

LOSS COSTS – INFORMATION

OCTOBER 30, 2020

BUSINESSOWNERS

LI-BP-2020-137

## NEW YORK BUSINESSOWNERS ADVISORY PROSPECTIVE LOSS COST REVISION PENDING; SUPPLEMENT PROVIDED

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### KEY MESSAGE

This circular provides a supplement for the New York Businessowners filing BP-2020-RLA1.

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### BACKGROUND

In circular [LI-BP-2020-104](#), we advised the filing of BP-2020-RLA1 in New York. We are providing a supplement to this circular containing information regarding the use of a hurricane model. This supplementary information is not part of the experience review document or filing.

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### ISO ACTION

We are providing a New York supplement for filing BP-2020-RLA1.

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### CAUTION

This filing has not yet been implemented. You should not submit any filing referencing this material until we inform you in a subsequent circular that this revision has been implemented.

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### REFERENCE(S)

[LI-BP-2020-104](#) (09/11/2020) New York Businessowners Advisory Prospective Loss Cost Revision Filed; Exhibits Newly Presented In Excel

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### ATTACHMENT(S)

New York Supplement

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**DATA QUALITY**

Statistical plan data reported to ISO is first processed through a system of rigorous automated data verification procedures so that only valid data would be used for ratemaking. Subsequent to this initial data submission review, additional analyses on the statistical plan data and AIR Hurricane Model involving an even more customized data review for this line were performed by staff. During these processes, various data records were excluded from the review. The ISO staff responsible for this circular also reviewed the data for reasonableness.

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**ACKNOWLEDGMENT OF ACTUARIAL QUALIFICATIONS**

The American Academy of Actuaries' "Qualifications Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" requires that an actuary issuing a Statement of Actuarial Opinion should include an acknowledgment with the opinion that he/she has met the qualification standards of the AAA. ISO considers this loss cost document a Statement of Actuarial Opinion; therefore, we are including the following acknowledgment:

I, Nancy A. Narisi, am a Senior Actuarial Associate of Strategic Actuarial Operations for ISO and I, Michael Doyle, am an Actuarial Product Director for Specialty Lines for ISO. We are jointly responsible for the content of this Statement of Actuarial Opinion. We are both members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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**AIR WORLDWIDE CORPORATION**

This filing incorporates the use of AIR Worldwide Corporation's (AIR) tropical cyclone model to produce hurricane modeled loss costs as part of the Extended Coverage ratemaking procedure. AIR is the world's premier risk modeling and technology firm specializing in risks associated with natural and man-made catastrophes, weather and climate. AIR has developed models covering all major natural hazards, including hurricanes and earthquakes, and man-made perils (terrorist events) for more than 40 countries throughout North America, the Caribbean, South America, Europe, and the Asia-Pacific region. AIR provides a full suite of integrated products for underwriting, pricing, portfolio management, risk transfer and financing.

For more information concerning AIR Worldwide Corporation, please refer to the Contact Information block.

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## CONTACT INFORMATION

If you have any questions concerning:

- The actuarial content of this circular, please contact:  
Lukas Cechura  
Actuarial Operations, Property  
201-469-3480  
[Lukas.Cechura@verisk.com](mailto:Lukas.Cechura@verisk.com)  
[propertyactuarial@verisk.com](mailto:propertyactuarial@verisk.com)
- The non-actuarial content of this circular, please contact:  
Alexander Esau  
Production Operations, Compliance and Product Services  
201-469-2717  
[productionoperations@verisk.com](mailto:productionoperations@verisk.com)
- PCS catastrophe information, please contact:  
Joe Louwagie  
Property Claim Services  
201-469-3126  
[Joseph.Louwagie@verisk.com](mailto:Joseph.Louwagie@verisk.com)
- AIR Worldwide Corporation, please contact:  
AIR Worldwide Corporation  
131 Dartmouth Street  
Boston, MA 02116-5134  
[www.air-worldwide.com](http://www.air-worldwide.com)  
[info@air-worldwide.com](mailto:info@air-worldwide.com)
- Other issues for this circular, please contact Customer Support:  
E-mail: [info@verisk.com](mailto:info@verisk.com)  
Phone: 800-888-4476

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##### INTRODUCTION

For hurricane-prone states other than New York, the extended coverage ratemaking procedures incorporate the use of a computerized hurricane model which can estimate hurricane losses more accurately and with greater geographic specificity than traditional experience-based techniques. The model uses a meteorological database of both landfalling and nonlandfalling tropical cyclones since 1900, a sophisticated wind field model, and engineering and insurance-based damage relationships to develop reliable estimates of expected hurricane losses. The model relates the probability of a hurricane at a specific location, the duration of the wind speeds at that location and the damageability relationship by type of structure to the current distribution of exposures.

However, the New York State Department of Insurance does not approve of the inclusion of the results of a computer simulation model in loss cost filings. As such, the New York BP-2020-RLA1 filing is based on a more traditional ratemaking methodology.

To properly reflect the hurricane loss potential in the overall property loss cost indication, the experience period used in calculating the wind excess factors has been extended to include the effects of the 1938 hurricane, which did considerable damage to New York. (See Section C for details.)

The hurricane loss costs produced by the hurricane model, as well as the total property indication resulting from incorporating the use of the model, are furnished in this section as supplemental information. Note that the indication on Table S1-1 has not been filed with any Insurance Department. The calculation of ALCCL in the supplemental information is based off the assumption that loss costs incorporating the use of the hurricane model were previously filed.

