

LOSS COSTS – IMPLEMENTATION

APRIL 24, 2019

COMMERCIAL PROPERTY

LI-CF-2019-023

## ARIZONA COMMERCIAL FIRE AND ALLIED LINES ADVISORY PROSPECTIVE LOSS COST REVISION TO BE IMPLEMENTED

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### KEY MESSAGE

Revised advisory prospective loss costs reflecting a statewide loss cost level change of **+1.8%** to be implemented.

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### BACKGROUND

In circular [LI-CF-2019-018](#), we provided you with information about the Commercial Fire and Allied Lines loss cost level experience review.

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### ISO ACTION

We are implementing CF-2019-RLA1, which presents a review of Commercial Fire and Allied Lines loss cost experience. Refer to the attachment(s) for complete details.

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### SUPPLEMENTARY INFORMATION

We are including the following supplementary information:

- An Actuarial Analysis Supplement which provides discussion and analysis of changes in the experience and adjustments used to derive the loss cost level analysis.
- The loss cost exhibits contained in this filing in a Microsoft® Excel workbook.

NOTE: This supplementary information is **not** part of the experience review document and, in states where we are making a filing, is **not** part of the filing.

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### EFFECTIVE DATE

The ISO revision is subject to the following rule of application:

These changes are applicable to all policies **written** on or after October 1, 2019.

The effective date applies only to those insurers who have filed their Commercial Fire and Allied Lines loss cost adjustments to be automatically applicable to future ISO loss cost revisions.

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### IMPACT ON THE STATISTICAL REPORTING OF LOSS COST MULTIPLIER

For the purpose of reporting your company Loss Cost Multiplier under the CSP, as of October 1, 2019, the multiplier must be based on the relationship between your gross rates and the ISO advisory prospective loss costs contained in this circular.

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## COMPANY ACTION

You must independently determine the final rates you will use. The action, if any, you must take in response to this filing is dependent upon how you filed to have your loss cost adjustments apply to subsequent revisions of ISO loss costs. Any submission you make with respect to this revision must comply with applicable regulatory filing requirements.

For guidance on submission requirements, consult the ISO State Filing Handbook.

WE WILL SUBMIT OUR REFERENCE FILING TO THE INSURANCE DEPARTMENT ON **SEPTEMBER 20, 2019**. ANY SUBMISSION YOU MAY MAKE WITH THE INSURANCE DEPARTMENT WITH RESPECT TO THIS FILING SHOULD NOT BE SUBMITTED PRIOR TO THIS DATE.

In all correspondence with the Insurance Department on this revision, you should refer to ISO Reference Filing Number CF-2019-RLA1, NOT this circular number.

CAUTION: This reference filing revises only certain advisory prospective loss costs for Commercial Fire and Allied Lines in this state. In determining whether or not to revise your rates, you should consider the application of your loss cost adjustments to any loss costs not included in this revision.

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## RATING SOFTWARE IMPACT

No new attributes are being introduced with this revision.

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## POLICYHOLDER NOTIFICATION

If you decide to implement this revision, you should check all applicable laws for the state(s) to which this revision applies, to determine whether or not a specific policyholder notice requirement may apply. Please note that circular [LI-CL-2018-044](#) contains the ISO Guide To Renewals With Changed Conditions For Commercial Lines, which is available only as a guide to assist participating companies in complying with various conditional renewal statutes or regulations, for the major commercial lines of insurance serviced by ISO. The information in the Guide does not necessarily reflect all requirements or exceptions that may apply, and it is not intended as a substitute for your review of all applicable statutes and regulations concerning policyholder notification.

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## REVISION DISTRIBUTION INFORMATION

- **Manual And ISO Suite**

We will issue a Notice to Manualholders with an edition date of 10-19 (or the earliest possible subsequent date), along with any new and/or revised manual pages.

- **ProMetrix**

Revised loss costs for specifically rated and class-rated properties contained in ProMetrix will be displayed as "Pending" beginning on June 10, 2019. On October 1, 2019, these loss costs will move to "Current" status. The previous "Current" becomes the most recent "Prior" and joins all previously displayed "Priors". With each subsequent loss cost revision, we will make an additional "Prior" available. Information in ProMetrix will distinguish between loss costs which reflect the effect of limit of insurance (LOI) relativities and pre-LOI loss costs.

- **Toll-free Telephone Service**

Revised loss costs for specifically rated and class-rated properties will be available by calling toll-free 1-800-444-4554 and requesting "Pending" from June 10, 2019 to October 1, 2019. On October 1, 2019, these loss costs will move to "Current" status. The previous "Current" becomes the most recent "Prior" and joins all previously displayed "Priors". With each subsequent loss cost revision, we will make an additional "Prior" available. Information available via toll-free telephone service will distinguish between loss costs which reflect the effect of limit of insurance (LOI) relativities and pre-LOI loss costs.

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## REFERENCE(S)

- [LI-CF-2019-018](#) (03/13/2019) Commercial Fire And Allied Lines Experience Level Indications Reviewed By ISO Staff
- [LI-CL-2018-044](#) (11/27/2018) Revised Lead Time Requirements Listing

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## ATTACHMENT(S)

- CF-2019-RLA1
- Actuarial Analysis Supplement
- Excel Workbook

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## FILES AVAILABLE FOR DOWNLOAD

To download all files associated with this circular, including attachments in the full circular PDF and/or any additional files not included in the PDF, search for the circular number on [ISOnet Circulars](#). Then click the Word/Excel link under the Full Circular column on the Search Results screen.

Please note that in some instances, not all files listed in the Attachment(s) block (if applicable) are included in the PDF.

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## ACKNOWLEDGMENT OF ACTUARIAL QUALIFICATIONS

The American Academy of Actuaries' "Qualification 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 review a Statement of Actuarial Opinion; therefore we are including the following acknowledgment:

I, Rimma Maasbach, am an Actuarial Consultant in Actuarial Operations for ISO and I, Bei Zhou, am an Actuarial Product Director for Commercial Property 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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## XACTWARE SOLUTIONS, INC.

This filing incorporates the use of pricing data from Xactware Solutions, Inc., to estimate trends in building costs for commercial properties. Xactware provides computer software solutions for professionals involved in estimating all phases of building construction and repair. The company has been providing building cost data, estimate tracking and data trending to the insurance repair market since 1986. Insurance carriers using Xactware data are responsible for settlement of the majority of property claims in the USA and Canada.

For more information concerning Xactware Solutions, Inc., please see the Contact Information block.

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## CONTACT INFORMATION

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Callers outside the United States, Canada, and the Caribbean may contact us using our global toll-free number (International Access Code + 800 48977489). For information on all ISO products, visit us at [www.verisk.com/iso](http://www.verisk.com/iso). To keep abreast of the latest Insurance Lines Services updates, view [www.verisk.com/ils](http://www.verisk.com/ils).

## ARIZONA

### COMMERCIAL FIRE AND ALLIED LINES INSURANCE PROSPECTIVE LOSS COST LEVEL REVISION EXECUTIVE SUMMARY

#### PURPOSE

This document:

- revises advisory prospective loss costs. These loss costs represent a +1.8% statewide change from the current ISO loss costs.
  - provides the analyses used to derive the prospective loss costs based on experience through calendar/accident year ending 03/31/2018, evaluated as of 06/30/2018.
  - removes the Rating ID dimension (class vs. specifically-rated) from the Basic Group I relativity analysis on Table 8 since it is not expected that loss cost indications should vary by rating method. \_\_\_\_\_
- 

#### DEFINITION OF THE ISO PROSPECTIVE LOSS COST

Advisory prospective loss costs in this document are the expected value of that portion of a rate that does not include provisions for expenses (other than loss adjustment expenses) or profit, and are based on historical aggregate losses and loss adjustment expenses adjusted and projected through trending to a future point in time.

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#### LOSS COST LEVEL CHANGES

The statewide monoline prospective loss cost level changes are:

Coverage	Filed
Basic Group I	+3.5%
Basic Group II	-6.6%
Special Causes of Loss	+5.8%
Total	+1.8%

Filed loss cost level changes are changes from the current loss cost level.

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PRIOR ISO  
REVISIONS

The latest revisions in this state are:

<u>Reference Document or Filing</u>	CF-2017-RLA1	CF-2015-RLA1
<u>Rates/ Loss Costs</u>	Loss Costs	Loss Costs
<u>Dates Implemented</u>	12/01/2017	12/01/2015
<u>Changes</u>		
Basic Group I	-8.1%	-5.3%
Basic Group II	+6.5%	+8.5%
Special Causes of Loss	-0.2%	+8.6%
Total	-2.2%	+1.5%

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HISTORICAL  
SOURCE DATA

The data used in this revision is:

- Voluntary experience for ISO reporting companies.
  - Five calendar/accident years ending 03/31/2018 for Basic Group I and Special Causes of Loss.
  - Ten calendar/accident years ending 03/31/2018 for Basic Group II.
- 

DISTRIBUTION  
OF STATEWIDE  
MONOLINE  
LOSS COST  
CHANGES

ISO has distributed the statewide monoline prospective loss cost changes as follows:

- by rating group and territory (where applicable) for Basic Group I.
- by category (building coverage and occupancy type) for Special Causes of Loss.

This has been done based on the experience of each rating group and territory (where applicable), or category for Basic Group I and Special Causes of Loss. Therefore, the resulting changes will vary by rating group and territory (where applicable) for Basic Group I and by category for Special Causes of Loss.

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TREND AND  
OTHER  
ADJUSTMENTS

Loss Trend

For trend purposes, the period of use for this revision is assumed to begin on 10/01/2019. To adjust the loss experience to the levels expected to prevail while the revised loss costs are in effect, trend factors have been applied to the historical incurred losses. These trend factors are based on:

- external cost indices published by the U.S. Government and information provided by Xactware Solutions, Inc.
- changes in multistate average claim costs through fourth quarter 2017.

The "historic" trend factors based on the external indices, i.e. the factors based on historic changes in the indices, vary by year. The latest annual rates of change based on these indices are:

<u>Coverage</u>	<u>Annual Rate of Change</u>
Buildings	2.9%
Contents	1.7%
Time Element	1.1%

Incurred losses are also multiplied by loss trend adjustment factors (LTA's) to reflect trends in claim frequency and claim costs that are different from those exhibited by the external indices. The annual loss trend adjustments are:

<u>Line of Business</u>	<u>Buildings</u>	<u>Contents</u>	<u>Time Element</u>
Basic Group I	-0.3%	0.7%	2.8%
Basic Group II	0.2%	0.6%	2.6%
Special Causes of Loss	0.2%	0.0%	2.8%

This produces a total annual loss trend of:

<u>Line of Business</u>	<u>Buildings</u>	<u>Contents</u>	<u>Time Element</u>
Basic Group I	2.6%	2.4%	3.9%
Basic Group II	3.1%	2.3%	3.7%
Special Causes of Loss	3.1%	1.7%	3.9%

Premium Trend

Over time, insureds tend to purchase increased amounts of insurance in order to compensate for inflation, which results in increased premium revenue.



TREND AND  
OTHER  
ADJUSTMENTS  
(cont'd)

In order to reflect this increase in revenue, ISO uses a premium trend procedure. The premium trend factors are based on observed changes in the annual amount of insurance written for BG I renewal policies for a group of selected companies. The selected annual trends in the amount of insurance are:

Buildings	2.6%
Contents	1.9%
Time Element	0.6%

Other Adjustments

Standard actuarial procedures have been used in calculating the loss costs including loss development and the reflection of all loss adjustment expense. In addition, smoothing procedures have been applied to stabilize the effects of large or excess losses.

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TEN LARGEST  
COMPANY  
GROUPS IN  
ISO DATA BASE

COMMERCIAL MULTIPERIL - NON-LIABILITY (ASLOB 51)

1. Travelers Indemnity Company
2. Tokio Marine Companies
3. Hartford Accident & Indemnity Company
4. Cincinnati Insurance Company
5. Country Mutual Insurance Company
6. Zurich American Insurance Company
7. Firemans Fund Insurance Company
8. AMCO (Allied Group)
9. Westfield Insurance Company
10. RLI Insurance Company

Insurers are listed in descending order based on the percent of statewide written premium volume from Annual Statement Page 15 for year ending 12/31/2017 for Annual Statement Line of Business (ASLOB) 51, Commercial Multiperil - Non-liability.

Although ASLOB 51 includes coverages in addition to commercial fire and allied lines, e.g., crime, inland marine, fidelity, the largest percentage of premium volume is due to fire and allied lines (Basic Group I, Basic Group II, and Special Causes of Loss coverages). ASLOB 51 does not include data reported under monoline fire and allied lines (ASLOBs 10 and 21), which includes both commercial and personal property experience.

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SIZE OF ISO  
DATA BASE

The market share of all insurers reporting to ISO in this state and included in the ratemaking experience underlying this review as measured by Annual Statement Page 15 written premium for year ending 12/31/2017 is:

Commercial Multi-peril - Non-liability (ASLOB 51) – 30.6%

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COMPANY  
DECISION

We encourage each insurer to decide independently whether the judgments made and the procedures or data used by ISO in developing the loss costs contained herein are appropriate for its use. We have included within this document the information upon which ISO relied in order to enable companies to make such independent judgments.

The data underlying the enclosed material comes from companies reporting to Insurance Services Office, Inc. Therefore, the ISO experience permits the establishment of a much broader statistical ratemaking base than could be employed by using any individual company's data. A broader data base enhances the validity of ratemaking analysis derived therefrom. At the same time, however, an individual company may benefit from comparison of its own experience to the aggregate ISO experience, and may reach valid conclusions with respect to the manner in which its own costs can be expected to differ from ISO's projections based on the aggregate data.

Some calculations included in this document involve areas of ISO staff judgment. Each company should carefully review and evaluate its own experience in order to determine whether the ISO selected loss costs are appropriate for its use.

This material has been developed exclusively by the staff of Insurance Services Office, Inc.

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ARIZONA  
COMMERCIAL PROPERTY INSURANCE

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ARIZONA

TABLE 1 - SUMMARY OF MONOLINE PROSPECTIVE LOSS COST CHANGES (A)

COVERAGE	INDICATIONS	AGGREGATE LOSS COSTS AT CURRENT LEVEL
<hr/>		
BASIC GROUP I	+3.5%	12,003,138
TERRITORY 01	+12.7%	
TERRITORY 02	-3.4%	
TERRITORY 08	+0.8%	
BASIC GROUP II	-6.6%	6,191,652
SPECIAL CAUSES OF LOSS	+5.8%	7,659,479
ALL COVERAGES COMBINED	+1.8%	25,854,269

TERRITORY DEFINITIONS

-----  
01 Phoenix  
02 Tucson  
08 Balance of State

(A) FOR TREND PURPOSES, THE PERIOD OF USE FOR THIS REVISION IS ASSUMED TO BEGIN ON 10/01/2019.

