. The Commission would then meet and review the letter and any other documentation provided and determine whether the model will be considered acceptable for an additional year and whether an on-site review by the Professional Team is warranted and whether a meeting with the Commission is warranted.

Revisions to the Standards or the Model – **Significant.** If the Commission does not revise or makes only minor revisions to some existing standards but makes significant changes to other existing standards and/or adopts new standards so that a model already determined to be acceptable is still in compliance with some, but not necessarily all, the standards, then the modeling company will inform the Commission in writing as to whether it believes it is still in compliance with the standards that have been substantially revised or are new. If an existing modeling company makes significant changes to the version of the model previously accepted by the Commission, then at the time it notifies the Commission that it is ready to have its model reviewed for acceptability, the modeling company must

notify the Commission in writing of the change(s) and describe the magnitude of the change(s). The Commission will then meet and review the modeling company's notification and any other documentation provided and determine whether the model is acceptable for an additional year or whether an on-site review by the Professional Team is warranted or whether an on-site review is not necessary but that additional documentation must be provided which would then be reviewed at a Commission meeting. The Commission will not review changes made to a previously approved version of a model at any time other than after the next February 28 notification date.

B. ***Review of the readiness notification.*** The Chair will notify the Commission members of a projected time frame for an on-site review by the Professional Team and for the Commission meeting to review a model for acceptability. If there is any doubt as to the readiness of the modeling company to receive the Professional Team on-site, the Chair may request that the modeling company (in person or by conference call) meet with the Commission and explain any issue concerning compliance with the standards or Modules 1, 2, and 3. If the Commission determines that the modeling company is not ready for the on-site review, and it is an existing modeling company, the prior year's acceptance will expire and the company will be notified in writing.

C. ***Professional Team on-site review***

1. ***New Modeling Companies***

If a determination has been made that the modeling company is ready for an on-site review, the staff will schedule an on-site review of the Professional Team to (a) review the information provided by the modeling company in Modules 1, 2, and 3; and (b) to audit for compliance with the most recently adopted standards. The Professional Team will be assembled and put under contract by the State Board of Administration (SBA). The Commission staff will handle all arrangements for the on-site review. The on-site review will be scheduled at a mutually agreeable time. On-site, the Professional Team will assist the Commission in identifying issues for the Commission's consideration, including the development of new standards, and also verifying that each standard has been met.

There are two possible outcomes of the on-site review regarding auditing for compliance with the standards:

a. The Professional Team determines that, in its opinion, the model complies with the standards, and so reports to the Commission.

b. The Professional Team determines that, in its opinion, the model has not been demonstrated to comply with one or more standards.

For those standards not met, the Professional Team is free to react to possible corrections proposed by the modeling company but will not tell the modeling company how to correct the non-compliance. If the problems can be remedied overnight, the second day of the on-site review will focus on the corrective actions taken.

If the problems cannot be corrected overnight, then the modeling company will have 30 days to make corrections. Once corrections are made, the modeling company will notify the Chair that the model is ready for another verification review by the Professional Team. The Chair will assemble the Professional Team or an appropriate subset of the Professional Team for only one additional review to ensure that the corrections have been incorporated into the current, running version of the model. The Professional Team will make no more than one additional on-site review to address problems noted by the Professional Team.

As to a new model, if the modeling company disagrees as to compliance, then the company has two options: (1) it can proceed with the scheduled Commission meeting and present its arguments to the Commission at its meeting to determine acceptability, or (2) it can withdraw its request for review. Such a withdrawal will result in the company having to wait until the next revision of the standards are produced before requesting the Commission review its model.

2. Existing Modeling Companies

If a determination has been made that an on-site review is necessary, the staff will schedule the on-site review of the Professional Team to: (a) audit for compliance with the most recently adopted standards; and (b) review any changes provided by the modeling company in Modules l, 2, and 3. The Professional Team will be assembled and put under contract by the SBA. The Commission staff will handle all arrangements for the on-site review. The on-site review will be scheduled at a mutually agreeable time. On-site, the Professional Team will assist the Commission in identifying issues for the Commission's consideration, including the development of new standards, and also verifying that each standard has been met.

There are two possible outcomes of the on-site review regarding auditing for compliance with the standards:

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company how to correct the non-compliance. If the problems can be remedied overnight, the second day of the on-site review will focus on the corrective actions taken.

If the problems cannot be corrected overnight, then the modeling company will have 30 days to make corrections. Once the corrections are made, the modeling company will notify the Chair that the model is ready for another verification review by the Professional Team. The Chair will assemble the Professional Team or an appropriate subset of the Professional Team for only one additional review to ensure that the corrections have been incorporated into the current, running version of the model. The Professional Team will make no more than one additional on-site review to address problems noted by the Professional Team.

If the modeling company disagrees as to compliance, then the company has two options: (1) it can proceed with the scheduled Commission meeting and present its arguments to the Commission at its meeting to determine acceptability, or (2) it can withdraw its request for review. Such a withdrawal will result in the expiration of its acceptability and cause the modeling company to wait until the next revision of the standards are produced before requesting the Commission review its model.

D. ***Professional Team Report.*** After the new or existing model has been reviewed on-site and prior to the meeting at which the model will be reviewed for acceptability, the Professional Team will provide the Commission with a written report. The Professional Team report shall include a section that summarizes its review of the information submitted in Modules 1, 2 and 3, as well as a general overview of the model, citing any pertinent issues for the Commission's consideration. As to each standard, the Professional Team will state whether it verified that the standard was met or not met, and also provide an explanation and appropriate support for the Professional Team's conclusion. For both new and existing models, as to each standard, the report will indicate whether or not the Professional Team reviewed proprietary information or documentation and, if so, include a general description of this proprietary information or documentation. Any disagreements among Professional Team members will be noted and explained.

II. Review by the Commission

A. ***General review of a modeling company***. For any modeling company seeking the Commission's determination of acceptability, the Commission may request a meeting with the modeling company prior to the Commission's review of the modeler's compliance with the standards. The meeting may provide a general discussion about the model and will also give the Commission and the modeler an opportunity to address any issues, as defined in Module 5, which were contained in the Professional Team Report. This meeting may be conducted concurrently

with the meeting to determine acceptability.

B. ***Meeting to determine acceptability.*** The Commission will meet at a properly noticed public meeting to determine the acceptability of a new or existing model once the modeling company has provided all required material and the Professional Team has concluded its on-site review or any rescheduled reviews.

The Professional Team shall first have reviewed all materials presented to the Commission.

If the Commission determines that meeting one standard makes it impossible to meet a second standard, the conflict will be resolved by the Commission and the Commission will determine which standard will prevail. Each company's model will be reviewed independently of any other companys' models previously approved or presently applying for review.

C. ***Voting at the meeting to determine acceptability.*** At its public meeting to determine the acceptability of a new or existing model, once a quorum is present, either in person or by tele-communications, all votes will be by a roll call vote based on the majority vote of those present.

For a **new** model, the Commission will consider each standard and will determine whether the model meets each standard by a majority vote of those present. Before voting on whether the model meets the standard under consideration, the Commission will permit the modeler to make whatever presentation it chooses to convince the Commission that it meets the standard. Following the modeler's presentation, the Professional Team will comment on whether the model meets the standard. Commission members will then have the opportunity to ask questions of both the modeler and the Professional Team. Once a motion is made and seconded and the discussion has concluded, a roll call vote will be taken on each standard. The model will be determined to have met the standard if the majority of those present vote that the standard has been met. The Commission will have completed its determination of the acceptability of the model when it has completed voting on each standard individually. To be determined acceptable, the model must have met all standards by a majority vote on each standard.

For an **existing** model, there are three types of standard changes that will require a vote by the Commission:

1. <u>No Change</u> – The Commission will vote a blanket acceptability for compliance with the standards with no revisions;

2. <u>Not Significant</u> – The Commission will determine whether or not it will vote a blanket acceptability for compliance with standards where changes were determined by the Commission as being not significant,

3. <u>Significant</u> – The Commission will vote separately for compliance on

each standard which has significantly changed.

D. ***Notification of acceptability.*** Once the Commission has determined that a model is acceptable in accordance with the procedures in this process, the Chair of the Commission will provide the modeling company with a letter confirming the Commission's action. The letter shall be in the following form:

(Name and Address of Modeler)

RE: Florida Commission on Hurricane Loss Projection Methodology

Dear _____:

This will confirm the finding of the Florida Commission on Hurricane Loss Projection Methodology on (date), that the (name of company) computer model has been determined acceptable for projecting hurricane loss costs for personal residential rate filings.

The Commission has determined that the (name and version of model) complies with the standards adopted by the Commission on (date of adoption), and concludes that the (name and version of the model) is sufficiently accurate and reliable for projecting hurricane loss costs for residential property in the State of Florida.

In accordance with the Commission's procedures, this determination of acceptability expires on February 28, 2001, unless the modeler has complied with the latest adopted procedures described in the "Process for the determination of acceptability of a computer model."

On behalf of the Commission, I congratulate you and your colleagues. We appreciate your participation and input in this process.

Sincerely,
(Name,) Chair

E. ***Notification of expiration***. A model's acceptability expires when a model which had been determined acceptable under the prior year's standards is determined not acceptable as to the following year's standards. A model's acceptability will also expire under the previous year's standards on February 28 following the November 1 effective date of new and revised standards unless the modeling company has notified the Commission of its compliance with the new and revised standards by February 28. In that case, the previous year's determination of acceptability will remain effective until the conclusion of the determination of acceptability process for the then current standards.

Upon the expiration of a model's acceptability, for whatever reason, the Chair of the Commission shall send a letter to the modeling company informing the company that its acceptability has expired.

The letter shall be in the following form:

(Name and Address of Modeler)

RE: Florida Commission on Hurricane Loss Projection Methodology

Dear _____:

This will confirm the finding of the Florida Commission on Hurricane Loss Projection Methodology on (date), that the Commission's determination of acceptability for the (name of company) computer model under the standards effective (dates) has expired as of (date).

The Commission appreciates your participation and input in this process.

Sincerely,
(Name,) Chair

MODULES

Florida Commission on
Hurricane Loss Projection Methodology

Model Identification

Name of Model and Version: _____

Name of Firm: _____

Street Address: _____

City, State, Zip: _____

Mailing Address, if different from above: _____

_____

Contact Person: _____

Phone Number: _____ **Fax Number:** _____

E-mail Address: _____

Date: _____

MODULE 1

MODULE 1

I. General Description of the Model

(Standards 5.5.1, 5.5.2, 5.5.3, and 5.5.4 for all questions in this section.)

A. In General

1. Provide a complete and concise description of your model, with a one-page introductory summary. Include a description of your methodology, particularly the wind components, the damage components, and the insured loss components. Describe the computer language/code in which your computer program is written and what type of computer hardware is needed. Specify the details of translation from model structure to program structure. State whether your model takes into consideration meteorological factors such as droughts in Africa and El Niño. Can your model be adjusted for annual meteorological variables such as the presence or absence of El Niño?

2. Explain and describe all sub-models used. Potential sub-model types include but are not limited to:
   a. Conceptual: models that organize the knowledge of the physical objects and concepts in your simulation (i.e., objects, classes, attributes, relations, data/knowledge bases)
   b. Dynamic: models that affect state variables over time (differential or algebraic equations, event chains, trees or graphs)
   c. Geometric: models that describe shapes and topologies of storm and land characteristics (i.e., track, storm, geographic information)

3. Describe the theoretical basis for your model. Provide precise citations to or, preferably, copies of, the representative or any primary technical papers which help describe the theory underlying your model and/or which you relied on as to any particular component of the model.

4. Provide classes, objects, and procedures that define how the model is represented and how the domain associated with hurricane catastrophe (including all hurricane-related entities) is mapped to elements in your computer program. Explain all interfaces and coupling assumptions.

5. Provide a list and a description of the model variables and the outputs from your model. Indicate which of these model variables are critical. Indicate what assumptions are made, if any, relating to any of the model variables that are missing. In describing the variables, state which are qualitative and which are quantitative. Describe the possible range associated with each variable. Identify differences, if any, in how the

model produces loss costs for specific historical events versus loss costs for events in the stochastic hurricane set.

6. Are there methods used in the model to incorporate modification factors to the actuarial functions or characteristics? If so, describe. *(Standard 5.4.2*)

7. Describe the number of categories of the different vulnerability functions (damage ratios) used within the model. Specifically, include descriptions of the structure types, lines of business, and coverages in which a unique vulnerability function is used. What is the basis for differentiation (e.g., engineering analysis, empirical data, etc.)? *(Standard 5.3.2*)

8. What are the primary or representative documents used or the research results which developed the model's vulnerability functions (damage ratios)? *(Standard 5.3.1*)

9. What efforts have been made to update or revise your model or specific parts of the model? How many times have revisions been made? Discuss which changes you consider substantive and which you consider technical. When did the revisions occur? What specific revisions were made? How often is your Zip Code database updated? Assess the differences, if any, between results in Module 3, Sections I, IV, V, and VII. *(Standards 5.1.3*)

10. Specify the model and program version numbers reflecting the release date. *(Standard 5.1.3*)

11. Describe methods and procedures available to the model user so that the user may incorporate modifications into the model. *(Standards 5.4.2 and 5.4.5*)

B. Loss Costs

1. We assume that your model can produce loss costs. Is it true that your model would produce the same loss costs if it runs the same information more than once? If not, why not?

2. What is the highest resolution for which loss costs can be provided? What resolution is used for the reported output ranges? Describe how the model handles beach/coastal areas as distinct from inland areas. *(Standard 5.2.7*)

3. How does the model handle deductibles (both flat and percentage), policy limits, replacement costs, and insurance-to-value when estimating loss costs? *(Standard 5.4.9*)

4. Are annual aggregate loss distributions available? What review or tests have been done on these? *(Standards 5.4.1, 5.4.4, and 5.4.5*)

5. How are loss adjustment expenses considered within the loss cost estimates?

6. Can your model distinguish among policy form types, i.e., homeowners, dwelling property, mobilehome, etc., and if so, what are your assumptions? Does your model produce loss costs for different types of policies, i.e., structure and contents; loss of use; mobilehome; commercial residential; or contents only? Discuss in detail.

C. Other Considerations

1. Describe how your model takes into consideration the following:
   a. Socio-economic effects resulting from a large catastrophe, both upside as in FEMA mitigation and downside as in labor and material shortages; *(Standards 5.4.4 and 5.4.6*)
   b. Building code and/or enforcement differentiation; *(Standards 5.4.8 and 5.4.12*)
   c. Specific construction characteristics (e.g., use of hurricane shutters). *(Standard 5.4.2)*

2. List your input variables for all of the categories in 1 above. *(Standard 5.2.2*)

II. Specific Description of the Model

(Standards 5.5.1, 5.5.2, 5.5.3, and 5.5.4 for all questions in this section.

A. Model Variables

1. Using the list of model variables provided in response to I.A.5 above, describe the source documents and any additional research which was done to develop the model's databases. Particularly describe all such information, including a description of the historical database(s), for the model's hurricane windspeeds and hurricane frequencies. Were there any assumptions used in creating any of these databases? Describe how you deviate, if at all, from the Commission's hurricane set. Describe intensities used for these hurricanes.

2. List the current primary databases used by your model and the aspects of the model to which they relate. Indicate which databases are "public" and which are "proprietary".

3. What are your assumptions in the following areas:
   a. Meteorological

b. Damageability
c. Insurance Coverage

How does your model address the issue of demand surge? (*Standards 5.4.1 and 5.4.5*)

4. Are there other major or significant assumptions not listed above? If so, describe. *(Standards 5.4.1 and 5.4.5*)

5. Describe the nature and extent of actual insurance claims data which have been used to develop the model's vulnerability functions (damage ratios). Describe in detail what is included, such as, number of policies; number of insurers; number of units of dollar exposure; separate into personal lines, commercial, and mobilehome. *(Standards 5.4.1 and 5.4.7)*

B. Methodology

1. Specify the windspeed(s) (e.g., one-minute sustained, peak gusts, etc.) used for loss estimation. *(Standards 5.2.5 and 5.2.8)*

2. Is the asymmetric nature of hurricanes considered? If so, describe. *(Standard 5.2.5)*

3. Describe the nature of the filling rate function used. *(Standards 5.2.5 and 5.2.10)*

4. Other than the hurricane's characteristics, what other variables affect the windspeed estimation (e.g., surface roughness, topography, etc.)? Describe the database used for land friction calculation and its compatibility with the friction model. *(Standards 5.2.5 and 5.2.9)*

5. Identify the characteristics (e.g., central pressure, radius of maximum winds, etc.) of a hurricane that are used in estimating windspeeds and how this information is applied for the entire state of Florida. *(Standards 5.2.5, 5 and 5.2.8)*

6. Which variables in the windspeed component are dependent, and how is this dependence incorporated in the model? *(Standard 5.2.5)*

7. Does the model produce confidence intervals for damage estimates given a windspeed estimate? If so, does it consider both the process and parameter variance? *(Standard 5.2.5)*

8. Describe how the coastline is segmented (or partitioned) in determining the parameters for hurricane frequency used in the model. Provide the

   hurricane frequency distribution by intensity for each segment. *(Standards 5.2.4, 5.2.5, 5.2.7, and 5.2.8)*

9. If stochastic simulation techniques are used, describe how the hurricanes are generated from the underlying probability distributions. How are landfall sites, hurricane paths, and decay rates determined? *(Standards 5.2.4, 5.2.5, and 5.2.8)*

10. Does the model produce confidence intervals for windspeed estimates given a set of hurricane parameters? If so, does it consider both process and parameter variance? *(Standards 5.2.5 and 5.2.10)*

11. Describe the method or methods used to estimate annual loss costs needed for ratemaking. Identify any source documents used and research performed.

12. Does the model produce confidence intervals for annual loss costs? If so, does it consider both process and parameter risk?

13. What functions or variables does your model consider to be independent? On what are the other functions or variables dependent (including latitude)? Are there limitations on the functions or variables that are a function of latitude? If so, describe. What are the intermediate (endogenous) variables which are part of the calculations between the inputs and outputs described in I.A.5? *(Standard 5.1.4)*

14. Identify the form of the probability distribution used for each function or variable, if applicable. What statistical techniques are used for distributions which are estimates? What tests are used for goodness of fit?

15. What is the most sensitive aspect of your model? Is this sensitivity based upon a) an assumption, b) an underlying datum unique to your model, or c) a technique which the model employs? Please discuss fully and provide an example to illustrate how (to what degree) this sensitivity affects output results. *(Standard 5.1.4)*

16. Are there other aspects of your model that may have a significant impact upon the sensitivity or variation in output results of which the Commission may need to be made aware? *(Standard 5.1.4)*

17. What sensitivity analyses have been done on the model's variables? *(Standard 5.1.4)*

C. Validation Tests

1. What were the nature and results of the tests performed to validate the wind speeds generated?

2. What were the nature and results of the tests performed to validate the expected loss estimates generated? If a set of simulated hurricanes or simulation trials was used to determine these loss estimates, specify the convergence tests which were used and the results. Specify the number of hurricanes or trials which were used. *(Standard 5.4.16)*

3. What were the nature and results of the tests performed to validate the damage estimates generated?

4. Were insured losses from ancillary perils included within the annual loss cost estimate? If so, describe which perils, the basis for the loss estimation, and the validity testing or peer review which were done on these calculations.

5. What were the nature and results of any validation tests on any other aspects of the model?

6. Provide documentation of all validation tests performed.

MODULE 2

MODULE 2

Background/Professionalism

1. Company Background

A. How long has your firm been in existence?

B. In what year was your model developed?

C. How long have you been using your model for ratemaking purposes?

D. In which states have you attempted to use your model for ratemaking purposes? Has your model been accepted for use in any state? If so, what state or states? Please provide the Commission with the name of a contact person in all the states where you have previously used your model for ratemaking purposes. (The Commission may contact these persons to discuss your work.)

E. Describe the ownership structure of your company. Is your company affiliated with any other company? If so, describe the nature of the relationship.

F. Describe generally your company's services and the percentage of the company's annual income derived from each.

G. How long have you used your model for analyzing insurance company exposures or other such uses? Please describe these uses.

2. Professional Credentials

(*Standard 5.1.2 for all questions in this section*)

A. List the names of your technical staff and indicate their years of experience with hurricane modeling for ratemaking and their credentials and years of experience in their area of expertise.

B. Describe the credentials of the individuals or groups involved in the development of the following aspects of the model:

1. Vulnerability functions (damage ratios)
2. Windspeed model
3. Method(s) used to estimate annual loss costs
4. Model representation structure

State whether these persons are full-time employees or outside consultants**.**

3. Multi-discipline Team

(*Standard 5.1.2 for all questions in this section*)

A. Indicate the different academic disciplines used to provide input and to construct your model.

B. Of the disciplines listed above, which are represented by current employees with your firm? Are other disciplines represented through consulting arrangements?

4. List of Clients

A. Provide a sample list of your clients in the following categories: for ratemaking, for reinsurance, in government. Regarding the ratemaking clients, state the number of clients in this category and the total residential marketshare, in Florida and nationwide, represented by these clients. For your ratemaking clients, how many clients have an aggregate annual premium of $100 million? Do any of your ratemaking clients have an aggregate annual premium of over $5 billion? (The Commission may contact these persons or firms to discuss your work.)

B. Describe the present mix of your clients (ratemaking, reinsurance, government, etc.) and whether (and if so, how) that mix differs from the mix over the last 3 to 5 years.

C. How long have your ratemaking clients been clients of your company?

5. References

(*Standard 5.1.2 for all questions in this section*)

A. Provide references for the following categories of persons who have reviewed or have knowledge of your model:

1. Independent Meteorologist
2. Independent Engineer
3. Independent Actuary
4. Independent Computer Scientist

(The Commission may contact these persons to discuss your work.)

B. Provide the names of experts who have reviewed your model and any letters or documents indicating their evaluation.

(The Commission may contact these persons to discuss your work.)

6. Independent Expert Review

(*Standard 5.1.2 for all questions in this section*)

A. What independent peer reviews have been performed on the following parts of the model and were there any unresolved or outstanding issues as a result of these reviews? If so, describe.

1. Windspeed model
2. Windspeed frequencies
3. Vulnerability functions (damage ratios)
4. Calculation of annualized loss costs
5. Any other parts of the model

B. Please provide all documentation regarding the peer reviews described in response to the answer to question 1 above. State which of the peer reviews described above were paid for by your firm and which were performed for no compensation.

C. Describe the nature of any on-going or functional relationship your company has with any of the persons performing the independent peer reviews described in response to the answer to question 1 above.

D. Name the people who provided the technical support for the model, such as meteorologists, engineers, actuaries, and software and hardware specialists, who can be consulted by the Commission on how the model can best be used.

E. Discuss any adversarial situations (such as a ratemaking hearing) in which your model was subjected to review.

MODULE 3

MODULE 3

On the following pages are questions and the follow-up test. Please answer each question thoroughly and with as much detail as possible. Answers that do not address the question directly may not help the Commission make the appropriate decisions regarding your model.

Your written response and output file must be submitted to the Commission.

NOTE: Please answer all questions for your model as your model relates to ratemaking. Answering a question about how your model is used for exposure evaluation purposes or for other uses will lead to confusion. The Commission is solely interested in evaluating your model as a ratemaking tool.

Module 3 - Section I

Meteorology - Hurricane Set

(*Standards 5.2.4, 5.2.5, 5.2.7, 5.2.9, and 5.2.10 for all questions in this section*)

1. Define an "event" in your model. Does it include only hurricanes making landfall (i.e., the eye of the hurricane crosses land) or does it also include any hurricane where hurricane force winds cause damage (i.e., the eye need not necessarily cross land). (*Standard 5.2.6*)

2. What is the upper limit of wind speeds (maximum one-minute average sustained) per hurricane category (defined by the Saffir-Simpson scale) that your model produces? (*Standards 5.2.6 and 5.2.8*)

Saffir-Simpson Hurricane Scale

	Central Pressure		Wind Speed
Category	**(inches)**	**(mb)**	**(mph)**
1	> 28.94	$\geq$ 980	74 - 95
2	28.50 - 28.93	965 - 979	96 - 110
3	27.91 - 28.49	945 - 964	111 - 130
4	27.17 - 27.90	920 - 944	131 - 155
5	< 27.17	< 920	> 155

3. How does your model handle events with multiple landfalls? Are these defined as a single event or multiple events? How does this affect your frequency assumptions? (*Standard 5.2.6*)

4. How does your model handle the definition of an event from the insurance policy perspective? In other words, does it recognize the 72-hour limitation for an occurrence as defined by some insurance policies? From this perspective, could events with multiple landfalls greater than 72 hours apart be considered as two events?