The hurricane loss costs contained in this section are based on the Touchstone Version 7.0 of AIR Worldwide Corporation's (AIR) tropical cyclone model.

Highlights of the model updates include:

- Four new events have been added to the Historical Catalog - 2016 Hurricane Hermine, 2016 Hurricane Matthew, 2017 Hurricane Harvey, and 2017 Hurricane Irma.
- Event Descriptions - Updates have been made to parameters such as landfall area, coordinates, and maximum wind speed, for events that have been updated.
- Event-level demand surge factors have been updated.
- The Industry Exposure Database has been updated.
- Zip code boundaries, zip code population-weighted centroids and related zip code county/state mappings were updated

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##### OVERVIEW OF HURRICANE MODELED RATEMAKING

The model provides hurricane loss costs (expected hurricane losses per \$100 of replacement cost) by zip code, construction and coverage (building vs. contents vs. time element). The time element loss costs are loaded into buildings and contents using a 50%/50% allocation. These building and contents loss costs are then weighted together to derive expected hurricane loss costs for each rating territory and coverage, using the latest three years of Businessowners exposures. The expected hurricane loss costs are then adjusted to reflect a \$500 deductible level and all loss adjustment expenses. Finally, the loss costs are brought to a base loss cost level by dividing out the average relativity (excluding coverage). The non-hurricane portion of the prospective loss costs is calculated by applying the statewide non-hurricane change, based on the latest five years of non-hurricane experience, to the non-hurricane portion of the current loss costs. The revised loss costs are equal to the sum of the modeled hurricane loss costs and the non-hurricane portion of the prospective loss costs.

##### HURRICANE DEFINED

A hurricane is a tropical cyclone technically defined as a non-frontal, low pressure synoptic-scale system in which the maximum sustained surface wind speed is at least 74 miles per hour.

##### HURRICANE MODEL OVERVIEW

The model consists of several components or modules - an event generation, local intensity and damage module. The event generation module is used to create the stochastic storm catalog. Over 100 years of historical data on the frequency of hurricanes and their meteorological characteristics were used to fit statistical distributions for each parameter. By stochastically drawing from these distributions, the fundamental characteristics of each simulated storm are generated. These parameters include storm track, landfall location and track angle at landfall, and the intensity variables of central pressure, radius of maximum winds, and forward speed. The result is a large, representative catalog of potential events. The model generates simulated "years" of activity. A simulated year represents a hypothetical year of catastrophe experience, which could happen in the current year. The AIR model allows for the possibility of multiple events occurring within a single year. Many thousands of these scenarios are run to produce the complete and stable range of potential annual experience of catastrophe event activity as well as ensuring full coverage of extreme events.

Once the model generates the characteristics of a simulated event, it propagates the event along its track. Peak gust wind speeds and wind duration are estimated for each geographical location affected by the storm, and the local intensity is estimated as a function of the magnitude of the event, distance from the source of the event, and a variety of local conditions. Damageability functions are then used to determine the relationship between the local intensity and the resulting damage to buildings and contents. Expected hurricane losses are calculated by applying the appropriate damage functions to the replacement value of the insured properties.

Following is a discussion of those elements reflected in the AIR tropical cyclone model for the Gulf and Atlantic Coasts of the continental United States.

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#### EVENT GENERATION MODULE

The following storm characteristics are modeled as part of the event generation module.

**Frequency of Occurrence** – The model estimates frequency of occurrence based on tropical cyclones occurring since 1900.

**Landfall Location** – The model estimates the probability of a hurricane occurring at points along the smoothed coastline from Texas to Maine.

**Central Pressure** - Central pressure is the primary determinant of hurricane wind speed and therefore of intensity. All else being equal, as central pressure decreases, wind speeds increase or, more precisely, wind speed is an increasing function of the difference between the central and peripheral pressure.

**Radius of Maximum Winds** - The radius of maximum winds is the distance from the storm's center, or eye, to where the strongest winds are found. On average, the radius of maximum winds tends to be larger at higher latitudes. Similarly, the radius will be smaller, on average, for more intense storms. These relationships are explicitly accounted for in the model. While a smaller radius of maximum winds corresponds to greater storm intensity, it does not necessarily follow that losses will be greater. This is because a smaller radius usually results in a smaller affected area.

**Forward Speed** - Forward, or translational, speed is the rate at which a hurricane moves from point to point along its track. In general, the higher the latitude, the faster the hurricane's translational speed. Faster moving storms result in higher losses further inland. On the other hand, the faster a storm travels, the shorter the duration that a building is subjected to high wind speeds. In some areas, particularly along the coast, this can lead to lower losses than would otherwise be the case.

**Track Angle at Landfall** - Separate distributions for track angle at landfall are estimated for segments of coastline that are variable in length, depending upon the coastal orientation of that segment.

**Storm Track** - Once landfall location and the track angle at landfall are identified, the simulated storm track is generated using conditional probability matrices which resemble the curving and recurving tracks actually observed from the stochastic storm database.

**Multiple-Landfalling Storms** - In order to model multiple landfalling events as single storms, simulated storm tracks are joined statistically based on consistency of certain storm parameters.