ARIZONA

TABLE 2 - BASIC GROUP I PROSPECTIVE LOSS COST CHANGES  
BY RATING GROUP AND TERRITORY (A)

RATING GROUP DESCRIPTION	Phoenix	Tucson
	INDICATED	INDICATED
01 APARTMENTS	+20.8%	+3.3%
02 OTHER HABITATIONAL	+17.6%	+0.6%
03 RESTAURANTS & BARS	+13.1%	-3.3%
04 OTHER MERCANTILE RISKS	+10.6%	-5.5%
05 PUBLIC BUILDINGS	+12.6%	-3.7%
06 CHURCHES	+15.1%	-1.6%
07 SCHOOLS	+14.6%	-2.1%
08 OFFICES AND BANKS	+7.9%	-7.8%
09 RECREATIONAL FACILITIES	+23.7%	+5.8%
10 HOTELS & MOTELS	+16.1%	-0.7%
11 HOSPITALS & NURSING HOMES	+14.9%	-1.8%
12 BLDGS UNDER CONSTRUCTION	+12.6%	-3.7%
13 MOTOR VEHICLE RISKS	+14.6%	-2.1%
14 OTHER NON-MANUFACTURING	+12.6%	-3.7%
15 STORAGE	+13.1%	-3.3%
17 FOOD MANUFACTURING	+13.8%	-2.7%
18 WOOD MANUFACTURING	+15.2%	-1.5%
19 WEARING APPAREL	+12.3%	-4.0%
20 CHEMICAL MANUFACTURING	+12.3%	-4.0%
21 METAL MANUFACTURING	+11.5%	-4.7%
22 OTHER MANUFACTURING	+12.3%	-4.0%
TOTAL	+12.7%	-3.4%

(A) FOR EACH RATING GROUP, THE LOSS COST CHANGE FOR EACH CSP CLASS IN THE RATING GROUP, BY COVERAGE AND CONSTRUCTION, IS IDENTICAL TO THE OVERALL CHANGE SHOWN FOR THE RATING GROUP.

ARIZONA

TABLE 2 - BASIC GROUP I PROSPECTIVE LOSS COST CHANGES  
BY RATING GROUP AND TERRITORY (A)

RATING GROUP DESCRIPTION	Balance of State (Arizona)
-----	
	INDICATED
01 APARTMENTS	+6.9%
02 OTHER HABITATIONAL	+4.1%
03 RESTAURANTS & BARS	+0.1%
04 OTHER MERCANTILE RISKS	-2.1%
05 PUBLIC BUILDINGS	-0.3%
06 CHURCHES	+1.9%
07 SCHOOLS	+1.4%
08 OFFICES AND BANKS	-4.5%
09 RECREATIONAL FACILITIES	+9.5%
10 HOTELS & MOTELS	+2.8%
11 HOSPITALS & NURSING HOMES	+1.7%
12 BLDGS UNDER CONSTRUCTION	-0.3%
13 MOTOR VEHICLE RISKS	+1.4%
14 OTHER NON-MANUFACTURING	-0.3%
15 STORAGE	+0.1%
17 FOOD MANUFACTURING	+0.7%
18 WOOD MANUFACTURING	+2.0%
19 WEARING APPAREL	-0.6%
20 CHEMICAL MANUFACTURING	-0.6%
21 METAL MANUFACTURING	-1.3%
22 OTHER MANUFACTURING	-0.6%
TOTAL	+0.8%

(A) FOR EACH RATING GROUP, THE LOSS COST CHANGE FOR EACH CSP CLASS IN THE RATING GROUP, BY COVERAGE AND CONSTRUCTION, IS IDENTICAL TO THE OVERALL CHANGE SHOWN FOR THE RATING GROUP.

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TABLE 3 - SPECIAL CAUSES OF LOSS PROSPECTIVE LOSS COST CHANGES BY CATEGORY

CATEGORY DESCRIPTION	ENTIRE STATE
-----	-----
01 BUILDINGS	+7.2%
02 RES. APTS. AND CONDOS	-3.4%
03 OFFICES	-2.2%
04 MERCANTILE - HIGH	-3.9%
05 MERCANTILE - MEDIUM	+9.0%
06 MERCANTILE - LOW	+4.7%
07 MOTELS AND HOTELS	+7.3%
08 INSTITUTIONAL - HIGH	+2.8%
09 INSTITUTIONAL - LOW	+2.6%
10 INDUST-PROC - HIGH	+6.4%
11 INDUST-PROC - LOW	+10.8%
12 SERVICE - HIGH	+2.8%
13 SERVICE - LOW	+11.6%
14 CONTRACTORS	+8.0%
STATEWIDE TOTAL	+5.8%



ARIZONA  
TABLE 4

POTENTIAL IMPACT OF BG I, BG II, AND SCL MONOLINE REVISIONS  
ON COMMERCIAL PACKAGE POLICY

(1)		(2)	(3)	(4)
TYPE OF POLICY		BASIC GROUP I	BASIC GROUP II	SPECIAL CAUSES OF LOSS
-----				
31	MOTEL/HOTEL	+5.6%	-6.6%	+7.2%
32	APARTMENT	+8.9%	-6.6%	+4.4%
33	OFFICE	-1.6%	-6.6%	+3.3%
34	MERCANTILE	+1.7%	-6.6%	+6.2%
35	INSTITUTIONAL	+4.1%	-6.6%	+4.9%
36	SERVICES	+5.0%	-6.6%	+6.7%
37	INDUST/PROCESSING	+3.8%	-6.6%	+8.2%
38	CONTRACTORS	+1.1%	-6.6%	+6.6%

BASIC GROUP I, BASIC GROUP II, AND SPECIAL CAUSES OF LOSS MONOLINE CHANGES BY TYPE OF POLICY (TOP) ARE DISPLAYED. THEY ARE CALCULATED BY TAKING A WEIGHTED AVERAGE OF THE LOSS COST CHANGES BY TERRITORY (WHERE APPLICABLE) AND RATING GROUP (FOR BG I), OR BY CATEGORY (FOR SCL), USING THE LATEST YEAR MULTILINE AGGREGATE LOSS COSTS AS WEIGHTS. BASIC GROUP II MONOLINE CHANGES DO NOT VARY BY TOP BECAUSE THE SAME MONOLINE LOSS COST CHANGE IS APPLIED STATEWIDE.

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COMMERCIAL PROPERTY INSURANCE

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## OVERVIEW OF ISO ACTUARIAL PROCEDURES - COMMERCIAL PROPERTY

### INTRODUCTION

Commercial Property prospective loss costs are determined by evaluating the adequacy of the current ISO loss costs to pay for our best estimate of losses and all loss adjustment expenses that will be incurred in the prospective (or future) period. This evaluation is done separately for Basic Group I, Basic Group II, and Special Causes of Loss.

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### STEP 1: DETERMINATION OF INDICATED STATEWIDE LOSS COST LEVEL CHANGE

The first step in this process is the determination of the indicated statewide loss cost level change. This indicated statewide loss cost level change is the average percentage change which must be made to the current ISO loss costs in order to achieve adequacy for the prospective conditions. The percentage changes are presented on the exhibits labeled "Statewide Coverage Loss Cost Level Evaluation".

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### STEP 2: DISTRIBUTION OF CHANGES

Based on the experience, ISO then distributes the indicated statewide loss cost level change by territory (where applicable), type of policy and rating group for Basic Group I; by type of policy for Basic Group II; and by type of policy and category for Special Causes of Loss.

---

### STEP 3: CALCULATION OF REVISED LOSS COSTS

The last step is the calculation of the prospective ISO loss costs. This is achieved by applying the indicated monoline changes to the current ISO loss costs. For Basic Group I, for those states without BG I rating territories, the statewide loss cost changes by rating group are applied to the current manual loss costs. For those states with rating territories, the Balance of State loss cost changes by rating group are applied to the current manual loss costs. The revised territory multipliers are calculated by multiplying the current territory multipliers by the indicated territory changes. For specifically-rated properties, the appropriate changes are applied to the current experience level adjustment factors and territory multipliers. For Basic Group II, revised loss costs are calculated by applying the indicated statewide monoline change to the current ISO loss costs, and where applicable, adding the hurricane modeled loss costs. For Special Causes of Loss, revised loss costs are calculated by applying the indicated monoline changes by category to the current ISO loss costs.

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COMMERCIAL PROPERTY INSURANCE  
CALCULATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGES IN TABLES 5, 6 AND 7

OBJECTIVE	<p>The objective of this procedure is to determine the indicated statewide advisory loss cost level change. This procedure answers the question: What average percentage change must be made to the current ISO loss costs in order for them to be adequate to cover indemnity losses and all loss adjustment expenses incurred in the prospective period in which the revised loss costs are assumed to be in effect?</p>
DESCRIPTION	<p>This procedure compares the trended and developed incurred losses and loss adjustment expenses with the trended aggregate loss costs at current ISO level. The aggregate loss costs at current level are the amounts that would have been collected for losses and all loss adjustment expenses if the current ISO loss costs had been in effect during the experience period.</p> <p>Experience ratios (losses and all loss adjustment expenses divided by aggregate loss costs, both trended to the prospective experience period) are calculated by year, and a weighted average of the yearly experience ratios is calculated. For Basic Group I (BG I) and Special Causes of Loss (SCL), the five year weights vary by year, giving greater weight to the more recent experience. For Basic Group II (BG II), because of the more volatile nature of the data, the ten individual years are given equal weight.</p> <p>The average experience ratio is then credibility-weighted with the expected experience ratio in order to minimize the impact of random variation in the observed losses. The resulting credibility-weighted experience ratio is the indicated statewide advisory loss cost level change in decimal form.</p>
EXPERIENCE BASE	<p>The experience used in this review is the latest available data reported under the ISO Commercial Statistical Plan for BG I, BG II and SCL. The data are aggregated on an accident year basis.</p>

ARIZONA  
TABLE 5

STATEWIDE BASIC GROUP I  
COVERAGE LOSS COST LEVEL EVALUATION

(1)	(2)	(3)	(4)	(5)
YEAR	AGGREGATE* LOSS COSTS	ADJUSTED** INCURRED LOSSES	EXPERIENCE RATIO (3) / (2)	WEIGHTS
2014	12,962,920	10,200,890	0.787	0.10
2015	11,782,919	13,193,480	1.120	0.15
2016	11,480,375	11,568,527	1.008	0.20
2017	12,047,595	12,343,987	1.025	0.25
2018	12,003,138	21,773,222	1.814	0.30

(6) WEIGHTED EXPERIENCE RATIO	= 1.249
(7) CREDIBILITY	= 0.260
(8) EXPECTED EXPERIENCE RATIO	= 1.005
(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO (0.260 X 1.249 ) + (0.740 X 1.005 )	= 1.068
(10) INDICATED COVERAGE LOSS COST CHANGE	= 1.068
	OR +6.8%

\* AGGREGATE LOSS COSTS ARE ADJUSTED TO CURRENT ISO LOSS COST LEVEL  
AND 04/01/2020 AMOUNT OF INSURANCE LEVELS.

\*\* INCURRED LOSSES ARE ADJUSTED TO 10/01/2020 COST LEVELS INCLUDING LOSS  
DEVELOPMENT AND ALL LOSS ADJUSTMENT EXPENSES.

ARIZONA  
TABLE 6

STATEWIDE BASIC GROUP II  
COVERAGE LOSS COST LEVEL EVALUATION

(1)	(2)	(3)	(4)
YEAR	AGGREGATE* LOSS COSTS	ADJUSTED** INCURRED LOSSES	EXPERIENCE RATIO (3) / (2)
2009	6,605,300	6,810,547	1.031
2010	7,228,983	6,420,420	0.888
2011	7,459,996	11,200,995	1.501
2012	7,145,659	9,449,002	1.322
2013	7,000,375	5,616,799	0.802
2014	6,345,168	7,155,327	1.128
2015	6,230,238	4,421,427	0.710
2016	6,125,829	10,429,045	1.702
2017	5,860,070	5,949,669	1.015
2018	6,191,652	5,506,037	0.889

(5) WEIGHTED EXPERIENCE RATIO (EQUAL WEIGHTS) = 1.099

(6) CREDIBILITY = 0.388

(7) EXPECTED EXPERIENCE RATIO = 1.007

(8) CREDIBILITY WEIGHTED EXPERIENCE RATIO = 1.043  
(0.388 x 1.099 ) + (0.612 x 1.007 )

(9) INDICATED COVERAGE LOSS COST CHANGE = 1.043

OR +4.3%

\* AGGREGATE LOSS COSTS ARE ADJUSTED TO CURRENT ISO LOSS COST LEVEL  
AND 04/01/2020 AMOUNT OF INSURANCE LEVELS.

\*\* INCURRED LOSSES ARE ADJUSTED TO 10/01/2020 COST LEVELS INCLUDING LOSS  
DEVELOPMENT AND ALL LOSS ADJUSTMENT EXPENSES.

ARIZONA  
TABLE 7

STATEWIDE SPECIAL CAUSES OF LOSS  
COVERAGE LOSS COST LEVEL EVALUATION

(1)	(2)	(3)	(4)	(5)
YEAR	AGGREGATE* LOSS COSTS	ADJUSTED** INCURRED LOSSES	EXPERIENCE RATIO (3) / (2)	WEIGHTS
2014	8,278,274	7,474,846	0.903	0.10
2015	7,844,476	7,105,232	0.906	0.15
2016	7,658,929	4,808,689	0.628	0.20
2017	7,274,763	8,236,708	1.132	0.25
2018	7,659,479	4,760,778	0.622	0.30

(6) WEIGHTED EXPERIENCE RATIO = 0.822

(7) CREDIBILITY = 0.265

(8) EXPECTED EXPERIENCE RATIO = 1.005

(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO = 0.957  
(0.265 X 0.822 ) + (0.735 X 1.005 )

(10) INDICATED COVERAGE LOSS COST CHANGE = 0.957

OR -4.3%

\* AGGREGATE LOSS COSTS ARE ADJUSTED TO CURRENT ISO LOSS COST LEVEL  
AND 04/01/2020 AMOUNT OF INSURANCE LEVELS.

\*\* INCURRED LOSSES ARE ADJUSTED TO 10/01/2020 COST LEVELS INCLUDING LOSS  
DEVELOPMENT AND ALL LOSS ADJUSTMENT EXPENSES.

EXPLANATORY NOTES TO TABLES 5, 6 AND 7

STATEWIDE BASIC GROUP I, BASIC GROUP II AND  
SPECIAL CAUSES OF LOSS COVERAGE LOSS COST LEVEL EVALUATION

COLUMN (1)

EXPERIENCE PERIOD

Experience for the five most recent accident years is used for BG I and SCL.  
Experience for the ten most recent accident years is used for BG II.

COLUMN (2)

AGGREGATE LOSS COSTS

Since the objective of the ratemaking procedure is to test the adequacy of the current ISO loss costs, premium data for each year in the experience period are adjusted to the loss cost level which would have been earned had the current loss costs been in effect. This is accomplished by using either an extension-of-exposures (PPR or premium at present rates/loss costs) approach or an on-level approach. Where appropriate, certain reported data elements have been adjusted prior to being used in the calculations.