5. Describe the hurricane tracks in your model. Discuss the appropriateness of the hurricane tracks used by your model. What historical data are your hurricane tracks based on?

6. Describe in detail the decay rates or hurricane degradation assumptions used by your model after the hurricane makes landfall. How far inland are hurricane force winds estimated for different category events (as defined by the Saffir-Simpson scale)? Does the decay rate vary by region or hurricane segment? Please describe in detail and fill out the following table.

Category	**Distance of Hurricane Force Winds Inland (nmi)**
1	_____
2	_____
3	_____
4	_____
5	_____

7. Name the source of the historical data set used to develop frequency distributions for specific hurricane characteristics. How many years worth of data does the data set contain? Did you make any modifications to the data set? If so, please describe in detail the modifications and their appropriateness. (*Standard 5.4.14*)

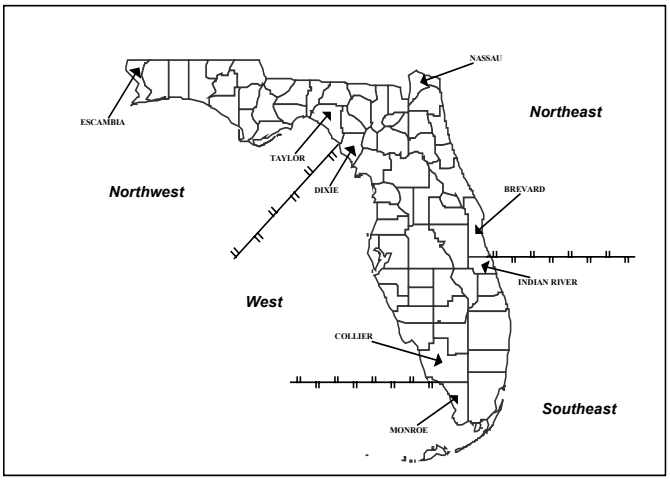
8. Provide estimates of radius of maximum winds, radius of hurricane force winds and far field pressure used by your model for the central pressures provided in the following table: (*Standard 5.2.8*)

Central Pressure (mb)	Radius of Maximum Winds (nmi)	Radius of Hurricane Force Winds (nmi)	Far Field Pressure (mb)
900			
910			
920			
930			
940			
950			
955			
960			
965			
970			
975			
980			
985			
990			

9. Provide frequency and annual occurrence rates from both the historical data set that your firm has chosen to use and the data set that your model generates by hurricane category (defined by the Saffir-Simpson scale) for the entire state of Florida and selected regions as defined on the next page. (*Standard 5.4.14)*

Region Definitions

Region	Definition
Northeast	Coastal region between Nassau and Brevard Counties.
Southeast	Coastal region between Indian River and Monroe Counties.
West	Coastal region between Collier and Dixie Counties.
Northwest	Coastal region between Taylor and Escambia Counties.



Please fill in the following tables with both historical and modeled information for Florida in total and by region as defined above. List the number of events, the frequency (percent of the total) and annual occurrence rate (probability of an event in a given year) per hurricane category.

Entire State of Florida

	No. of Events		Frequency		Annual Occurrence Rate	
Cat.	Historical	Modeled	Historical	Modeled	Historical	Modeled
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____

Northeast Florida

	No. of Events		Frequency		*Annual Occurrence Rate*	
Cat.	**Historical**	**Modeled**	**Historical**	**Modeled**	**Historical**	**Modeled**
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____

Southeast Florida

	No. of Events		Frequency		Annual Occurrence Rate	
Cat.	**Historical**	**Modeled**	**Historical**	**Modeled**	**Historical**	**Modeled**
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____

West Florida

	No. of Events		Frequency		Annual Occurrence Rate	
Cat.	**Historical**	**Modeled**	**Historical**	**Modeled**	**Historical**	**Modeled**
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____

Northwest Florida

	No. of Events		Frequency		Annual Occurrence Rate	
Cat.	Historical	Modeled	Historical	Modeled	Historical	Modeled
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____

****

MODEL RESULTS
PROBABILITY OF HURRICANES BY YEAR

EXPECTED NUMBER OF HURRICANES PER YEAR	NUMBER OF YEARS	PROBABILITY
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Hurricanes causing damage in Florida

MODEL RESULTS
DISTRIBUTION OF HURRICANES BY SIZE

LIMIT RANGE (MILLIONS)			TOTAL LOSS	AVERAGE (Millions)	NO. OF STORMS	EXPECTED ANNUAL HURRICANE LOSSES*	RETURN TIME (YEARS)
$ -	To	$ 500					
$ 501	To	$ 1,000					
$ 1,001	To	$ 1,500					
$ 1,501	To	$ 2,000					
$ 2,001	To	$ 2,500					
$ 2,501	To	$ 3,000					
$ 3,001	To	$ 3,500					
$ 3,501	To	$ 4,000					
$ 4,001	To	$ 4,500					
$ 4,501	To	$ 5,000					
$ 5,001	To	$ 6,000					
$ 6,001	To	$ 7,000					
$ 7,001	To	$ 8,000					
$ 8,001	To	$ 9,000					
$ 9,001	To	$ 10,000					
$ 10,001	To	$ 11,000					
$ 11,001	To	$ 12,000					
$ 12,001	To	$ 13,000					
$ 13,001	To	$ 14,000					
$ 14,001	To	$ 15,000					
$ 15,001	To	$ 16,000					
$ 16,001	To	$ 17,000					
$ 17,001	To	$ 18,000					
$ 18,001	To	$ 19,000					
$ 19,001	To	$ 20,000					
$ 20,001	To	$ 21,000					
$ 21,001	To	$ 22,000					
$ 22,001	To	$ 23,000					
$ 23,001	To	$ 24,000					
$ 24,001	To	$ 25,000					
$ 25,001	To	$ 26,000					
$ 26,001	To	$ 27,000					
$ 27,001	To	$ 28,000					
$ 28,001	To	$ 29,000					
$ 29,001	To	$ 30,000					
$ 30,001	To	$ 35,000					
$ 35,001	To	$ 40,000					
$ 40,001	To	$ 45,000					
$ 45,001	To	$ 50,000					
$ 50,001	To	$ 55,000					
$ 55,001	To	$ 60,000					
$ 60,001	To	$ 65,000					
$ 65,001	To	$ 70,000					
$ 70,001	To	$ 75,000					
$ 75,001	To	$ 80,000					
$ 80,001	To	$ 85,000					
$ 85,001	To	$ 90,000					
TOTAL							

*Personal Residential Ground-up loss using FHCF exposure data - file name: **hlpm.exe**.
(Do not include commercial residential)

Module 3 - Section II

Hurricane Windfield

1. What wind values (e.g., peak gust, maximum one-minute average sustained) and for what elevation is your windfield valid? Describe in detail the rationale for using the wind value chosen by your firm.

2. Do you need to convert the wind speeds generated in your windfield model to another form (i.e., from one-minute sustained to peak gust) for use by the vulnerability functions used by your model? If so, is there any accuracy lost by doing so? Please describe in detail. *(Standard 5.2.3)*

3. Is the duration of wind speeds at a particular location over the life of a hurricane considered in our model? If so, at what point (or wind speed level) is the damage ratio estimated for wind speeds at a location? Does your model take into consideration both damage caused by gusts of wind and damage caused by sustained winds at perhaps a lower wind speed level? Please describe your answers in as much detail as possible.

Module 3 - Section III

Vulnerability Functions
Damage Estimates

(*Standards 5.3.1 and, 5.3.2 for all questions in this section*)

1. At what maximum one-minute average sustained wind speed does your model begin estimating loss?

2. Describe in detail how demand surge or socio-economic effects are considered (if at all) within your model. Is this applied to every event in your model or limited to select events? If for only select events, how are they selected? If this is not considered directly in your model but only at the request of the insurance company, please describe your procedure for including this in the loss estimates. Describe the validation procedures to verify the results. (*Standards 5.4.4 and 5.4.6*)

3. Describe in detail how building code enforcement is considered (if at all) within your model. If this is not considered directly in your model but only at the request of the insurance company, please describe your procedure for including this in the loss estimates. Describe the validation procedures to verify the results. (*Standards 5.3.3, 5.4.2 and 5.4.12*)

4. Describe in detail your "unknown" vulnerability curve used for unknown residential construction types. If you use a composite of other vulnerability functions, describe how they are derived. Cite the documentation or describe the data used as a basis for this curve. (*Standard 5.3.3*)

Module 3 - Section IV

Insurance Functions
Company Loss Estimates

(*Standards 5.4.1 and 5.4.5 for all questions in this section*)

1. A given wind speed can produce a variety of damage within a given Zip Code. For example, a 10% average damage ratio could result from a wide variety of damages ranging from no damage up to moderate damage. Some properties may have losses that are entirely below the deductible so that total insured losses in the Zip Code are well below 10%. In a similar manner for more severe wind speeds, some properties within a Zip Code could have damages in excess of policy limits. How does your model handle this problem? (*Standard 5.4.9*)

2. Provide an example of how insurer loss (loss net of deductibles) is calculated. Discuss data or documentation used to confirm or validate the method used by your model. (*Standard 5.4.9*)

   Example:

(A) Building Value	Policy Limit	(B) Deductible	(C) Damage Ratio	(D)=(A)*(C) Ground Up Loss	(E)=(D)-(B) Loss Net of Deductible
100,000	90,000	500	2%	2,000	1,500

3. Describe in detail the approach used for the appurtenant structures vulnerability function (if it is a unique function). How is it dependent on the building function? Provide documentation of validation test results to verify the approach used.

4. Describe in detail the approach used for the mobilehome vulnerability function. How is it dependent upon other building functions and are there separate mobilehome vulnerability functions? Provide documentation of validation test results to verify the approach used.

5. Describe in detail the approach used for the contents vulnerability function. How is it dependent on the building function (e.g., is it a function of building loss or other aspect)? Is there a minimum threshold at which loss is calculated (e.g., loss is estimated when the building damage exceeds 20%)? Provide documentation of validation test results to verify the approach used. (*Standards 5.3.4 and 5.4.10*)

6. Describe in detail the approach used for the time element vulnerability function. Does it consider both direct and indirect loss to the building? For example, direct loss is for expenses paid to house policyholders in an apartment while their home is being repaired. Indirect loss is for expenses incurred (e.g., food spoilage) for loss of power, heat, etc. Is

there a minimum threshold at which loss is calculated (e.g., loss is estimated for building damage greater than 20% or only for category 3, 4, 5 events)? Provide documentation of validation test results to verify the approach used. (*Standard 5.4.11*)

7. Some policies, particularly for contents coverage, provide for indemnity on an actual cash value basis. Identify depreciation assumptions and describe in detail the methods and assumptions used to reduce insured losses on account of depreciation. Provide a sample calculation for determining the amount of depreciation and the ACV losses. (*Standard 5.4.10*)

8. Some policies cover losses that exceed the amount of insurance. Identify property value assumptions and describe in detail the methods and assumptions used to determine the true property value and associated losses. Provide a sample calculation for determining the property value and guaranteed replacement cost losses.

9. Provide five (5) validation comparisons of actual exposures and loss to modeled exposures and loss. These comparisons must be provided by line of insurance, construction type, policy coverage, county or other level of similar detail in addition to total losses. Include not only the loss estimates, but also loss as a percent of total exposure as well. Total exposure represents the total amount of insured values (all coverages combined) in the area affected by the hurricane. This would include exposures for policies that did not have loss. If this is not available, provide exposures for only these policies that had a loss. Please specify which is used. Also, specify the name of the hurricane event compared. (*Standard 5.4.13*)

Example:

Comparison #1
Hurricane = Andrew
Exposure = Total (or Loss only)

	Company Actual			Modeled		
Construction	Exposure	Loss	Loss/ Exposure	Exposure	Loss	Loss/ Exposure
Wood Frame	_____	_____	_____	_____	_____	_____
Masonry	_____	_____	_____	_____	_____	_____
Mobilehome	_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____	_____

Module 3 - Section V

Average Annual Loss Functions
Loss Costs

(*Standard 5.4.3 for all questions in this section)*

1. Provide copies of documentation and reports available to the insurer to be used to analyze loss costs or as supporting documentation in rate filings.

2. In responding to the following questions, demonstrate that the results of the model are reasonably consistent with observed insurance data and other scientifically based observations. Where appropriate, explain possible inconsistencies. Document data sources. (*Standards 5.4.8, 5.4.13 and 5.4.14*)
   - Demonstrate that loss cost relationships by type of coverage (buildings, appurtenant structures, contents, time element) are consistent with actual insurance data.
   - Demonstrate that loss cost relationships by construction type or vulnerability function (frame, masonry, brick, mobilehome, etc.) are consistent with actual insurance data.
   - Demonstrate that loss cost relationships between territories or regions are consistent and reasonable.

3. Provide copies of thematic maps (with a minimum of 6 value ranges) displaying ground-up loss costs by 5-digit Zip Code for frame, masonry, and mobilehome.

4. The modeling company shall provide to the Commission output ranges in the following format: (*Standard 5.4.15*)

   Loss costs shall be provided by county in a format adopted by the Commission. Within each county, loss costs shall be shown separately per $1,000 of exposure for personal residential, renters, condos, and mobilehome; for each major deductible option; and by construction type. For each of these categories using Zip Code centroids, the output range shall show the highest loss cost, the lowest loss cost, and the weighted average loss cost based on the Florida Hurricane Catastrophe Fund (FHCF) aggregate exposure data provided to each modeler on a 3 ½" diskette named **"hlpm.exe".** A file named **"99 FHCF Wts.xls"** has also been provided to be used to determine the weighted average loss costs. Include the statewide range of loss costs (i.e., low, high, and weighted average). For each of the loss costs provided by the modeling company, the company shall identify what that loss cost represents by line of business, deductible option, construction type, and coverages included, i.e., structure, contents, appurtenant structure, or additional living expenses as specified on the form entitled "Output Range Loss Cost Format".

The modeler will provide the data on diskette in the format specified in the document entitled, "Output Range Loss Cost Format" (found following Module 3).

NOTE: If a modeler has loss costs for a zip code for which there is no exposure, then the modeler should give the loss costs zero weight (i.e. assume the exposure in that zip code is zero). The modeler should provide a list of those zip codes where this happens. If the modeler does not have loss costs for a zip code for which there is some exposure, the modeler should not assume such loss costs are zero. Instead, the modeler should use only those exposures for which it has loss costs in calculating the weighted average loss costs. The modeler should provide a list of those zip codes where the modeler does not have loss costs for a zip code for which there is some exposure.

Output Range Specifications
"Owners" Policy Type

Coverage A: Structure

- Coverage A: Amount of Insurance = $100,000
- Replacement Cost Included Subject to Coverage "A" Limit
- Ordinance or Law Not Included

Coverage B: Appurtenant Structures

- Amount of Insurance = 10% of Coverage "A" Amount
- Replacement Cost Included Subject to Coverage "B" Limit
- Ordinance or Law not Included

Coverage C: Contents

- Amount of Insurance = 50% of Coverage "A" Amount
- Replacement Cost Included Subject to Coverage "C" Limit

Coverage D: Additional Living Expense

- Amount of Insurance = 20% of Coverage "A" Amount
- Time Limit = 12 Months

- Loss Costs per $1,000 should be related to the Coverage "A" Amount.

- For weighting the Coverage "D" Loss Costs, use the file named **"99 FHCF Wts.xls"** for distribution for Coverage "A".

- Loss Costs for the various deductibles should be determined based on "per occurrence" deductibles.

- Explain any deviations and differences from the prescribed format above.

- **Specify the model and program version numbers reflecting the release date as a footnote on each page of the output.**

Output Range Specifications
"Renters" Policy Type

Coverage C: Contents

- Amount of Insurance = $25,000
- Replacement Cost Included Subject to Coverage "C" Limit

Coverage D: Additional Living Expense

- Amount of Insurance = 40% of Coverage "C" Amount
- Time Limit = 12 Months.

- Loss Costs per $1,000 should be related to the Coverage "C" Amount.

- For weighting the Coverage "D" Loss Costs, use the file named **"99 FHCF Wts.xls"** for distribution for Coverage "C".

- Loss Costs for the various deductibles should be determined based on "per occurrence" deductibles.

- For weighting the Coverage "C" Loss Costs, use the file named **"99 FHCF Wts.xls"** for distribution for Coverage "C".

- Explain any deviations and differences from the prescribed format above.

- **Specify the model and program version numbers reflecting the release date as a footnote on each page of the output.**

Output Range Specifications
"Condo Unit Owners" Policy Type

Coverage A: Structure

- Amount of Insurance = 10% of Coverage "C" Amount
- Replacement Cost Included Subject to Coverage "A" Limit

Coverage C: Contents

- Amount of Insurance = $50,000
- Replacement Cost Included Subject to Coverage "C" Limit

Coverage D: Additional Living Expense

- Amount of Insurance = 40% of Coverage "C" Amount
- Time Limit = 12 Months.

- Loss Costs per $1,000 should be related to the Coverage "C" Amount.

- For weighting the Coverage "D" Loss Costs, use the file named **"99 FHCF Wts.xls"** for distribution for Coverage "C".

- Loss Costs for the various deductibles should be determined based on "per occurrence" deductibles.

- For weighting the Coverage "C" Loss Costs, use the file named **"99 FHCF Wts.xls"** for distribution for Coverage "C".

- Explain any deviations and differences from the prescribed format above.

- **Specify the model and program version numbers reflecting the release date as a footnote on each page of the output.**

Output Range Specifications
"Mobilehome Owners" Policy Type

Coverage A: Structure

- Coverage "A" Amount of Insurance = $50,000
- Replacement Cost Included Subject to Coverage "A" Limit

Coverage B: Appurtenant Structures

- Amount of Insurance = 10% of Coverage "A" Amount
- Replacement Cost Included Subject to Coverage "B" Limit

Coverage C: Contents

- Amount of Insurance = 50% of Coverage "A" Amount
- Replacement Cost Included Subject to Coverage "C" Limit

Coverage D: Additional Living Expense

- Amount of Insurance = 20% of Coverage "A" Amount
- Time Limit = 12 Months.

- Loss Costs per $1,000 should be related to the Coverage "A" Amount

- For weighting the Coverage "D" Loss Costs, use the file named **"99 FHCF Wts.xls"** for distribution for Coverage "A".

- Loss Costs for the various deductibles should be determined based on "per occurrence" deductibles.

- Explain any deviations and differences from the prescribed format above.

- **Specify the model and program version numbers reflecting the release date as a footnote on each page of the output.**

Module 3 - Section VI

General

1. Describe in detail how invalid Zip Codes are handled within your model or modeling practice. Are they deleted from the analysis, allocated, mapped back into the exposure data set, or handled in some other fashion? (*Standard 5.1.3*)

2. Provide documentation of an analysis performed to review the relevance of geographic versus population weighted centroids on loss costs. If no documentation is available, please describe the rationale for the centroid used by your model. (*Standard 5.4.17*)

3. Describe what the modeler does to prevent tampering of the computer code by users. How is the security of the model code addressed? (*Standard 5.5.4*)

Module 3 - Section VII

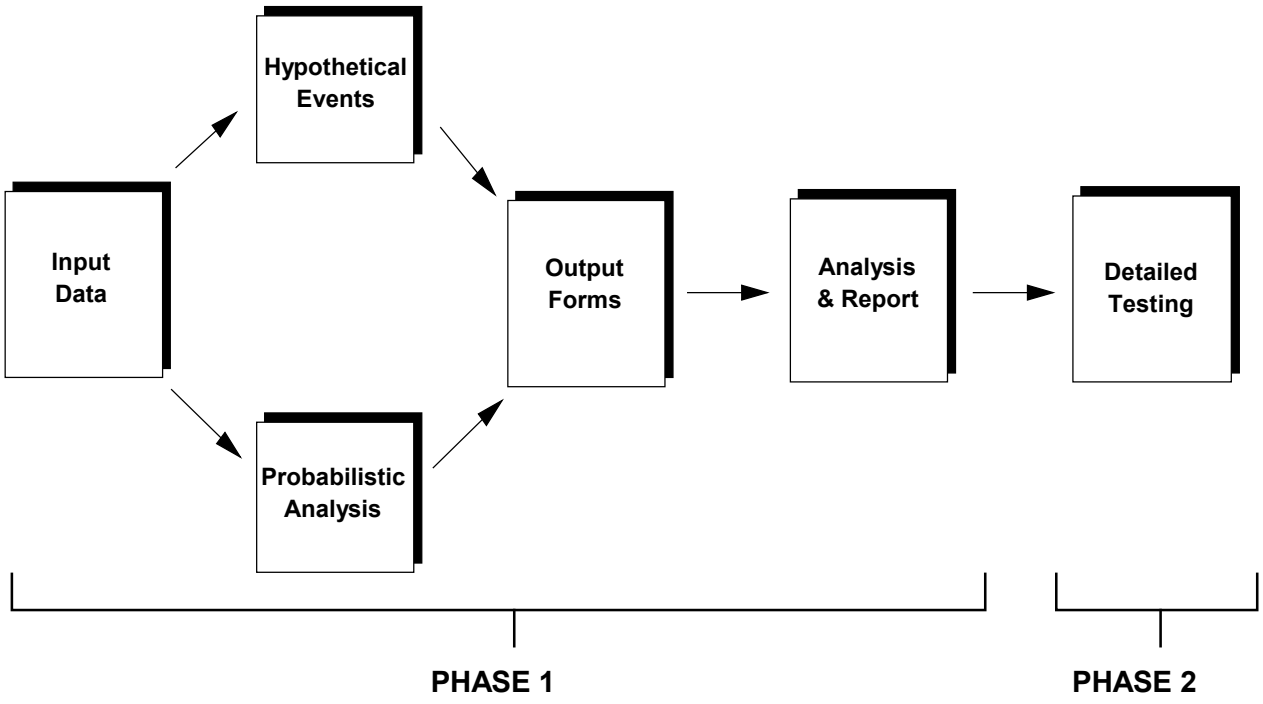
Baseline Tests

(*Standard 5.4.4, 5.4.6 and 5.4.8 for all questions in this section)*

I. Data Flow Chart

Following is a data flow chart depicting the process of evaluating hurricane catastrophe simulation models:

Data Flow Chart



Sample input data has been provided to the modeler on the enclosed diskette named **"inpdat99.xls".** The Commission is asking that the modeler run various scenario hurricane events (hypothetical and probabilistic) through its model on the sample input exposure data. The attached output forms must be filled out and specified loss files are to be forwarded to the Commission on diskette.

II. Sample Input Data

A sample data set is provided to each modeler on a 3½" diskette. The file is named **"inpdat99.xls"**. This data set consists of one $100,000 building for each construction type for each Zip Code in the state of Florida. The data set contains 6,052 records. The following is a description of the fields in the data set:

No.	Field	Description
1.	County Code	Federal Information Processing Standards (FIPS) County Code - see attached description following Form E
2.	Zip Code	5-digit Zip Code
3.	Construction Type	The following codes will be used: 1 = Wood Frame, 2 = Masonry, 3 = Mobilehome, 4 = Unknown
4.	Deductible	1% policy deductible for all records
5.	Total Insured Value - Building	$100,000 for all records
6.	Total Insured Value -Appurtenant Structures	$10,000 for all records
7.	Total Insured Value - Contents	$50,000 for all records
8.	Total Insured Value - Additional Living Expense	$20,000 for all records

The modeler is directed to make the following assumptions with the analysis:

- Each structure is insured 100% to value
- Number of stories = 1
- Occupancy type = Single Family Dwelling
- Year of Construction = 1980
- Tide at landfall is 0 meters

- If the model assumes different construction types other than those provided with the data, please map the codes the Commission has provided to the appropriate codes. The Commission requests a copy of this mapping and proper documentation describing the reason for the mapping. In addition, the modeler is requested to provide information as to the assumptions made with the unknown construction types by the model.
- Specify if population, geographic or other centroid was used for the location of the risks within the Zip Code.