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##### LOCAL INTENSITY MODULE

Once the model probabilistically generates the hurricane's meteorological characteristics, it simulates the storm's movement along its track. Calculations of local intensity begin with maximum over-water windspeed and adjustments are then made for the asymmetric nature of the hurricane windfield, storm filling over land, surface friction, and relative wind speed profiles.

**Asymmetry Effect** - In the Northern Hemisphere, hurricane winds rotate in a counter-clockwise direction. The combined effects of hurricane winds and forward motion (or translational speed) will produce higher wind speeds on the right-hand-band side of the storm. The model accounts for the dynamic interaction of the translational and rotational speeds, and the inflow angle.

**Filling Effect** - As the storm moves inland its intensity begins to dissipate. Central pressure rises and the eye of the hurricane begins to "fill" as it moves away from its energy source, i.e., warm ocean water. The model filling equations are a function of the geographic location (particularly distance from coastline) and the time elapsed since landfall. Rates of fill vary by region, as is consistent with historical observation.

**Surface Friction Effect** - Differences in surface terrain also affect windspeeds. Wind velocity profiles typically show higher wind speeds at higher elevations. Winds travel more slowly at ground-level because of the horizontal drag force of the earth's surface, or surface friction. The addition of obstacles such as buildings will further degrade wind speed. In general, the rougher the terrain, due to both natural and man-made obstacles, the more quickly wind speeds dissipate.

**Relative Wind Speeds** - The wind speed at any particular location is dependent on the radial distance between the eye of the storm and the location of interest.

##### DAMAGE ESTIMATION MODULE

The tropical cyclone model develops a complete time profile of wind speeds for each location affected by the storm, thus capturing the effect of wind duration on structures as well as the effect of peak wind speed. Damage estimation for hurricanes begins at sustained wind speeds of 40 mph and is calculated cumulatively until sustained winds are once again below 40 mph.

Separate damageability estimates exist by construction type (e.g., frame, joisted masonry, masonry non-combustible) and coverage (buildings vs. contents). Estimated hurricane damage is measured as the ratio of repair cost (i.e. hurricane losses) to the replacement cost.

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**DEMAND SURGE** Demand surge is an observable economic phenomenon of sudden inflation following a catastrophe. To the extent that individual insured properties' hurricane losses are partial, demand surge will raise the cost of covered losses, and consequently what the insurer ultimately pays. Demand surge is applied separately by coverage and varies by territory. One set of factors is applied to building and other structure losses. A factor of one is applied to contents losses, as AIR's research indicates that the items covered under contents coverage do not see significant price increases following catastrophic events.



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The following is an overview of the extended coverage ratemaking procedures incorporating computer modeled hurricane loss costs in the hurricane-prone states.

#### REMOVAL OF HURRICANE LOSSES

Property damage and time element losses due to hurricanes reflected in the modeled hurricane loss costs are excluded from the extended coverage loss database. Storm track data from several meteorological sources are analyzed to determine the date, location, and wind speed of each hurricane during the experience period, and those losses incurred during the month of a hurricane reflected in the model are replaced with the average monthly non-hurricane losses for each rating territory. The resulting non-hurricane losses are used in the calculation of the statewide non-hurricane coverage change and excess procedure.

#### EXCESS PROCEDURE

The excess procedure has been revised to smooth catastrophic losses due to perils other than hurricane and it reflects long term excess potential exhibited on a state and regional basis. Property damage and time element losses incurred during the month of a hurricane have been replaced by average non-hurricane losses as described above. The normal loss ratio cutoff for each month is 2.0. From this follows the following definitions:

$$\text{Loss Ratio (LR)} = \frac{\text{Non - Hurricane Losses}}{\text{Earned Premium}}$$

$$\text{State Excess Loss Ratio (SELR)} = \frac{20(\text{LR}-2.0)}{(\text{LR}-2.0)+20}, \text{ (if LR > 2.0)}$$

$$\text{Normal Loss Ratio Cutoff (NLRC)} = 2.0$$

Normal Loss Ratio (NLR) = the lesser of the Loss Ratio and the NLRC

$$\text{Regional Excess Loss Ratio (RELR)} = \text{LR} - \text{SELR} - \text{NLR}$$

These ratios are calculated by month. Annual ratios are calculated by summing the monthly losses in each category, and dividing by the earned premium for that particular year.

The Excess Multiplier is equal to the state excess component plus 1.000, times the regional excess component plus 1.000, and is applied to the normal non-hurricane losses used in the statewide experience review.

The Normal incurred losses for each month are those losses which do not exceed 2.0 times the earned premium for the month. The Excess incurred losses for each year are equal to the Incurred losses minus the Normal losses for the year.

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##### STATEWIDE EXPERIENCE LEVEL REVIEW

The statewide experience review (Table S1-1) is based on the latest five years of non-hurricane loss experience. The losses are normal non-hurricane losses (i.e., hurricane losses reflected by the model have been replaced by average non-hurricane losses and the resulting losses have been capped at 2.0 times the earned premium for each month), multiplied by the excess multiplier, loss adjustment expense factor and trend factors. The non-hurricane aggregate loss costs are at current manual level and have been trended to the average date of writing in the assumed effective period.

##### MODELED HURRICANE LOSS COSTS

The model produces hurricane loss costs (expected hurricane loss per \$100 of replacement cost) by zip code, coverage (buildings, contents and time element), and construction. The time element loss costs are loaded into buildings and contents using a 50%/50% allocation. These building and contents loss costs are then weighted together to derive expected hurricane loss costs for each rating territory and coverage, using the latest three years of Businessowners exposures.