Extension of Exposures Approach

Where feasible, aggregate loss costs at current level (ALCCL) are developed using an extension-of-exposures approach. That is, the exposure (amount of insurance per \$100) for each policy is multiplied by the current manual loss cost for that state, territory, subline, coverage, construction, occupancy and by any other applicable rating factors, such as limit of insurance factors and deductible relativities.

On-Level Approach

The on-level approach is applied on an individual policy basis. The first step in the process is to multiply the reported premiums by the product of all loss cost level changes that have become effective subsequent to the inception date of the policy. The premiums are divided by the reported Rating Modification Factors and Loss Cost Multipliers to bring them to current ISO monoline manual loss cost level.

For premium records with inception dates prior to the effective date of the implementation of Limit of Insurance (LOI ) curves, premiums are multiplied by off-balance factors and limit of insurance factors to bring them to a post-LOI loss cost level.

The on-level approach is used to adjust those premium records which cannot be adjusted using the extension-of-exposures techniques, for example, premium records for Basic Group I specifically-rated properties, for which manual loss costs do not exist. In addition, records failing an exposure edit which checks for a reasonable relationship between reported premium and exposure amount have also been on-leveled.



STATEWIDE BASIC GROUP I, BASIC GROUP II AND  
SPECIAL CAUSES OF LOSS COVERAGE LOSS COST LEVEL EVALUATION (cont'd)

COLUMN (2)  
(cont'd)

Current IPMF and Prospective Amount of Insurance Levels

Premiums are also adjusted to prospective amount of insurance levels by exposure trend factors to reflect the impact of inflation on the average amount of insurance written (Table 24). After multiline premiums are brought to current ISO monoline manual level, they are further adjusted to implicit package modification factor (IPMF) level by the application of Commercial Package Policy (CPP) IPMF's which vary by the eight CPP types of policy. (Both the adjustments to prospective amount of insurance level and to current IPMF level are done on an aggregate basis.) For a more complete description of the IPMF's and the other premium adjustments, refer to Tables 18 through 20 in the supporting material.

COLUMN (3)

ADJUSTED INCURRED LOSSES

In order to assure the adequacy of the proposed loss cost level, incurred losses are adjusted to reflect the effect of inflation and other trends on loss costs. The adjustment of past losses to prospective levels is accomplished on an individual loss basis by application of current cost factors, loss projection factors and loss trend adjustments (Tables 21 through 23). In addition to adjusting losses to prospective cost level, the effect of inflation on the deductible portion of the loss incurred is reflected.

For each subline, incurred losses are further adjusted by an excess loss procedure which smoothes fluctuations due to large loss occurrences. The procedure removes any losses determined to be excess from the total incurred losses, resulting in normal incurred losses. These normal incurred losses (total - excess) are then multiplied by excess loss factors to calculate adjusted incurred losses (Tables 29 through 32). The resulting adjusted incurred losses are then developed to their ultimate settlement value and loaded by a factor to include all loss adjustment expenses. Loss development factors can be found on Table 28, and loss adjustment expense factors on Table 41. Where appropriate, certain reported data elements have been adjusted prior to being used in the calculations.

COLUMN (4)

EXPERIENCE RATIO

The experience ratio is the ratio of adjusted incurred losses to aggregate loss costs for each year.

STATEWIDE BASIC GROUP I, BASIC GROUP II AND  
SPECIAL CAUSES OF LOSS COVERAGE LOSS COST LEVEL EVALUATION (cont'd)

COLUMN (5) - BG I, SCL    WEIGHTS

For Basic Group I and Special Causes of Loss, the yearly experience ratios are weighted using weights of 10%, 15%, 20%, 25%, and 30% with the greatest weight assigned to the most recent year. These weights recognize the need to balance stability and responsiveness. The ten Basic Group II experience ratios are equally weighted, each given 10% weight.

LINE (6) - BG I, SCL    WEIGHTED EXPERIENCE RATIO  
LINE (5) - BG II

For Basic Group I and Special Causes of Loss, the weights are applied to the experience ratios to yield the weighted experience ratio. For Basic Group II, the experience ratios are equally weighted. These weighted experience ratios represent a projection of the experience which would result if future policies were written without a loss cost level revision.

LINE (7) - BG I, SCL    CREDIBILITY  
LINE (6) - BG II

The standards for 100% credibility are discussed in detail in Tables 33, 33A, and 34 for Basic Group I, Basic Group II, and Special Causes of Loss, respectively.

LINE (8) - BG I, SCL    EXPECTED EXPERIENCE RATIO  
LINE (7) - BG II

The expected experience ratio is ISO's best prediction of the experience ratio if the actual incurred experience were 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 only to the extent of the net trend. The expected experience ratio is represented by the net (loss/amount of insurance) trend factor.

LINE (9) - BG I, SCL    CREDIBILITY WEIGHTED EXPERIENCE RATIO  
LINE (8) - BG II

The credibility weighted experience ratio is a weighted average of the weighted experience ratio (line (6) for BG I and SCL; line (5) for BG II) and the expected experience ratio (line (8) for BG I and SCL; line (7) for BG II) using the credibility factor and its complement as respective weights. For more detailed information regarding the development of the credibility factors, refer to Tables 33, 33A, and 34.

LINE (10) - BG I, SCL    INDICATED COVERAGE LOSS COST CHANGE  
LINE (9) - BG II

The credibility weighted experience ratio yields the overall coverage loss cost level change for Basic Group I (see Table 5), Basic Group II (see Table 6), and Special Causes of Loss (see Table 7).

## COMPOSITION OF THE RATEMAKING DATA BASE

### DATA INCLUDED

#### BASIC GROUP I

- . CSP Subline 010 (Commercial Fire)
- . CSP Subline 015 (Basic Group I, i.e., Fire, Lightning, Explosion, Vandalism, Sprinkler Leakage)
- . CSP Subline 016 (BG I excluding Vandalism)
- . CSP Subline 017 (BG I excluding Sprinkler Leakage)
- . CSP Subline 018 (BG I excluding Vandalism and Sprinkler Leakage)

#### BASIC GROUP II

- . CSP Subline 020 (Extended Coverage)
- . CSP Subline 025 (Basic Group II, i.e., Windstorm or Hail, Smoke, Aircraft or Vehicles, Riot or Civil Commotion, Sinkhole Collapse and Volcanic Action)
- . CSP Subline 027 (Basic Group II Causes of Loss, i.e., Windstorm or Hail, Smoke, Aircraft or Vehicles, Riot or Civil Commotion, Sinkhole Collapse and Volcanic Action)
- . CSP Subline 029 (Basic Group II Causes of Loss excluding Windstorm or Hail)

#### SPECIAL CAUSES OF LOSS

- . CSP Subline 028 (All Other Perils Special Coverage Forms & Endorsements)
- . CSP Subline 035 (Causes of Loss Special Form Including Theft)
- . CSP Subline 045 (Causes of Loss Special Form Excluding Theft)

### NOTES ON DATA INCLUDED

All CSP data are reviewed for CSP Types of Policy 10 (monoline), 3X, 70, and 7X (multiline).

For BG I, BG II and SCL, the reviewed experience is for property damage and time element coverages (coverage codes 1-7, as well as coverage code 9 reported under pre-simplification sublines 010, 020, and 028).

COMPOSITION OF THE RATEMAKING DATA BASE (cont'd)

<u>DATA EXCLUDED</u>	<u>TYPE OF DATA</u>	<u>BG I</u>	<u>BG II</u>	<u>SCL</u>
	• Non-voluntary experience (e.g. FAIR Plans)	X	X	NA
	• Dwelling experience	X	X	X
	• Farm experience	X	X	NA
	• Countrywide rated risks	X	X	X
	• Highly protected risks	X	X	X
	• Experience for policies with large deductibles	X	X	X

X indicates that experience is excluded.

Separately identifiable terrorism premium and loss records have been excluded from the ratemaking experience.

## OVERVIEW OF ISO ACTUARIAL PROCEDURES - COMMERCIAL PROPERTY

### STEP 2 - DISTRIBUTION OF LOSS COST LEVEL CHANGES

#### OBJECTIVE

The objective of this procedure is to distribute the indicated statewide loss cost level change for Basic Group I, Basic Group II, and Special Causes of Loss among the various rating variables used in each subline. These procedures are used to answer the question: What percentage change for each rating variable must be made to the current ISO loss costs in order to achieve adequacy for the prospective conditions?

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#### BASIC GROUP I

For Basic Group I, a consolidated simultaneous iterative procedure is used to calculate the type of policy, territory and rating group relativities. More detail on this procedure is given in Table 8. The type of policy relativities serve to price Commercial Package policies relative to monoline policies, via the Package Modification Factors (PMF), while the rating group and territory relativities serve to price the various rating groups and territories relative to one another.

The indicated monoline loss cost level changes shown on Table 2 are calculated for each rating group/territory combination by taking the product of the monoline type of policy relativity, the rating group relativity, the territory relativity and the statewide loss cost level change.

The overall monoline loss cost level change is a weighted average of the rating group/territory combination changes. In calculating this weighted average, the latest year aggregate monoline and multiline combined loss costs at current level are used as weights.

---

#### BASIC GROUP II

The purpose of the Basic Group II relativity analysis is to determine monoline loss cost level needs, to obtain marginal relativities displayed on Table 12 and to price CPP policies relative to monoline policies via the PMFs. Unlike the BG I and SCL relativity analyses, the BG II relativity analysis does not employ a simultaneous review procedure because the overall loss cost change is distributed across type of policy only. The indicated statewide monoline change is the product of the monoline type of policy relativity times the statewide loss cost level change.

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## OVERVIEW OF ISO ACTUARIAL PROCEDURES - COMMERCIAL PROPERTY

### STEP 2 - DISTRIBUTION OF LOSS COST LEVEL CHANGES (cont'd)

#### SPECIAL CAUSES OF LOSS

For Special Causes of Loss, a simultaneous iterative procedure is used as for BG I to arrive at a set of type of policy and category relativities (as displayed on Table 9) that best represent the experience within each state. The type of policy relativities serve to price CPP policies relative to monoline policies via the PMFs, while the category relativities serve to price the various categories relative to one another.

The indicated monoline loss cost level changes are calculated for each category by taking the product of the monoline type of policy relativity, the category relativity and the statewide coverage loss cost change. See Table 9 for the monoline loss cost indications.

The overall monoline loss cost level change is a weighted average of the 14 monoline category changes. In calculating this weighted average, the latest year monoline and multiline combined loss costs at current level are used as weights.

## ARIZONA

TABLE 8 - BASIC GROUP I RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	STATEWIDE COVERAGE
	\$ LST SQ	CREDIBILITY	Z-WTD.	BALANCED	LOSS COST
	FORMULA	Z	RELATIVITY	RELATIVITY	CHANGE OF 1.068
TOP	RELATIVITY				OR +6.8%
-----					
10	0.530	0.050	0.969	0.969	
31	1.070	0.019	1.001	1.002	
32	0.528	0.034	0.979	0.979	
33	1.598	0.024	1.011	1.012	
34	1.246	0.144	1.032	1.033	
35	1.008	0.061	1.000	1.001	
36	0.914	0.111	0.990	0.991	
37	0.653	0.079	0.967	0.967	
38	1.855	0.026	1.016	1.017	
RATING					(5) INDICATED
GROUP					MONOLINE
					LOSS COST LEVEL
					CHANGE **
01	2.086	0.066	1.050	1.065	+10.3
02	2.149	0.029	1.022	1.037	+6.5
03	0.833	0.091	0.984	0.997	+3.2
04	0.874	0.293	0.961	0.975	+1.1
06	1.015	0.061	1.001	1.015	+4.7
07	0.878	0.029	0.996	1.010	+4.9
08	0.647	0.148	0.938	0.951	-1.2
09	1.783	0.126	1.076	1.091	+10.8
10	1.215	0.049	1.010	1.024	+5.5
11	0.907	0.012	0.999	1.013	+3.1
13	0.923	0.047	0.996	1.010	+4.0
14	0.789	0.089	0.979	0.993	+2.1
15	0.701	0.047	0.983	0.997	+3.2
17	0.661	0.026	0.989	1.003	+3.9
18	1.086	0.022	1.002	1.016	+7.8
21	0.673	0.080	0.969	0.983	+3.6
22	0.727	0.075	0.976	0.990	+3.1
STATEWIDE MONOLINE LOSS COST LEVEL CHANGE					+3.5%

ARIZONA

TABLE 8 - BASIC GROUP I RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)
TERRITORY	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY
Phoenix	1.433	0.225	1.084	1.096
Tucson	0.481	0.103	0.927	0.937
Balance of State (Arizona)	0.905	0.409	0.960	0.970

	(5) INDICATED MONOLINE LOSS COST LEVEL CHANGE
TERRITORY	
Phoenix	+12.7
Tucson	-3.4
Balance of State (Arizona)	+0.8

LOSS COST CHANGES BY INDIVIDUAL TERRITORY AND RATING GROUP  
ARE SHOWN ON TABLE 2.



ARIZONA

TABLE 8 - BASIC GROUP I RELATIVITY ANALYSIS

EXAMPLE OF AN INDIVIDUAL LOSS COST CHANGE CALCULATION  
FOR Phoenix

STATEWIDE COVERAGE LOSS COST LEVEL CHANGE	=	+6.8%
TERRITORIAL RELATIVITY	=	1.096
MONOLINE (TOP 10) RELATIVITY	=	0.969
RATING GROUP 01 RELATIVITY	=	1.065

INDICATED MONOLINE LOSS COST LEVEL CHANGE FOR RATING GROUP 01

$$= 1.068 \quad \times \quad 1.096 \quad \times \quad 0.969 \quad \times \quad 1.065 \quad = 1.208$$

OR    +20.8%

ARIZONA

TABLE 8 - CALCULATION OF INDICATED TERRITORIAL MULTIPLIERS

(1)	(2)	(3)	(4)
TERRITORY	TERRITORY RELATIVITY	OFF- BALANCE FACTOR	CURRENT TERRITORIAL MULTIPLIER
-----			
Phoenix	1.096	1.000	1.280
Tucson	0.937	1.000	0.932
Balance of State (Arizona)	0.970	1.000	1.000

(5)
INDICATED TERRITORIAL MULTIPLIER
((2)X(3)X(4) / (0.970 X 1.000 ))
-----
Phoenix
1.446
Tucson
0.900
Balance of State (Arizona)
1.000

ARIZONA

TABLE 9 - SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	STATEWIDE COVERAGE LOSS COST CHANGE OF 0.957 OR -4.3%
TOP	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	
10	2.219	0.096	1.080	1.106	
31	3.990	0.015	1.021	1.046	
32	1.176	0.062	1.010	1.035	
33	0.814	0.060	0.988	1.012	
34	0.664	0.208	0.918	0.941	
35	0.926	0.120	0.991	1.015	
36	1.065	0.128	1.008	1.033	
37	0.461	0.092	0.931	0.954	
38	0.615	0.065	0.969	0.992	
					(5) INDICATED MONOLINE LOSS COST LEVEL CHANGE
CATEGORY					
01	1.024	0.595	1.014	1.013	+7.2
02	0.157	0.049	0.913	0.913	-3.4
03	0.470	0.103	0.925	0.924	-2.2
04	0.443	0.118	0.908	0.908	-3.9
05	1.327	0.106	1.030	1.030	+9.0
06	0.740	0.035	0.990	0.989	+4.7
07	2.487	0.016	1.015	1.014	+7.3
08	0.664	0.071	0.971	0.971	+2.8
09	0.780	0.122	0.970	0.969	+2.6
10	1.208	0.029	1.005	1.005	+6.4
11	1.596	0.099	1.047	1.047	+10.8
12	0.732	0.092	0.972	0.971	+2.8
13	2.435	0.060	1.055	1.054	+11.6
14	1.219	0.105	1.021	1.020	+8.0
OVERALL MONOLINE LOSS COST LEVEL CHANGE					+5.8%

ARIZONA

TABLE 9 - SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

---

EXAMPLE OF A LOSS COST CHANGE CALCULATION

STATEWIDE COVERAGE LOSS COST LEVEL CHANGE	=	-4.3%
MONOLINE (TOP 10) RELATIVITY	=	1.106
CATEGORY 01 RELATIVITY	=	1.013

INDICATED MONOLINE LOSS COST LEVEL CHANGE FOR CATEGORY 01

= 0.957	X	1.106	X	1.013	=	1.072
					OR	+7.2%

## EXPLANATORY NOTES TO TABLES 8 AND 9

### BASIC GROUP I AND SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

#### INTRODUCTION

The explanations which follow clarify Tables 8 and 9, the Basic Group I relativity analysis and the Special Causes of Loss relativity analysis, respectively. The purpose of these analyses is to:

- (1) determine monoline classification and territorial loss cost level needs for Basic Group I;
- (2) determine monoline category loss cost level needs for Special Causes of Loss;
- (3) determine indicated changes to the eight CPP package modification factors (PMFs) based on Basic Group I/Special Causes of Loss experience.