All other assumptions that the modeler must make with the analysis must be reviewed with the Commission staff. The intent is to keep all assumptions consistent among the modelers.

Evaluation 1 - Zip Codes

The accuracy of the model Zip Code data base will be compared to the most current available. A sample format is shown below. Please refer to **Form A**.

Sample format:

Model Zip Code data base as of _____.
Sample Exposure Zip Codes as of most current available.

	Matched	Unmatched
No. of Records	_____	_____
% of Total Records	_____	_____
Total Exposure	_____	_____
% of Total Exposure	_____	_____

III. Hypothetical Event Evaluation

Evaluation 2 - 30 Hypothetical Events

Each modeler is required to model 30 hypothetical events. These events have been specified by the Commission. These events consist of 5 hurricanes, one for each hurricane category 1 - 5, at 6 different landfall locations; Jacksonville, Fort Pierce, Miami, Ft. Myers, Tampa/St. Petersburg, and Panama City. The Commission is requesting the maximum estimated one-minute wind speed associated with the events as well as the estimated loss by coverage type. The purpose of this analysis is to evaluate the consistency of the wind speeds and loss estimates between the models. A description of the events is contained in the file named **"eval2.csv"** on the supplied diskette. Please provide this information in an ASCII comma delimited format. Please refer to **Form B** for the specific file layout

.

Evaluation 3 - One Hypothetical Event

In addition to the 30 hypothetical events, wind speeds for 336 Zip Codes have been provided to the modeler by the Commission. This information can be found on the supplied diskette in the file named **"eval3.csv".** The wind speeds* and Zip Codes represent a hypothetical hurricane track. The purpose is to compare the estimated damages by wind speed and construction type. The modeler is instructed to model the sample exposure data against these wind speeds at the specified Zip Codes and provide the Commission with damage ratios summarized by wind speed and construction type. A sample format is shown below. Please refer to **Form C**.

Sample format for wind speed and construction information:

Wind speed* (mph)	**Total Loss**/ Subject Exposure**
20-30	_____
31-40	_____
41-50	_____
51-60	_____
etc.	

Construction Type	**Total Loss**/ Subject Exposure**
Wood Frame	_____
Masonry	_____
Mobilehome	_____
Unknown	_____

*Wind speeds are one-minute sustained, ten-meter wind speeds.

**Total loss is the sum of loss to all buildings in that category. For example, the total loss to all buildings affected by 50 knot winds or the total loss to all buildings with wood frame construction.

IV. Probabilistic Analysis

Evaluation 4 - Loss Costs

The modeler is instructed to provide loss costs for each construction type for each Zip Code in the sample data set named **"inpdat99.xls".** Please provide this information in an ASCII comma delimited format on a 3½" diskette. Following is a description of the requested file layout. Please follow the instructions on **Form D**. Please note that fields 1-9 are the exposure fields from the sample data set. Fields 9-13 are for the loss costs.

Field	Description
1.	Analysis Date
2.	County Code
3.	5 Digit Zip Code
4.	Construction Type
5.	Deductible
6.	Total Insured Value: Building
7.	Total Insured Value: Appurtenant Structures
8.	Total Insured Value: Contents
9.	Total Insured Value: Additional Living Expense
10.	Loss Cost Net of Deductibles: Building
11.	Loss Cost Net of Deductibles: Appurtenant Structures
12.	Loss Cost Net of Deductibles: Contents
13.	Loss Cost Net of Deductibles: Additional Living Expense

Evaluation 5 - Probable Maximum Loss (PML)

The modeler will provide estimates of loss for various probability levels using the hypothetical data set. The modeler will also provide the annual aggregate and occurrence mean, median and standard deviation for its PML distribution. Following is a sample format for receiving this information. Please refer to **Form E**.

Part A

Return Time (years)	Probability of Exceedance	Estimated Loss
Top Event	_____	_____
10,000	0.01%	_____
5,000	0.02%	_____
2,000	0.05%	_____
1,000, etc.	0.10%	_____

Part B

	Annual Aggregate	Occurrence
Mean	_____	_____
Median	_____	_____
Standard Deviation	_____	_____

V. Output Forms

On the following pages are the forms and output format for the information requested in the evaluation.

Form A
Evaluation 1 - Zip Code Data Base
(*Standard 5.1.3)*

Modeler Name: _____

Model and Version: _____

Date of Analysis: _____

Please specify the centroid of the Zip Code that the model uses:

Population Weighted	_____
Geographic	_____
Other - Please Specify	_____

Please describe the mapping of the construction codes provided with the data to the construction codes used by the model, if any. In addition describe how the unknown construction type was handled.

Model Zip Code data base as of _____.
Sample Exposure Zip Codes as of most current available.

	Matched	**Unmatched**
No. of Records	_____	_____
% of Total Records	_____	_____
Total Exposure	_____	_____
% of Total Exposure	_____	_____

Form B
Evaluation 2 - 30 Hypothetical Events

Modeler Name: _____

Model and Version: _____

Date of Analysis: _____

Estimated losses are requested in total and by coverage type for the 30 hypothetical events. Please provide this information in an ASCII comma delimited format on a 3½" diskette.
Format for detailed output for the sample data set:

No.	Field	Description
1.	Event ID	Event identification 1-30
2.	Category	Saffir Simpson Hurricane Category 1-5
3.	Central Pressure	Measured in inches
4.	Central Pressure	Measured in millibars
5.	Radius of Maximum Winds	Measured in nautical miles
6.	Forward Speed	Measured in miles per hour
7.	Landfall	Latitude and longitude of event at landfall location
8.	Location	General area of landfall
9.	Direction	Measured in degrees, assuming 0 degrees is north
10.	Radius of Hurricane Force Winds	Measured in nautical miles
11.	Maximum Estimated Wind Speed	Maximum estimated one minute average wind speed for this event
12.	Total Estimated Loss	Total estimated loss summarized for building, appurtenant structures, contents and additional living expense
13.	Estimated Building Loss	Total estimated loss for building
14.	Estimated App. Structure Loss	Total estimated loss for appurtenant structures
15.	Estimated Contents Loss	Total estimated loss for contents
16.	Estimated ALE Loss	Total estimated loss for additional living expense

Form C
Evaluation 3 - One Hypothetical Event

Modeler Name: _____

Model and Version: _____

Date of Analysis: _____

Wind speed* (mph)	Total Loss**/ Subject Exposure
20-30	_____
31-40	_____
41-50	_____
51-60	_____
61-70	_____
71-80	_____
81-90	_____
91-100	_____
101-110	_____
111-120	_____
121-130	_____
131-140	_____
141-150	_____

Construction Type	Total Loss**/ Subject Exposure
Wood Frame	_____
Masonry	_____
Mobilehome	_____
Unknown	_____

*Wind speeds are one-minute sustained, ten-meter wind speeds.

**Total loss is the sum of loss to all buildings in that category. For example, the total loss to all buildings affected by 50 knot winds or the total loss to all buildings with wood frame construction.

Form D Evaluation 4 – Loss Costs

Modeler Name: _____

Model and Version: _____

Date of Analysis: _____

Please provide this form along with expected annual loss costs by construction type and coverage for each Zip Code in the sample data set. There are 1,513 Zip Codes in the sample data set and 4 construction types; therefore, the completed file should have 6,052 records in total. If there are Zip Codes in the sample data set that your model does not recognize as "valid", please provide a list of such Zip Codes and either a) the new Zip Code to which the original one was mapped, or b) an indication that the insured values from this Zip Code were not modeled. Furthermore, please provide loss cost data using all Zip Codes provided in the sample data set. In other words, if no losses were modeled, the record should still be included in the completed file with loss costs of zero, and if a Zip Code was mapped to a new one, the resulting loss costs should be reported with the original Zip Code.

Please provide the results in a comma separated ASCII file via 3½" diskette using the following format:

Order	Field Name	Description
1	Analysis Date	Date of Analysis – YYYY/MM/DD
2	County Code	FIPS County Code
3	Zip Code	5-digit Zip Code
4	Construction Type	Please use the following: 1 = Wood Frame, 2 = Masonry, 3 = Mobilehome, 4 = Unknown
5	Deductible	1% (of the Building Value) policy deductible for each record (i.e. 0.01*$100,000)
6	Building Value	$100,000 for each record
7	Appurtenant Structures Value	$10,000 for each record
8	Contents Value	$50,000 for each record
9	Additional Living Expense Value	$20,000 for each record
10	Building Loss Cost*	Estimated expected annual loss cost for building divided by the building value modeled for each record ($100,000)
11	Appurtenant Structures Loss Cost*	Estimated expected annual loss cost for appurtenant structures divided by the appurtenant structures value modeled for each record ($10,000)
12	Contents Loss Cost*	Estimated expected annual loss cost for contents divided by the contents value modeled for each record ($50,000)
13	Additional Living Expense Loss Cost*	Estimated expected annual loss cost for additional living expense divided by the additional living expense value modeled for each record ($20,000)

Please round all loss costs to 6 decimal places

All deductibles are a percentage of the Building Value and are policy-level deductibles; however, for reporting purposes, the policy deductible should be pro-rated to the individual coverage losses in proportion to the loss.

Example

Assume that a model analyzing Wood Frame properties in Zip Code 33102 (Dade County) estimated the following:

Field Name	**Value**
Analysis Date	1999/11/15
County Code	Dade County = 25
Zip Code	33120
Construction Type	Wood Frame = 1
Deductible	1% = 0.01*$100,000 = $1,000
Building Value	$100,000
Appurtenant Structures Value	$10,000
Contents Value	$50,000
Additional Living Expense Value	$20,000
Building Loss*	$10,000
Appurtenant Structures Loss*	$1,000
Contents Loss*	$2,500
Additional Living Expense Loss*	$500

**Represents 1st dollar losses (i.e. prior to application of deductibles)*

The $1,000 policy deductible would be applied as follows:

Deductible	1% = 0.01*$100,000=$1,000
Building Loss	$10,000-[($10,000÷$14,000)x$1,000]=$9,285.71
Appurtenant Structures Loss	$1,000-[($1,000÷$14,000)x$1,000]=$928.57
Contents Loss	$2,500-[($2,500÷$14,000)x$1,000]=$2,321.43
Additional Living Expense Loss	$500-[($500÷$14,000)x$1,000]=$464.29

The reported Form D data is shown below:

Field Name	**Value**
Analysis Date	1999/11/15
County Code	Dade County = 25
Zip Code	33120
Construction Type	Wood Frame = 1
Deductible	1% = 0.01
Building Value	$100,000
Appurtenant Structures Value	$10,000
Contents Value	$50,000
Additional Living Expense Value	$20,000
Building Loss Cost	$9,285.71÷$100,000 = 0.092857
Appurtenant Structures Loss Cost	$928.57÷$10,000 = 0.092857
Contents Loss Cost	$2,321.43÷$50,000 = 0.046429
Additional Living Expense Loss Cost	$464.29÷$20,000 = 0.023214

Based on the above information, the data should be reported in the following format:

1999/11/15,25,33102,1,0.01,100000,10000,50000,20000,0.092857,0.092857,0.046429,0.023214

Form E
Evaluation 5 - Probable Maximum Loss

Modeler Name: _____

Model and Version: _____

Date of Analysis: _____

Part A

Return Time (years)	Probability of Exceedance	Estimated Loss
Top Event	_____	_____
10,000	0.01%	_____
5,000	0.02%	_____
2,000	0.05%	_____
1,000	0.10%	_____
500	0.20%	_____
250	0.40%	_____
100	1.00%	_____
50	2.00%	_____
20	5.00%	_____
10	10.00%	_____
5	20.00%	_____

Part B

	Annual Aggregate	Occurrence
Mean	_____	_____
Median	_____	_____
Standard Deviation	_____	_____

Florida County Codes

County Code	County Name	County Code	County Name	County Code	County Name
001	Alachua	**047**	Hamilton	**093**	Okeechobee
003	Baker	**049**	Hardee	**095**	Orange
005	Bay	**051**	Hendry	**097**	Osceola
007	Bradford	**053**	Hernando	**099**	Palm Beach
009	Brevard	**055**	Highlands	**101**	Pasco
011	Broward	**057**	Hillsborough	**103**	Pinellas
013	Calhoun	**059**	Holmes	**105**	Polk
015	Charlotte	**061**	Indian River	**107**	Putnam
017	Citrus	**063**	Jackson	**109**	St. Johns
019	Clay	**065**	Jefferson	**111**	St. Lucie
021	Collier	**067**	Lafayette	**113**	Santa Rosa
023	Columbia	**069**	Lake	**115**	Sarasota
025	Dade	**071**	Lee	**117**	Seminole
027	De Soto	**073**	Leon	**119**	Sumter
029	Dixie	**075**	Levy	**121**	Suwannee
031	Duval	**077**	Liberty	**123**	Taylor
033	Escambia	**079**	Madison	**125**	Union
035	Flagler	**081**	Manatee	**127**	Volusia
037	Franklin	**083**	Marion	**129**	Wakulla
039	Gadsden	**085**	Martin	**131**	Walton
041	Gilchrist	**087**	Monroe	**133**	Washington
043	Glades	**089**	Nassau		
045	Gulf	**091**	Okaloosa		

Note: These codes are derived from the Federal Information Processing Standards (FIPS) Codes.

Output Ranges Format

Module 3, Section V

Average Annual Loss Functions

Question No. 4

Output Range Loss Cost Format

Rev. 11-1-09

LOSS COSTS PER $1,000

Personal Residential -- Owners -- FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
ALACHUA	LOW										
	HIGH										
	WGHTD AVE										
BAKER	LOW										
	HIGH										
	WGHTD AVE										
BAY	LOW										
	HIGH										
	WGHTD AVE										
BRADFORD	LOW										
	HIGH										
	WGHTD AVE										
BREVARD	LOW										
	HIGH										
	WGHTD AVE										
BROWARD	LOW										
	HIGH										
	WGHTD AVE										
CALHOUN	LOW										
	HIGH										
	WGHTD AVE										
CHARLOTTE	LOW										
	HIGH										
	WGHTD AVE										
CITRUS	LOW										
	HIGH										
	WGHTD AVE										
CLAY	LOW										
	HIGH										
	WGHTD AVE										
COLLIER	LOW										
	HIGH										
	WGHTD AVE										
COLUMBIA	LOW										
	HIGH										
	WGHTD AVE										
DADE	LOW										
	HIGH										
	WGHTD AVE										
DESOTO	LOW										
	HIGH										
	WGHTD AVE										
DIXIE	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No. _____

LOSS COSTS PER $1,000

Personal Residential – Owners – FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
DUVAL	LOW										
	HIGH										
	WGHTD AVE										
ESCAMBIA	LOW										
	HIGH										
	WGHTD AVE										
FLAGLER	LOW										
	HIGH										
	WGHTD AVE										
FRANKLIN	LOW										
	HIGH										
	WGHTD AVE										
GADSDEN	LOW										
	HIGH										
	WGHTD AVE										
GILCHRIST	LOW										
	HIGH										
	WGHTD AVE										
GLADES	LOW										
	HIGH										
	WGHTD AVE										
GULF	LOW										
	HIGH										
	WGHTD AVE										
HAMILTON	LOW										
	HIGH										
	WGHTD AVE										
HARDEE	LOW										
	HIGH										
	WGHTD AVE										
HENDRY	LOW										
	HIGH										
	WGHTD AVE										
HERNANDO	LOW										
	HIGH										
	WGHTD AVE										
HIGHLANDS	LOW										
	HIGH										
	WGHTD AVE										
HILLSBOROUGH	LOW										
	HIGH										
	WGHTD AVE										
HOLMES	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Market

Version No.

3

Output Range Loss Cost Format

Rev. 11-1-99

LOSS COSTS PER $1,000

Personal Residential -- Owners -- FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
INDIAN RIVER	LOW										
	HIGH										
	WGHTD AVE										
JACKSON	LOW										
	HIGH										
	WGHTD AVE										
JEFFERSON	LOW										
	HIGH										
	WGHTD AVE										
LAFAYETTE	LOW										
	HIGH										
	WGHTD AVE										
LAKE	LOW										
	HIGH										
	WGHTD AVE										
LEE	LOW										
	HIGH										
	WGHTD AVE										
LEON	LOW										
	HIGH										
	WGHTD AVE										
LEVY	LOW										
	HIGH										
	WGHTD AVE										
LIBERTY	LOW										
	HIGH										
	WGHTD AVE										
MADISON	LOW										
	HIGH										
	WGHTD AVE										
MANATEE	LOW										
	HIGH										
	WGHTD AVE										
MARION	LOW										
	HIGH										
	WGHTD AVE										
MARTIN	LOW										
	HIGH										
	WGHTD AVE										
MONROE	LOW										
	HIGH										
	WGHTD AVE										
NASSAU	LOW										
	HIGH										
	WGHTD AVE										

Output Range Loss Cost Format

Rev. 11-1-99

LOSS COSTS PER $1,000
Personal Residential – Owners – FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
OKALOOSA	LOW										
	HIGH										
	WGHTD AVE										
OKEECHOBEE	LOW										
	HIGH										
	WGHTD AVE										
ORANGE	LOW										
	HIGH										
	WGHTD AVE										
OSCEOLA	LOW										
	HIGH										
	WGHTD AVE										
PALM BEACH	LOW										
	HIGH										
	WGHTD AVE										
PASCO	LOW										
	HIGH										
	WGHTD AVE										
PINELLAS	LOW										
	HIGH										
	WGHTD AVE										
POLK	LOW										
	HIGH										
	WGHTD AVE										
PUTNAM	LOW										
	HIGH										
	WGHTD AVE										
SANTA ROSA	LOW										
	HIGH										
	WGHTD AVE										
SARASOTA	LOW										
	HIGH										
	WGHTD AVE										
SEMINOLE	LOW										
	HIGH										
	WGHTD AVE										
ST. JOHNS	LOW										
	HIGH										
	WGHTD AVE										
ST. LUCIE	LOW										
	HIGH										
	WGHTD AVE										
SUMTER	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
Personal Residential -- Owners -- FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
SUWANNEE	LOW										
	HIGH										
	WGHTD AVE										
TAYLOR	LOW										
	HIGH										
	WGHTD AVE										
UNION	LOW										
	HIGH										
	WGHTD AVE										
VOLUSIA	LOW										
	HIGH										
	WGHTD AVE										
WAKULLA	LOW										
	HIGH										
	WGHTD AVE										
WALTON	LOW										
	HIGH										
	WGHTD AVE										
WASHINGTON	LOW										
	HIGH										
	WGHTD AVE										
STATEWIDE	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL -Owners – MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE STRUCTURE	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
ALACHUA	LOW										
	HIGH										
	WGHTD AVE										
BAKER	LOW										
	HIGH										
	WGHTD AVE										
BAY	LOW										
	HIGH										
	WGHTD AVE										
BRADFORD	LOW										
	HIGH										
	WGHTD AVE										
BREVARD	LOW										
	HIGH										
	WGHTD AVE										
BROWARD	LOW										
	HIGH										
	WGHTD AVE										
CALHOUN	LOW										
	HIGH										
	WGHTD AVE										
CHARLOTTE	LOW										
	HIGH										
	WGHTD AVE										
CITRUS	LOW										
	HIGH										
	WGHTD AVE										
CLAY	LOW										
	HIGH										
	WGHTD AVE										
COLLIER	LOW										
	HIGH										
	WGHTD AVE										
COLUMBIA	LOW										
	HIGH										
	WGHTD AVE										
DADE	LOW										
	HIGH										
	WGHTD AVE										
DESOTO	LOW										
	HIGH										
	WGHTD AVE										
DIXIE	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL -Owners – MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE STRUCTURE	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
DUVAL	LOW										
	HIGH										
	WGHTD AVE										
ESCAMBIA	LOW										
	HIGH										
	WGHTD AVE										
FLAGLER	LOW										
	HIGH										
	WGHTD AVE										
FRANKLIN	LOW										
	HIGH										
	WGHTD AVE										
GADSDEN	LOW										
	HIGH										
	WGHTD AVE										
GILCHRIST	LOW										
	HIGH										
	WGHTD AVE										
GLADES	LOW										
	HIGH										
	WGHTD AVE										
GULF	LOW										
	HIGH										
	WGHTD AVE										
HAMILTON	LOW										
	HIGH										
	WGHTD AVE										
HARDEE	LOW										
	HIGH										
	WGHTD AVE										
HENDRY	LOW										
	HIGH										
	WGHTD AVE										
HERNANDO	LOW										
	HIGH										
	WGHTD AVE										
HIGHLANDS	LOW										
	HIGH										
	WGHTD AVE										
HILLSBOROUGH	LOW										
	HIGH										
	WGHTD AVE										
HOLMES	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL -Owners -- MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE STRUCTURE	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
INDIAN RIVER	LOW										
	HIGH										
	WGHTD AVE										
JACKSON	LOW										
	HIGH										
	WGHTD AVE										
JEFFERSON	LOW										
	HIGH										
	WGHTD AVE										
LAFAYETTE	LOW										
	HIGH										
	WGHTD AVE										
LAKE	LOW										
	HIGH										
	WGHTD AVE										
LEE	LOW										
	HIGH										
	WGHTD AVE										
LEON	LOW										
	HIGH										
	WGHTD AVE										
LEVY	LOW										
	HIGH										
	WGHTD AVE										
LIBERTY	LOW										
	HIGH										
	WGHTD AVE										
MADISON	LOW										
	HIGH										
	WGHTD AVE										
MANATEE	LOW										
	HIGH										
	WGHTD AVE										
MARION	LOW										
	HIGH										
	WGHTD AVE										
MARTIN	LOW										
	HIGH										
	WGHTD AVE										
MONROE	LOW										
	HIGH										
	WGHTD AVE										
NASSAU	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL -Owners – MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE STRUCTURE	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
OKALOOSA	LOW										
	HIGH										
	WGHTD AVE										
OKEECHOBEE	LOW										
	HIGH										
	WGHTD AVE										
ORANGE	LOW										
	HIGH										
	WGHTD AVE										
OSCEOLA	LOW										
	HIGH										
	WGHTD AVE										
PALM BEACH	LOW										
	HIGH										
	WGHTD AVE										
PASCO	LOW										
	HIGH										
	WGHTD AVE										
PINELLAS	LOW										
	HIGH										
	WGHTD AVE										
POLK	LOW										
	HIGH										
	WGHTD AVE										
PUTNAM	LOW										
	HIGH										
	WGHTD AVE										
SANTA ROSA	LOW										
	HIGH										
	WGHTD AVE										
SARASOTA	LOW										
	HIGH										
	WGHTD AVE										
SEMINOLE	LOW										
	HIGH										
	WGHTD AVE										
ST. JOHNS	LOW										
	HIGH										
	WGHTD AVE										
ST. LUCIE	LOW										
	HIGH										
	WGHTD AVE										
SUMTER	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL -Owners – MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE STRUCTURE	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
SUWANNEE	LOW										
	HIGH										
	WGHTD AVE										
TAYLOR	LOW										
	HIGH										
	WGHTD AVE										
UNION	LOW										
	HIGH										
	WGHTD AVE										
VOLUSIA	LOW										
	HIGH										
	WGHTD AVE										
WAKULLA	LOW										
	HIGH										
	WGHTD AVE										
WALTON	LOW										
	HIGH										
	WGHTD AVE										
WASHINGTON	LOW										
	HIGH										
	WGHTD AVE										
STATEWIDE	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL - MOBILE HOMES