The expected hurricane loss costs are then adjusted to reflect a \$500 deductible level and all loss adjustment expenses. The loss costs are brought to a base loss cost level by dividing out the average relativity (excluding coverage).

The present and revised modeled hurricane loss costs are displayed in Table S3.

##### LOSS COST LEVEL CHANGES

The statewide change shown on Table S1-2 is calculated as a weighted average of the individual loss cost changes for each territory (where applicable), occupancy, protection, construction, etc.

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BUSINESSOWNERS - PROPERTY  
SUPPLEMENTARY INFORMATION  
TABLE S1-1

CALCULATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGE

|   | (1)   | (2)   | (3)                        | (3a)                             | (3b)      | (3c)        | (3d)       |
|---|---|---|----------------------------|----------------------------------|-----------|-------------|------------|
| Fiscal Year<br><u>Ending</u>                          | Aggregate<br>Loss Costs at<br><u>Current Level(a)</u> | Incurred<br>Losses and<br>Loss Adjustment<br><u>Expenses(b)</u> | Experience<br><u>Ratio</u> | <u>Partial Experience Ratios</u> |           |             |            |
|   |   |   |                            | <u>Fire</u>                      | <u>EC</u> | <u>Burg</u> | <u>AOP</u> |
| 6/30/2015   | \$ 51,474,472   | \$ 59,203,265   | 1.150                      | 0.426                            | 0.031     | 0.023       | 0.671      |
| 6/30/2016   | 49,367,980  | 48,256,374  | 0.977                      | 0.373                            | 0.035     | 0.018       | 0.551      |
| 6/30/2017   | 58,621,899  | 47,385,553  | 0.808                      | 0.324                            | 0.062     | 0.017       | 0.405      |
| 6/30/2018   | 65,246,622  | 63,353,731  | 0.971                      | 0.338                            | 0.082     | 0.016       | 0.535      |
| 6/30/2019   | 68,909,240  | 64,627,359  | 0.938                      | 0.301                            | 0.070     | 0.017       | 0.550      |
| (4) Weighted Experience Ratio                         |   |   | =                          | 0.947                            |           |             |            |
| (5) Credibility                                       |   |   | =                          | 1.000                            |           |             |            |
| (6) Expected Experience Ratio                         |   |   | =                          | 1.002                            |           |             |            |
| (7) Credibility-Wtd. Experience Ratio                 |   |   | =                          | 0.947                            |           |             |            |
| (8) Indicated Non-Hurricane Loss Cost Level Change(c) |   |   | =                          | 0.947                            | or        | -5.3%       |            |
| (9) Selected Non-Hurricane Loss Cost Level Change     |   |   | =                          | -5.3%                            |           |             |            |
| (10) Indicated Total Loss Cost Level Change           |   |   | =                          | 0.927                            | or        | -7.3%       |            |
| (11) Selected Total Loss Cost Level Change            |   |   | =                          | -7.3%                            |           |             |            |

(a) Excludes the hurricane portion of the current loss costs.

(b) Excludes hurricane losses.

(c) Average loss cost change to current loss cost if there was to be no funding for potential hurricane (i.e. modeled) losses.

NOTE: The assumed effective date for trending is 12/1/2020.

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COLUMN (1)

AGGREGATE LOSS COSTS AT CURRENT LEVEL

In this analysis, aggregate loss costs at current level are calculated by re-rating each policy premium transaction using the current manual loss costs, excluding the hurricane portion of the current loss costs, and applicable rating variables such as territory, occupancy and building construction, and the number of exposures (buildings or contents amount of insurance in hundreds of dollars, payroll in thousands of dollars). Where appropriate, certain reported data elements have been adjusted prior to being used in the calculations. In addition, exposures are trended using exposure trend factors developed from Commercial Property and General Liability data as shown in Section C.

COLUMN (2)

INCURRED LOSSES AND LOSS ADJUSTMENT EXPENSES

The incurred losses displayed are losses including all loss adjustment expenses and trend, and for liability are developed to an ultimate settlement basis. Where appropriate, certain reported data elements have been adjusted prior to being used in the calculations. In this review, the assumed effective date for trending purposes is December 1, 2020.

Businessowners losses are adjusted separately by type of loss. Each Businessowners loss is assigned to one of the following type of loss groups: fire, extended coverage (wind, hail, explosion, vandalism and malicious mischief, and riot), all other property, burglary and theft, or liability. Adjustment procedures by type of loss group are summarized below and detailed in Section C.

Adjustment of Fire Losses

Fire losses are trended and loaded for all loss adjustment expenses. Large fire losses have been smoothed by calculating the normal portion of each loss and replacing the actual excess portion with an expected excess amount.

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COLUMN (2)  
(Cont'd)

##### Adjustment of Extended Coverage Losses

Extended coverage losses are trended and loaded for all loss adjustment expenses. Property damage and time element losses due to hurricanes reflected in the modeled hurricane loss costs have been removed from the experience and replaced with average non-hurricane losses for each rating territory and loss month. Abnormal non-hurricane extended coverage losses have been smoothed by calculating normal losses and accounting for non-hurricane excess losses by applying a state excess multiplier to the normal losses.