#### COLUMN (1)

##### LEAST SQUARES FORMULA RELATIVITIES

The least squares formula relativities are the marginal relativities which result from the application of the simultaneous review procedure to the raw experience (where marginal refers to the relativities for a given rating variable, e.g. type of policy, across all subsets of any other rating variables, i.e. rating group and territory for Basic Group I, and category for Special Causes of Loss).

The purpose of such a simultaneous review procedure is to arrive at a set of type of policy relativities (which will serve to price CPP policies relative to monoline policies via the PMFs); a set of rating group/territory relativities for Basic Group I; and a set of category relativities for Special Causes of Loss that best represent the experience. This procedure is in contrast to a review of each rating variable's experience separately. Such one-way types of review do not take into account differing percentages of monoline and multiline experience in each rating variable, nor differing percentages of a particular rating variable's experience in the monoline and multiline types of policy. The simultaneous relativity procedure accounts for these different distributions in generating relativities for the various rating variables.

EXPLANATORY NOTES TO TABLES 8 AND 9 (cont'd)

COLUMN (1)  
(Cont'd)

The procedure follows an iterative technique to determine a set of marginal relativities by rating variable that is a best fit to the individual cell relativities, with each cell being defined as the cross-section of specific values of each rating variable. The process uses the relativity of the five year experience ratios by rating cell to the overall statewide experience ratio and the latest year aggregate loss costs for each rating cell. (This experience is shown in Table 10 for Basic Group I and Table 11 for Special Causes of Loss.) Specifically, the iteration procedure uses the following formulas:

BASIC GROUP I:

$$TOP_i = \frac{\sum_{j=1}^n \sum_{k=1}^t W_{ijk}^2 R_{ijk} RG_j TER_k}{\sum_{j=1}^n \sum_{k=1}^t W_{ijk}^2 RG_j^2 TER_k^2}, \quad \text{where } 1 \leq i \leq m;$$

$$RG_j = \frac{\sum_{i=1}^m \sum_{k=1}^t W_{ijk}^2 R_{ijk} TOP_i TER_k}{\sum_{i=1}^m \sum_{k=1}^t W_{ijk}^2 TOP_i^2 TER_k^2}, \quad \text{where } 1 \leq j \leq n;$$

$$TER_k = \frac{\sum_{i=1}^m \sum_{j=1}^n W_{ijk}^2 R_{ijk} TOP_i RG_j}{\sum_{i=1}^m \sum_{j=1}^n W_{ijk}^2 TOP_i^2 RG_j^2}, \quad \text{where } 1 \leq k \leq t;$$

SPECIAL CAUSES OF LOSS:

$$TOP_i = \frac{\sum_{j=1}^n w_{ij}^2 R_{ij} CAT_j}{\sum_{j=1}^n w_{ij}^2 CAT_j^2}, \quad \text{where } 1 \leq i \leq m;$$

$$CAT_j = \frac{\sum_{i=1}^m w_{ij}^2 R_{ij} TOP_i}{\sum_{i=1}^m w_{ij}^2 TOP_i^2}, \quad \text{where } 1 \leq j \leq n;$$

EXPLANATORY NOTES TO TABLES 8 AND 9 (cont'd)

COLUMN (1)  
(cont'd)

- $TOP_i$  is the relativity for the  $i$ th type of policy;
- $RG_j$  is the relativity for the  $j$ th rating group;
- $CAT_j$  is the relativity for the  $j$ th category;
- $TER_k$  is the relativity for the  $k$ th territory;
- $W_{ijk}$  is the loss cost volume at current level for the  $i$ th type of policy,  $j$ th rating group and  $k$ th territory;
- $R_{ijk}$  is the experience ratio relativity for the  $i$ th type of policy,  $j$ th rating group and  $k$ th territory;
- $R_{ij}$  is the experience ratio relativity for the  $i$ th type of policy, and  $j$ th category;
- $m$  is the number of types of policy in the analysis;
- $n$  is the number of rating groups or categories in the analysis;
- $t$  is the number of territories in the analysis.

The procedure determines  $m$  type of policy relativities using the above formulas. Then, using those results, a set of  $n$  rating group and  $t$  territory relativities are determined. These steps form an iterative process which continues until there is no appreciable difference in results from one iteration to the next.

COLUMN (2)

CREDIBILITY

The credibility of the experience for each rating variable is determined from the formula:

$$Z = \frac{P}{P + K} ,$$

where  $P$  represents the five-year aggregate adjusted loss costs for a given rating variable, and  $K$  is a constant value. For Basic Group I,  $K$  equals an aggregate loss cost volume of \$55,000,000 for territory, \$40,000,000 for rating group, and \$100,000,000 for type of policy. For Special Causes of Loss,  $K$  equals an aggregate loss cost volume of \$15,000,000.

EXPLANATORY NOTES TO TABLES 8 AND 9 (cont'd)

COLUMN (3)

CREDIBILITY-WEIGHTED RELATIVITIES

Credibility-weighted relativities are calculated based on the formula

$$W = R^Z,$$

where Z is the credibility, R is the least squares formula relativity and W is the credibility weighted relativity for a given rating variable.

This formula implicitly assigns the complement of credibility to a relativity of unity.

COLUMN (4)

BALANCED RELATIVITIES

The credibility-weighted relativities are balanced to assure that the average relativity across all rating variables remains at unity.

COLUMN (5)

INDICATED MONOLINE LOSS COST LEVEL CHANGE

For Basic Group I, the indicated monoline loss cost changes are calculated for each rating group and territory by taking the product of the monoline type of policy (TOP 10) relativity, the territory relativity, the rating group relativity and the statewide loss cost level change. (An example of such a calculation appears on Table 8.)

The indicated monoline loss cost changes by rating group shown in Table 8 of this analysis are the aggregate loss cost weighted averages of the monoline loss cost changes for the rating group across all territories.



## EXPLANATORY NOTES TO TABLES 8 AND 9 (cont'd)

### COLUMN (5) (cont'd)

Similarly, the indicated monoline loss cost changes by territory shown on the second page are aggregate loss cost-weighted averages of the monoline loss cost changes for the territory across all rating groups. The indicated overall statewide monoline loss cost level change shown at the bottom of the first page of Table 8 is the aggregate loss cost-weighted average of the individual rating group changes across all territories.

For Special Causes of Loss, the indicated monoline loss cost changes are calculated for each category by taking the product of the monoline type of policy (TOP 10) relativity, the category relativity, and the statewide loss cost level change. (An example of such a calculation is included in Table 9.) The indicated overall statewide loss cost level change shown at the bottom of Table 9 is the aggregate loss cost-weighted average of the individual category changes.

In all cases, the loss costs used in these calculations are the latest year's monoline and multiline combined adjusted loss costs.

### MULTILINE CONSIDERATIONS

The type of policy (TOP) relativities are used to generate multiline indications which apply to the current implicit package modification factors (IPMF's). The indicated IPMF's are calculated as follows:

$$\frac{\text{TOP y indicated IPMF}}{\text{IPMF}} = \frac{(\text{TOP y current IPMF})(\text{TOP y relativity})}{\text{monoline relativity}}$$

For each CPP type of policy, the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the loss costs for that type of policy are adjusted to the capped IPMF level, and the entire relativity review as described above is re-performed to take this into account. If an IPMF has been capped, it is so noted at the bottom of Table 8 and Table 9.

It should be noted that although this procedure generates multiline indications, this filing only addresses monoline loss cost levels. That is, upon implementation of this filing only the monoline loss costs will be revised. The multiline indications developed here will be combined with those of the other component coverages, e.g. GL Premises and Operations in the CPP review for the purpose of revising the package modification factors.

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ARIZONA  
BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	37,148	258,097	5.720	2.055	1.779
	02 OTHER HABITATIONAL	2,239	15,179	1.514	1.302	1.127
	03 RESTAURANTS & BARS	4,472	88,700	0.000	1.033	0.894
	04 OTHER MERCANTILE RS	85,319	494,931	0.605	1.138	0.985
	06 CHURCHES	616	3,739	0.000	1.034	0.895
	07 SCHOOLS	5,177	31,190	0.000	1.034	0.895
	08 OFFICES AND BANKS	33,726	198,250	0.399	1.103	0.955
	09 REC. FACILITIES	14,488	116,085	0.903	1.193	1.033
	10 HOTELS AND MOTELS	2	43	0.000	1.035	0.896
	11 HOSPITALS/NURS HOME	1,627	10,062	0.000	1.034	0.895
	13 MOTOR VEHICLE RISKS	7,330	42,503	0.000	1.034	0.895
	14 OTHER NON-MANUF.	9,290	74,651	0.110	1.053	0.912
	15 STORAGE	8,752	55,886	0.000	1.034	0.895
	17 FOOD MANUFACTURING	4,502	5,824	0.000	1.034	0.895
	18 WOOD MANUFACTURING	10,699	57,228	0.000	1.034	0.895
	21 METAL MANUFACTURING	17,178	99,631	0.260	1.079	0.934
	22 OTHER MANUFACTURING	6,970	53,174	0.000	1.034	0.895
	TOTAL*	249,535	1,605,173	1.200	1.246	1.079
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	81,162	388,178	3.535	2.162	1.872
	TOTAL*	81,162	388,178	3.535	2.162	1.872
32 MULTILINE APARTMENT	01 APARTMENTS	128,896	666,593	2.044	1.908	1.652
	02 OTHER HABITATIONAL	44,969	228,281	3.127	2.090	1.810
	TOTAL*	173,865	894,874	2.324	1.955	1.693
33 MULTILINE OFFICE	08 OFFICES AND BANKS	133,711	657,483	0.281	1.602	1.387
	TOTAL*	133,711	657,483	0.281	1.602	1.387
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	165,940	742,148	0.006	1.553	1.345
	04 OTHER MERCANTILE RS	615,423	3,169,394	3.229	2.145	1.857
	08 OFFICES AND BANKS	41,397	176,374	0.034	1.568	1.358
	13 MOTOR VEHICLE RISKS	29,071	96,396	0.159	1.591	1.377
	14 OTHER NON-MANUF.	25,958	130,886	0.000	1.564	1.354
	15 STORAGE	67,922	321,879	0.010	1.562	1.352
	TOTAL*	945,711	4,637,077	2.109	1.941	1.681

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ARIZONA  
BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	63	5,628	0.000	1.566	1.356
	06 CHURCHES	103,674	584,804	1.347	1.787	1.547
	07 SCHOOLS	82,803	288,128	0.229	1.599	1.384
	08 OFFICES AND BANKS	109,454	460,085	0.025	1.562	1.352
	09 REC. FACILITIES	16,965	79,825	4.809	2.370	2.052
	11 HOSPITALS/NURS HOME	15,067	79,123	2.200	1.933	1.674
	13 MOTOR VEHICLE RISKS	219	1,970	0.000	1.566	1.356
	14 OTHER NON-MANUF.	21,658	75,622	0.000	1.565	1.355
	TOTAL*	349,903	1,575,185	0.789	1.693	1.466
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	30,356	110,733	0.000	0.882	0.764
	04 OTHER MERCANTILE RS	66,733	313,185	8.129	2.074	1.796
	08 OFFICES AND BANKS	53,430	225,318	0.000	0.881	0.763
	09 REC. FACILITIES	93,106	410,433	0.004	0.879	0.761
	13 MOTOR VEHICLE RISKS	75,925	385,745	3.140	1.343	1.163
	14 OTHER NON-MANUF.	78,266	370,236	0.164	0.903	0.782
	15 STORAGE	35,719	100,942	0.000	0.882	0.764
	21 METAL MANUFACTURING	13,224	59,649	0.151	0.905	0.784
	22 OTHER MANUFACTURING	18,298	89,607	0.098	0.897	0.777
	TOTAL*	465,057	2,065,848	1.716	1.132	0.980
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	39,670	209,996	0.062	0.890	0.771
	08 OFFICES AND BANKS	8,783	44,744	0.000	0.883	0.765
	13 MOTOR VEHICLE RISKS	2,857	8,529	0.000	0.884	0.765
	14 OTHER NON-MANUF.	19,642	101,325	0.223	0.914	0.791
	15 STORAGE	0	9,048	0.000	0.884	0.765
	17 FOOD MANUFACTURING	60,614	293,425	0.190	0.908	0.786
	18 WOOD MANUFACTURING	73,906	364,461	0.210	0.910	0.788
	21 METAL MANUFACTURING	261,522	1,318,036	0.190	0.897	0.777
	22 OTHER MANUFACTURING	162,765	922,292	2.068	1.191	1.031
	TOTAL*	629,759	3,271,856	0.667	0.975	0.845
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	117,990	653,146	0.269	0.916	0.793
	08 OFFICES AND BANKS	39,107	188,834	0.128	0.900	0.779
	14 OTHER NON-MANUF.	13,240	63,026	1.142	1.047	0.906
	TOTAL*	170,337	905,006	0.304	0.922	0.799