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
ALACHUA	LOW										
	HIGH										
	WGHTD AVE										
BAKER	LOW										
	HIGH										
	WGHTD AVE										
BAY	LOW										
	HIGH										
	WGHTD AVE										
BRADFORD	LOW										
	HIGH										
	WGHTD AVE										
BREVARD	LOW										
	HIGH										
	WGHTD AVE										
BROWARD	LOW										
	HIGH										
	WGHTD AVE										
CALHOUN	LOW										
	HIGH										
	WGHTD AVE										
CHARLOTTE	LOW										
	HIGH										
	WGHTD AVE										
CITRUS	LOW										
	HIGH										
	WGHTD AVE										
CLAY	LOW										
	HIGH										
	WGHTD AVE										
COLLIER	LOW										
	HIGH										
	WGHTD AVE										
COLUMBIA	LOW										
	HIGH										
	WGHTD AVE										
DADE	LOW										
	HIGH										
	WGHTD AVE										
DESOTO	LOW										
	HIGH										
	WGHTD AVE										
DIXIE	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No. _____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL - MOBILE HOMES

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
DUVAL	LOW										
	HIGH										
	WGHTD AVE										
ESCAMBIA	LOW										
	HIGH										
	WGHTD AVE										
FLAGLER	LOW										
	HIGH										
	WGHTD AVE										
FRANKLIN	LOW										
	HIGH										
	WGHTD AVE										
GADSDEN	LOW										
	HIGH										
	WGHTD AVE										
GILCHRIST	LOW										
	HIGH										
	WGHTD AVE										
GLADES	LOW										
	HIGH										
	WGHTD AVE										
GULF	LOW										
	HIGH										
	WGHTD AVE										
HAMILTON	LOW										
	HIGH										
	WGHTD AVE										
HARDEE	LOW										
	HIGH										
	WGHTD AVE										
HENDRY	LOW										
	HIGH										
	WGHTD AVE										
HERNANDO	LOW										
	HIGH										
	WGHTD AVE										
HIGHLANDS	LOW										
	HIGH										
	WGHTD AVE										
HILLSBOROUGH	LOW										
	HIGH										
	WGHTD AVE										
HOLMES	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL - MOBILE HOMES

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
INDIAN RIVER	LOW										
	HIGH										
	WGHTD AVE										
JACKSON	LOW										
	HIGH										
	WGHTD AVE										
JEFFERSON	LOW										
	HIGH										
	WGHTD AVE										
LAFAYETTE	LOW										
	HIGH										
	WGHTD AVE										
LAKE	LOW										
	HIGH										
	WGHTD AVE										
LEE	LOW										
	HIGH										
	WGHTD AVE										
LEON	LOW										
	HIGH										
	WGHTD AVE										
LEVY	LOW										
	HIGH										
	WGHTD AVE										
LIBERTY	LOW										
	HIGH										
	WGHTD AVE										
MADISON	LOW										
	HIGH										
	WGHTD AVE										
MANATEE	LOW										
	HIGH										
	WGHTD AVE										
MARION	LOW										
	HIGH										
	WGHTD AVE										
MARTIN	LOW										
	HIGH										
	WGHTD AVE										
MONROE	LOW										
	HIGH										
	WGHTD AVE										
NASSAU	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL - MOBILE HOMES

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
OKALOOSA	LOW										
	HIGH										
	WGHTD AVE										
OKEECHOBEE	LOW										
	HIGH										
	WGHTD AVE										
ORANGE	LOW										
	HIGH										
	WGHTD AVE										
OSCEOLA	LOW										
	HIGH										
	WGHTD AVE										
PALM BEACH	LOW										
	HIGH										
	WGHTD AVE										
PASCO	LOW										
	HIGH										
	WGHTD AVE										
PINELLAS	LOW										
	HIGH										
	WGHTD AVE										
POLK	LOW										
	HIGH										
	WGHTD AVE										
PUTNAM	LOW										
	HIGH										
	WGHTD AVE										
SANTA ROSA	LOW										
	HIGH										
	WGHTD AVE										
SARASOTA	LOW										
	HIGH										
	WGHTD AVE										
SEMINOLE	LOW										
	HIGH										
	WGHTD AVE										
ST. JOHNS	LOW										
	HIGH										
	WGHTD AVE										
ST. LUCIE	LOW										
	HIGH										
	WGHTD AVE										
SUMTER	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL - MOBILE HOMES

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE APPURTENANT STRUCTURE	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
SUWANNEE	LOW										
	HIGH										
	WGHTD AVE										
TAYLOR	LOW										
	HIGH										
	WGHTD AVE										
UNION	LOW										
	HIGH										
	WGHTD AVE										
VOLUSIA	LOW										
	HIGH										
	WGHTD AVE										
WAKULLA	LOW										
	HIGH										
	WGHTD AVE										
WALTON	LOW										
	HIGH										
	WGHTD AVE										
WASHINGTON	LOW										
	HIGH										
	WGHTD AVE										
STATEWIDE	LOW										
	HIGH										
	WGHTD AVE										

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters – FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
ALACHUA	LOW								
	HIGH								
	WGHTD AVE								
BAKER	LOW								
	HIGH								
	WGHTD AVE								
BAY	LOW								
	HIGH								
	WGHTD AVE								
BRADFORD	LOW								
	HIGH								
	WGHTD AVE								
BREVARD	LOW								
	HIGH								
	WGHTD AVE								
BROWARD	LOW								
	HIGH								
	WGHTD AVE								
CALHOUN	LOW								
	HIGH								
	WGHTD AVE								
CHARLOTTE	LOW								
	HIGH								
	WGHTD AVE								
CITRUS	LOW								
	HIGH								
	WGHTD AVE								
CLAY	LOW								
	HIGH								
	WGHTD AVE								
COLLIER	LOW								
	HIGH								
	WGHTD AVE								
COLUMBIA	LOW								
	HIGH								
	WGHTD AVE								
DADE	LOW								
	HIGH								
	WGHTD AVE								
DESOTO	LOW								
	HIGH								
	WGHTD AVE								

82

82

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters – FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
DIXIE	LOW								
	HIGH								
	WGHTD AVE								
DUVAL	LOW								
	HIGH								
	WGHTD AVE								
ESCAMBIA	LOW								
	HIGH								
	WGHTD AVE								
FLAGLER	LOW								
	HIGH								
	WGHTD AVE								
FRANKLIN	LOW								
	HIGH								
	WGHTD AVE								
GADSDEN	LOW								
	HIGH								
	WGHTD AVE								
GILCHRIST	LOW								
	HIGH								
	WGHTD AVE								
GLADES	LOW								
	HIGH								
	WGHTD AVE								
GULF	LOW								
	HIGH								
	WGHTD AVE								
HAMILTON	LOW								
	HIGH								
	WGHTD AVE								
HARDEE	LOW								
	HIGH								
	WGHTD AVE								
HENDRY	LOW								
	HIGH								
	WGHTD AVE								
HERNANDO	LOW								
	HIGH								
	WGHTD AVE								
HIGHLANDS	LOW								
	HIGH								
	WGHTD AVE								

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters -- FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
HILLSBOROUGH	LOW								
	HIGH								
	WGHTD AVE								
HOLMES	LOW								
	HIGH								
	WGHTD AVE								
INDIAN RIVER	LOW								
	HIGH								
	WGHTD AVE								
JACKSON	LOW								
	HIGH								
	WGHTD AVE								
JEFFERSON	LOW								
	HIGH								
	WGHTD AVE								
LAFAYETTE	LOW								
	HIGH								
	WGHTD AVE								
LAKE	LOW								
	HIGH								
	WGHTD AVE								
LEE	LOW								
	HIGH								
	WGHTD AVE								
LEON	LOW								
	HIGH								
	WGHTD AVE								
LEVY	LOW								
	HIGH								
	WGHTD AVE								
LIBERTY	LOW								
	HIGH								
	WGHTD AVE								
MADISON	LOW								
	HIGH								
	WGHTD AVE								
MANATEE	LOW								
	HIGH								
	WGHTD AVE								
MARION	LOW								
	HIGH								
	WGHTD AVE								

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters -- FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
MARTIN	LOW								
	HIGH								
	WGHTD AVE								
MONROE	LOW								
	HIGH								
	WGHTD AVE								
NASSAU	LOW								
	HIGH								
	WGHTD AVE								
OKALOOSA	LOW								
	HIGH								
	WGHTD AVE								
OKEECHOBEE	LOW								
	HIGH								
	WGHTD AVE								
ORANGE	LOW								
	HIGH								
	WGHTD AVE								
OSCEOLA	LOW								
	HIGH								
	WGHTD AVE								
PALM BEACH	LOW								
	HIGH								
	WGHTD AVE								
PASCO	LOW								
	HIGH								
	WGHTD AVE								
PINELLAS	LOW								
	HIGH								
	WGHTD AVE								
POLK	LOW								
	HIGH								
	WGHTD AVE								
PUTNAM	LOW								
	HIGH								
	WGHTD AVE								
SANTA ROSA	LOW								
	HIGH								
	WGHTD AVE								
SARASOTA	LOW								
	HIGH								
	WGHTD AVE								

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters -- FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
SEMINOLE	LOW								
	HIGH								
	WGHTD AVE								
ST. JOHNS	LOW								
	HIGH								
	WGHTD AVE								
ST. LUCIE	LOW								
	HIGH								
	WGHTD AVE								
SUMTER	LOW								
	HIGH								
	WGHTD AVE								
SUWANNEE	LOW								
	HIGH								
	WGHTD AVE								
TAYLOR	LOW								
	HIGH								
	WGHTD AVE								
UNION	LOW								
	HIGH								
	WGHTD AVE								
VOLUSIA	LOW								
	HIGH								
	WGHTD AVE								
WAKULLA	LOW								
	HIGH								
	WGHTD AVE								
WALTON	LOW								
	HIGH								
	WGHTD AVE								
WASHINGTON	LOW								
	HIGH								
	WGHTD AVE								
STATEWIDE	LOW								
	HIGH								
	WGHTD AVE								

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*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters – MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,000 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
ALACHUA	LOW								
	HIGH								
	WGHTD AVE								
BAKER	LOW								
	HIGH								
	WGHTD AVE								
BAY	LOW								
	HIGH								
	WGHTD AVE								
BRADFORD	LOW								
	HIGH								
	WGHTD AVE								
BREVARD	LOW								
	HIGH								
	WGHTD AVE								
BROWARD	LOW								
	HIGH								
	WGHTD AVE								
CALHOUN	LOW								
	HIGH								
	WGHTD AVE								
CHARLOTTE	LOW								
	HIGH								
	WGHTD AVE								
CITRUS	LOW								
	HIGH								
	WGHTD AVE								
CLAY	LOW								
	HIGH								
	WGHTD AVE								
COLLIER	LOW								
	HIGH								
	WGHTD AVE								
COLUMBIA	LOW								
	HIGH								
	WGHTD AVE								
DADE	LOW								
	HIGH								
	WGHTD AVE								
DESOTO	LOW								
	HIGH								
	WGHTD AVE								
DIXIE	LOW								
	HIGH								
	WGHTD AVE								

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL - Renters – MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
DUVAL	LOW								
	HIGH								
	WGHTD AVE								
ESCAMBIA	LOW								
	HIGH								
	WGHTD AVE								
FLAGLER	LOW								
	HIGH								
	WGHTD AVE								
FRANKLIN	LOW								
	HIGH								
	WGHTD AVE								
GADSDEN	LOW								
	HIGH								
	WGHTD AVE								
GILCHRIST	LOW								
	HIGH								
	WGHTD AVE								
GLADES	LOW								
	HIGH								
	WGHTD AVE								
GULF	LOW								
	HIGH								
	WGHTD AVE								
HAMILTON	LOW								
	HIGH								
	WGHTD AVE								
HARDEE	LOW								
	HIGH								
	WGHTD AVE								
HENDRY	LOW								
	HIGH								
	WGHTD AVE								
HERNANDO	LOW								
	HIGH								
	WGHTD AVE								
HIGHLANDS	LOW								
	HIGH								
	WGHTD AVE								
HILLSBOROUGH	LOW								
	HIGH								
	WGHTD AVE								
HOLMES	LOW								
	HIGH								
	WGHTD AVE								

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*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters -- MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
INDIAN RIVER	LOW								
	HIGH								
	WGHTD AVE								
JACKSON	LOW								
	HIGH								
	WGHTD AVE								
JEFFERSON	LOW								
	HIGH								
	WGHTD AVE								
LAFAYETTE	LOW								
	HIGH								
	WGHTD AVE								
LAKE	LOW								
	HIGH								
	WGHTD AVE								
LEE	LOW								
	HIGH								
	WGHTD AVE								
LEON	LOW								
	HIGH								
	WGHTD AVE								
LEVY	LOW								
	HIGH								
	WGHTD AVE								
LIBERTY	LOW								
	HIGH								
	WGHTD AVE								
MADISON	LOW								
	HIGH								
	WGHTD AVE								
MANATEE	LOW								
	HIGH								
	WGHTD AVE								
MARION	LOW								
	HIGH								
	WGHTD AVE								
MARTIN	LOW								
	HIGH								
	WGHTD AVE								
MONROE	LOW								
	HIGH								
	WGHTD AVE								
NASSAU	LOW								
	HIGH								
	WGHTD AVE								

Includes contents and A.L.E.

Model _____ Version No. _____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters – MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL IVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
OKALOOSA	LOW								
	HIGH								
	WGHTD AVE								
OKEECHOBEE	LOW								
	HIGH								
	WGHTD AVE								
ORANGE	LOW								
	HIGH								
	WGHTD AVE								
OSCEOLA	LOW								
	HIGH								
	WGHTD AVE								
PALM BEACH	LOW								
	HIGH								
	WGHTD AVE								
PASCO	LOW								
	HIGH								
	WGHTD AVE								
PINELLAS	LOW								
	HIGH								
	WGHTD AVE								
POLK	LOW								
	HIGH								
	WGHTD AVE								
PUTNAM	LOW								
	HIGH								
	WGHTD AVE								
SANTA ROSA	LOW								
	HIGH								
	WGHTD AVE								
SARASOTA	LOW								
	HIGH								
	WGHTD AVE								
SEMINOLE	LOW								
	HIGH								
	WGHTD AVE								
ST. JOHNS	LOW								
	HIGH								
	WGHTD AVE								
ST. LUCIE	LOW								
	HIGH								
	WGHTD AVE								
SUMTER	LOW								
	HIGH								
	WGHTD AVE								

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*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Renters -- MASONRY

COUNTY	LOSS COSTS	0% DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
SUWANNEE	LOW								
	HIGH								
	WGHTD AVE								
TAYLOR	LOW								
	HIGH								
	WGHTD AVE								
UNION	LOW								
	HIGH								
	WGHTD AVE								
VOLUSIA	LOW								
	HIGH								
	WGHTD AVE								
WAKULLA	LOW								
	HIGH								
	WGHTD AVE								
WALTON	LOW								
	HIGH								
	WGHTD AVE								
WASHINGTON	LOW								
	HIGH								
	WGHTD AVE								
STATEWIDE	LOW								
	HIGH								
	WGHTD AVE								

*Includes contents and A.L.E.

Model _____ Version No. _____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners – FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
ALACHUA	LOW									
	HIGH									
	WGHTD AVE									
BAKER	LOW									
	HIGH									
	WGHTD AVE									
BAY	LOW									
	HIGH									
	WGHTD AVE									
BRADFORD	LOW									
	HIGH									
	WGHTD AVE									
BREVARD	LOW									
	HIGH									
	WGHTD AVE									
BROWARD	LOW									
	HIGH									
	WGHTD AVE									
CALHOUN	LOW									
	HIGH									
	WGHTD AVE									
CHARLOTTE	LOW									
	HIGH									
	WGHTD AVE									
CITRUS	LOW									
	HIGH									
	WGHTD AVE									
CLAY	LOW									
	HIGH									
	WGHTD AVE									
COLLIER	LOW									
	HIGH									
	WGHTD AVE									
COLUMBIA	LOW									
	HIGH									
	WGHTD AVE									
DADE	LOW									
	HIGH									
	WGHTD AVE									
DESOTO	LOW									
	HIGH									
	WGHTD AVE									
DIXIE	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners – FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL MMG EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,000 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
DUVAL	LOW									
	HIGH									
	WGHTD AVE									
ESCAMBIA	LOW									
	HIGH									
	WGHTD AVE									
FLAGLER	LOW									
	HIGH									
	WGHTD AVE									
FRANKLIN	LOW									
	HIGH									
	WGHTD AVE									
GADSDEN	LOW									
	HIGH									
	WGHTD AVE									
GILCHRIST	LOW									
	HIGH									
	WGHTD AVE									
GLADES	LOW									
	HIGH									
	WGHTD AVE									
GULF	LOW									
	HIGH									
	WGHTD AVE									
HAMILTON	LOW									
	HIGH									
	WGHTD AVE									
HARDEE	LOW									
	HIGH									
	WGHTD AVE									
HENDRY	LOW									
	HIGH									
	WGHTD AVE									
HERNANDO	LOW									
	HIGH									
	WGHTD AVE									
HIGHLANDS	LOW									
	HIGH									
	WGHTD AVE									
HILLSBOROUGH	LOW									
	HIGH									
	WGHTD AVE									
HOLMES	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners -- FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL IVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
INDIAN RIVER	LOW									
	HIGH									
	WGHTD AVE									
JACKSON	LOW									
	HIGH									
	WGHTD AVE									
JEFFERSON	LOW									
	HIGH									
	WGHTD AVE									
LAFAYETTE	LOW									
	HIGH									
	WGHTD AVE									
LAKE	LOW									
	HIGH									
	WGHTD AVE									
LEE	LOW									
	HIGH									
	WGHTD AVE									
LEON	LOW									
	HIGH									
	WGHTD AVE									
LEVY	LOW									
	HIGH									
	WGHTD AVE									
LIBERTY	LOW									
	HIGH									
	WGHTD AVE									
MADISON	LOW									
	HIGH									
	WGHTD AVE									
MANATEE	LOW									
	HIGH									
	WGHTD AVE									
MARION	LOW									
	HIGH									
	WGHTD AVE									
MARTIN	LOW									
	HIGH									
	WGHTD AVE									
MONROE	LOW									
	HIGH									
	WGHTD AVE									
NASSAU	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners – FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
OKALOOSA	LOW									
	HIGH									
	WGHTD AVE									
OKEECHOBEE	LOW									
	HIGH									
	WGHTD AVE									
ORANGE	LOW									
	HIGH									
	WGHTD AVE									
OSCEOLA	LOW									
	HIGH									
	WGHTD AVE									
PALM BEACH	LOW									
	HIGH									
	WGHTD AVE									
PASCO	LOW									
	HIGH									
	WGHTD AVE									
PINELLAS	LOW									
	HIGH									
	WGHTD AVE									
POLK	LOW									
	HIGH									
	WGHTD AVE									
PUTNAM	LOW									
	HIGH									
	WGHTD AVE									
SANTA ROSA	LOW									
	HIGH									
	WGHTD AVE									
SARASOTA	LOW									
	HIGH									
	WGHTD AVE									
SEMINOLE	LOW									
	HIGH									
	WGHTD AVE									
ST. JOHNS	LOW									
	HIGH									
	WGHTD AVE									
ST. LUCIE	LOW									
	HIGH									
	WGHTD AVE									
SUMTER	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No. _____

LOSS COSTS PER $1,000
PERSONAL RESIDENTIAL - Condo Owners – FRAME

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL IVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
SUWANNEE	LOW									
	HIGH									
	WGHTD AVE									
TAYLOR	LOW									
	HIGH									
	WGHTD AVE									
UNION	LOW									
	HIGH									
	WGHTD AVE									
VOLUSIA	LOW									
	HIGH									
	WGHTD AVE									
WAKULLA	LOW									
	HIGH									
	WGHTD AVE									
WALTON	LOW									
	HIGH									
	WGHTD AVE									
WASHINGTON	LOW									
	HIGH									
	WGHTD AVE									
STATEWIDE	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners – MASONRY

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
ALACHUA	LOW									
	HIGH									
	WGHTD AVE									
BAKER	LOW									
	HIGH									
	WGHTD AVE									
BAY	LOW									
	HIGH									
	WGHTD AVE									
BRADFORD	LOW									
	HIGH									
	WGHTD AVE									
BREVARD	LOW									
	HIGH									
	WGHTD AVE									
BROWARD	LOW									
	HIGH									
	WGHTD AVE									
CALHOUN	LOW									
	HIGH									
	WGHTD AVE									
CHARLOTTE	LOW									
	HIGH									
	WGHTD AVE									
CITRUS	LOW									
	HIGH									
	WGHTD AVE									
CLAY	LOW									
	HIGH									
	WGHTD AVE									
COLLIER	LOW									
	HIGH									
	WGHTD AVE									
COLUMBIA	LOW									
	HIGH									
	WGHTD AVE									
DADE	LOW									
	HIGH									
	WGHTD AVE									
DESOTO	LOW									
	HIGH									
	WGHTD AVE									
DIXIE	LOW									
	HIGH									
	WGHTD AVE									

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*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners – MASONRY

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	3% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
DUVAL	LOW									
	HIGH									
	WGHTD AVE									
ESCAMBIA	LOW									
	HIGH									
	WGHTD AVE									
FLAGLER	LOW									
	HIGH									
	WGHTD AVE									
FRANKLIN	LOW									
	HIGH									
	WGHTD AVE									
GADSDEN	LOW									
	HIGH									
	WGHTD AVE									
GILCHRIST	LOW									
	HIGH									
	WGHTD AVE									
GLADES	LOW									
	HIGH									
	WGHTD AVE									
GULF	LOW									
	HIGH									
	WGHTD AVE									
HAMILTON	LOW									
	HIGH									
	WGHTD AVE									
HARDEE	LOW									
	HIGH									
	WGHTD AVE									
HENDRY	LOW									
	HIGH									
	WGHTD AVE									
HERNANDO	LOW									
	HIGH									
	WGHTD AVE									
HIGHLANDS	LOW									
	HIGH									
	WGHTD AVE									
HILLSBOROUGH	LOW									
	HIGH									
	WGHTD AVE									
HOLMES	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners – MASONRY

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
INDIAN RIVER	LOW									
	HIGH									
	WGHTD AVE									
JACKSON	LOW									
	HIGH									
	WGHTD AVE									
JEFFERSON	LOW									
	HIGH									
	WGHTD AVE									
LAFAYETTE	LOW									
	HIGH									
	WGHTD AVE									
LAKE	LOW									
	HIGH									
	WGHTD AVE									
LEE	LOW									
	HIGH									
	WGHTD AVE									
LEON	LOW									
	HIGH									
	WGHTD AVE									
LEVY	LOW									
	HIGH									
	WGHTD AVE									
LIBERTY	LOW									
	HIGH									
	WGHTD AVE									
MADISON	LOW									
	HIGH									
	WGHTD AVE									
MANATEE	LOW									
	HIGH									
	WGHTD AVE									
MARION	LOW									
	HIGH									
	WGHTD AVE									
MARTIN	LOW									
	HIGH									
	WGHTD AVE									
MONROE	LOW									
	HIGH									
	WGHTD AVE									
NASSAU	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners -- MASONRY

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
OKALOOSA	LOW									
	HIGH									
	WGHTD AVE									
OKEECHOBEE	LOW									
	HIGH									
	WGHTD AVE									
ORANGE	LOW									
	HIGH									
	WGHTD AVE									
OSCEOLA	LOW									
	HIGH									
	WGHTD AVE									
PALM BEACH	LOW									
	HIGH									
	WGHTD AVE									
PASCO	LOW									
	HIGH									
	WGHTD AVE									
PINELLAS	LOW									
	HIGH									
	WGHTD AVE									
POLK	LOW									
	HIGH									
	WGHTD AVE									
PUTNAM	LOW									
	HIGH									
	WGHTD AVE									
SANTA ROSA	LOW									
	HIGH									
	WGHTD AVE									
SARASOTA	LOW									
	HIGH									
	WGHTD AVE									
SEMINOLE	LOW									
	HIGH									
	WGHTD AVE									
ST. JOHNS	LOW									
	HIGH									
	WGHTD AVE									
ST. LUCIE	LOW									
	HIGH									
	WGHTD AVE									
SUMTER	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No._____

LOSS COSTS PER $1,000

PERSONAL RESIDENTIAL - Condo Owners – MASONRY

COUNTY	LOSS COSTS	$0 DEDUCTIBLE STRUCTURE	$0 DEDUCTIBLE CONTENTS	$0 DEDUCTIBLE ADDITIONAL LIVING EXPENSE	$500 DEDUCTIBLE TOTAL*	$1,000 DEDUCTIBLE TOTAL*	$2,500 DEDUCTIBLE TOTAL*	1% DEDUCTIBLE TOTAL*	2% DEDUCTIBLE TOTAL*	5% DEDUCTIBLE TOTAL*
SUWANNEE	LOW									
	HIGH									
	WGHTD AVE									
TAYLOR	LOW									
	HIGH									
	WGHTD AVE									
UNION	LOW									
	HIGH									
	WGHTD AVE									
VOLUSIA	LOW									
	HIGH									
	WGHTD AVE									
WAKULLA	LOW									
	HIGH									
	WGHTD AVE									
WALTON	LOW									
	HIGH									
	WGHTD AVE									
WASHINGTON	LOW									
	HIGH									
	WGHTD AVE									

*Includes contents and A.L.E.