##### Adjustment of All Other Property Losses

All other property losses are trended and loaded for all loss adjustment expenses. Large all other property losses have been smoothed by calculating normal losses and accounting for excess losses by applying a state excess multiplier to the normal losses.

##### Adjustment of Burglary and Theft Losses

Burglary and theft losses are trended and loaded for all loss adjustment expenses. Large burglary and theft losses have been smoothed by calculating the normal portion of each loss and replacing the actual excess portion with an expected excess amount.

##### Adjustment of Liability Losses

Liability losses are trended and loaded for unallocated loss adjustment expenses. Liability losses are also adjusted to their ultimate settlement value by application of loss development factors.

Businessowners basic limits coverage includes \$300,000 for liability. Therefore, liability losses greater than \$300,000 are excluded from this analysis. Losses between \$50,000 and \$300,000 are smoothed by replacing actual excess losses with expected excess losses.

COLUMN (3)

##### EXPERIENCE RATIO

The experience ratios in this column are calculated by dividing the incurred losses and loss adjustment expenses in column (2) by the aggregate loss costs at current level in column (1).

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COLUMNS (3a)-(3d)

PARTIAL EXPERIENCE RATIOS

Partial experience ratios are displayed for each of the four Property type of loss groups. These partial experience ratios are calculated by taking the ratio of the incurred losses and loss adjustment expenses in each of the groups to the indivisible aggregate loss costs at current level in column (1). Because all these ratios are rounded, the sum of the partial experience ratios in columns (3a) to (3d) may not exactly equal the total experience ratio in column (3).

Line (4)

WEIGHTED EXPERIENCE RATIO

The experience ratios shown in column (3) are weighted using weights of .10, .15, .20, .25 and .30 from earliest to most recent accident year.

Line (5)

CREDIBILITY

Credibility is based on the five year number of earned risks. See "Explanatory Notes to Relative Change Analysis" in Section B.

Line (6)

EXPECTED EXPERIENCE RATIO

The expected experience ratio is our best prediction of the experience ratio if the most recent data was not available. For this review we have assumed that the current loss costs were adequate when implemented and will be inadequate for the prospective period to the extent of the net trend. The net trend is calculated as the combined trend factor (loss trend/premium trend) projected for the number of years between the last revision (or review) and this revision. See Table B3.

Line (7)

CREDIBILITY WEIGHTED EXPERIENCE RATIO

The credibility weighted experience ratio is calculated using the formula:

$$(WER) (Z) + (EER) (1 - Z)$$

where WER = Weighted Experience Ratio  
Z = Credibility Factor  
EER = Expected Experience Ratio

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Line (8) INDICATED NON-HURRICANE LOSS COST LEVEL CHANGE

The indicated statewide non-hurricane loss cost level change is equal to the credibility weighted experience ratio. The indication is converted to a percentage by subtracting one, and multiplying by 100.

Line (9) SELECTED NON-HURRICANE LOSS COST LEVEL CHANGE

The selected non-hurricane loss cost level change is equal to the indicated non-hurricane loss cost level change.

Line (10) INDICATED TOTAL LOSS COST LEVEL CHANGE

The indicated total loss cost level change results from combining the indicated non-hurricane loss costs with the hurricane loss costs.

Line (11) SELECTED TOTAL LOSS COST LEVEL CHANGE

The selected total loss cost level change is equal to the indicated total loss cost level change.

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BUSINESSOWNERS  
SUPPLEMENTARY INFORMATION  
TABLE S1-2

LOSS COST LEVEL CHANGES

PROPERTY

Buildings

| <u>Territory</u> | <u>Aggregate Loss Costs<br/>at Current Level(a)</u> | <u>Loss Cost<br/>Level Changes</u> |
|------------------|---|------------------------------------|
| 2                | \$ 946,219  | -3.7%                              |
| 3                | 962,729   | -7.9%                              |
| 4                | 606,988   | -5.2%                              |
| 5                | 139,265   | -0.4%                              |
| 6                | 270,050   | +2.5%                              |
| 7                | 2,330,324   | -10.4%                             |
| 8                | 427,654   | -6.7%                              |
| 9                | 1,091,594   | -8.8%                              |
| 11               | 818,089   | -6.7%                              |
| 13               | 3,082,028   | -2.1%                              |
| 14               | 2,167,027   | -3.6%                              |
| 15               | 1,535,016   | -5.9%                              |
| 16               | 2,227,345   | -40.1%                             |
| 17               | 2,427,267   | +0.9%                              |
| 19               | 3,575,845   | -13.3%                             |
| 20               | 7,881   | -12.6%                             |
| 21               | 1,836,634   | +2.6%                              |
| 27               | 4,771,171   | -2.0%                              |
| 28               | 4,070,099   | -5.4%                              |
| 29               | 428,139   | -1.3%                              |
| 30               | 1,418,072   | -6.8%                              |
| 31               | 1,813,241   | -5.8%                              |
| 32               | 2,251,784   | -11.0%                             |
| 33               | 1,285,067   | -2.2%                              |
| 34               | 903   | -40.9%                             |
| 35               | 10,878  | -13.6%                             |
| 36               | 151,867   | -7.3%                              |
| 38               | 1,031,118   | -3.8%                              |
| 39               | 1,362,922   | -3.9%                              |
| Statewide Total  | \$ 43,047,214                                       | -7.0%                              |

(a) Includes the hurricane portion of the current loss costs.