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ARIZONA  
BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TOTAL ALL TOPS*	01 APARTMENTS	166,044	924,690	2.866	1.941	1.680
	02 OTHER HABITATIONAL	47,271	249,088	3.046	2.052	1.777
	03 RESTAURANTS & BARS	200,768	941,581	0.005	1.440	1.247
	04 OTHER MERCANTILE RS	925,135	4,840,652	2.827	1.837	1.590
	06 CHURCHES	104,290	588,543	1.339	1.783	1.543
	07 SCHOOLS	87,980	319,318	0.216	1.566	1.356
	08 OFFICES AND BANKS	419,608	1,951,088	0.143	1.376	1.191
	09 REC. FACILITIES	124,559	606,343	0.763	1.118	0.968
	10 HOTELS AND MOTELS	81,164	388,221	3.535	2.161	1.872
	11 HOSPITALS/NURS HOME	16,694	89,185	1.986	1.845	1.598
	13 MOTOR VEHICLE RISKS	115,402	535,143	2.106	1.375	1.190
	14 OTHER NON-MANUF.	168,054	815,746	0.198	1.111	0.962
	15 STORAGE	112,393	487,755	0.006	1.305	1.130
	17 FOOD MANUFACTURING	65,116	299,249	0.177	0.916	0.794
	18 WOOD MANUFACTURING	84,605	421,689	0.183	0.925	0.801
	21 METAL MANUFACTURING	291,924	1,477,316	0.192	0.908	0.786
	22 OTHER MANUFACTURING	188,033	1,065,073	1.800	1.157	1.001
	TOTAL*	3,199,040	16,000,680	1.428	1.490	1.290

\* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

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ARIZONA  
BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
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10 MONOLINE	01 APARTMENTS	10,766	43,605	0.000	0.397	0.344
	02 OTHER HABITATIONAL	1,895	12,695	0.000	0.407	0.352
	03 RESTAURANTS & BARS	7,757	28,155	0.436	0.487	0.422
	04 OTHER MERCANTILE RS	33,958	164,036	1.393	0.744	0.644
	06 CHURCHES	810	2,399	0.000	0.411	0.356
	07 SCHOOLS	1,615	8,362	0.000	0.409	0.354
	08 OFFICES AND BANKS	17,453	87,463	0.033	0.391	0.339
	09 REC. FACILITIES	5,268	26,181	0.110	0.424	0.367
	10 HOTELS AND MOTELS	1,091	11,657	0.000	0.407	0.352
	11 HOSPITALS/NURS HOME	3,956	19,156	0.000	0.405	0.351
	13 MOTOR VEHICLE RISKS	1,464	23,929	0.000	0.403	0.349
	14 OTHER NON-MANUF.	3,209	31,085	0.059	0.413	0.358
	15 STORAGE	4,330	24,570	0.330	0.467	0.404
	17 FOOD MANUFACTURING	657	2,220	0.000	0.411	0.356
	18 WOOD MANUFACTURING	1,179	2,332	0.000	0.411	0.356
	21 METAL MANUFACTURING	4,830	10,651	0.000	0.408	0.353
	22 OTHER MANUFACTURING	5,248	14,944	0.000	0.406	0.352
	TOTAL*	105,486	513,440	0.507	0.521	0.451
31 MULTILINE	10 HOTELS AND MOTELS	8,844	70,233	0.982	0.873	0.756
MOTEL/HOTEL	TOTAL*	8,844	70,233	0.982	0.873	0.756
32 MULTILINE	01 APARTMENTS	76,115	338,274	4.957	1.583	1.371
APARTMENT	02 OTHER HABITATIONAL	19,875	96,927	0.081	0.720	0.623
	TOTAL*	95,990	435,201	3.947	1.404	1.216
33 MULTILINE	08 OFFICES AND BANKS	50,932	327,406	0.108	0.718	0.622
OFFICE	TOTAL*	50,932	327,406	0.108	0.718	0.622
34 MULTILINE	03 RESTAURANTS & BARS	81,873	466,254	0.073	0.708	0.613
MERCANTILE	04 OTHER MERCANTILE RS	280,832	1,129,550	0.122	0.702	0.608
	08 OFFICES AND BANKS	10,418	64,699	2.993	1.212	1.049
	13 MOTOR VEHICLE RISKS	22,802	53,201	0.000	0.707	0.612
	14 OTHER NON-MANUF.	5,706	29,065	0.000	0.708	0.613
	15 STORAGE	17,385	87,298	0.000	0.706	0.611
	TOTAL*	419,016	1,830,067	0.170	0.716	0.620

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ARIZONA  
BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	70	1,435	0.000	0.709	0.614
	06 CHURCHES	39,321	223,448	1.755	1.008	0.873
	07 SCHOOLS	31,701	132,051	0.428	0.778	0.674
	08 OFFICES AND BANKS	39,438	201,413	1.548	0.972	0.842
	09 REC. FACILITIES	13,528	46,002	0.031	0.713	0.617
	11 HOSPITALS/NURS HOME	18,152	101,435	0.199	0.740	0.641
	13 MOTOR VEHICLE RISKS	91	633	0.000	0.709	0.614
	14 OTHER NON-MANUF.	18,933	99,583	0.132	0.728	0.630
	TOTAL*	161,234	806,000	0.931	0.866	0.750
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	4,315	43,902	0.677	0.328	0.284
	04 OTHER MERCANTILE RS	38,049	163,315	0.143	0.146	0.126
	08 OFFICES AND BANKS	23,089	136,190	0.017	0.077	0.067
	09 REC. FACILITIES	70,500	369,596	0.004	0.041	0.035
	13 MOTOR VEHICLE RISKS	31,533	156,612	0.041	0.087	0.075
	14 OTHER NON-MANUF.	32,972	138,512	0.862	0.542	0.469
	15 STORAGE	4,373	32,809	0.000	0.105	0.091
	21 METAL MANUFACTURING	1,216	7,261	0.000	0.122	0.106
	22 OTHER MANUFACTURING	1,722	34,797	0.000	0.104	0.090
	TOTAL*	207,769	1,082,994	0.187	0.159	0.138
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	7,189	35,041	0.000	0.104	0.090
	08 OFFICES AND BANKS	1,356	8,237	0.000	0.121	0.105
	14 OTHER NON-MANUF.	1,788	12,137	0.000	0.118	0.102
	15 STORAGE	1,242	5,429	0.000	0.123	0.106
	17 FOOD MANUFACTURING	11,972	59,282	0.039	0.107	0.093
	18 WOOD MANUFACTURING	8,346	47,828	0.000	0.097	0.084
	21 METAL MANUFACTURING	95,089	455,422	0.025	0.052	0.045
	22 OTHER MANUFACTURING	46,167	255,630	0.550	0.421	0.365
	TOTAL*	173,149	879,006	0.163	0.160	0.139
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	47,843	235,876	0.000	0.051	0.044
	08 OFFICES AND BANKS	18,111	85,121	0.102	0.128	0.111
	14 OTHER NON-MANUF.	6,122	20,866	0.000	0.112	0.097
	TOTAL*	72,076	341,863	0.026	0.075	0.065

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BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TOTAL ALL TOPS*	01 APARTMENTS	86,881	381,879	4.343	1.436	1.243
	02 OTHER HABITATIONAL	21,840	111,057	0.074	0.692	0.600
	03 RESTAURANTS & BARS	93,945	538,311	0.131	0.673	0.582
	04 OTHER MERCANTILE RS	407,871	1,727,818	0.213	0.566	0.491
	06 CHURCHES	40,131	225,847	1.720	0.996	0.862
	07 SCHOOLS	33,316	140,413	0.407	0.760	0.658
	08 OFFICES AND BANKS	160,797	910,529	0.625	0.613	0.531
	09 REC. FACILITIES	89,296	441,779	0.014	0.165	0.143
	10 HOTELS AND MOTELS	9,935	81,890	0.874	0.822	0.712
	11 HOSPITALS/NURS HOME	22,108	120,591	0.163	0.680	0.589
	13 MOTOR VEHICLE RISKS	55,890	234,375	0.023	0.349	0.302
	14 OTHER NON-MANUF.	68,730	331,248	0.453	0.552	0.478
	15 STORAGE	27,330	150,106	0.052	0.546	0.472
	17 FOOD MANUFACTURING	12,629	61,502	0.037	0.123	0.106
	18 WOOD MANUFACTURING	9,525	50,160	0.000	0.136	0.118
	21 METAL MANUFACTURING	101,135	473,334	0.024	0.070	0.060
	22 OTHER MANUFACTURING	53,137	305,371	0.478	0.410	0.354
	TOTAL*	1,294,496	6,286,210	0.569	0.572	0.495

\* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

Balance of State (Arizona)  
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ARIZONA  
BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	5,556	66,688	0.000	0.395	0.342
	02 OTHER HABITATIONAL	11,540	91,073	0.532	0.494	0.428
	03 RESTAURANTS & BARS	26,256	162,837	0.184	0.425	0.368
	04 OTHER MERCANTILE RS	163,775	918,941	0.093	0.371	0.321
	06 CHURCHES	2,291	7,699	0.919	0.562	0.487
	07 SCHOOLS	12,620	68,104	0.033	0.401	0.347
	08 OFFICES AND BANKS	74,217	358,312	0.092	0.397	0.344
	09 REC. FACILITIES	53,198	288,715	1.167	0.633	0.548
	10 HOTELS AND MOTELS	15,415	76,330	2.262	0.818	0.708
	11 HOSPITALS/NURS HOME	7,433	47,175	0.037	0.403	0.349
	13 MOTOR VEHICLE RISKS	36,126	150,448	0.268	0.442	0.383
	14 OTHER NON-MANUF.	86,282	402,931	1.856	0.802	0.694
	15 STORAGE	23,183	121,042	0.034	0.398	0.345
	17 FOOD MANUFACTURING	18,327	63,872	0.000	0.395	0.342
	18 WOOD MANUFACTURING	2,648	19,572	0.000	0.398	0.345
	21 METAL MANUFACTURING	13,680	102,419	0.000	0.393	0.340
	22 OTHER MANUFACTURING	37,627	180,273	0.041	0.396	0.343
	TOTAL*	590,174	3,126,431	0.517	0.488	0.422
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	288,045	1,516,913	2.714	1.486	1.287
	TOTAL*	288,045	1,516,913	2.714	1.486	1.287
32 MULTILINE APARTMENT	01 APARTMENTS	320,266	1,472,520	1.387	1.230	1.065
	02 OTHER HABITATIONAL	150,417	733,373	1.661	1.277	1.106
	TOTAL*	470,683	2,205,893	1.475	1.245	1.078
33 MULTILINE OFFICE	08 OFFICES AND BANKS	325,831	1,507,970	1.389	1.230	1.065
	TOTAL*	325,831	1,507,970	1.389	1.230	1.065
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	334,838	2,011,416	1.546	1.264	1.094
	04 OTHER MERCANTILE RS	1,240,135	6,607,714	1.041	1.151	0.997
	08 OFFICES AND BANKS	67,027	384,966	1.039	1.166	1.010
	13 MOTOR VEHICLE RISKS	71,146	171,132	0.000	0.990	0.857
	14 OTHER NON-MANUF.	43,190	227,580	0.000	0.989	0.856
	15 STORAGE	219,194	926,051	0.121	0.996	0.862
	TOTAL*	1,975,530	10,328,859	0.964	1.144	0.991



Balance of State (Arizona)  
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ARIZONA  
BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	2,462	27,615	0.000	0.993	0.860
	06 CHURCHES	294,217	1,798,817	1.024	1.159	1.003
	07 SCHOOLS	167,154	665,836	0.042	0.987	0.855
	08 OFFICES AND BANKS	99,464	452,131	0.030	0.989	0.856
	09 REC. FACILITIES	83,825	533,204	2.952	1.502	1.300
	11 HOSPITALS/NURS HOME	57,989	249,232	0.013	0.991	0.858
	13 MOTOR VEHICLE RISKS	1,021	7,781	0.000	0.993	0.860
	14 OTHER NON-MANUF.	75,595	376,276	0.050	0.994	0.861
	TOTAL*	781,727	4,110,892	0.721	1.108	0.959
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	85,040	353,112	1.832	1.438	1.245
	04 OTHER MERCANTILE RS	212,721	1,184,038	0.181	0.446	0.386
	08 OFFICES AND BANKS	163,436	867,839	0.461	0.685	0.593
	09 REC. FACILITIES	778,636	3,903,869	1.999	1.897	1.642
	13 MOTOR VEHICLE RISKS	221,330	885,140	1.020	1.048	0.907
	14 OTHER NON-MANUF.	323,359	1,552,900	0.767	0.847	0.733
	15 STORAGE	60,351	292,732	0.031	0.647	0.560
	21 METAL MANUFACTURING	18,438	92,283	0.231	0.878	0.760
	22 OTHER MANUFACTURING	29,663	167,530	0.000	0.738	0.639
	TOTAL*	1,892,974	9,299,443	1.218	1.262	1.093
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	57,896	296,300	0.000	0.632	0.547
	08 OFFICES AND BANKS	29,562	136,158	0.101	0.800	0.693
	13 MOTOR VEHICLE RISKS	349	1,386	0.000	0.942	0.816
	14 OTHER NON-MANUF.	21,423	102,243	0.000	0.807	0.699
	15 STORAGE	964	4,950	0.000	0.936	0.810
	17 FOOD MANUFACTURING	152,237	664,104	0.008	0.453	0.392
	18 WOOD MANUFACTURING	91,039	426,872	1.249	1.175	1.017
	21 METAL MANUFACTURING	259,959	1,313,705	0.045	0.329	0.285
	22 OTHER MANUFACTURING	295,428	1,510,637	0.139	0.373	0.323
	TOTAL*	908,857	4,456,355	0.188	0.495	0.429
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	173,574	962,338	4.684	3.506	3.035
	08 OFFICES AND BANKS	79,709	376,546	0.363	0.752	0.651
	14 OTHER NON-MANUF.	22,498	98,417	0.820	1.027	0.889
	TOTAL*	275,781	1,437,301	3.120	2.508	2.171

Balance of State (Arizona)  
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ARIZONA  
BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TOTAL ALL TOPS*	01 APARTMENTS	325,822	1,539,208	1.363	1.216	1.053
	02 OTHER HABITATIONAL	164,419	852,061	1.557	1.217	1.054
	03 RESTAURANTS & BARS	446,134	2,527,365	1.520	1.247	1.080
	04 OTHER MERCANTILE RS	1,848,101	9,969,331	1.168	1.206	1.044
	06 CHURCHES	296,508	1,806,516	1.023	1.154	0.999
	07 SCHOOLS	179,774	733,940	0.041	0.946	0.819
	08 OFFICES AND BANKS	839,246	4,083,922	0.762	0.956	0.828
	09 REC. FACILITIES	915,659	4,725,788	2.038	1.787	1.548
	10 HOTELS AND MOTELS	303,460	1,593,243	2.691	1.452	1.257
	11 HOSPITALS/NURS HOME	65,422	296,407	0.016	0.924	0.800
	13 MOTOR VEHICLE RISKS	329,972	1,215,887	0.714	0.969	0.839
	14 OTHER NON-MANUF.	572,347	2,760,347	0.752	0.876	0.758
	15 STORAGE	303,692	1,344,775	0.096	0.881	0.763
	17 FOOD MANUFACTURING	170,564	727,976	0.007	0.446	0.387
	18 WOOD MANUFACTURING	93,687	446,444	1.214	1.153	0.998
	21 METAL MANUFACTURING	292,077	1,508,407	0.055	0.366	0.317
	22 OTHER MANUFACTURING	362,718	1,858,440	0.117	0.405	0.351
	TOTAL*	7,509,602	37,990,057	1.070	1.113	0.964

\* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

ENTIRE STATE

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ARIZONA

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
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10 MONOLINE	01 APARTMENTS	53,470	368,390	3.974	1.548	1.341
	02 OTHER HABITATIONAL	15,674	118,947	0.608	0.599	0.519
	03 RESTAURANTS & BARS	38,485	279,692	0.213	0.508	0.440
	04 OTHER MERCANTILE RS	283,052	1,577,908	0.403	0.647	0.560
	06 CHURCHES	3,717	13,837	0.567	0.607	0.526
	07 SCHOOLS	19,412	107,656	0.021	0.571	0.494
	08 OFFICES AND BANKS	125,396	644,025	0.166	0.586	0.507
	09 REC. FACILITIES	72,954	430,981	1.038	0.729	0.631
	10 HOTELS AND MOTELS	16,508	88,030	2.112	0.791	0.685
	11 HOSPITALS/NURS HOME	13,016	76,393	0.021	0.483	0.418
	13 MOTOR VEHICLE RISKS	44,920	216,880	0.216	0.538	0.465
	14 OTHER NON-MANUF.	98,781	508,667	1.633	0.813	0.704
	15 STORAGE	36,265	201,498	0.061	0.560	0.485
	17 FOOD MANUFACTURING	23,486	71,916	0.000	0.518	0.448
	18 WOOD MANUFACTURING	14,526	79,132	0.000	0.867	0.751
	21 METAL MANUFACTURING	35,688	212,701	0.125	0.725	0.628
	22 OTHER MANUFACTURING	49,845	248,391	0.031	0.486	0.421
	TOTAL*	945,195	5,245,044	0.696	0.692	0.599
31 MULTILINE	10 HOTELS AND MOTELS	378,051	1,975,324	2.850	1.617	1.400
MOTEL/HOTEL	TOTAL*	378,051	1,975,324	2.850	1.617	1.400
32 MULTILINE	01 APARTMENTS	525,277	2,477,387	2.066	1.447	1.253
APARTMENT	02 OTHER HABITATIONAL	215,261	1,058,581	1.821	1.395	1.208
	TOTAL*	740,538	3,535,968	1.995	1.432	1.240
33 MULTILINE	08 OFFICES AND BANKS	510,474	2,492,859	0.971	1.277	1.105
OFFICE	TOTAL*	510,474	2,492,859	0.971	1.277	1.105
34 MULTILINE	03 RESTAURANTS & BARS	582,651	3,219,818	0.900	1.268	1.098
MERCANTILE	04 OTHER MERCANTILE RS	2,136,390	10,906,658	1.550	1.379	1.193
	08 OFFICES AND BANKS	118,842	626,039	0.860	1.310	1.134
	13 MOTOR VEHICLE RISKS	123,019	320,729	0.038	1.080	0.935
	14 OTHER NON-MANUF.	74,854	387,531	0.000	1.167	1.010
	15 STORAGE	304,501	1,335,228	0.089	1.106	0.957
	TOTAL*	3,340,257	16,796,003	1.189	1.316	1.139

ENTIRE STATE

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ARIZONA

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	2,595	34,678	0.000	0.999	0.865
	06 CHURCHES	437,212	2,607,069	1.166	1.294	1.121
	07 SCHOOLS	281,658	1,086,015	0.140	1.144	0.990
	08 OFFICES AND BANKS	248,356	1,113,629	0.269	1.239	1.073
	09 REC. FACILITIES	114,318	659,031	2.882	1.538	1.331
	11 HOSPITALS/NURS HOME	91,208	429,790	0.411	1.096	0.949
	13 MOTOR VEHICLE RISKS	1,331	10,384	0.000	1.068	0.925
	14 OTHER NON-MANUF.	116,186	551,481	0.054	1.057	0.915
	TOTAL*	1,292,864	6,492,077	0.765	1.236	1.070
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	119,711	507,747	1.326	1.257	1.088
	04 OTHER MERCANTILE RS	317,503	1,660,538	1.847	0.752	0.651
	08 OFFICES AND BANKS	239,955	1,229,347	0.316	0.670	0.580
	09 REC. FACILITIES	942,242	4,683,898	1.653	1.657	1.435
	13 MOTOR VEHICLE RISKS	328,788	1,427,497	1.416	1.024	0.887
	14 OTHER NON-MANUF.	434,597	2,061,648	0.666	0.834	0.722
	15 STORAGE	100,443	426,483	0.019	0.707	0.612
	21 METAL MANUFACTURING	32,878	159,193	0.190	0.860	0.745
	22 OTHER MANUFACTURING	49,683	291,934	0.036	0.774	0.671
	TOTAL*	2,565,800	12,448,285	1.225	1.149	0.995
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	104,755	541,337	0.023	0.693	0.600
	08 OFFICES AND BANKS	39,701	189,139	0.075	0.795	0.688
	13 MOTOR VEHICLE RISKS	3,206	9,915	0.000	0.890	0.771
	14 OTHER NON-MANUF.	42,853	215,705	0.102	0.827	0.716
	15 STORAGE	2,206	19,427	0.000	0.479	0.414
	17 FOOD MANUFACTURING	224,823	1,016,811	0.059	0.557	0.482
	18 WOOD MANUFACTURING	173,291	839,161	0.746	1.010	0.875
	21 METAL MANUFACTURING	616,570	3,087,163	0.103	0.527	0.456
	22 OTHER MANUFACTURING	504,360	2,688,559	0.799	0.642	0.555
	TOTAL*	1,711,765	8,607,217	0.362	0.638	0.553
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	339,407	1,851,360	2.489	2.118	1.834
	08 OFFICES AND BANKS	136,927	650,501	0.261	0.712	0.616
	14 OTHER NON-MANUF.	41,860	182,309	0.802	0.900	0.779
	TOTAL*	518,194	2,684,170	1.764	1.648	1.427

ENTIRE STATE

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ARIZONA

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TOTAL ALL TOPS*	01 APARTMENTS	578,747	2,845,777	2.242	1.457	1.261
	02 OTHER HABITATIONAL	233,530	1,212,206	1.720	1.337	1.158
	03 RESTAURANTS & BARS	740,847	4,007,257	0.933	1.227	1.062
	04 OTHER MERCANTILE RS	3,181,107	16,537,801	1.528	1.307	1.132
	06 CHURCHES	440,929	2,620,906	1.161	1.289	1.116
	07 SCHOOLS	301,070	1,193,671	0.133	1.107	0.958
	08 OFFICES AND BANKS	1,419,651	6,945,539	0.564	1.041	0.902
	09 REC. FACILITIES	1,129,514	5,773,910	1.737	1.585	1.373
	10 HOTELS AND MOTELS	394,559	2,063,354	2.819	1.582	1.370
	11 HOSPITALS/NURS HOME	104,224	506,183	0.363	1.020	0.883
	13 MOTOR VEHICLE RISKS	501,264	1,985,405	0.957	0.993	0.860
	14 OTHER NON-MANUF.	809,131	3,907,341	0.612	0.897	0.777
	15 STORAGE	443,415	1,982,636	0.071	0.968	0.838
	17 FOOD MANUFACTURING	248,309	1,088,727	0.053	0.553	0.479
	18 WOOD MANUFACTURING	187,817	918,293	0.688	0.999	0.865
	21 METAL MANUFACTURING	685,136	3,459,057	0.109	0.553	0.479
	22 OTHER MANUFACTURING	603,888	3,228,884	0.673	0.640	0.554
	TOTAL*	12,003,138	60,276,947	1.112	1.155	1.000

\* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

## ARIZONA

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS  
TABLE 11 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
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10 MONOLINE	01 BUILDINGS	393,819	2,181,505	1.985	2.430
	02 RES. APTS. AND COND	15,945	76,520	0.237	0.290
	03 OFFICES	86,993	480,299	0.498	0.610
	04 MERCANTILE - HIGH	80,165	401,722	0.379	0.464
	05 MERCANTILE - MEDIUM	16,983	90,845	9.744	11.927
	06 MERCANTILE - LOW	12,164	56,735	0.893	1.093
	07 MOTELS AND HOTELS	5,810	35,656	0.000	0.000
	08 INSTITUTIONAL - HIG	20,954	98,064	0.721	0.882
	09 INSTITUTIONAL - LOW	30,550	160,960	0.010	0.012
	10 INDUST-PROC - HIGH	10,880	51,492	0.000	0.000
	11 INDUST-PROC - LOW	34,686	190,308	0.210	0.257
	12 SERVICE - HIGH	19,805	108,787	0.103	0.126
	13 SERVICE - LOW	28,319	164,186	0.912	1.116
	14 CONTRACTORS	22,780	149,250	1.169	1.431
	TOTAL*	779,853	4,246,329	1.427	1.747
31 MULTILINE	01 BUILDINGS	93,431	424,291	3.375	4.131
MOTEL/HOTEL	07 MOTELS AND HOTELS	33,501	201,843	8.332	10.198
	TOTAL*	126,932	626,134	4.683	5.732
32 MULTILINE	01 BUILDINGS	442,765	1,968,581	1.002	1.226
APARTMENT	02 RES. APTS. AND COND	158,242	694,889	0.155	0.190
	TOTAL*	601,007	2,663,470	0.779	0.953
33 MULTILINE	01 BUILDINGS	317,857	1,456,851	0.662	0.810
OFFICE	03 OFFICES	226,175	1,071,956	0.454	0.556
	08 INSTITUTIONAL - HIG	4,353	25,670	2.515	3.078
	12 SERVICE - HIGH	12,249	20,679	0.000	0.000
	14 CONTRACTORS	0	78	0.000	0.000
	TOTAL*	560,634	2,575,234	0.578	0.707

## ARIZONA

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS  
TABLE 11 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
34 MULTILINE MERCANTILE	01 BUILDINGS	1,521,697	6,800,310	0.568	0.695
	03 OFFICES	10,783	29,946	0.052	0.064
	04 MERCANTILE - HIGH	222,683	1,429,385	0.435	0.532
	05 MERCANTILE - MEDIUM	307,051	1,683,852	0.659	0.807
	06 MERCANTILE - LOW	90,990	453,560	0.420	0.514
	08 INSTITUTIONAL - HIG	242	5,224	0.000	0.000
	11 INDUST-PROC - LOW	213	366	0.000	0.000
	12 SERVICE - HIGH	8,484	41,221	2.815	3.446
	13 SERVICE - LOW	5,551	25,475	0.181	0.222
	14 CONTRACTORS	3,298	22,648	0.392	0.480
	TOTAL*	2,170,992	10,491,987	0.566	0.693
35 MULTILINE INSTITUTIONAL	01 BUILDINGS	502,459	2,676,971	0.777	0.951
	03 OFFICES	352	1,859	0.000	0.000
	04 MERCANTILE - HIGH	408	770	0.000	0.000
	06 MERCANTILE - LOW	77	365	0.000	0.000
	08 INSTITUTIONAL - HIG	199,331	944,740	0.529	0.647
	09 INSTITUTIONAL - LOW	328,538	1,791,505	0.635	0.777
	12 SERVICE - HIGH	1,574	7,992	1.169	1.431
	13 SERVICE - LOW	7,391	33,159	0.443	0.542
	14 CONTRACTORS	699	3,830	0.000	0.000
	TOTAL*	1,040,829	5,461,191	0.682	0.835
36 MULTILINE SERVICES	01 BUILDINGS	729,073	3,430,818	0.880	1.077
	03 OFFICES	4,746	18,039	7.136	8.734
	04 MERCANTILE - HIGH	7,972	29,921	0.026	0.032
	05 MERCANTILE - MEDIUM	1,321	5,266	0.000	0.000
	06 MERCANTILE - LOW	2,039	6,570	1.931	2.364
	08 INSTITUTIONAL - HIG	17,324	78,028	0.000	0.000
	09 INSTITUTIONAL - LOW	23,722	129,375	0.000	0.000
	10 INDUST-PROC - HIGH	0	173	0.000	0.000
	11 INDUST-PROC - LOW	1,727	6,808	0.000	0.000
	12 SERVICE - HIGH	181,248	1,333,808	0.678	0.830
	13 SERVICE - LOW	129,580	723,741	2.519	3.083
	14 CONTRACTORS	18,534	86,731	0.000	0.000
	TOTAL*	1,117,286	5,849,278	1.010	1.236

## ARIZONA

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS  
TABLE 11 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 03/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
37 MULTILINE INDUST/PROC	01 BUILDINGS	393,135	2,126,996	0.223	0.273
	03 OFFICES	7,183	22,610	0.000	0.000
	04 MERCANTILE - HIGH	5,541	26,239	0.726	0.889
	05 MERCANTILE - MEDIUM	940	4,242	0.000	0.000
	06 MERCANTILE - LOW	9	9	0.000	0.000
	08 INSTITUTIONAL - HIG	51	290	0.000	0.000
	10 INDUST-PROC - HIGH	70,241	393,672	0.721	0.882
	11 INDUST-PROC - LOW	249,738	1,456,902	0.866	1.060
	12 SERVICE - HIGH	513	2,508	0.000	0.000
	13 SERVICE - LOW	1,245	5,104	0.000	0.000
	14 CONTRACTORS	473	2,050	0.000	0.000
	TOTAL*	729,069	4,040,622	0.492	0.602
38 MULTILINE CONTRACTORS	01 BUILDINGS	195,526	1,001,335	0.430	0.526
	03 OFFICES	22,605	100,456	1.647	2.016
	04 MERCANTILE - HIGH	25,104	111,823	0.214	0.262
	05 MERCANTILE - MEDIUM	784	2,023	0.000	0.000
	06 MERCANTILE - LOW	8,279	31,914	2.451	3.000
	08 INSTITUTIONAL - HIG	180	575	0.000	0.000
	11 INDUST-PROC - LOW	454	1,634	0.000	0.000
	12 SERVICE - HIGH	1,120	4,628	0.000	0.000
	13 SERVICE - LOW	1,087	2,923	0.000	0.000
	14 CONTRACTORS	277,738	1,504,365	0.659	0.807
	TOTAL*	532,877	2,761,676	0.619	0.758
TOTAL ALL TOPS*	01 BUILDINGS	4,589,762	22,067,658	0.832	1.018
	02 RES. APTS. AND COND	174,187	771,409	0.163	0.200
	03 OFFICES	358,837	1,725,165	0.607	0.743
	04 MERCANTILE - HIGH	341,873	1,999,860	0.400	0.490
	05 MERCANTILE - MEDIUM	327,079	1,786,228	1.125	1.377
	06 MERCANTILE - LOW	113,558	549,153	0.646	0.791
	07 MOTELS AND HOTELS	39,311	237,499	7.101	8.692
	08 INSTITUTIONAL - HIG	242,435	1,152,591	0.542	0.663
	09 INSTITUTIONAL - LOW	382,810	2,081,840	0.546	0.668
	10 INDUST-PROC - HIGH	81,121	445,337	0.624	0.764
	11 INDUST-PROC - LOW	286,818	1,656,018	0.779	0.953
	12 SERVICE - HIGH	224,993	1,519,623	0.670	0.820
	13 SERVICE - LOW	173,173	954,588	2.059	2.520
	14 CONTRACTORS	323,522	1,768,952	0.652	0.798
	TOTAL*	7,659,479	38,715,921	0.817	1.000

\* TOTALS IN COLUMNS (3) & (4) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.