Model _____ Version No. _____

MODULE 4

Module 4

Professional Team On-Site Review

I. On-Site Review by Professional Team

A. General Purpose

1. Due diligence

a. The Professional Team will perform a "due diligence" review regarding information submitted by a modeler contained in Modules 1, 2, and 3.

b. For existing modelers, the "due diligence" review will concentrate on any changes in Modules 1, 2 and 3 as noted in the notification letter for readiness for the modeler.

c. The on-site evaluation will consist of the following components:

1. On-site test administration – this should consist of a basic test of the model under the control and supervision of the Professional Team. The object is to observe the model in operation and the results it produces during a "real time" run. This is necessary in order to avoid the possibility that the modeler could recalibrate the model solely for producing desirable results.

2. Verification and inquiry – into responses provided by the modeler to Module 1, Module 2, and Module 3. The interest of the Commission is that due diligence be done to verify that information provided by the modeler is valid and is an accurate and fairly complete description of the model.

2. Audit for compliance with standards

a. The Professional Team will begin the review with a briefing of modeling company staff to work out the schedule for the review, and to describe the subsequent audit process.

b. The Professional Team will consider each individual section of the standards as a unit depending on the availability of modeler staff.

One exception is Standard 5.1.4 which will be considered following the completion of the audit of Standards 5.2, 5.3 and 5.4.

c. After completing its review of each of the standards in a section, the Professional Team will meet privately and then provide immediate feedback to the modeling company.

B. Preparation for On-site Review

1. The Professional Team will assist the Commission and the State Board of Administration (SBA) staff in determining if the modeling company is ready for an on-site review.

2. The Professional Team will assist the modeling company in preparing for the on-site review by responding to requests for clarifications of the due diligence and audit requirements and any materials which the Professional Team has stated should be available, according to the Guidebook, during the review.

3. The SBA staff is responsible for scheduling on-site review dates and the subsequent post-audit Commission meetings for the review of the model. Each modeler will be notified at least two weeks prior to the scheduled review. The actual length of the review may vary depending on the preparedness of the modeler and the depth of the inquiry needed for the Professional Team to obtain an understanding of the model.

C. Post On-site Review

1. After completing its review of Module 1, 2, and 3 and all of the standards, the Professional Team will conduct an exit briefing with the modeling company. During this briefing, the Professional Team will provide to the modeling company a preliminary draft of the report to be provided to the Commission. This offers the modeler an opportunity to check for any factual errors and to expunge any confidential or proprietary information. The Professional Team will accede to modeling company suggestions for changes in its draft only to correct factual errors and to remove any confidential or proprietary information. The format for the report is as follows:

- Introduction section: what occurred on site
- On-site test results
- Verification of model responses provided in Modules 1, 2, and 3
- Verification of modeler responses to the standards

- Additional information which the Modeler is willing to make

public
- Suggestions for Model Specifications, Standards and Guidelines

2. After leaving the modeling company premises, the Professional Team, in coordination with SBA staff, will finalize its report and provide it to all Commission members in advance of the meeting scheduled for the Commission's review of the model.

3. It is possible that a subset of the standards or changes made to Modules 1, 2, or 3 may require further on-site review by a subset of the Professional Team. In such cases, the SBA staff will arrange a follow-up on-site review to ascertain compliance to those standards.

II. Composition and Selection of the Professional Team

On-site reviews of the modeling companies seeking a determination of acceptability by the Commission will be conducted by a team of professional individuals known as the "Professional Team". The Professional Team will consist of individuals having professional credentials in the following disciplines (each area will be represented by one or more individuals): Actuarial Science, Statistics, Meteorology, Computer Science, and Engineering.

The State Board of Administration (SBA) staff will select the Professional Team members and the SBA will enter into contracts with each individual selected.

Selection of the Professional Team members will be an aggressive recruiting process to seek out qualified individuals who are capable of working closely with the Commission and who are available during specified time frames in order that the Commission can meet its deadline(s). Consideration will be given to the following factors:

$ Professional credentials and experience
$ Reasonableness of fees
$ Availability
$ References

III. Responsibilities of the Professional Team

A. Team Leader

The SBA staff will designate one member of the Professional Team as the team leader. The team leader will be responsible for coordinating the activities of the Professional Team and overseeing the development of reports to the Commission.

B. Responsibilities of the Team Members for the On-Site Review

1. Participate with the Commission and the SBA staff in pre- on-site preparations and discussions.

2. Study, review, and develop an understanding of responses and materials provided to the Commission by the modelers.

3. Participate with the Commission and the SBA staff in developing, reviewing and revising Module 3 tests and evaluations.

4. While on-site, verify, evaluate and observe the techniques and assumptions used in the model for each member's area of expertise.

5. Identify and observe how various assumptions affect the model so as to identify to the Commission various sensitive components/aspects of the model.

6. Discuss the model with the modeler's professional staff to gain a clear understanding and confidence in the operation of the model and its description as provided to the Commission.

7. Participate in the administration of on-site tests.

8. Participate in the preparation of written reports and presentations to the Commission.

IV. Responsibilities of the SBA Staff

The Professional Team will report to designated SBA staff. The SBA staff will supervise the Professional Team and coordinate their pre- on-site planning activities, on-site reviews and activities, and post- on-site activities.

These responsibilities include:

A. Setting up meetings with Professional Team members individually and as a group. These meetings will include conference calls and other meetings depending on circumstances and needs of the Commission.

B. Coordinating and scheduling on-site reviews.

C. Working with the Commission and Professional Team members in developing, reviewing and revising Module 3 tests and evaluations.

D. Overseeing the supervision and administration of specified on-site tests and evaluations.

E. Working with the modeler to determine which professionals at the modeler's firm will work with corresponding Professional Team members while on-site.

F. Briefing and de-briefing the Professional Team members prior to, during, and after the on-site review.

G. Coordinating the preparation of written reports and presentations to the Commission.

V. Confidential and Proprietary Information

While on-site, the Professional Team members are expected to have access to confidential and proprietary data and information.

It is the responsibility of the modeling company to identify to all Professional Team members what is considered proprietary or confidential and is not to be made public.

All written documentation provided by the modeling company to the Commission will be considered a public document. As such, it will be available for public scrutiny. The preferred approach is that the modeling company provide any such additional information directly to the Commission rather than give it to Professional Team members to be brought back with them.

Documents that the modeling company indicates are proprietary or confidential which are viewed by Professional Team members will not be considered public documents and are to be left on-site. Any notes made by Professional Team members are not considered public documents and are to be kept confidential with respect to proprietary information or trade secrets learned on-site.

Any notes made by a Professional Team member relating to confidential information or data that would compromise the proprietary nature of a model or reveal trade secrets are not to be made available to Commission members for their review.

Proprietary information or trade secrets of the modeler learned by a Professional Team member will not be discussed with Commission members.

Professional Team members will agree to respect the proprietary nature of a model and not use confidential information in any way detrimental to the interest of the modeling firm.

Care will be taken by the Professional Team members not to discuss other models being evaluated while they are on-site reviewing a particular model.

The Professional Team will present the results of the on-site review to the Commission and answer questions related to their review.

The job of the Professional Team is to verify information and make observations. It is not part of the Professional Team's responsibilities to opine or draw conclusions about the appropriateness of a particular model or a component part of a model.

MODULE 5

Module 5

Modeler Presentations and Discussion of Issues with the Commission

I. How the Modeler Presentations Will Be Conducted

A. Modelers should not make a formal presentation to the Commission regarding general information on how their model operates. Rather, the Commission would like to focus on details and issues related to each model as used for residential rate making purposes.

B. The Modeler Presentations should serve to enlighten the Commission regarding various issues that have arisen throughout the entire evaluation process - Module 1, Module 2, Module 3, and Module 4 and compliance with the standards.

C. The various issues may relate to:

1. Information needs of the Commission
2. The theoretical soundness of the model
3. Use of reasonable assumptions
4. Other related aspects dealing with accuracy or reliability

D. The modeler presentations are for the purpose of helping the Commission understand outstanding issues and to communicate as to how the model meets the standards.

II. The Development of Issues for Discussion

A. Commission members will review the modeler responses and report of the Professional Team, create a list of issues, and submit them to the Chair. The list of issues should be in the following format: (1) issues related to Module 1; (2) issues related to Module 2; (3) issues related to Module 3; (4) issues related to Module 4; and (5) suggestions for standards and guidelines. It might also be useful for the Commission members to divide the issues associated with each module into those that are of a general concern and those that concern the Commission member's area of expertise.

B. The staff will create a list of issues developed from (1) Commission member comments, (2) a review of the responses to the modules, (3) the follow up questions, (4) data provided from the modelers and (5) issues arising out of the Professional Team's report.

C. The final list of issues will be sent to the modeler at least two weeks prior to the presentation. The modeler will provide the staff with a written response to the list of issues one week prior to the presentation. The staff will provide the written response from the modelers to the Commission members and the Professional Team members prior to the presentation.

MODULE CROSS REFERENCE

1999 Standards - Modules Cross Reference

		Module 1 Section I	Module 1 Section II	Module 2	Module 3
General	5.1.1				III #1
	5.1.2			2, 3, 5, 6	
	5.1.3	A9, A10			VI #1, Form A
	5.1.4		B13, B15-17		
Meteoro-logical	5.2.1				
	5.2.2	C2			
	5.2.3				II #2
	5.2.4		B8, B9		I
	5.2.5		B1 - B10		I
	5.2.6	A.1-3			I, #1-3
	5.2.7	B2	B8		I
	5.2.8		B1, B5, B8, B9		I, #2, #8
	5.2.9		B4		I
	5.2.10		B3, B10		I
Vulnerability	5.3.1	A8			III
	5.3.2	A7			III
	5.3.3				III, #3,4
	5.3.4	B5			IV, #5
Actuarial	5.4.1	B4	A3-A5		IV
	5.4.2	A6, A11, C.1.c			III #3
	5.4.3				V
	5.4.4	B4, C.1.a	A3		III #2, VII
	5.4.5	A11, B4	A3, A4		IV
	5.4.6	C.1.a			III #2, VII
	5.4.7		A5		
	5.4.8	C.1.b			V #2; VII
	5.4.9	B3			IV #1-2
	5.4.10				IV #5, 7
	5.4.11				IV #6
	5.4.12	C.1.b			III #3
	5.4.13				IV #9; V #2
	5.4.14				I #7, #9; V #2
	5.4.15				V #4
	5.4.16		C2		
	5.4.17				VI #2
Computer	5.5.1	A,B,C	A,B,C		
	5.5.2	A,B,C	A,B,C		
	5.5.3	A,B,C	A,B,C		
	5.5.4	A,B,C	A,B,C		VI #3

Disclaimer: This cross reference is intended to be as complete as possible. However, if errors or omissions have occurred, please report this to Commission staff for correction in subsequent editions.

COMPLIANCE WITH THE STANDARDS AND RELATED INFORMATION

1999 STANDARDS

1999 STANDARDS

5. 1 General Standards

5.1.1 Scope of the Computer Model and Its Implementation

The computer model shall project loss costs for personal lines residential property from hurricane events, excluding flood and storm surge, except as it applies to Additional Living Expense (ALE). References to the model shall include its implementation.

Reference: Module 3, Section III, 1

5.1.2 Qualifications of Modeler Personnel and/or Independent Experts

Model construction, testing, and evaluation must be performed by modeler personnel and/or independent experts who possess the necessary skills, formal education, or experience to develop hurricane loss projection methodologies, and who must abide by the standards of professional conduct adopted by their profession.

Reference: Module 2, Section I, B, C, E, F

5.1.3 Modeler's Policy of Model Revision

The modeler shall have developed and implemented a clearly written policy for model revision with respect to methodologies and data. Zip codes used in the model shall be updated at least every 24 months using information originating from the United States Postal Service.

Reference: Module 1, I.A.9
Reference: Module 1, I.A.10
Reference: Module 3, Section VI, #1
Reference: Module 3, Form A

5.1.4 Independence of Model Components

The meteorology, vulnerability, and actuarial components of the model shall each be demonstrated to be theoretically sound without compensation for potential bias from the other two components.

Reference: Module 1, II, B.13, 15, 16, 17

5.2 Meteorological Standards

5.2.1 Units of Measure for Model Output

All model outputs of length, wind speed, and pressure shall be in units of statute miles, statute miles per hour, and millibars, respectively.

5.2.2 Identification of Units of Measure of The Model

All units of measure for model inputs and outputs shall be clearly identified.

Reference: Module 1, I.C.2

5.2.3 Damage Function Wind Inputs

Wind inputs to the damage function shall be in units consistent with currently used wind measurement units and/or shall be converted using standard meteorological/engineering conversion factors which are supported by literature and/or documented measurements available to the Commission.

Reference: Module 3, II.2

5.2.4 Official Hurricane Set or Suitable Approved Alternatives

Modelers shall include in their base storm set all hurricanes, including by-passing hurricanes, which produce minimal hurricane force winds or higher in Florida. Storm set modifications will be taken from the Tropical Prediction Center/National Hurricane Center (TPC/NHC) document *Tropical Cyclones of the North Atlantic Ocean, 1871-1995* with the most recent updates available. All proposed alternatives shall be subject to the approval of the Commission.

Reference: Module 1, II.B. 8-9
Reference: Module 3, Section I

5.2.5 Hurricane Characteristics

Methods for depicting all modeled hurricane characteristics (e.g., wind speed, minimum central pressure, radius of hurricane force winds, strike probabilities, and tracks) shall be based on information documented by scientific literature or modeler information accepted by the Commission.

Reference: Module 1, II.B.1-10
Reference: Module 3, Section I

5.2.6 Landfall Intensity

Models shall use as intensity criteria maximum one-minute sustained 10-meter wind speed when defining hurricane landfall intensity. This applies both to the meteorological storm set used to develop landfall strike probabilities as a function of coastal location and to the modeled winds in each hurricane which causes damage. If historical records include minimum central pressure but do not include wind speed, then minimum central pressure will be used to define hurricane intensity. The associated maximum one-minute sustained 10-meter windspeed must be within the range of wind speeds (in statute miles per hour) categorized by the Saffir-Simpson scale for observed minimum pressure.

Saffir-Simpson Hurricane Scale:
A scale from 1 to 5 that measures hurricane intensity.

Category	Central Pressure (MB)	Winds (mph)	Damage
1	$\geq$ 980	74 - 95	Minimal
2	965 - 979	96 - 110	Moderate
3	945 - 964	111 - 130	Extensive
4	920 - 944	131 - 155	Extreme
5	< 920	Over 155	Catastrophic

Reference: Module 1, II.B.5
Reference: Module 3, Section I. 1, 2, 3

5.2.7 Hurricane Probabilities

Modeled hurricane probabilities for category 1-5 hurricanes shall be consistent with those observed for each geographical area of Florida. "Consistent" means: (1) spatial distributions of modeled hurricane probabilities must accurately depict vulnerable coastlines in Florida; and (2) probabilities are fit to observed hurricane frequency using methods documented in accepted scientific literature or proposed by the modeler and accepted by the Commission.

Reference: Module 1, I.B.2
Reference: Module 1, II.B.8
Reference: Module 3, Section I

5.2.8 Hurricane Probability Distributions

Modeled probability distributions for hurricane strength, eye diameter, forward speed, radii for maximum winds, and radii for hurricane force winds shall be consistent with historical hurricanes in the Atlantic basin as documented in accepted scientific literature available to the Commission.

Reference: Module 1, II.B.1, 5, 8, 9
Reference: Module 3, Section 1.2, 8

5.2.9 Land Friction

Land friction shall be used in the model to reduce wind speeds over land, shall be based on scientific methods, and shall provide realistic wind speed transitions between adjacent zip codes, counties, and territories. The magnitude of friction coefficients shall be consistent with accepted scientific literature, consistent with geographic surface roughness and shall be implemented with appropriate geographic information system data.

Reference: Module 1, II.B.4
Reference: Module 3, Section I

5.2.10 Hurricane Overland Weakening Rate

The hurricane overland weakening rate used by the model shall be no less than and no greater than the observed extremes in historical records for Florida. The mean wind speed must be within twenty percent (20%) of the Kaplan/DeMaria decay value or an alternative acceptable to the Commission.

Reference: Module 1, II.B. 3,10
Reference: Module 3, Section I

5.3 Vulnerability Standards

5.3.1 Vulnerability Functions

The method of derivation of the vulnerability functions shall be described and demonstrated to be theoretically sound.

Development of the vulnerability functions is to be based on one or more of the following: (1) historical data; (2) tests; (3) structural calculations; (4) expert opinion. Any development of the vulnerability functions based on structural calculations and/or expert opinion shall be supported by tests and historical data to the extent such data are available.

Vulnerability functions shall separately compute damages for building structures, mobile homes, appurtenant structures, contents, and additional living expense.

Damage associated with a declared hurricane event shall include damage incurred for wind speeds above and below the hurricane threshold of 74 m.p.h. The assumptions used in determining sub-hurricane force induced damage shall be identified and demonstrated to be reasonable and appropriate. The minimum wind speed that generates damage shall be specified.

Reference: Module 1, I.A.8
Reference: Module 3, Section III

5.3.2 Construction Characteristics

In the derivation and application of vulnerability functions, assumptions concerning construction type and construction characteristics shall be demonstrated to be reasonable and appropriate.

Reference: Module 1, I.A.7
Reference: Module 3, Section III

5.3.3 Modification Factors

All modification factors to the vulnerability functions or structural characteristics and their corresponding effects must be disclosed and shall be clearly defined and their theoretical soundness demonstrated.

Reference: Module 3, Section III, 3, 4

5.3.4 Additional Living Expenses

In the estimation of Additional Living Expenses (ALE), the model shall include only factors that are hurricane related and theoretically sound. Storm surge/wave damage to the infrastructure shall be included.

The Additional Living Expense vulnerability function shall consider the time it takes to repair/reconstruct the home.

Reference: Module 3, Section IV, 5

5.4 Actuarial Standards

5.4.1 Underwriting Assumptions

For damage estimates derived from historical insured hurricane losses, the assumptions in the derivations concerning (1) construction characteristics, (2) policy provisions, and (3) relevant underwriting practices underlying those losses shall be identified and demonstrated to be reasonable and appropriate.

Adjustments, edits, inclusions, or deletions to insurance company input data used by the modeler in the modeling process shall be based upon accepted actuarial, underwriting, and statistical procedures. The methods used shall be documented in writing.

Reference: Module 1, I.B.4
Reference: Module 1, II.A.3-5
Reference: Module 3, Section IV

5.4.2 Actuarial Modifications

All modification factors to the actuarial functions or characteristics including but not limited to building code, quality, age, occupancy, stories, or condition of structure and their corresponding affects must be disclosed and shall be clearly defined and their actuarial soundness demonstrated**.** The disclosure of modification shall include a description of the impact upon loss costs of the modification in accordance with the following:

A: < - 50%.
B: -50% to -25%
C: -25% to 0
D: 0 to 25%
E: 25% to 50%
F: >50%

Reference: Module 1, I.A.6,11, I.C.1.c

Reference: Module 3, Section III, 3

5.4.3 Loss Cost Projections

Loss cost projections produced by hurricane loss projection models shall not include expenses, risk load, investment income, premium reserves, taxes, assessments, or profit margin.

Reference: Module 3, Section V

5.4.4 Economic Inflation

Hurricane loss projection models shall not make a prospective provision for economic inflation.

Reference: Module 1, I.B.4
Reference: Module 1, I.C.1.a
Reference: Module 1, II.A.3
Reference: Module 3, Section III, 2; Section VII

5.4.5 Insurer Inputs

Any assumption or method that relates to a specific insurer's inputs (e.g., insurance to value, demographic assumptions, insurer exposures by zip code) to the model, if any, for the purposes of preparing the insurer's rate filing shall be clearly identified by the modeler. A modeler shall disclose any implicit assumptions relating to, but not limited to, the following:

1. Insurance to Value. Hurricane loss projection models may make assumptions as to the relationship of the amount of insurance to the replacement cost, repair cost, or actual cash value of property. This relationship, called insurance to value, can vary by insurer and can further vary over time.

2. Demographic Assumptions. Hurricane loss projection models may also include assumptions made by insurers using the model. These may include the percentage of houses in a zip code having a particular roof type, cladding, or other structural characteristic. Other assumptions may be more subjective such as maintenance or state of repair.

3. Appurtenant Structures. The model should take into account the prevalence of appurtenant structures by geographic area. In many geographic areas there are relatively few appurtenant structures. Insurers, however, provide an amount of insurance for these structures anyway. Also, change in limits for appurtenant structures may not result in a

commensurate change in expected losses because the existing limits may already exceed the value of these structures.

4. Contents. A change in contents limits may not result in a commensurate change in losses because the existing limits may already exceed the value of the contents.

5. Additional Living Expenses. A change in additional living expense limits may not result in a commensurate change in losses because the existing limits may already exceed the largest likely loss.

6. Insurer Exposures By Zip Code. Some modelers rely on exposure data by zip code provided by insurers in preparation of a rate filing. In such cases, the modeler shall validate all zip code information received from its insurance company clients to assure that valid zip codes are used.

Reference: Module 1, I.A.11
Reference: Module 1, I.B.4
Reference: Module 1, II.A.3
Reference: Module 1, II.A.4
Reference: Module 3, Section IV

5.4.6 Demand Surge

Loss cost projections shall not explicitly include demand surge. Any adjustment to the model or historical data to remove implicit demand surge, shall be disclosed.

Reference: Module 1, I.C.1.a
Reference: Module 3, Section III. 2
Reference: Module 3, Section VII

5.4.7 Loss Costs - Meaning of "Damage"

In calculating loss costs, damage shall be expressed as insurable losses.

Reference: Module 1, II.A.5

5.4.8 Logical Relation to Risk

Loss costs shall not exhibit an illogical relation to risk, nor shall loss costs exhibit a significant change when the underlying risk does not change significantly.

1. Loss costs produced by the model shall be positive and non-zero for all zip codes.

2. Modelers must produce color-coded maps for the purpose of comparing loss costs by five-digit zip code within each county and on a statewide basis.

3. Loss costs cannot increase as friction or roughness increase, all other factors held constant.

4. Loss costs cannot increase as the quality of construction type, materials and workmanship increases, all other factors held constant.

5. If the model considers the quality of building codes and enforcement, then loss costs cannot increase as the quality increases, all other factors held constant.

6. Loss costs must decrease as deductibles increase, all other factors held constant.

The above tests are intended to apply in general. There may be certain anomalies that are insignificant or are explainable by special circumstances. This standard applies separately to each coverage.

Reference: Module 1, 1.C.1.b
Reference: Module 3, Section V.2, Section VII

5.4.9 Deductibles

The model shall provide a mathematical representation of the distribution of losses to reflect the effects of deductibles and coinsurance, and the modeler shall demonstrate its actuarial soundness.