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SUPPLEMENTARY INFORMATION  
TABLE S1-2 (Cont'd)

SELECTED LOSS COST LEVEL CHANGES

| PROPERTY                    |   |                                    |
|-----------------------------|---|------------------------------------|
| <u>Business Pers. Prop.</u> |   |                                    |
| <u>Territory</u>            | <u>Aggregate Loss Costs<br/>at Current Level(a)</u> | <u>Loss Cost<br/>Level Changes</u> |
| 2                           | \$ 347,676  | -9.4%                              |
| 3                           | 703,940   | -9.4%                              |
| 4                           | 411,570   | -10.3%                             |
| 5                           | 115,783   | -6.1%                              |
| 6                           | 85,456  | -3.1%                              |
| 7                           | 2,437,583   | -9.6%                              |
| 8                           | 198,875   | -12.1%                             |
| 9                           | 923,219   | -10.7%                             |
| 11                          | 525,926   | -4.9%                              |
| 13                          | 1,205,499   | -7.1%                              |
| 14                          | 793,351   | -8.5%                              |
| 15                          | 908,583   | -11.4%                             |
| 16                          | 1,218,278   | -5.1%                              |
| 17                          | 1,071,135   | -5.6%                              |
| 19                          | 2,111,100   | -16.9%                             |
| 20                          | 33,432  | -16.4%                             |
| 21                          | 998,245   | -3.0%                              |
| 27                          | 4,429,950   | -2.9%                              |
| 28                          | 3,058,456   | -6.7%                              |
| 29                          | 419,123   | -4.8%                              |
| 30                          | 4,574,625   | -9.7%                              |
| 31                          | 3,669,524   | -8.4%                              |
| 32                          | 1,133,103   | -12.9%                             |
| 33                          | 2,241,724   | -2.6%                              |
| 34                          | 2,334   | -15.1%                             |
| 35                          | 14,486  | -4.0%                              |
| 36                          | 175,114   | -5.7%                              |
| 38                          | 605,848   | -5.8%                              |
| 39                          | 514,493   | -5.8%                              |
| Statewide Total             | \$ 34,928,430                                       | -7.7%                              |

(a) Includes the hurricane portion of the current loss costs.

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TABLE S1-2 (Cont'd)

SELECTED LOSS COST LEVEL CHANGES

| PROPERTY            |   |                                    |
|---------------------|---|------------------------------------|
| <u>All Property</u> |   |                                    |
| <u>Territory</u>    | <u>Aggregate Loss Costs<br/>at Current Level(a)</u> | <u>Loss Cost<br/>Level Changes</u> |
| 2                   | \$ 1,293,895  | -5.2%                              |
| 3                   | 1,666,669   | -8.5%                              |
| 4                   | 1,018,558   | -7.3%                              |
| 5                   | 255,047   | -3.0%                              |
| 6                   | 355,505   | +1.2%                              |
| 7                   | 4,767,907   | -10.0%                             |
| 8                   | 626,530   | -8.4%                              |
| 9                   | 2,014,813   | -9.7%                              |
| 11                  | 1,344,015   | -6.0%                              |
| 13                  | 4,287,527   | -3.5%                              |
| 14                  | 2,960,377   | -4.9%                              |
| 15                  | 2,443,599   | -7.9%                              |
| 16                  | 3,445,623   | -27.7%                             |
| 17                  | 3,498,402   | -1.1%                              |
| 19                  | 5,686,945   | -14.6%                             |
| 20                  | 41,312  | -15.7%                             |
| 21                  | 2,834,879   | +0.6%                              |
| 27                  | 9,201,121   | -2.4%                              |
| 28                  | 7,128,555   | -6.0%                              |
| 29                  | 847,262   | -3.0%                              |
| 30                  | 5,992,697   | -9.0%                              |
| 31                  | 5,482,765   | -7.5%                              |
| 32                  | 3,384,886   | -11.6%                             |
| 33                  | 3,526,791   | -2.5%                              |
| 34                  | 3,237   | -22.3%                             |
| 35                  | 25,364  | -8.1%                              |
| 36                  | 326,981   | -6.4%                              |
| 38                  | 1,636,966   | -4.5%                              |
| 39                  | 1,877,415   | -4.4%                              |
| Statewide Total     | \$ 77,975,644                                       | -7.3%                              |

(a) Includes the hurricane portion of the current loss costs.