## EXPLANATORY NOTES TO TABLES 10 AND 11

### BASIC GROUP I/SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

INTRODUCTION	<p>The experience used in the relativity analysis and displayed on Tables 10 and 11 is the latest five accident years of data reported under the Commercial Statistical Plan. As in the overall review, loss costs have been adjusted to current ISO loss cost and prospective amount of insurance levels (with multiline aggregate loss costs adjusted additionally by the current implicit package modification factors). Incurred losses are adjusted to prospective cost levels, and are further adjusted by the Basic Group I large loss procedure and the Special Causes of Loss excess procedure. Losses have also been developed to their ultimate settlement value by application of loss development factors.</p>
COLUMN (1)	<p><u>2018 AGGREGATE LOSS COSTS</u></p> <p>The latest accident year aggregate loss costs (adjusted as described above) are used as weights both in the calculation of any totals shown in this table and in the iterative formulas used in the simultaneous review procedure.</p>
COLUMN (2)	<p><u>2014-2018 AGGREGATE LOSS COSTS</u></p> <p>The combined five-year adjusted aggregate loss costs (adjusted as described above) are used to calculate the experience ratios in column (3).</p>
COLUMN (3)	<p><u>FIVE-YEAR EXPERIENCE RATIOS</u></p> <p>These are the ratios of the combined five-year adjusted incurred losses (adjusted as described above) to the combined five-year adjusted aggregate loss costs as shown in column (2). Any totals which are shown are weighted averages using the adjusted aggregate loss costs in column (1).</p>
COLUMN (4)	<p><u>CREDIBILITY (Z) WEIGHTED EXPERIENCE RATIO</u></p> <p>A credibility procedure is applied to the initial experience ratios in column (3) on a cell-by-cell basis prior to the simultaneous review procedure. The credibility values are calculated using an empirical Bayesian credibility procedure. In the following discussion, cell refers to an individual combination of TOP, rating group or category, and territory (where applicable).</p>

## EXPLANATORY NOTES TO TABLES 10 AND 11 (cont'd)

COLUMN (4)  
(cont'd)

The important concept underlying empirical Bayesian credibility is that credibility should depend both on the overall variation of the group of which the cell is a member and the variation of the yearly experience ratios for the cell. Therefore, if a cell's data is very stable then a relatively high credibility value is assigned, and vice versa.

The empirical Bayesian credibility formula for individual cell credibility is  $Z = ((C-3)/C) (P/(P+K)) + (3/C)$ . P equals the cell's five-year adjusted aggregate loss costs and C equals the number of unique combinations of rating variables (Territory, TOP and Rating Group/Category) within a class group. The K value is estimated from the underlying data using the empirical Bayes method and varies by TOP group and by territory where applicable. The three TOP groups used in this analysis are: Monoline (TOP 10), Premises (TOP's 31-35), and Operations (TOP's 36-38). The 3/C term corrects for the statistical bias associated with the credibility process. The minimum credibility that is possible is 3/C.

COLUMN (5)

### WEIGHTED RELATIVITIES

The relativities are the ratios of the five-year credibility-weighted experience ratios shown in column (4) to the average five-year credibility-weighted experience ratio for all TOP's, rating groups and territories (where applicable) combined. These relativities represent how much better or worse than average the experience for a given cell is. They are used along with the aggregate loss costs in column (1) as input for the simultaneous review procedure.

## ARIZONA

TABLE 12 - BASIC GROUP II RELATIVITY ANALYSIS

INDICATED LOSS COST ADJUSTMENT: +4.3%

	(1) ACCIDENT YEAR ENDING 03/31/18	(2) ACCIDENT YEARS 2009-2018	(3) FORMULA RELATIVITY (2) / 1.086	(4) CREDI- BILITY Z C	(5) Z WEIGHTED RELA- TIVITY D	(6) BALANCED FORMULA RELA- TIVITY E	(7) NORMALIZED FORMULA RELA- TIVITY F	(8) CURRENT IMPLICIT PMF	(9) INDICATED IMPLICIT PMF G	(10) INDIC. LOSS COST ADJUST
MONOLINE	703,458	0.503	0.463	0.152	0.918	0.918	0.8953			-6.6%
MULTILINE	5,488,194	1.161	1.069	0.564	1.039	1.039	1.0130			+5.7%
COVERAGE	6,191,652	1.086	1.000			1.0253	B 0.9996			+4.3%
MULTILINE TOP										
31 MOTEL/HOTEL	150,031	2.422	2.230	0.040	1.049	1.075	1.0485	0.790	0.925	+9.4%
32 APARTMENT	501,333	0.954	0.878	0.090	0.989	1.013	0.9880	0.821	0.906	+3.0%
33 OFFICE	362,702	0.698	0.643	0.072	0.974	0.998	0.9734	0.782	0.850	+1.5%
34 MERCANTILE	1,415,410	1.180	1.087	0.246	1.021	1.046	1.0202	0.729	0.831	+6.4%
35 INSTITUTIONAL	782,069	1.637	1.507	0.170	1.086	1.113	1.0855	0.684	0.829	+13.2%
36 SERVICES	1,536,142	1.070	0.985	0.259	0.996	1.021	0.9958	1.022	1.137	+3.9%
37 INDUST/PROCESS	432,331	1.044	0.961	0.104	0.996	1.021	0.9958	0.630	0.701	+3.9%
38 CONTRACTORS	308,176	0.745	0.686	0.072	0.977	1.001	0.9763	0.853	0.930	+1.8%
	5,488,194	1.161 B	1.069		1.014 B	1.039 B	1.0130 B			+5.7%

B - AVERAGE WEIGHTED BY COLUMN (1)

C - CREDIBILITY =  $P / (P + K)$  WHERE P REPRESENTS THE TOTAL 10 YEAR ADJUSTED LOSS COSTS AND K = 45,000,000

D - (5) = (3) \* (4) + (1.000 - (4))

E - (6) = (5) \* (1.039/1.014)

F - (7) = (6) / 1.0253

G - (9) = (7) \* (8) / (0.8953)

## EXPLANATORY NOTES TO TABLE 12

### BASIC GROUP II RELATIVITY ANALYSIS

#### INTRODUCTION

The explanations which follow clarify Table 12, the Basic Group II (BG II) relativity analysis. The purpose of this analysis is to:

- (1) determine the monoline loss cost level need;
- (2) determine indicated changes to the eight CPP package modification factors (PMFs) based on Basic Group II experience.

#### COLUMN (1)

##### 2018 AGGREGATE LOSS COSTS

The latest accident year adjusted aggregate loss costs (adjusted in the same manner as in the overall review, i.e. to current manual loss cost and prospective amount of insurance levels, with multiline aggregate loss costs further adjusted to current IPMF level) are used as weights in the calculation of any totals shown in this table.

#### COLUMN (2)

##### 2009 - 2018 EXPERIENCE RATIO

These experience ratios are the ratios of the combined ten-year CSP adjusted incurred losses (adjusted to current deductible and prospective cost levels including loss development, and smoothed by the BG II excess loss procedure) to the combined ten year CSP adjusted aggregate loss costs. Any totals which are shown are weighted averages using the aggregate loss costs in column (1). When a dash is displayed in the column, it indicates that the indicated IPMF which resulted from this procedure was capped. The procedure which follows when capping occurs is described below.

#### COLUMN (3)

##### FORMULA RELATIVITY

The formula relativities are the ratios of the ten year experience ratios for the type of policy (either monoline vs. multiline or individual multiline programs) to the average ten year experience ratio for monoline and multiline combined. These relativities represent how much better or worse than average the experience for a given type of policy is. Again, any totals which are shown are weighted averages and the display of a dash indicates that the resulting IPMF was capped. Unlike the BG I and SCL relativity analyses, the BG II analysis does not employ a simultaneous review procedure since a one way review is involved. That is, the overall loss cost change is only distributed across type of policy; no other rating variables are considered.

EXPLANATORY NOTES TO TABLE 12 (cont'd)

COLUMN (4)

CREDIBILITY

The credibility of the experience for each type of policy is determined from the formula:

$$Z = \frac{P}{P + K}$$

where P is the ten year aggregate adjusted loss costs for a given type of policy, and K is a constant loss cost volume of \$45,000,000.

COLUMN (5)

Z - WEIGHTED RELATIVITY

The weighted relativity is a weighted average of the individual TOP formula relativity and the overall (coverage) formula relativity using credibility and its complement as the respective weights. Therefore, to the extent that the indication for a type of policy is not fully credible, the complement of credibility is assigned to the statewide coverage level change.

COLUMN (6)

BALANCED FORMULA RELATIVITY

The individual multiline weighted relativities are balanced to the multiline weighted relativity level by applying a factor equal to the overall multiline relativity (i.e. the weighted relativity for all multiline combined which is shown on the top of the exhibit directly under the corresponding monoline relativity) divided by the average multiline relativity (i.e. the weighted average of the individual multiline weighted relativities which is shown on the bottom of the exhibit). When the indicated IPMF for a type of policy is capped, the balanced relativity is set equal to the product of the capped IPMF in column (9) and the monoline balanced formula relativity in column (6), divided by the current IPMF in column (8).

COLUMN (7)

NORMALIZED FORMULA RELATIVITY

The normalized relativity is equal to the balanced formula relativity divided by the average monoline/multiline combined relativity. This balances the average monoline/multiline relativity to unity.

COLUMN (8)

CURRENT IMPLICIT PMF

This is the current IPMF for each multiline type of policy.

EXPLANATORY NOTES TO TABLE 12 (cont'd)

COLUMN (9)

INDICATED IMPLICIT PMF

The indicated IPMF is calculated from the normalized relativities as follows:

$$\frac{\text{TOP y indicated IPMF}}{\text{IPMF}} = \frac{(\text{TOP y current IPMF})(\text{TOP y relativity})}{\text{monoline relativity}}$$

For each CPP type of policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that type of policy are adjusted to the capped IPMF level, and the entire relativity review as described above is redone to take this into account. If an IPMF has been capped it is so noted in footnote A.

COLUMN (10)

INDICATED LOSS COST CHANGES

The indicated monoline and multiline (by TOP) changes are calculated by taking the product of the statewide loss cost level change and the corresponding TOP relativity.

The overall multiline loss cost level change is the aggregate loss cost weighted average of all multiline TOP loss cost level changes.

MULTILINE  
CONSIDERATIONS

It should be noted that although this procedure generates multiline indications, this filing only addresses monoline loss cost levels. That is, upon implementation of this filing only the monoline loss costs will be revised. The multiline indications developed here will be combined with those of the other component coverages, e.g. GL Premises and Operations in the CPP review for the purpose of revising the package modification factors.

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COMMERCIAL PROPERTY INSURANCE

SECTION C - SUPPORTING MATERIAL

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## OVERVIEW

### AGGREGATE LOSS COSTS AT CURRENT LEVEL

Tables 13, 14 and 15 provide the overall loss cost/rate level histories for Basic Group I, Basic Group II, and Special Causes of Loss respectively. These tables, along with Tables 16 and 17, provide information on the on-level factors needed to bring collected aggregate loss costs to current loss cost level.

Table 16 provides rate level/loss cost level histories by rating id (class vs. specific), rating group, and territory (where applicable) for Basic Group I, while Table 17 provides rate level/loss cost level histories by category for Special Causes of Loss. These tables can be used to develop on-level factors appropriate to bring collected aggregate loss costs up to current loss cost level. Factors based on these tables are more appropriate for company use than the overall factors shown on Tables 13 and 15 if the company's mix of business differs substantially from the industrywide average. For example, if a company's business is very heavily concentrated in a single class or territory, it is more appropriate to use the rate level/loss cost history for that class rather than the overall average to develop on-level factors.

Tables 18, 19 and 20 provide the current implicit package modification factors (IPMFs) and IPMF caps for Basic Group I, Basic Group II and Special Causes of Loss.

### ADJUSTMENTS TO LOSSES

The loss projection factors, current cost factors, and loss trend adjustments shown on Tables 21, 22 and 23 reflect the combined impact of all economic influences on Commercial Property underwriting results and are used to project past underwriting results to future loss levels. They are intended to reflect the impact of inflation on loss payments, the impact of higher costs due to repairs done on an "emergency" basis, the impact of coinsurance and relative insurance to value on loss payments, and any other economic influences which can affect underwriting losses but for which specific provisions are not made. Losses have also been developed to their ultimate settlement value using factors shown on Table 28.

### CREDIBILITY

Credibility,  $Z$ , is a weight given to the most recent body of data. The complement of credibility,  $1-Z$ , is the weight assigned to net trend. The final estimate is a weighted average obtained by using the formula  $C = Z \times R + (1-Z) \times N$ , where

$Z$  = credibility

$C$  = final estimate

$R$  = estimate based on the most recent data

$N$  = net trend



## OVERVIEW (cont'd)

### CREDIBILITY (cont'd)

Credibility may range from 0 to 1, where  $Z=1$  is full credibility and  $Z=0$  is no credibility. The actual numerical value of  $Z$  is calculated by considering how the state's volume of experience compares with the full credibility standard. Credibility is capped at 25% if the credibility calculated is less than 25%. See Tables 33, 33A, and 34 for a complete explanation of the credibility standards for Basic Group I, Basic Group II, and Special Causes of Loss.

### LOSS COST/RATE LEVEL HISTORY

Loss cost/rate level histories are provided for Basic Group I, Basic Group II and Special Causes of Loss. The loss cost/rate level changes are then further split out by rating territory, rating group or category since a company's business may be more heavily concentrated in a single class. These histories can be used to develop on-level factors appropriate to bring collected aggregate loss costs up to current loss cost levels.