Reference: Module 1, I.B.3
Reference: Module 3, Section IV.1-2

5.4.10 Contents

The model shall provide a separate mathematical representation of contents loss costs, and the modeler shall demonstrate its actuarial soundness.

Reference: Module 3, Section IV.5, 7

5.4.11 Additional Living Expenses (ALE)

The model shall provide a separate mathematical representation of Additional Living Expense (ALE) loss costs, and the modeler shall demonstrate its actuarial soundness.

Reference: Module 3, Section IV.6

5.4.12 Building Codes

Information upon which building code quality and enforcement is assessed, if incorporated in the model, shall be objective and reasonably accurate and reliable.

Reference: Module 1, I.C.1.b
Reference: Module 3, Section III.3

5.4.13 Replication of Known Hurricane Losses

The model shall be shown to reasonably replicate incurred losses on a sufficient body of past hurricane events, including the most current data available to the modeler. This standard applies separately to personal residential and mobile homes to the extent data are available. Personal residential experience may be used to replicate building-only and contents-only losses. The modeler shall demonstrate that the replications were produced on an objective body of loss data.

Reference: Module 3, Section IV.9
Reference: Module 3, Section V.2

5.4.14 Comparison of Estimated Hurricane Loss Costs

The model shall provide the annual average statewide loss costs produced using the list of hurricanes in standard 5.2.4 historical hurricanes in Florida based on the 1998 Florida Hurricane Catastrophe Fund's (FHCF) aggregate exposure data, as of November 1, 1999. These will be compared to the statewide loss costs produced by the model on an average industry basis. The difference, due to uncertainty, between historical and modeled annual average statewide loss costs shall be demonstrated to be statistically reasonable.

Reference: Module 3, Section I.7, 9
Reference: Module 3, Section V.2

5.4.15 Output Ranges

Any model previously found acceptable by the Commission shall provide an explanation suitable to the Commission concerning the updated output ranges.

Reference: Module 3, Section V.3

5.4.16 County Level Aggregation

At the county level of aggregation, the contribution to the error in loss costs estimates induced by the sampling process shall be demonstrated to be negligible.

Reference: Module 1, II.C.2

5.4.17 Zip Codes – Derivation

Loss cost projections by zip code produced by the model shall be derived by using either population centroid or geographic centroid.

Reference: Module 3, Section VI.2

5.5 Computer Standards

5.5.1 Model and Software Design

The modeler shall clearly specify and make available to the Commission or its Professional Team the following:

1. Model Design - This provides visual, equational and/or technical specifications for the simulation model. Simplifying assumptions, chosen parameters, input modeling methods, and technical design shall also be specified.

2. Algorithm Design - This includes but is not limited to pseudo-code specifications, flow-charts, class and aggregation hierarchies, and/or data flow diagrams for all numerical and event handling algorithms including random number generation, interpolation, parameter estimation for specified probability distributions and simulation control.

3. Data Design - This specifies methods used for the organization and maintenance of data, including database and/or file organization

approaches.

All critical design decisions must be based on accepted scientific, simulation and software engineering principles.

Reference: Module 1, Section I and II for all computer standards

5.5.2 Implementation

The modeler shall clearly specify the process of translating the model, algorithm, and data designs into a computer program. The process of developing an implementation from these designs must be based on generally accepted practices of good software engineering. The modeler shall specify the methodologies employed and the programming language(s) used to encode the model, as well as provide justification for these choices. In particular the methodologies must provide a high degree of encapsulation of data and code.

Reference: Module 1, Section I and II for all computer standards

5.5.3 Validation, Verification, and Testing

The modeler shall specify methods used for testing computer programs to verify that the programs produce output that is consistent with the model. Model verification is a comparison of the model behavior and program behavior, whereas model validation is a comparison between model behavior and empirical (i.e., physical) behavior. These methods may include, but are not limited to, sample hand calculations, aggregate and simplified analysis, dimensional analysis, testing using extreme values for initial conditions and parameters, and testing based on perturbations and sensitivity. Modeled output variables shall be consistent in dimensions and units with the cited equations and methods. The modeler shall specify the procedures it enforces with its clients to assure accuracy of input data prior to running the model. All data sources used during the validation process shall be specified. The choices of procedures shall be based on sound scientific reasoning.

Reference: Module 1, Section I and II for all computer standards

5.5.4 Written Documentation

The modeler shall maintain and make available to the Commission or its Professional Team a comprehensive and complete set of documentation that tracks and explains the development of the model, its design, implementation, verification, testing, and maintenance. The contents of the documentation shall be logically organized and shall include key background scientific papers and references, analytical derivations, calculations, justifications of parameters, assumptions, sensitivity analyses, and hand calculations. Expert testimony on the

model and its implementation shall be clearly documented. A comprehensive set of documentation is expected in each of the following areas:

1. Technical Documentation - This includes all model and software design documents relevant to the current state of the model and its implementation. With regard to models, this documentation shall cover decisions related to meteorology, engineering, statistics, actuarial science, and insurance. With regard to software, this documentation shall cover all phases of the software engineering life cycle. *(See 5.5.1, 5.5.2, and 5.5.3)*

2. Testing Documentation - This includes all procedures for testing and error handling, as well as those used for verification of the program and validation of the model. Moreover, the results of all these procedures must be retained in a form amenable to expert review. *(See 5.5.3)*

3. User Documentation - This includes release notes and user documentation.

4. Maintenance Documentation - This includes documentation of the maintenance methodology including tracking of all changes whether done to improve the product or to correct errors. Each change must be accompanied by a clear description of the purpose of the change and verification/test results that support the efficacy of this change.

5. Security Documentation - The modeler shall disclose to the professional team its security processes. This includes appropriate computer and networking procedures relating to the model design, implementation, and management of data.

Reference: Module 1, Section I and II for all computer standards

COMPARISON OF
1999 STANDARDS TO 1998 STANDARDS

Methodology Commission
1999 Standards Compared to 1998 Standards

Standard	Title	Change	New	Comments
General				
5.1.1	Scope of the Computer Model and Its Implementation	NS		
5.1.2	Qualification of Modeler Personnel and/or Independent Experts	NS		
5.1.3	Modeler's Policy of Model Revision	NS		
5.1.4	Independence of Model Components	NS		
Meteorological				
5.2.1	Units of Measure for Model Output	None		
5.2.2	Identification of Units of Measure of The Model	None		
5.2.3	Damage Function Wind Inputs	None		
5.2.4	Official Hurricane Set or Suitable Approved Alternatives	**S**		
5.2.5	Hurricane Characteristics	NS		
5.2.6	Landfall Intensity	NS		
5.2.7	Hurricane Probabilities	NS		
5.2.8	Hurricane Probability Distributions	**S**		
5.2.9	Land Friction	None		
5.2.10	Hurricane Overland Weakening Rate	NS		
Vulnerability				
5.3.1	Vulnerability Functions	NS		
5.3.2	Construction Characteristics	None		
5.3.3	Modification Factors	None		
5.3.4	Additional Living Expenses	NS		
Actuarial				
5.4.1	Underwriting Assumptions	NS		
5.4.2	Actuarial Modifications	None		
5.4.3	Loss Costs Projections	None		
5.4.4	Economic Inflation	None		
5.4.5	Insurer Inputs	NS		
5.4.6	Demand Surge	NS		
5.4.7	Loss Costs—Meaning of "Damage"	NS		
5.4.8	Logical Relation to Risk	NS		
5.4.9	Deductibles	NS		
5.4.10	Contents	NS		
5.4.11	Additional Living Expenses (ALE)	NS		
5.4.12	Building Codes	None		
5.4.13	Replication of Known Hurricane Losses	NS		
5.4.14	Comparison of Estimated Hurricane Loss Costs	NS		
5.4.15	Output Ranges	None		
5.4.16	County Level of Aggregation	None		
5.4.17	Zip Codes—Derivation	NS		
5.4.18	Zip Codes—Updating	NS		Moved to 5.1.3
Computer				
5.5.1	Model and Software Design	None		
5.5.2	Implementation	NS		
5.5.3	Validation, Verification, and Testing	NS		
5.5.4	Written Documentation	NS		

S = Significant
NS = Not Significant
None = No change from prior year's standard

Note: ***The Commission has determined that "significant changes" are those that result in changes to loss costs.***

WORKING DEFINITIONS

Working Definitions

Meteorological Terms

Decay Rate/Filling Rate:

The rate at which a typical cyclone decays as measured by its rise in central pressure. Tropical cyclones weaken or decay as central pressure rises. Once tropical cyclones move over land, their rate of decay is affected not only because of the removal of their warm water energy source, but also because of natural or man-made terrain roughness.

Fastest Mile:

Speed at which it takes one mile of wind to pass a location.

Forward Speed:

The forward speed at which a tropical cyclone is moving along the earth's surface. This is not the speed at which winds are circulating around the tropical cyclone. A forward speed of 3 mph is slow; a forward speed of 10-15 mph is average; a forward speed of 20-30 mph is fast but not impossible.

Hurricane:

A tropical cyclone in which the maximum one-minute sustained surface wind speed is 74 miles per hour or greater.

Hurricane Eye:

The relatively calm area in the center of the storm. In this area, winds are light and the sky often is only partly covered by clouds.

Hurricane Season:

That part of the year having a relatively high incidence of hurricanes. In the Atlantic Ocean, Carribean Sea and the Gulf of Mexico, the period runs from June 1 through November 30.

Hurricane Strike Probabilities:

The probability in percent that a hurricane eye will pass within 50 miles to the right or 75 miles to the left of the listed location within the indicated time period when looking at the coast in the direction of the hurricane's movement.

Hurricane Warning:

A warning issued by the Tropical Prediction Center/National Hurricane Center that one-minute sustained surface winds of 74 miles per hour or higher associated with a hurricane are expected in a specified coastal area within 24 hours or less. A hurricane warning can remain in effect when dangerously high water or a combination of dangerously high water

and exceptionally high waves continue even though winds may be less than hurricane force.

Hurricane Watch:

An announcement issued by the Tropical Prediction Center/National Hurricane Center for specific areas that a hurricane or an incipient hurricane condition poses a possible threat to the coastal areas generally within 36 hours.

Miles Per Hour (mph):

Miles per hour**.** Standard unit of wind speed measurement.

Millibar (mb):

Metric unit of air pressure. See Minimum Central Pressure.

Minimum Central Pressure:

Minimum Central Pressure is defined as the minimum pressure at the center of a tropical cyclone. The atmosphere exerts a pressure force. Pressure is measured in inches of mercury and in millibars. Average sea level pressure is 29.92 inches of mercury or 1013.25 millibars. Tropical Cyclones have low pressure at the center of the cyclone. The lower the pressure, the stronger the tropical storm, both in terms of wind speed and storm surge height. The lowest pressure ever measured in a hurricane in the Atlantic basin was 888 mb/26.22 inches in Hurricane Gilbert.

Peak Gust:

Highest wind recorded. Generally in a 2- to 3-second interval.

Radius of Maximum Winds:

The radius from tropical cyclone center to the point of maximum winds surrounding a tropical cyclone. For a typical hurricane, the distance is about 15-20 miles.

Saffir-Simpson Scale:

A scale ranging from one to five based on the hurricane's present intensity. This scale can be used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane. In practice, wind speed is the parameter that determines category since storm surge is strongly dependent on the slope of the continental shelf.

Storm Surge:

An abnormal rise in sea level accompanying a hurricane, and whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the hurricane. Storm surge is usually estimated by subtracting the normal or astronomical tide from the observed storm tide.

Storm Tide:

The actual sea level resulting from the astronomical tide combined with the storm surge.

Storm Track:

The path along which a tropical cyclone has already moved.

Tropical Cyclone:

A generic term for a non-frontal synoptic-scale cyclone originating over tropical or subtropical waters with organized convection and definite cyclonic surface wind circulation.

Tropical Depression:

A tropical cyclone in which the maximum one-minute sustained surface wind speed is 38 miles per hour or less.

Tropical Disturbance:

A discrete system of organized convection originating in the tropics having a non-frontal migratory character and maintaining its identity for 24 hours or more. It is a basic generic designation that, in successive stages of intensification, may be subsequently classified as a tropical wave, tropical depression, tropical storm or hurricane.

Tropical Storm:

A tropical cyclone in which the maximum one-minute sustained surface wind speed ranges from 39 to 73 miles per hour inclusive.

Tropical Wave:

A surface cyclonic curvature maximum or trough in the tropics.

Wind Field:

The area of winds associated with a tropical cyclone. Winds are typically asymmetric in a moving tropical cyclone with winds in the right front quadrant, relative to motion, being strongest.

Modeling Terms:

Aggregated Data:

Summarized data sets or data summarized by using different variables. For example, data summarizing the exposure amounts by line of business by Zip Code is one set of aggregated data.

Annual Aggregate Loss Distributions:

For the Commission's purposes, the aggregate losses which are expected to occur for all hurricane events in any one year. Another way to state it is the aggregate probable maximum loss. See below for Probable Maximum Loss (PML).

Characteristics:

The variables which define an event. For the Commission's purposes, since the event is

a hurricane, these might include such things as central pressure, forward speed, or wind speeds.

Confidence Intervals:

A measure of the probability that certain behaviors or events occur within certain parameters.

Damage Ratio:

Percentage of a property damaged by an event relative to the total cost to rebuild or replace the property of like kind and quality.

Damageability:

The degree of susceptibility a structure has to damage caused by a hurricane. For example, a mobilehome is more susceptible to damage from hurricanes than is a home built of poured concrete.

Event Tree Methodology:

A modeling approach which uses historical information to determine patterns of the key characteristics for defining hurricane events including landfall locations, central pressure, forward speed and angle. This method segments these probability distributions and then combines the different segments to create a stochastic storm set.

Event:

For purposes of modeling hurricane losses, a hurricane is considered an event.

Geocoding:

Assignment of a location to geographic coordinates.

Independent:

An independent characteristic or event is one which is unaffected by the existence of another characteristic or by whether or not another event occurs.

Location Specific Data:

Data represented for each individual risk or unit covered by a policy in an insurer's portfolio of policies.

Mapping of Zip Codes:

Either a point estimate or a physical geographic area.

Monte Carlo Methodology:

A modeling approach which simulates losses based on probabilistic distributions of the key characteristics of hurricanes and their damage characteristics. This approach randomly generates characteristics to create a probabilistic (stochastic) database.

Probability Distributions:

An assignment of probabilities to each of the basic outcomes in a sample space. A random trial is an activity having two or more different possible outcomes, with

uncertainty in advance as to which outcome will prevail. The different possible outcomes of a random trial are called the basic outcomes of the trial. The set of all basic outcomes for a random trial is called the sample space of the trial. An event is a set of basic outcomes of a sample space. An event is said to occur if one of its basic outcomes is realized in the random trial.

Probable Maximum Loss (PML):

The largest single event that is likely to befall an insurer. This is important to assess the adequacy of surplus to support the policies issued by the insurer and is also used to evaluate reinsurance needs.

Property Data Base:

A listing of assumed or actual structures in an area that includes at a minimum the number, location, type, and value of property. It may be the modeler's estimate or an insurance company's actual book of business.

Return Time:

Average span in years between expected, similar events.

Roughness:

The characteristics of a surface related to its ability to disrupt airflow. The rougher the surface, the quicker a storm decays, the greater the turbulence, and the higher the difference between peak winds and sustained winds.

Man-Made Roughness:

Man-made obstacles; e.g., structures, which affect the wind speeds and surge or wave action of hurricanes.

Natural Roughness:

Natural obstacles in a particular area; e.g., valleys, mountains, trees, coastline, which affect wind speed and storm surge or wave action of hurricanes.

Sensitivity:

The effect which a change in the value of a variable will have on the output of the model.

Significant Change:

Those changes to the standards or any changes to the model that result in changes to loss costs.

Simulation:

A statistical methodology which uses a large number of iterations and probability distributions to produce the estimated results.

Smooth Terrain:

Open grassy location with no obstructions above the surface for 100 meters.

Vulnerability Assessment:

A determination as to how likely a particular insured structure is to be damaged by a hurricane and/or an estimate of the loss potential.

Vulnerability Functions:

The curve that represents the damage ratios expected at various wind speeds for a given structural type.

Zip Code Centroid: Two types of centroids:

Geographic Centroid: The geographic center of a Zip Code.

Population Weighted Centroid: The center determined by weighing the distribution of population over the Zip Code.

Organizations:

ISO:

Insurance Services Office is an organization that provides actuarial, structural engineering, fire protection, and loss cost information to the insurance community on a specific location and peril basis.

NOAA:

National Oceanographic and Atmospheric Administration. Created in 1970 by the U.S. Government as part of the Department of Commerce.

NWS:

National Weather Service organizationally a component of NOAA. The NWS has more than 400 field offices and observation networks in 50 states and overseas. Its primary responsibility is to provide scientific and technological assistance in the general field of the atmospheric sciences to save lives, reduce injuries, and minimize property loss from extreme weather events throughout the country.

NWS has the following components:

National Center for Environmental Prediction (NCEP) in Washington, DC is the nerve center for all national centers and provides synoptic-scale numerical forecast guidance material and long-range forecasts;

National Severe Storms Forecast Center (NSSFC) in Kansas City maintains a constant watch for severe weather potential around the country and issues thunderstorm and tornado watches;

Tropical Prediction Center/National Hurricane Center (TPC/NHC) in Miami,

Florida is responsible for issuing many tropical weather forecasts including hurricane advisories for the Atlantic, the Caribbean, the Gulf of Mexico and the Eastern Pacific to 140W longitude. The Honolulu Forecast Office covers hurricanes in the Central Pacific between 140W and 180W longitude.

Marine Prediction Center: Provides marine forecasts**.**

Aviation Weather Center: Provides aviation forecasts**.**

Climate Prediction Center: Provides weather forecasts on weekly, monthly, and seasonal time-scales.

PCS:

Property Claims Services is an industry claims reporting service located in New Jersey. Property and casualty insurance companies report to PSC after major losses occur. If the number of claims exceeds 5,000 or the total loss exceeds $5 million, the event is assigned a catastrophe number. The organization is funded by company subscription to its service.

Insurance Terms:

Actual Cash Value (ACV):

Cost of replacing damaged or destroyed property with comparable new property minus depreciation.

Actuary:

A highly specialized mathematician professionally trained in the risk aspects of insurance, whose functions include the calculations involved in determining proper insurance rates, evaluating reserves, and various aspects of insurance research.

All Risk:

Coverage in a property policy that provides protection for all perils except for those specifically excluded.

Amount of Insurance Curve:

A rating chart in which the rate per amount of insurance is lower for higher amounts of insurance. For example, the rate applicable to a $50,000 home may be $5.00 per thousand (resulting in a $250 premium) while the rate for a $100,000 home may be $4.00 per thousand (resulting in a premium of $400).

Appurtenant Structures:

Coverage for detached buildings and other structures located on the same property as the principal insured building, e.g., detached garage, fences, swimming pools, patios, etc.

Biased:

A statistical sampling or testing error caused by systematically favoring some outcomes over others.

Catastrophe:

A natural or man-made event which causes more than $5 million in insured losses. This definition is the one used by Property Claims Services.

Catastrophe Loading:

A provision in the rates to pay for expected losses from catastrophes. This loading is included in the rate generally as a factor representing catastrophe losses.

Coinsurance:

A percentage co-payment structured so that the policyholder pays a specified percentage of each loss. The maximum paid by the policyholder on a total loss is the coinsurance percentage times the amount of insurance. Although coinsurance has been rare in homeowners in the past, it is becoming more common in catastrophic exposures such as earthquake and hurricane.

Coinsurance Requirement or Coinsurance Penalty Policy:

A policy provision in a property insurance contract which requires the insured to carry insurance equal to a certain specified percentage of the value of the property in order for the insured to receive full replacement value on a loss. The typical coinsurance requirement requires that the value of the property at the time of a loss be 80% of the replacement value of the property. If the value is less than 80%, the policyholder collects less than the replacement value of the loss but never less than ACV of the loss.

Depreciation:

The decrease in the value of property over a period of time.

Earned Premium:

The portion of premium paid by an insured which has been allocated to the insurance company's loss experience, expenses, and profit year to date.

Exclusion:

Provision of an insurance policy that indicates which types of property or perils are not covered.

Expense Ratio:

The ratio of expenses to premium. Expenses are typically categorized as follows: (a) commission; (b) general expense; (c) loss adjustment expenses; (d) taxes, licenses, and fees; (e) investment expenses.

Exposure:

The unit of measure of the amount of risk assumed. Rates and loss costs are expressed as

dollars per exposure. Sometimes the number of houses is used in homeowner's insurance as a loose equivalent.

Florida Insurance Code:

Chapters 624 through 632, 634, 635, 636, 641, 648, and 651 of the Florida Statutes. Note that as the State Fire Marshal, the Treasurer and Insurance Commissioner also has responsibility for Chapter 633, but that chapter is not part of the Insurance Code.

Ground Up Loss:

Incurred loss to a structure or location prior to the application of a deductible, policy limit, coinsurance penalty, depreciation, exclusion or other policy provision.

Guaranteed Replacement Cost:

A policy provision in which the insurer agrees to pay losses on a replacement cost basis even if in excess of the policy limit.

Homeowner's Policy:

A package policy for the homeowner that typically combines protection on the structure and contents, additional living expense protection, and personal liability insurance. Homeowner's policies were first developed in the 1950's. Prior to that time, homeowners wishing coverage for fire, theft, and liability had to purchase three separate policies. Homeowner's policies do not cover earthquake or flood. These are sold separately.

Insurance to Value:

The relationship of the amount of insurance to replacement cost is called Insurance to Value. 100% insurance to value means that the amount of insurance equals the replacement cost.

Involuntary or Residual Markets:

State sponsored markets; markets of last resort. For property insurance in Florida these are: Florida Residential and Property Casualty Joint Underwriting Association and the Florida Windstorm Underwriting Association.

ISO BCEGS:

Insurance Services Offices Building Code Effectiveness Grading Schedule.

Loss:

A reduction in the value of a property caused by an insured event.

Loss Adjustment Expenses (LAE):

The expenses incurred by an insurer to adjust a claim by a policyholder. These expenses are divided into allocated loss adjustment expenses (ALAE) and unallocated loss adjustment expenses (ULAE). Allocated loss adjustment expenses are specific amounts attributable to individual claims such as attorney's fees and court costs. Unallocated loss

adjustment expenses are all other types of LAE.

Named Peril:

Coverage in a property policy that provides protection against a loss only from the perils specifically listed in the policy. Examples of named perils include fire, windstorm, theft, smoke, riot, vandalism, water (other than rising water), explosion, aircraft, and hail.

Pass Through:

Generally, an amount which is a cost to an insurer but which is permitted by statute to be ultimately absorbed by the consumer. During the 1995 session, the Legislature added a subsection (5) to Section 627.062, F.S., which permits insurers to "recoup the actual amount of reimbursement premium charged by the Florida Hurricane Catastrophe Fund (FHCF) by including the FHCF rates in their rating manuals".

Peril:

The loss producing agent. The contingency which is the cause or agent of loss. Insurance policies are often referred to by the peril insured against, as in a fire policy, a collision policy, or a liability policy.

Policy Term:

Time interval during which a policy is in force.

Premises:

The building, other structures, and land where the insurance protection is applicable. It is usually described and defined in the property and casualty policy. Note, however, that the land is not insured, only the structures and contents located on the land.

Premium:

The consideration paid or to be paid to an insurer for the issuance and delivery of any binder or policy of insurance; see Section 626.014(2), Florida Statutes. Premium is the amount charged to the policyholder and includes all taxes and commissions.

Property Insurance:

Insurance on real or personal property of every kind, whether the property is located on land, on water, or in the air, against loss or damage from any and all perils (hazards or causes); (see Section 624.604, Florida Statutes.)

Rate:

The amount by which the exposure is multiplied to determine the premium. See Section 627.041(1), Florida Statutes. Rates times exposure equals premium.