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TABLE S2

DEVELOPMENT OF EXTENDED COVERAGE EXCESS MULTIPLIER\*

|   | (1)        | (2)       | (3)       | (4)    | (5)   | (6)      |
|---|------------|-----------|-----------|--------|-------|----------|
| YEAR  | EARNED     | INCURRED  | NORMAL    | NORMAL | STATE | REGIONAL |
| ENDING  | PREMIUMS   | LOSSES    | INCURRED  | LOSS   | LOSS  | LOSS     |
|   |            |           | LOSSES    | RATIO  | RATIO | RATIO    |
| 6/30/1990   | 4,631,942  | 3,898,040 | 3,898,037 | 0.842  |       |          |
| 6/30/1991   | 5,132,990  | 6,068,293 | 6,001,081 | 1.169  | 0.013 |          |
| 6/30/1992   | 5,296,745  | 4,120,316 | 4,120,312 | 0.778  |       |          |
| 6/30/1993   | 5,607,309  | 7,984,548 | 5,115,453 | 0.912  | 0.444 | 0.068    |
| 6/30/1994   | 5,976,884  | 2,845,092 | 2,845,094 | 0.476  |       |          |
| 6/30/1995   | 6,280,118  | 2,313,297 | 2,313,290 | 0.368  |       |          |
| 6/30/1996   | 6,346,455  | 6,519,512 | 5,786,890 | 0.912  | 0.108 | 0.008    |
| 6/30/1997   | 6,189,987  | 4,362,350 | 4,053,773 | 0.655  | 0.048 | 0.001    |
| 6/30/1998   | 6,154,625  | 4,583,906 | 3,589,008 | 0.583  | 0.147 | 0.015    |
| 6/30/1999   | 6,952,874  | 9,409,476 | 3,819,263 | 0.549  | 0.568 | 0.236    |
| 6/30/2000   | 6,769,735  | 5,136,574 | 4,089,923 | 0.604  | 0.141 | 0.014    |
| 6/30/2001   | 6,895,665  | 2,944,082 | 2,944,081 | 0.427  |       |          |
| 6/30/2002   | 7,242,748  | 4,668,327 | 4,590,766 | 0.634  | 0.011 |          |
| 6/30/2003   | 7,604,012  | 2,894,530 | 2,894,537 | 0.381  |       |          |
| 6/30/2004   | 7,995,526  | 3,516,589 | 3,516,602 | 0.440  |       |          |
| 6/30/2005   | 8,529,960  | 3,063,157 | 3,063,139 | 0.359  |       |          |
| 6/30/2006   | 8,895,537  | 3,729,511 | 3,729,514 | 0.419  |       |          |
| 6/30/2007   | 9,485,367  | 4,325,619 | 4,325,626 | 0.456  |       |          |
| 6/30/2008   | 9,896,707  | 4,105,606 | 4,105,591 | 0.415  |       |          |
| 6/30/2009   | 9,844,244  | 2,135,045 | 2,135,067 | 0.217  |       |          |
| 6/30/2010   | 9,685,736  | 9,333,548 | 5,940,831 | 0.613  | 0.288 | 0.062    |
| 6/30/2011   | 9,418,083  | 5,527,268 | 5,527,276 | 0.587  |       |          |
| 6/30/2012   | 8,695,523  | 5,012,136 | 4,576,626 | 0.526  | 0.049 | 0.002    |
| 6/30/2013   | 7,766,799  | 8,169,454 | 4,723,615 | 0.608  | 0.352 | 0.092    |
| 6/30/2014   | 7,857,479  | 3,328,217 | 2,889,743 | 0.368  | 0.054 | 0.002    |
| 6/30/2015   | 8,024,423  | 945,146   | 945,146   | 0.118  |       |          |
| 6/30/2016   | 8,044,073  | 1,015,096 | 1,015,100 | 0.126  |       |          |
| 6/30/2017   | 8,744,657  | 4,218,315 | 3,123,003 | 0.357  | 0.116 | 0.009    |
| 6/30/2018   | 9,551,351  | 5,835,362 | 4,984,762 | 0.522  | 0.085 | 0.004    |
| 6/30/2019   | 10,093,486 | 3,779,374 | 3,779,393 | 0.374  |       |          |
| TOTALS  |            |           |           | 15.796 | 2.424 | 0.513    |
| (7) STATE EXCESS COMPONENT = ( TOTAL (5) / TOTAL (4) )  |            |           |           |        | 0.153 |          |
| (8) REGIONAL EXCESS COMPONENT                           |            |           |           |        | 0.086 |          |
| (9) STATE EXCESS MULTIPLIER = ( 1 + (7) ) x ( 1 + (8) ) |            |           |           |        | 1.252 |          |

\* LOSSES INCURRED DURING THE MONTH OF A HURRICANE HAVE BEEN REPLACED WITH AVERAGE MONTHLY NON-HURRICANE LOSSES.

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OBJECTIVE

Due to the absence or presence of catastrophic wind losses, Extended Coverage (EC) experience can be extremely volatile; in recognition of this, an excess loss procedure is used to smooth the losses incurred during the experience period. Under this approach a given year's aggregate losses are split into normal and excess components (defined below). The excess loss experience of the long term review period (1990-present) is used to develop a state excess multiplier which is applied to the normal losses for each accident year. The state excess multiplier is derived in such a manner as to provide an estimate, based on the long term experience, of the expected volume of excess loss dollars per normal loss dollar in the review period. Therefore, by applying the state excess multiplier to each year's normal incurred losses, a normal review period ratemaking database is generated which reflects both normal loss experience and the expected, average annual excess loss experience (averaged over the long term review period). The calculation of the state excess multiplier gives consideration to three layers of losses: normal, state excess, and regional excess.

COLUMN (1)

EARNED PREMIUMS

The earned premiums for EC are a portion of the total earned premium obtained by multiplying each individual year's statewide unadjusted earned premium by its long-term ratio of unadjusted EC losses to total losses.

COLUMN (2)

INCURRED NON-HURRICANE LOSSES

The unadjusted non-hurricane incurred losses are shown for each year.

COLUMN (3)

NORMAL INCURRED NON-HURRICANE LOSSES

Normal losses are defined as that portion of each month's non-hurricane losses which does not exceed the normal loss ratio cutoff, aggregated by fiscal year.

Note: 2.0 times the monthly earned premiums are defined to be the normal loss ratio cutoff.