Rating Territory (Territory):

In various property and casualty lines, a geographical grouping within which insureds are likely to share an exposure to similar risks. Grouping of insureds by territory helps establish equitable rates for the territory and simplifies premium determination.

Reinsurance:

An arrangement by which one insurer (the ceding insurer) transfers all or a portion of its risk under a policy or group of policies to another insurer (the reinsurer). Thus reinsurance is insurance purchased by an insurance company from another insurer, to reduce risk for the original insurer.

Replacement Cost:

The cost to replace damaged property with a new item of like kind and quality.

Standard Risk:

A property which, according to a company's underwriting standards, is entitled to insurance at standard rates without restrictions.

Trending Procedure:

A process by which an actuary evaluates how changes over time affect such items as claims costs, claim frequencies, expenses and premiums.

Underwriting:

The process of identifying and classifying the potential degree of risk represented by a proposed exposure unit. Potential insureds that satisfy an insurer's underwriting standards are offered insurance or are offered a renewal while others are declined or non-renewed.

Written Premium:

Premiums billed, collected, or otherwise recorded on the books of the insurer during a calendar year or other period of time.

Voluntary Market:

The market in which a person seeking insurance obtains it with no help from the state, through an insurer of his or her own selection.

STORM SET

11/1/99 Standards			Data	Central	Wind	
Name	**Year**	**Landfall Code**	**Source**	**Pressure**	**Speed**	**Category**
NONAME	1903	HRCFL2AFL1	NWS-23	977	89	2
NONAME	1906	HRCFL1	NWS-23	979	86	1
NONAME	1906	HRCFL2	NWS-38	967	81	2
NONAME	1909	By-Passing	HURDAT	978	98	2
NONAME	1910	HRBFL3	NWS-23	941	121	3
NONAME	1911	HRAFL1 AL1	HURDAT	990	81	1
NONAME	1915	HRAFL1	HURDAT	982	92	1
NONAME	1916	HR AL2AFL2	NWS-23	974	97	2
NONAME	1916	HRBFL1	HURDAT	990	81	1
NONAME	1917	HRAFL3	NWS-23	964	104	3
NONAME	1919	HRBFL4ATX4	NWS-23	929	132	4
NONAME	1921	HRBFL3DFL2	NWS-23	952	112	3
NONAME	1924	HRAFL1	HURDAT	994	75	1
NONAME	1924	HRBFL1	NWS-23	972	93	1
NONAME	1925	HRBFL1	HURDAT	994	75	1
NONAME	1926	HRDFL2	NWS-23	960	109	2
NONAME	1926	HRCFL4BFL3AFL3 AL3	NWS-38	931	134	4
NONAME	1926	By-Passing	HURDAT	968	110	2
NONAME	1928	HRCFL2	HURDAT	977	98	2
NONAME	1928	HRCFL4DFL2 GA1 SC1	NWS-23	935	128	4
NONAME	1929	HRCFL3AFL2	NWS-23	948	114	3
NONAME	1933	HRATX2CFL1	HURDAT	990	81	1
NONAME	1933	HRCFL3	NWS-23	948	132	3
NONAME	1935	HRBFL5AFL2	NWS-23	892	173	5
NONAME	1935	HRCFL2	NWS-38	977	99	2
NONAME	1936	HRAFL3	NWS-23	964	105	3
NONAME	1939	HRCFL1AFL1	HURDAT	990	81	1
NONAME	1941	HRCFL2BFL2AFL2	HURDAT	954	121	3
NONAME	1944	HRBFL3DFL2	NWS-23	949	117	3
NONAME	1945	HRAFL1	HURDAT	982	92	1
NONAME	1945	HRCFL3	NWS-23	951	116	3
NONAME	1946	HRBFL1	HURDAT	993	75	1
NONAME	1947	HRCFL4 LA3 MS3BFL2	NWS-23	947	125	4
NONAME	1947	HR GA2 SC2CFL1	HURDAT	993	75	1
NONAME	1948	HRBFL3CFL2	NWS-23	935	127	3
NONAME	1948	HRCFL2	NWS-38	963	86	2
NONAME	1949	HRCFL3	NWS-23	954	116	3
EASY	1950	HRAFL3	NWS-23	958	102	3
KING	1950	HRCFL3	NWS-23	955	112	3
FLORENCE	1953	HRAFL1	HURDAT	982	92	1
FLOSSY	1956	HR LA2AFL1	NWS-23	974	92	1
DONNA	1960	HRBFL4 NC3 NY3DFL2 CT2 RI2 MA1 NH1 ME1	NWS-38	930	132	4
CLEO	1964	HRCFL2	NWS-23	967	99	2
DORA	1964	HRDFL2	MWS-38	961	99	2
ISBELL	1964	HRBFL2CFL2	NWS-23	964	107	2
BETSY	1965	HRCFL3 LA3	MWS-23	952	115	3
ALMA	1966	HRAFL2	NWS-23	970	98	2
INEZ	1966	HRBFL1	NWS-23	977	76	1
GLADYS	1968	HRAFL2DFL1	NWS-23	977	86	2
AGNES	1972	HRAFL1 NY1 CT1	NWS-23	978	85	1
ELOISE	1975	HRAFL3	NWS-23	955	119	3
DAVID	1979	HRCFL2DFL2 GA2 SC2	NWS-38	968	98	2
ELENA	1985	HR AL3 MS3AFL3	HURDAT	959	115	3
KATE	1985	HRAFL2	HURDAT	967	92	2
FLOYD	1987	HRBFL1	HURDAT	993	75	1
ANDREW	1992	HRCFL4BFL3 LA3	HURDAT	922	138	4
ERIN	1995	HRCFL1AFL2	HURDAT	974	98	2
OPAL	1995	HRAFL2	HURDAT	942	113	3
EARL	**1998**	**HRAFL1**	**HURDAT**	**987**	**81**	**1**
GEORGES	**1998**	**HRBFL2**	**HURDAT**	**981**	**104**	**2**

The Codes:
AFL = Northwest Florida
BFL = Southwest Florida
CFL = Southeast Florida
DFL = Northeast Florida

11/1/99 Standards			Data	Central	Wind		Total for
Name	Year	Landfall Code	Source	Pressure	Speed	Category	Category
NONAME	1906	HRCFL1	NWS-23	979	86	1	
NONAME	1911	HRAFL1 AL1	HURDAT	990	81	1	
NONAME	1915	HRAFL1	HURDAT	982	92	1	
NONAME	1916	HRBFL1	HURDAT	990	81	1	
NONAME	1924	HRAFL1	HURDAT	994	75	1	
NONAME	1924	HRBFL1	NWS-23	972	93	1	
NONAME	1925	HRBFL1	HURDAT	994	75	1	
NONAME	1933	HRATX2CFL1	HURDAT	990	81	1	
NONAME	1939	HRCFL1AFL1	HURDAT	990	81	1	
NONAME	1945	HRAFL1	HURDAT	982	92	1	
NONAME	1946	HRBFL1	HURDAT	993	75	1	
NONAME	1947	HR GA2 SC2CFL1	HURDAT	993	75	1	
FLORENCE	1953	HRAFL1	HURDAT	982	92	1	
FLOSSY	1956	HR LA2AFL1	NWS-23	974	92	1	
INEZ	1966	HRBFL1	NWS-23	977	76	1	
AGNES	1972	HRAFL1 NY1 CT1	NWS-23	978	85	1	
FLOYD	1987	HRBFL1	HURDAT	993	75	1	Category 1 = 18
EARL	**1998**	**HRAFL1**	**HURDAT**	**987**	**81**	**1**	
NONAME	1903	HRCFL2AFL1	NWS-23	977	89	2	
NONAME	1906	HRCFL2	NWS-38	967	81	2	
NONAME	1909	By-Passing	HURDAT	978	98	2	
NONAME	1916	HR AL2AFL2	NWS-23	974	97	2	
NONAME	1926	HRDFL2	NWS-23	960	109	2	
NONAME	1926	By-Passing	HURDAT	968	110	2	
NONAME	1928	HRCFL2	HURDAT	977	98	2	
NONAME	1935	HRCFL2	NWS-38	977	99	2	
NONAME	1948	HRCFL2	NWS-38	963	86	2	
CLEO	1964	HRCFL2	NWS-23	967	99	2	
DORA	1964	HRDFL2	MWS-38	961	99	2	
ISBELL	1964	HRBFL2CFL2	NWS-23	964	107	2	
ALMA	1966	HRAFL2	NWS-23	970	98	2	
GLADYS	1968	HRAFL2DFL1	NWS-23	977	86	2	
DAVID	1979	HRCFL2DFL2 GA2 SC2	NWS-38	968	98	2	
KATE	1985	HRAFL2	HURDAT	967	92	2	
ERIN	1995	HRCFL1AFL2	HURDAT	974	98	2	Category 2 = 18
GEORGES	**1998**	**HRBFL2**	**HURDAT**	**981**	**104**	**2**	
NONAME	1910	HRBFL3	NWS-23	941	121	3	
NONAME	1917	HRAFL3	NWS-23	964	104	3	
NONAME	1921	HRBFL3DFL2	NWS-23	952	112	3	
NONAME	1929	HRCFL3AFL2	NWS-23	948	114	3	
NONAME	1933	HRCFL3	NWS-23	948	132	3	
NONAME	1936	HRAFL3	NWS-23	964	105	3	
NONAME	1941	HRCFL2BFL2AFL2	HURDAT	954	121	3	
NONAME	1944	HRBFL3DFL2	NWS-23	949	117	3	
NONAME	1945	HRCFL3	NWS-23	951	116	3	
NONAME	1948	HRBFL3CFL2	NWS-23	935	127	3	
NONAME	1949	HRCFL3	NWS-23	954	116	3	
EASY	1950	HRAFL3	NWS-23	958	102	3	
KING	1950	HRCFL3	NWS-23	955	112	3	
BETSY	1965	HRCFL3 LA3	MWS-23	952	115	3	
ELOISE	1975	HRAFL3	NWS-23	955	119	3	
ELENA	1985	HR AL3 MS3AFL3	HURDAT	959	115	3	
OPAL	1995	HRAFL2	HURDAT	942	113	3	Category 3 = 18
NONAME	1919	HRBFL4ATX4	NWS-23	929	132	4	
NONAME	1926	HRCFL4BFL3AFL3 AL3	NWS-38	931	134	4	
NONAME	1928	HRCFL4DFL2 GA1 SC1	NWS-23	935	128	4	
NONAME	1947	HRCFL4 LA3 MS3BFL2	NWS-23	947	125	4	
DONNA	1960	HRBFL4 NC3 NY3DFL2 CT2 RI2 MA1 NH1 ME1	NWS-38	930	132	4	
ANDREW	1992	HRCFL4BFL3 LA3	HURDAT	922	138	4	Category 4 = 6
NONAME	1935	HRBFL5AFL2	NWS-23	892	173	5	Category 5 = 1

The Codes:
AFL = Northwest Florida
BFL = Southwest Florida
CFL = Southeast Florida
DFL = Northeast Florida

NORMATIVE REFERENCES

Normative References and Data Sets

For the purposes of the standards for model specification adopted in this document, the following references or published data sets are deemed normative. Subsequent revisions to these documents shall be construed to supersede the versions listed below. The actual use of information from these documents or data sets in the context of the computer models is addressed in the standards.

1. **Meteorological Criteria for Standard Project Hurricane and Probable Maximum Hurricane Windfields, Gulf and East Coasts of the United States**, **NOAA Technical Report NWS 23,** Washington, D.C., September, 1979

2. **Hurricane Climatology for the Atlantic and Gulf Coasts of the United States, NOAA Technical Report NWS 38**, Washington, D.C., April, 1987

3. **North Atlantic Storm Data Base, HURDAT**

4. Kaplan/DeMaria, *"A Simple Empirical Model for Predicting the Decay of Tropical Cyclone Winds After Landfall",* **Journal of Applied Meteorology**, Volume 34, #11, November 1995

5. Tropical Prediction Center/National Hurricane Center (TPC/NHC), **Tropical Cyclones of the North Atlantic Ocean, 1871-1992,** with updates

GUIDEBOOK

GUIDEBOOK

This document supplements the requirements of the standards adopted by the Commission regarding the Professional Team's on-site reviews. The intent of this document is to provide additional information to the modeling company as to what kinds of questions the Professional Team may ask or what documents the Professional Team may want to review while on-site so that the modeling company can prepare or locate materials or have appropriate staff available. Such advance preparations are intended to increase the efficiency of the review. This does not preclude further investigation by the Professional Team in other areas.

The purpose of the on-site review is to secure information relating to the standards adopted by the Commission. The Professional Team's questions are intended to provide the Team with an in-depth understanding of the models so that the Team's report to the Commission addressing compliance with the standards can be as clear and thorough as possible, subject to non-disclosure.

5.1 General Standards

5.1.1 Scope of the Computer Model and Its Implementation

Purpose: This standard gives a high level view of the scope of the model to be reviewed – namely, projected loss costs for personal lines residential property from hurricane events. Additional living expense (ALE) will be reviewed in detail since infrastructure degradation due to flood and storm surge can have an impact on ALE. Discussion of ALE will be primarily deferred to 5.3.4, 5.4.5 and 5.4.11. The reference to a computer model explicitly is intended to include the implementation of the model.

Audit: This standard concerns the scope of the computer model and its implementation which is expected to project loss costs for personal residential property due to hurricane events. ALE is mentioned explicitly since flood and storm surge can in fact impact it. The main intent of the audit is to determine the capabilities of the model and to assess its implementation for purposes of Florida estimated loss costs.

5.1.2 Qualifications of Modeler Personnel and/or Independent Experts

Purpose: This standard was originally adopted as a Finding of the Commission on November 30, 1995, and was subsequently modified and adopted on May 20, 1996, to add language to address the professional conduct of modeler personnel or independent experts involved in the model construction. To meet the standard, the modeler shall provide during the audit written evidence of the professional credentials and capabilities, typically in the form of

professional vitae of their personnel responsible for the current model and its development. Professional disciplines implicitly represented in Commission standards (structural engineering, applied mathematics/statistics, actuarial science, meteorology, computer science/engineering) shall be represented among modeler staff and consultants.

Audit: We would like to review the professional vitae of modeler personnel and/or independent experts responsible for the current model and information on their predecessors, if different than current personnel. For the actuarial personnel, professional status in the appropriate actuarial organization or organizations is usually apparent on the vitae. For other disciplines, the vitae ought to be sufficient to make a determination for this standard, with further commentary possible during the on-site interactions. Background information on individuals providing testimonial letters in the submission must be provided.

5.1.3 Modeler's Policy of Model Revision

Purpose: The Commission shall determine to be acceptable only those models for which the owners have a clearly written policy for model revision with respect to methodologies and data. To meet the standard, the modeler shall demonstrate control of the evolution of their model to the extent that reviews, updates, modifications, releases, and other revisions follow generally accepted practices and are appropriately identified to the user, especially with respect to computer engineering.

After discussing this matter at some length with the modeling companies, it is the Commission's position that loss costs are not significantly affected unless there is a failure by the modeling company to update the zip codes at least every two years. The Commission recognizes that the United States Postal Service supplies zip code information to commercial software companies which in turn update their information for their customers. The Commission does not take a position on the relative quality of these commercial services.

Audit: Here we would like to see the process for model revisions (both methodology and data – especially updates from year-to-year with new storms.) What safeguards or controls are in place? How does the annual update take place? How is it identified? Citing specific examples gives further strength to our assessment (for 1996 storms, we did the following ... and now the updated storm

set is in place....). Our computer expert could then review the current set up.

5.1.4 Independence of Model Components

Purpose: This standard requires that each of the three primary components are individually sound, and moreover operate independently of each other. For example, the model shall not allow adjustments to the vulnerability components to compensate for apparent meteorological deficiencies (e.g., inflating damage to counteract for a deflated wind field.)

Audit: This standard will be considered last, or at least following the review of meteorology, vulnerability and actuarial sections. The modeler needs to convince the professional team that their choices of model components adequately portrays hurricane phenomena and effects (damage and loss costs). This can be accomplished indirectly via agreement with historical loss costs and attendant tests but also requires an assessment of the theoretical soundness of each component. A model would not be found to meet this standard, if an artificial calibration adjustment had been made to improve the match of historical and model results for a specific storm.

5.2 Meteorological Standards

5.2.1 Units of Measure for Model Output

Purpose: The Commission requires uniformity of measurements with regard to model outputs in the units given in the standard.

5.2.2 Identification of Units of Measure of Model

Purpose: To insure that the units of model input are clearly identified, regardless if they are the same or different from the units of model output.

5.2.3 Damage Function Wind Inputs

Purpose: To insure that the output from the wind component is appropriate as input for the damage function (allowing for the possibility of an appropriate conversion).

5.2.4 Official Hurricane Set or Suitable Approved Alternatives

Purpose: The "official" storm set is a baseline. This set covers the period 1900-1998. This standard requires that the storm set include damaging winds associated with by-passing hurricanes which pose an insurance risk to Florida locations. A primary use of this baseline storm set is in checking model versus historical storms impacting Florida. The standard does not preclude the use of other hurricane or tropical storm events, if they provide relevant information in hurricane modeling.

5.2.5 Hurricane Characteristics

Purpose: This standard requires that the modeler use only scientifically sound information for determining hurricane characteristics. By using graphical depictions and density functions, the modeler should describe the data set and the correlated storm characteristics.

Audit: Prepare graphical depictions (e.g., histograms overlaid with fitted density functions) of storm characteristics as used in the model. Please be prepared to describe the data set basis for the fitted distributions. Describe your assessments of correlated characteristics (e.g., central pressure and radius of hurricane force winds). Describe the fitting methods used and any smoothing techniques employed. Defend your choice of parametric distributions used. Be prepared to present information on the spatial distribution of hurricane force winds (e.g., the radius of hurricane force winds) associated with both modeled and historical events.

5.2.6 Landfall Intensity

Purpose: To provide a consistent measure of hurricane wind speed and a consistent measure of hurricane intensity. The HURDAT data base and/or the "official" storm set provided by the Commission will form the normative reference to this standard.

Audit: Be prepared to describe and to support category 3 - 5 storms with respect to intensity and wind speed.

5.2.7 Hurricane Probabilities

Purpose: This standard requires that the probability of occurrence of hurricanes match the historical record with respect to intensities and geographical locations. Results provided in Module 3, Section

I provide definitions of the four geographic areas of particular interest.

Audit: Be prepared to describe and to support your method of selecting stochastic storm tracks and angle of landfall. Be prepared to describe and support the method of selecting storm track strike intervals. If strike locations are on a discrete set, show the landfall points for major metropolitan areas in Florida. Assess the goodness of fit of modeled to historical frequencies for the four sections of the state and overall. Explain any significant discrepancies.

5.2.8 Hurricane Probability Distributions

Purpose: This standard requires that the modeled probabilities of hurricane characteristics be documented in accepted scientific literature which is available for the Commission's review.

5.2.9 Land Friction

Purpose: To insure that the required weakening of hurricanes over land is consistent with the scientific literature depicting appropriate building/land coefficients and which shall be made available to the Commission for review.

Audit: Be prepared to describe your handling of land friction. Maps by zip codes are helpful in this regard.

5.2.10 Hurricane Overland Weakening Rate

Purpose: To provide the current most widely accepted model of overland weakening and to provide a range of compliance with that model prediction.

5.3 Vulnerability Standards

5.3.1 Vulnerability Functions

5.3.2 Construction Characteristics

5.3.3 Modification Factors

Purpose: Expert opinion on modification factors shall not be accepted unless supported by sufficient data. Calculation alone is not sufficient unless supported by tests or field data. Any modification factors shall be supported by tests. The Commission recognizes that because of the nature of these factors, the justification may involve evidence that does not lend itself to precise measurement.

5.3.4 Additional Living Expenses

Purpose: Earthquake damage to streets, bridges, water systems, sewers and other infrastructure is not similar in nature to hurricane damage and shall not be used to assess or to assume the time that might be required to reconstruct and to re-occupy a hurricane damaged structure. Hurricane wind damage or hurricane storm surge damage to life lines may be factors in the estimation of ALE.

5.4 Actuarial Standards

5.4.1 Underwriting Assumptions

Purpose: To insure that loss cost projections, when based upon insurance company data, do not include inappropriate insurer or modeler manipulations, but are indicative of the actual underlying data whenever such data are used.

5.4.2 Actuarial Modifications

5.4.3 Loss Cost Projections

Purpose: The Commission has determined that at present its scope is limited to loss costs. Loss costs represent the pure premium for anticipated losses. Other "expense and profit loads" such as those listed in the standard are included in rate filings and are calculated by actuaries rather than a computer model. The appropriateness of such "loads" should be resolved between the regulatory actuary and the insurance company actuary.

5.4.4 Economic Inflation

Purpose: Loss severity is influenced by general economic inflation applicable to material and labor. Amounts of insurance may also be influenced (although perhaps differently) by economic inflation. Economic inflation is an element of past insurance experience which has been used to construct and validate hurricane loss projection models. Prospective changes in economic inflation applicable after construction of the model are found to be outside of the scope of the Commission's work.

5.4.5 Insurer Inputs

Purpose: Hurricane loss projection models may rely upon certain insurer assumptions. In other cases modelers may make implicit actuarial

assumptions relating to insurance to value, the prevalence of appurtenant structures, or demographic risk characteristics. Implicit assumptions may or may not be appropriate for use by a given insurer, depending upon the circumstances. All insurer inputs and the following assumptions must be disclosed.

Audit:
A. Provide a blank copy of the user input form.
B. The standard specifically mentions assumptions that must be disclosed when preparing the insurer's rate filing relating to insurance to value, demographic assumptions, appurtenant structures, contents, additional living expenses, and exposure by zip code.

5.4.6 Demand Surge

Purpose: Demand surge is an increase in the cost of materials and labor due to increased demand following a hurricane. Demand surge was observed in Hurricane Andrew but it has not been observed in smaller U.S. hurricanes. The circumstances necessary for a recurrence of demand surge do not appear to be well understood and quantified. Furthermore, governmental intervention is possible in future demand surge situations. Demand surge, if it exists for smaller storms, will be implicitly reflected in insurance industry experience. Models should not place over-emphasis on Hurricane Andrew experience because this may result in the prediction that demand surge will recur for all storms both large and small. Validation tests based on Hurricane Andrew should take into account the effects of demand surge.

5.4.7 Loss Costs – Meaning of "Damage"

Purpose: The Commission recognizes that the question, "what is the damage to the house?" may be answered in a number of ways. In constructing their models, the modeling companies assess "damage" in more than one way, depending on the use to which the information is to be put in the model. A structural engineer might determine that a house is 55% damaged and consider it still structurally sound. A claims adjuster might look at the same house and determine that 55% damage translates into a total loss because the house will be uninhabitable for some time and, further, because of a local ordinance relating to damage exceeding 50%, will have to be completely rebuilt according to up-dated building requirements. Since the Commission is reviewing models for purposes of residential rate filings in Florida, loss costs must be a function of insurance damage rather than engineering damage.

5.4.8 Logical Relation to Risk

Purpose: Modeled loss costs should vary according to risk. If the risk of loss due to hurricanes is higher for one area or structure type, then the loss costs should also be higher. Likewise, if there is no difference in risk there should be no difference in loss costs. Loss costs not having these properties have an illogical relation to risk.

Audit:

A. Prepare graphic representation of loss costs by zip code. Provide statewide, by region, and major population centers.

B. For land friction, provide a color-coded map by zip code of friction for Dade County and identify low, average, and high loss costs. Be prepared to call up loss costs for selected zip codes in Dade County.

5.4.9 Deductibles

Purpose: For a given wind speed and structure type, a range of possible damages result, each with varying degrees of probability. Some damages may fall completely below the deductible. The distribution of damage is therefore important to the determination of the effects of deductibles.

A modeler that does not comply with this standard may not be determined to be acceptable to provide loss costs with deductibles.

Deductibles will become more important in the near future because very large deductibles were approved for use by the Legislature during the 1996 Legislative Session.

Audit: The company actuary will be asked to attest to the actuarial soundness of the procedure.