COLUMN (4)

NORMAL LOSS RATIO

Normal loss ratios (NLR) are calculated by dividing the normal losses in Column (3) by the earned premiums in Column (1).

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COLUMN (5)

STATE EXCESS LOSS RATIO

Excess losses are the portion of incurred losses exceeding the normal. Excess losses allocated to the state are determined on a monthly basis by the following formula:

Excess Loss = Excess Loss Ratio x Earned Premium, where

$$\text{Excess Loss Ratio} = \frac{20(\text{LR}-2.0)}{(\text{LR}-2.0)+20} \quad (\text{if LR} > 2.0), \text{ and}$$

LR = the monthly loss ratio.

State excess losses are the sum of the monthly excess losses calculated above, aggregated by fiscal year. The state excess loss ratio (SELR) is simply the state excess losses divided by the earned premiums in Column (1).

COLUMN (6)

REGIONAL EXCESS LOSS RATIO

If the unadjusted loss ratio (ULR) is greater than the normal loss ratio (NLR) then the regional excess loss ratio is:

$$\text{Regional Excess Loss Ratio} = \text{ULR} - \text{SELR} - \text{NLR}$$

where SELR = the State Excess Loss Ratio, Column (5),

NLR = the Normal Loss Ratio, Column (4), and

ULR = the Unadjusted Loss Ratio, Column(2) / Column(1).

LINE (7)

STATE EXCESS COMPONENT

The State Excess Component is determined by dividing the sum of all state excess loss ratios by the sum of all normal loss ratios (where the sum is taken across all accident years).

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LINE (8)

REGIONAL EXCESS COMPONENT

The Regional Excess component is determined by dividing the weighted average (determined, in each case, against the latest year unadjusted earned premium distribution) of the sum of Regional Excess Loss Ratios of all the states in the region by the weighted average of the sum of all loss ratio points retained by a state (Normal and State Excess Loss Ratios) of all the states in the region.

LINE (9)

STATE EXCESS MULTIPLIER

The State Excess Multiplier is derived by taking the product of the State Excess Component and the Regional Excess Component.

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BUSINESSOWNERS  
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TABLE S3  
PRESENT AND REVISED MODELED HURRICANE LOSS COSTS

PRESENT HURRICANE LOSS COSTS

REVISED HURRICANE LOSS COSTS

| PROPERTY         |                  |                                  | PROPERTY         |                  |                                  |
|------------------|------------------|----------------------------------|------------------|------------------|----------------------------------|
|                  |                  | Business<br>Personal<br>Property |                  |                  | Business<br>Personal<br>Property |
| <u>Territory</u> | <u>Buildings</u> | <u>Property</u>                  | <u>Territory</u> | <u>Buildings</u> | <u>Property</u>                  |
| 2                | 0.005            | 0.004                            | 2                | 0.006            | 0.004                            |
| 3                | 0.058            | 0.020                            | 3                | 0.047            | 0.019                            |
| 4                | 0.002            | 0.001                            | 4                | 0.002            | 0.001                            |
| 5                | 0.002            | 0.001                            | 5                | 0.003            | 0.001                            |
| 6                | 0.001            | 0.001                            | 6                | 0.001            | 0.001                            |
| 7                | 0.066            | 0.029                            | 7                | 0.048            | 0.026                            |
| 8                | 0.002            | 0.001                            | 8                | 0.002            | 0.001                            |
| 9                | 0.065            | 0.024                            | 9                | 0.055            | 0.023                            |
| 11               | 0.062            | 0.024                            | 11               | 0.047            | 0.023                            |
| 13               | 0.009            | 0.004                            | 13               | 0.009            | 0.005                            |
| 14               | 0.002            | 0.001                            | 14               | 0.001            | 0.001                            |
| 15               | 0.003            | 0.001                            | 15               | 0.003            | 0.001                            |
| 16               | 0.200            | 0.057                            | 16               | 0.086            | 0.045                            |
| 17               | 0.003            | 0.002                            | 17               | 0.004            | 0.002                            |
| 19               | 0.003            | 0.001                            | 19               | 0.001            | 0.001                            |
| 20               | 0.047            | 0.017                            | 20               | 0.040            | 0.015                            |
| 21               | 0.008            | 0.005                            | 21               | 0.008            | 0.005                            |
| 27               | 0.041            | 0.013                            | 27               | 0.034            | 0.015                            |
| 28               | 0.049            | 0.019                            | 28               | 0.041            | 0.019                            |
| 29               | 0.035            | 0.013                            | 29               | 0.031            | 0.013                            |
| 30               | 0.041            | 0.014                            | 30               | 0.034            | 0.013                            |
| 31               | 0.038            | 0.013                            | 31               | 0.031            | 0.013                            |
| 32               | 0.037            | 0.015                            | 32               | 0.030            | 0.015                            |
| 33               | 0.043            | 0.018                            | 33               | 0.034            | 0.016                            |
| 34               | 0.062            | 0.020                            | 34               | 0.029            | 0.018                            |
| 35               | 0.171            | 0.057                            | 35               | 0.129            | 0.060                            |
| 36               | 0.056            | 0.025                            | 36               | 0.040            | 0.022                            |
| 38               | 0.033            | 0.014                            | 38               | 0.028            | 0.014                            |
| 39               | 0.040            | 0.011                            | 39               | 0.035            | 0.011                            |