5.4.10 Contents

Purpose: Some policies cover contents only (called tenants policies) and some policies provide no contents coverage at all (called fire and extended coverage policies). Condominium policies have an

increased emphasis on contents. A reasonable representation of contents losses is necessary in order to address these types of policies.

Audit: The company actuary will be asked to attest to the actuarial

soundness of the procedure.

5.4.11 Additional Living Expenses (ALE)

Purpose: Some policies do not cover additional living expense. A reasonable representation of additional living expense losses is necessary in order to address these types of policies.

Audit: The company actuary will be asked to attest to the actuarial soundness of the procedure. Also, be prepared to document, discuss, and justify the following during the on-site review:

A. The method of derivation and data upon which the ALE vulnerability function is based;
B. Validation data specifically applicable to ALE.
C. Assumptions regarding the coding of ALE losses by insurers;
D. For Andrew, be prepared to quantify and discuss the effects of demand surge on ALE;
E. Assumptions regarding the variability of ALE by size of property;
F. Statewide application of ALE assumptions;
G. Assumptions regarding ALE for mobile homes, tenants and condominium exposure; and
H. Logical relation to contents, especially contents vs. ALE for condominiums.

5.4.12 Building Codes

Purpose: Building code quality and enforcement may have an important effect on the losses incurred in a hurricane. In addition to assessing the risk of loss due to hurricane, the recognition of building code quality and enforcement may promote loss control. Since building codes and enforcement vary regionally, the recognition of these factors may have an important impact on loss costs by location.

It is difficult, however, to objectively measure building code quality and enforcement, particularly over time. Insurance Services Office's program for assessing building code quality and enforcement, called BCEGS (Building Code Effectiveness Grading Schedule), is a rating scheme applicable mostly to new construction.

Audit: Be prepared to document building code assumptions and data sources, where appropriate.

5.4.13 Replication of Known Hurricane Losses

Purpose: Each model should demonstrate that it can reasonably replicate past known events for storm frequency and severity. The meteorological standards assess the model's storm frequency projections and storm tracks. This standard applies to severity, or the combined effects of wind field, vulnerability functions, and insurance loss limitations.

Given a past storm event and a book of insured properties at the time of the storm, the model should be able to provide expected losses. The validity of the model will be assessed by comparing expected losses produced by the model to actual observed losses incurred by insurers. A number of storms should be examined and unusual results should be explained.

To the extent possible, each of the three functions of windfield, vulnerability and insurance should be separately tested and verified.

It is important that the stochastic part of the model be tested, which is the part of the model used to produce loss costs used in rate making.

Audit: A. Provide the following for each insurer and/or hurricane:

1. The version of the model used to calculate modeled losses for each storm provided;
2. For each storm, a general description of the data and its source;
3. A disclosure of any material mismatch of exposure and loss data problems, or other material consideration. For each storm, the date of the exposures used for modeling and the date of the hurricane;
4. An explanation of differences in the actual and modeled storm parameters;
5. A listing of the departures, if any, in the windfield applied to a particular hurricane for the purpose of validation and the windfield used in the model under consideration;
6. The type of property used in each storm to address:
   a. Personal versus commercial
   b. Residential structures
   c. Mobile homes
   d. Condominiums
   e. Buildings only
   f. Contents only
7. For each example, the inclusion of demand surge, storm surge, loss adjustment expenses, or law and

ordinance coverage in the actual losses, or the modeled losses.

B. Have the following documentation available for on-site review:

1. Provide a copy of the publicly available documentation that you plan to provide to the Commission;
2. A listing of all data sources excluded from validation and the reasons for excluding the data from review by the Commission (if any);
3. An analysis that identifies and explains anomalies observed in the validation data;
4. For Andrew, be prepared to quantify and discuss the effects of demand surge; and
5. User input sheets for each insurer and hurricane detailing specific assumptions made with regard to exposed property.

5.4.14 Comparison of Estimated Hurricane Loss Costs

Comment: The SBA will provide FHCF aggregate exposure data to the modelers.

Audit: Be prepared to discuss and justify the following during the on-site review:

A. Meteorological parameters;
B. The effect of bypassing storms;
C. The effect of actual storms that have two landfalls impacting Florida;
D. The departures, if any, from the windfield, vulnerability functions or insurance functions applied to the actual hurricanes for the purposes of this test and those used in the model under consideration;
E. Exposure assumptions; and
F. Identify and explain any unusual results.

5.4.15 Output Ranges

5.4.16 County Level Aggregation

Purpose: Sample size consideration is an issue in many statistical applications and simulating estimated loss costs is not an exception. The intent of this standard is to ensure that sufficient runs of the simulation have been made and a suitable sampling design invoked so that the contribution to the error of the loss cost

estimates due to its probabilistic nature is negligible.

Audit: Provide a graph assessing the accuracy associated with low impact areas such as Nassau County.

5.4.17 Zip Codes – Derivation

Purpose: After discussing the matter at some length with the modeling companies, the Commission is comfortable that loss costs produced by population weighted or geographic weighted centroids are not significantly different. Population-weighted centroids make intuitive sense because the residential property addressed by these standards will be where the population is. Geographic centroids are most useful when commercial exposures are modeled because commercial exposures tend to be located away from residential centers. However, the zip code may be weighted either way.

5.5 Computer Standards

5.5.1 Model and Software Design

Purpose: Modeling is the process of abstracting the dynamics of a physical system using mathematical and/or graphical notation. In case of hurricane models, these include expected occurrences of hurricanes and their characteristics including winds, strike probabilities, track and inland dissipation, vulnerability functions and loss cost predictions.

Computer software represents the implementation of some mathematical model. As such, its design and implementation must accurately and clearly realize this underlying model. Software design involves two components: algorithm design and data design, both of which follow from a scientifically acceptable mathematical model. The algorithms and data specifications build upon the mathematical model by translating this model into specifications for an executable program, composed of encoded algorithms and data.

5.5.2 Implementation

5.5.3 Validation, Verification, and Testing

5.5.4 Written Documentation

Appendix A

On-Site Test
Test of Current Model

(*Standards 5.4.4, 5.4.6, 5.4.8 for all questions in this section*)

The purpose of this test is to evaluate the hurricane windfield, land use and friction adjustments, vulnerability functions, and insurance functions.

Model the category 4 and 5 events described below landfalling in the Florida Keys and Tampa. Use the sample input data provided on the supplied diskette in the file called "**latinp.csv"**. The sample input data contains policy and risk information by latitude-longitude coordinate for locations in Dade, Hillsborough, Monroe, and Pinellas counties. The sample data is described on the next page.

Use the latitude and longitude coordinates of the geographic location of the risk. If unable to use the latitude and longitude coordinates as exactly specified, please explain why not and what location the risk was assumed to be.

Provide the Commission with estimates of one-minute sustained windspeeds, land roughness adjustments, ground up loss, and loss net of deductibles for the exposure amounts provided in the data file. Provide the Commission with estimates of far field pressure, radius of hurricane force winds, and radius of maximum winds estimated by your model if different from those provided.

Do not map any additional exposures to these locations.

In your loss estimates, do not include any estimates for demand surge, socio-economic inflation, loss adjustment expense, or storm surge.

For land roughness adjustments, provide the percent amount the vulnerability functions are adjusted for land use. If this adjustment is made to the wind speeds and not the vulnerability function, please provide the wind speed estimates after the adjustment is made. Land use may be described by wooded areas, urban areas, beachfronts, etc.

The hurricane events are defined as follows:

Cat.	Central Pressure (mb)	Maximum Winds (mph)	Radius of Hurricane Force Winds (nmi)	Rmax (nmi)	Farfield Pressure (mb)	Forward Speed (mph)	Landfall	Location	Direction (degrees)
4	930.70	146	100	16	1013	10	-80.5;25.3	Fl. Keys	-10
5	913.50	160	100	10	1013	10	-80.5;25.3	Fl. Keys	-10
4	930.70	146	100	16	1013	10	-82.9;27.8	Tampa	45
5	913.50	160	100	10	1013	10	-82.9;27.8	Tampa	45

If your model does not use one or more of the specified parameters, please describe which ones are not used and why (e.g., Rmax is estimated to be "X" based on the central pressure or this variable is not used by our model). If your model assumes different values for the variables, please specify what that value is.

Assume a straight-line path after the point of landfall in the direction specified. The direction specified assumes zero degrees is North.

A sample data set has been provided to each modeler on a 3½" diskette. The file is called "**latinp.csv"** and it is in ASCII comma delimited format. This data set consists of one policy with the following coverages; $100,000 building, $10,000 appurtenant structures, $50,000 contents, $20,000 time element, by construction type, occupancy and age for each latitude-longitude location within Dade, Hillsborough, Monroe, and Pinellas counties. The data set contains 2,768 records. The layout of the sample exposure file is as follows:

Sample Exposure File Layout

No.	Field	Description
1.	ID	Unique record identification code
2.	Longitude	Longitude location
3.	Latitude	Latitude location
4.	Location	Location within lat-long point
5.	Construction Type	The codes are: 1 = Wood Frame, 2 = Masonry, 3 = Mobilehome, 4 = Unknown
6.	Occupancy	The codes are: 1 = Single Family Dwelling, 2 = 4 Unit Apartment Complex
7.	Year of Construction	The codes are: 1 = 1975, 2 = 1990
8.	Deductible	1% to be applied separately to each coverage type.
9.	Total Insured Value - Building	$100,000 for all records
10.	Total Insured Value - Appurtenant Structures	$10,000 for all records
11.	Total Insured Value - Contents	$50,000 for all records
12.	Total Insured Value - Time Element	$20,000 for all records

Modeler is directed to make the following assumptions with the analysis:

- Each structure is insured 100% to value.
- Tide at landfall is 0 meters.
- Number of stories = 2.
- If the model assumes different construction types other than those provided with the data, please map the codes the Commission has provided to the appropriate codes.
- The hurricane is traveling steadily until land effects modify hurricane behavior in the model.

Provide the loss estimates in a data file with the following file layout:

No.	Field	Description
1.	ID	Unique record identification code.
2.	Location	Location within lat-long point.
3.	Wind Speed	Estimated maximum one-minute average sustained wind speed (knots) at the lat-long point.
4.	Land Use Adjustment	Percent adjustment to vulnerability curve or adjusted maximum one-minute average sustained wind speed (knots) after land use adjustment at the lat-long point.
5.	Total Ground Up Loss - Building	Estimated ground up loss for building only.
6.	Total Insured Loss - Building	Estimated loss net of 1% building deductible.
7.	Total Ground Up Loss - Appurtenant Structures	Estimated ground up loss for appurtenant structures only.
8.	Total Insured Loss - Appurtenant Structures	Estimated loss net of 1% appurtenant structures deductible.
9.	Total Ground Up Loss - Contents	Estimated ground up loss for contents only.
10.	Total Insured Loss - Contents	Estimated loss net of 1% contents deductible.
11.	Total Ground Up Loss - Time Element	Estimated ground up loss for time element only.
12.	Total Insured Loss - Time Element	Estimated loss net of 1% time element deductible.

FUTURE INQUIRIES OR INVESTIGATIONS

Future Inquiries or Investigations

The Commission finds that since its activities are ongoing, it is appropriate to set out, as it did at the end of its previous year of inquiry and investigation, a list of matters which the Commission determines are subjects for further inquiry and investigation. This list is not intended to be all-inclusive. The Commission anticipates that other matters will be added as they are identified. The Commission also notes that these matters as set out below imply no particular order of importance and no particular order regarding timing.

Risk Load

Early in the process, the Commission discussed whether the risk load component of a rate filing should be part of its investigations in its first year. The Commission decided to interpret the term "losses" in the statute to mean pure premium loss costs. However, it has been suggested that perhaps the value of risk loading in loss projections is a topic for future consideration by the Commission. While part of a risk load is company-specific, another part is generic and is part of modeling now performed by modeling companies for particular insurers.

Commercial Residential Property

The Commission asked the Professional Team to address the issue relating to the inclusion of commercial residential property in the modeling process and asked them to obtain information during their next on-site review.

Wind-related Construction Classifications

The Commission asked the Professional Team to work toward improvement of the standards by building on the current construction classifications, to make them more hurricane-related rather than fire-related.

Radius of Hurricane Force Winds

The Professional Team will devote some of its auditing efforts in assessing the extent to which modeled storms match the observed radius of hurricane force winds. At present, no modeler explicitly includes a parameter or parameters to capture this characteristic directly. However, in the assessment of models, it is reasonable to consider the modeled wind field and the extent of its agreement with the region of hurricane force winds.

APPENDICES

627.0628 Florida Commission on Hurricane Loss Projection Methodology--

(1) LEGISLATIVE FINDINGS AND INTENT.--

(a) Reliable projections of hurricane losses are necessary in order to assure that rates for residential property insurance meet the statutory requirement that rates be neither excessive nor inadequate. The ability to accurately project hurricane losses has been enhanced greatly in recent years through the use of computer modeling. It is the public policy of this state to encourage the use of the most sophisticated actuarial methods to assure that consumers are charged lawful rates for residential property insurance coverage.

(b) The Legislature recognizes the need for expert evaluation of computer models and other recently developed or improved actuarial methodologies for projecting hurricane losses, in order to resolve conflicts among actuarial professionals, and in order to provide both immediate and continuing improvement in the sophistication of actuarial methods used to set rates charged to consumers.

(c) It is the intent of the Legislature to create the Florida Commission on Hurricane Loss Projection Methodology as a panel of experts to provide the most actuarially sophisticated guidelines and standards for projection of hurricane losses possible, given the current state of actuarial science. It is the further intent of the Legislature that such standards and guidelines must be used by the State Board of Administration in developing reimbursement premium rates for the Florida Hurricane Catastrophe Fund, and may be used by insurers in rate filings under s. 627.062 unless the way in which such standards and guidelines were applied by the insurer was erroneous, as shown by a preponderance of the evidence.

(d) It is the intent of the Legislature that such standards and guidelines be employed as soon as possible, and that they be subject to continuing review thereafter.

(2) COMMISSION CREATED.--

(a) There is created the Florida Commission on Hurricane Loss Projection Methodology, which is assigned to the State Board of Administration. The commission shall be administratively housed within the State Board of Administration, but it shall independently exercise the powers and duties specified in this section.

(b) The commission shall consist of the following 11 members:

1. The Insurance Consumer Advocate.

2. The Chief Operating Officer of the Florida Hurricane Catastrophe Fund.
3. The Executive Director of the Residential Property and Casualty Joint Underwriting Association.
4. The Director of the Division of Emergency Management of the Department of Community Affairs.
5. The actuary member of the Florida Hurricane Catastrophe Fund Advisory Council.
6. Six members appointed by the Insurance Commissioner, as follows:
    a. An employee of the Department of Insurance who is an actuary responsible for property insurance rate filings.
    b. An actuary who is employed full time by a property and casualty insurer which was responsible for at least 1 percent aggregate statewide direct written premium for homeowner's insurance in the calendar year preceding the member's appointment to the commission.
    c. An expert in insurance finance who is a full time member of the faculty of the State University System and who has a background in actuarial science.
    d. An expert in statistics who is a full time member of the faculty of the State University System and who has a background in insurance.
    e. An expert in computer system design who is a full time member of the faculty of the State University System.
    f. An expert in meteorology who is a full time member of the faculty of the State University System and who specializes in hurricanes.

(c) Members designated under subparagraphs (b)1.-5. shall serve on the commission as long as they maintain the respective offices designated in subparagraphs (b)1.-5. Members appointed by the Insurance Commissioner under subparagraph (b)6. shall serve on the commission until the end of the term of office of the Insurance Commissioner who appointed them, unless earlier removed by the Insurance Commissioner for cause. Vacancies on the commission shall be filled in the same manner as the original appointment.

(d) The State Board of Administration shall annually appoint one of the members of the commission to serve as chair.

(e) Members of the commission shall serve without compensation, but shall be reimbursed for per diem and travel expenses pursuant to s. 112.061.

(f) The State Board of Administration shall, as a cost of administration of the Florida Hurricane Catastrophe Fund, provide for travel, expenses, and staff support for the commission.

(g) There shall be no liability on the part of, and no cause of action of any nature shall arise against, any member of the commission, any member of the State Board of Administration, or any employee of the State Board of

Administration for any action taken in the performance of their duties under this section. In addition, the commission may, in writing, waive any potential cause of action for the negligence of a consultant, contractor, or contract employee engaged to assist the commission.

(3) ADOPTION AND EFFECT OF STANDARDS AND GUIDELINES.--

(a) The commission shall consider any actuarial methods, principles, standards, models, or output ranges that have the potential for improving the accuracy of or reliability of the hurricane loss projections used in residential property insurance rate filings. The commission shall, from time to time, adopt findings as to the accuracy or reliability of particular methods, principles, standards, models, or output ranges.

(b) In establishing reimbursement premiums for the Florida Hurricane Catastrophe Fund, the State Board of Administration must, to the extent feasible, employ actuarial methods, principles, standards, models, or output ranges found by the commission to be accurate or reliable.

(c) With respect to a rate filing under s. 627.062, an insurer may employ actuarial methods, principles, standards, models, or output ranges found by the commission to be accurate or reliable to determine hurricane loss factors for use in a rate filing under s. 627.062, which findings and factors are admissible and relevant in consideration of a rate filing by the department or in any arbitration or administrative or judicial review.

(d) The commission shall adopt initial actuarial methods, principles, standards, models, or output ranges no later than December 31, 1995. The commission shall adopt revisions to such actuarial methods, principles, standards, models, or output ranges at least annually thereafter. As soon as possible, but no later than July 1, 1996, the commission shall adopt revised actuarial methods, principles, standards, models, or output ranges which include specification of acceptable computer models or output ranges derived from computer models.

Meeting Schedule and Topics of Discussion

1995

July 14 -	Organizational Meeting
August 10 -	Discussion of the Problem
August 24 -	Discussion on Our Mission, Goals and Objections
September 7 -	Meeting with Modelers
September 21 -	Development of Work Plan
October 5 -	Canceled Due to Hurricane Opal
October 19 -	Development of Descriptive Criteria and Tests of the Model
November 2 -	The Evaluation Process
November 16 -	Meeting with Modelers to provide input for the Evaluation Process
November 30 -	Adoption of Initial Standards and Guidelines

1996

January 8 -	Review of Modeler Responses for Modules 1 and 2
January 29 -	Comparison of Models
February 12 -	Tests and Evaluations
February 26 -	Tests and Evaluations - Continued
April 1 -	Professional Team Report
April 15 -	Module 3 Phase 2 Test Results
April 19 -	AIR Presentation
April 20 -	EQECAT Presentation
April 26 -	Tillinghast Presentation
April 27 -	RMS Presentation
May 6 -	Committee Meetings - Session 1 Adopting Standards
May 20 -	Committee Meetings - Session 2 Adopting Standards
June 3 -	Adopting a Specification of Acceptable Computer Models or Output Ranges
August 26 -	Planning and Update as to Modeler Progress
November 13 -	Vulnerability Standards Committee Meeting
December 11 -	Actuarial Standards Committee Meeting

1997

February 7 -	Review of Standards and Procedures
	Vulnerability Standards Committee Meeting
April 11 -	Review of AIR Model
May 6 -	Meteorology Standards Committee Meeting
May 7 -	General Standards Committee Meeting
May 16 -	Review of AIR Model (Continued)

	Computer Standards Committee Meeting
May 22 -	Vulnerability Standards Committee Conference Call
May 29 -	Review of AIR Model (Continued) and Adoption of Revised Standards for 1997
September 29 -	Planning for Calendar Year and Review of Models
October 23 -	Vulnerability Committee Meeting
October 24-	Review of AIR Model
December 11 -	Review of EQECAT Model
December 12 -	Review of EQECAT Model (Continued)
December 16 -	Review of RMS Model
1998	
April 23 -	Acceptability Process Committee Meeting
	Computer Programming Committee Meeting
	Meteorological Standards Committee Meeting
	Acturial Standards Committee Meeting
April 24 -	Vulnerability Standards Committee Meeting
	General Standards Committee Meeting
	1998 Standards Adopted
May 21 -	Module and Acceptability Process Adopted
November 17 -	Review of Tillinghast Model
November 18 -	Review of Tillinghast Model (Continued)
November 19 -	Review of E.W. Blanch Model
November 20 -	Review of E.W. Blanch Model (Continued)
December 8 -	Review of RMS Model
December 9 -	Review of EQECAT Model
December 10 -	Review of AIR Model
1999	
March 19 -	Commission Workshop
	New Timeframe for Model Review
July 15 -	Acceptability Process Committee
	General Standards Committee
	Vulnerability Standards Committee
July 16 -	Actuarial Standards Committee
	Computer Standards Committee
July 28 -	Meteorology Standards Committee
August 17 -	Adoption of Standards for 1999, Modules, Acceptability Process, Findings and "Report of Activities"

Transcript Information

All meetings of the Florida Commission on Hurricane Loss Projection Methodology were transcribed by a Court Reporter. The meetings were not put on videotape or audiotape. If you would like to purchase copies of any transcript, please contact the Court Reporter for the date of the meeting.

July 14, 1995 -	Amy Gonter, Habershaw Reporting Service, 850385-9426
August 10, 1995 -	Amy Gonter, Habershaw Reporting Service, 850385-9426
August 24, 1995 -	Sue Habershaw, Habershaw Reporting Service, 850-385-9426
September 7, 1995 -	Sue Habershaw, Habershaw Reporting Service, 850-385-9426
September 21, 1995 -	Nancy Vetterick, Accurate Stenotype Reporters, Inc. 850-878-2221
October 19, 1995 -	Christine Wheeler, Habershaw Reporting Service, 850-385-9426
November 2, 1995 -	Cathy Webster, C & N Reporters, 850-926-2020
November 16, 1995 -	Cathy Webster, C & N Reporters, 850-926-2020
November 30, 1995 -	Lori Dezell, Kirkland & Associates, 850-222-8390
January 8, 1996 -	Cathy Webster, C & N Reporters, 850-926-2020
January 29, 1996 -	Cathy Webster, C & N Reporters, 850-926-2020
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May 16, 1997 -	Cathy Webster, C & N Reporters, 850-926-2020
May 22, 1997 -	Cathy Webster, C & N Reporters, 850-926-2020
May 29, 1997 -	Nancy Metzke, C & N Reporters, 850-926-2020
September 29, 1997 -	Lisa Girod Jones, Registered Merit Reporter, 850-894-2277
October 23, 1997 -	Cathy Webster, C & N Reporters, 850-926-2020

October 24, 1997 -	Cathy Webster, C & N Reporters, 850-926-2020
December 11, 1997 -	Nancy Metzke, C & N Reporters, 850-926-2020
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April 23, 1998 -	Nancy Metzke, C & N Reporters, 850-926-2020
April 24, 1998 -	Nancy Metzke, C & N Reporters, 850-926-2020
May 21, 1998 -	Cathy Webster, C & N Reporters, 850-926-2020
November 17, 1998 -	Cathy Webster, C & N Reporters, 850-926-2020
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November 19, 1998 -	Cathy Webster, C & N Reporters, 850-926-2020
November 20, 1998 -	Cathy Webster, C & N Reporters, 850-926-2020
December 8, 1998 -	Cathy Webster, C & N Reporters, 850-926-2020
December 9, 1998 -	Nancy Metzke, C & N Reporters, 850-697-8314
December 10, 1998 -	Cathy Webster, C & N Reporters, 850-926-2020
March 19, 1999 -	Cathy Webster, C & N Reporters, 850-926-2020
July 15, 1999 -	Nancy Metzke, C & N Reporters, 850-697-8314
July 16, 1999 -	Nancy Metzke, C & N Reporters, 850-697-8314
July 28, 1999 -	Nancy Metzke, C & N Reporters, 850-697-8314
August 17, 1999 -	Debra Krick, Premier Reporting, 850-894-0828

Commission Documentation

The State Board of Administration, in its responsibility as administrator for the Commission, maintains documentation for all meetings of the Commission. This information may be obtained by writing to:

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P. O. Box 13300
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