## ARIZONA

TABLE 13

## BASIC GROUP I

## HISTORY OF STATEWIDE LOSS COST/RATE LEVEL CHANGES

LOSS COST/RATE LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2000-08-01	14.7	1.147	0.470	0.419
2001-07-01	7.2	1.230	0.438	0.504
2003-10-01	5.9	1.302	0.414	0.252
2004-09-01	-3.2	1.260	0.428	0.333
2005-09-01	-3.7	1.214	0.444	0.334
2006-09-01	-12.5	1.062	0.508	0.334
2007-09-01	-9.5	0.961	0.561	0.334
2008-10-01	-13.0	0.836	0.645	0.251
2009-10-01	-10.5	0.748	0.721	0.252
2011-10-01	-8.8	0.683	0.789	0.252
2012-11-01	-9.3	0.619	0.871	0.167
2015-12-01	-5.3	0.586	0.920	0.085
2017-12-01	-8.1	0.539	1.000	0.085

TIME ELEMENT ONLY LOSS COST LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2013-04-01	-13.1	0.869	1.000	0.753

\* WEIGHT DENOTES THE PORTION OF THE EFFECTIVE YEAR FOR WHICH THE ADJUSTMENT FACTORS APPLY.

## ARIZONA

TABLE 14

## BASIC GROUP II

## HISTORY OF STATEWIDE LOSS COST/RATE LEVEL CHANGES

LOSS COST/RATE LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2000-08-01	5.9	1.059	0.886	0.419
2001-07-01	7.1	1.134	0.827	0.504
2003-10-01	-8.6	1.037	0.905	0.252
2004-09-01	-4.2	0.993	0.945	0.333
2005-09-01	3.7	1.030	0.911	0.334
2006-09-01	-1.3	1.016	0.923	0.334
2007-09-01	-5.2	0.964	0.973	0.334
2008-10-01	-12.6	0.842	1.114	0.251
2009-10-01	-0.5	0.838	1.119	0.252
2011-10-01	-7.3	0.777	1.207	0.252
2012-11-01	4.5	0.812	1.155	0.167
2015-12-01	8.5	0.881	1.065	0.085
2017-12-01	6.5	0.938	1.000	0.085

TIME ELEMENT ONLY LOSS COST LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2013-04-01	-13.3	0.867	1.000	0.753

\* WEIGHT DENOTES THE PORTION OF THE EFFECTIVE YEAR FOR WHICH THE ADJUSTMENT FACTORS APPLY.

## ARIZONA

TABLE 15

## SPECIAL CAUSES OF LOSS

## HISTORY OF STATEWIDE LOSS COST/RATE LEVEL CHANGES

LOSS COST/RATE LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2000-08-01	-5.7	0.943	0.998	0.419
2001-07-01	13.3	1.068	0.881	0.504
2003-10-01	-6.7	0.997	0.944	0.252
2004-09-01	-6.9	0.928	1.014	0.333
2005-09-01	-7.8	0.856	1.099	0.334
2006-09-01	-4.4	0.818	1.150	0.334
2007-09-01	-7.6	0.756	1.245	0.334
2008-10-01	0.1	0.757	1.243	0.251
2009-10-01	1.4	0.767	1.227	0.252
2011-10-01	10.5	0.848	1.110	0.252
2012-11-01	2.4	0.868	1.084	0.167
2015-12-01	8.6	0.943	0.998	0.085
2017-12-01	-0.2	0.941	1.000	0.085

## TIME ELEMENT ONLY LOSS COST LEVEL HISTORY

(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2013-04-01	-25.0	0.750	1.000	0.753

\* WEIGHT DENOTES THE PORTION OF THE EFFECTIVE YEAR FOR WHICH THE ADJUSTMENT FACTORS APPLY.

EXPLANATORY NOTES TO TABLES 13, 14 AND 15

LOSS COST/RATE LEVEL HISTORIES

COLUMN (1) EFFECTIVE DATE

The effective dates of the latest loss cost/rate level changes are shown.

COLUMN (2) LOSS COST/RATE LEVEL CHANGE

The overall loss cost/rate level change is shown in percent form.

COLUMN (3) LOSS COST/RATE LEVEL INDEX

The product of all loss cost/rate level changes up to and including the loss cost/rate change for that effective date is used to calculate on level factors.

COLUMN (4) WRITTEN ADJUSTMENT (ON LEVEL) FACTORS

The factors are used to bring individual policies with inception dates prior to the effective date up to current loss cost level. For Basic Group II these are the actual factors used. However, the loss cost/rate changes for Basic Group I vary by rating group and territory (where applicable), while the loss cost/rate level changes for Special Causes of Loss vary by category. Consequently, for these coverages the on-level factors represent average factors and are not the factors actually used to adjust the aggregate loss costs on an individual policy basis. For complete loss cost/rate level histories by rating group and territory (where applicable) for Basic Group I and by category for Special Causes of Loss refer to Tables 16 and 17.

COLUMN (5) WEIGHT

The weight indicates the portion of the effective year for which the on level factors apply. These can be used to calculate average yearly factors.

ARIZONA  
TABLE 16

HISTORY OF BASIC GROUP I

LOSS COST CHANGES BY TERRITORY, RATING ID AND RATING GROUP

TERRITORY: Phoenix

EFFECTIVE DATE	RATING ID	RATING GROUP																				
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22
09-01-2006	SPEC.	-1.7	-7.6	-9.4	-15.1	-10.5	-10.5	-10.6	-16.6	-8.2	-11.3	-10.9	-8.9	-9.5	-8.9	-11.5	-10.5	-11.3	-10.1	-11.2	-10.5	-11.2
	CLASS	6.2	-0.2	-2.2	-8.4	-3.3	-3.3	-3.4	-10.0	-0.9	-4.3	-3.8	-1.6	-2.3	-1.6	-4.5	-3.3	-11.3	-2.9	-11.2	-10.5	-4.1
09-01-2007	SPEC.	-19.3	-18.5	-22.2	-26.8	-19.2	-17.1	-19.2	-29.1	-13.8	-21.8	-17.8	-12.6	-17.0	-12.6	-21.0	-18.9	-19.5	-19.0	-17.6	-17.0	-17.6
	CLASS	2.5	3.6	-1.1	-7.0	2.7	5.4	2.6	-10.3	9.6	-0.6	4.4	11.1	5.5	11.1	0.4	3.0	-19.5	2.9	-17.6	-17.0	4.7
10-01-2008	SPEC.	-17.7	-18.2	-19.7	-21.1	-19.6	-19.7	-20.4	-21.1	-17.3	-20.7	-19.9	-19.9	-19.8	-19.9	-20.0	-19.2	-19.8	-19.1	-17.3	-15.8	-17.3
	CLASS	-2.5	-3.1	-4.9	-6.6	-4.8	-4.9	-5.8	-6.6	-2.0	-6.1	-5.2	-5.1	-5.0	-5.1	-5.3	-4.3	-19.8	-4.2	-17.3	-15.8	-2.0
10-01-2009	SPEC.	-11.4	-7.4	-7.9	-6.4	-7.0	-3.7	-7.5	-7.8	-7.1	-10.3	-7.1	-8.7	-8.7	-8.7	-8.2	-7.1	-8.6	-5.5	-5.5	1.8	-5.5
	CLASS	-22.5	-19.1	-19.5	-18.2	-18.7	-15.8	-19.2	-19.4	-18.8	-21.6	-18.8	-20.2	-20.2	-20.2	-19.7	-18.8	-8.6	-17.4	-5.5	1.8	-17.4
10-01-2011	SPEC.	-9.2	-8.0	-9.5	1.7	-7.5	-10.9	-8.8	-8.4	-5.2	-8.0	-7.7	-7.5	-4.9	-7.5	-8.2	-7.6	-7.4	-7.0	-7.8	-6.4	-7.8
	CLASS	-28.8	-28.4	-28.8	-20.8	-27.9	-28.8	-28.8	-28.7	-26.2	-28.4	-28.2	-27.9	-25.9	-27.9	-28.5	-28.1	-7.4	-27.6	-7.8	-6.4	-28.2
11-01-2012	SPEC.	-9.8	-6.1	-6.9	2.0	-6.1	-3.2	-5.2	-0.7	-5.9	-7.8	-5.5	-6.1	-3.7	-6.1	-5.3	-5.9	-6.5	-10.5	-10.5	-8.9	-10.5
	CLASS	-21.8	-18.5	-19.3	-11.6	-18.5	-16.0	-17.8	-13.8	-18.3	-20.0	-18.0	-18.5	-16.4	-18.5	-17.8	-18.3	-6.5	-22.4	-10.5	-8.9	-22.4
12-01-2015	SPEC.	-25.3	-23.6	-23.6	-10.3	-25.3	-25.3	-25.3	-25.3	-17.2	-20.4	-23.6	-25.3	-19.2	-25.3	-22.9	-21.2	-19.4	-19.4	-19.4	-18.2	-19.4
	CLASS	-23.0	-11.2	-11.1	4.2	-15.9	-15.9	-13.9	-25.3	-3.7	-7.5	-11.2	-15.9	-6.0	-15.9	-10.2	-8.4	-19.4	-6.3	-19.4	-18.2	-6.3
12-01-2017	SPEC.	-2.3	-6.8	-15.5	-15.5	-14.3	-12.3	-12.8	-15.5	-7.1	-10.9	-14.3	-14.3	-11.5	-14.3	-14.3	-12.2	-10.2	-15.3	-15.3	-15.4	-15.3
	CLASS	-2.3	-6.8	-15.5	-15.5	-14.3	-12.3	-12.8	-15.5	-7.1	-10.9	-14.3	-14.3	-11.5	-14.3	-14.3	-12.2	-10.2	-15.3	-15.3	-15.4	-15.3

ARIZONA  
TABLE 16

HISTORY OF BASIC GROUP I

LOSS COST CHANGES BY TERRITORY, RATING ID AND RATING GROUP

TERRITORY: Tucson

EFFECTIVE DATE	RATING ID	RATING GROUP																				
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22
09-01-2006	SPEC.	2.1	-4.0	-5.9	-11.9	-7.0	-7.0	-7.1	-13.4	-4.6	-7.9	-7.5	-5.4	-6.0	-5.4	-8.1	-7.0	-7.8	-6.7	-7.7	-7.0	-7.7
	CLASS	10.3	3.7	1.6	-4.8	0.4	0.4	0.3	-6.5	3.0	-0.6	-0.1	2.2	1.5	2.2	-0.8	0.4	-7.8	0.8	-7.7	-7.0	-0.4
09-01-2007	SPEC.	-19.7	-18.9	-22.6	-27.2	-19.6	-17.5	-19.7	-29.5	-14.2	-22.2	-18.3	-13.1	-17.4	-13.1	-21.5	-19.4	-19.9	-19.4	-18.0	-17.4	-18.0
	CLASS	2.0	3.1	-1.6	-7.5	2.2	4.9	2.1	-10.7	9.0	-1.1	3.9	10.5	5.0	10.5	-0.2	2.5	-19.9	2.4	-18.0	-17.4	4.2
10-01-2008	SPEC.	-21.5	-22.0	-23.4	-24.8	-23.3	-23.4	-24.1	-24.8	-21.1	-24.4	-23.6	-23.6	-23.5	-23.6	-23.7	-23.0	-23.5	-22.9	-21.1	-19.7	-21.1
	CLASS	-7.0	-7.6	-9.3	-10.9	-9.2	-9.3	-10.1	-10.9	-6.6	-10.5	-9.6	-9.5	-9.4	-9.5	-9.7	-8.8	-23.5	-8.7	-21.1	-19.7	-6.6
10-01-2009	SPEC.	-12.5	-8.6	-9.1	-7.6	-8.1	-4.9	-8.7	-9.0	-8.2	-11.4	-8.2	-9.9	-9.9	-9.9	-9.3	-8.2	-9.7	-6.7	-6.7	0.5	-6.7
	CLASS	-23.5	-20.1	-20.5	-19.2	-19.7	-16.9	-20.2	-20.4	-19.8	-22.6	-19.8	-21.2	-21.2	-21.2	-20.7	-19.8	-9.7	-18.4	-6.7	0.5	-18.4
10-01-2011	SPEC.	2.5	3.7	2.0	14.5	4.4	0.5	2.9	3.3	6.9	3.7	4.1	4.4	7.2	4.4	3.5	4.2	4.5	4.9	4.0	5.6	4.0
	CLASS	-19.7	-19.2	-19.7	-10.7	-18.7	-19.7	-19.7	-19.6	-16.7	-19.2	-19.0	-18.7	-16.5	-18.7	-19.4	-18.9	4.5	-18.3	4.0	5.6	-19.1
11-01-2012	SPEC.	6.6	11.0	10.0	20.5	11.0	14.4	12.0	17.4	11.2	9.0	11.7	11.0	13.9	11.0	11.9	11.2	10.6	5.8	5.8	7.7	5.8
	CLASS	-7.5	-3.7	-4.6	4.5	-3.7	-0.7	-2.8	1.9	-3.5	-5.5	-3.1	-3.7	-1.2	-3.7	-2.9	-3.5	10.6	-8.2	5.8	7.7	-8.2
12-01-2015	SPEC.	-13.4	-11.5	-11.4	3.9	-13.4	-13.4	-13.4	-13.4	-4.0	-7.7	-11.5	-13.4	-6.3	-13.4	-10.5	-8.7	-6.5	-6.5	-6.5	-5.2	-6.5
	CLASS	-10.6	2.9	3.0	20.9	-2.5	-2.5	-0.2	-13.4	11.6	7.3	2.9	-2.5	9.0	-2.5	4.0	6.2	-6.5	8.7	-6.5	-5.2	8.7
12-01-2017	SPEC.	-16.8	-20.6	-28.1	-28.1	-27.0	-25.4	-25.8	-28.1	-20.9	-24.1	-27.0	-27.0	-24.6	-27.0	-27.0	-25.3	-23.5	-27.9	-27.9	-27.9	-27.9
	CLASS	-16.8	-20.6	-28.1	-28.1	-27.0	-25.4	-25.8	-28.1	-20.9	-24.1	-27.0	-27.0	-24.6	-27.0	-27.0	-25.3	-23.5	-27.9	-27.9	-27.9	-27.9



ARIZONA  
TABLE 16

HISTORY OF BASIC GROUP I

LOSS COST CHANGES BY TERRITORY, RATING ID AND RATING GROUP

TERRITORY: Balance of State (Arizona)

EFFECTIVE DATE	RATING ID	RATING GROUP																				
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22
09-01-2006	SPEC.	-9.1	-14.5	-16.2	-21.5	-17.2	-17.2	-17.3	-22.9	-15.1	-18.0	-17.6	-15.7	-16.3	-15.7	-18.2	-17.2	-17.9	-16.9	-17.8	-17.2	-17.8
	CLASS	-1.8	-7.7	-9.5	-15.2	-10.6	-10.6	-10.7	-16.7	-8.3	-11.5	-11.0	-9.0	-9.6	-9.0	-11.6	-10.6	-17.9	-10.2	-17.8	-17.2	-11.3
09-01-2007	SPEC.	-14.8	-13.9	-17.8	-22.7	-14.6	-12.4	-14.7	-25.1	-8.9	-17.4	-13.2	-7.7	-12.3	-7.7	-16.6	-14.4	-14.9	-14.4	-13.0	-12.3	-13.0
	CLASS	8.3	9.5	4.5	-1.7	8.5	11.4	8.4	-5.2	15.8	5.0	10.3	17.4	11.5	17.4	6.0	8.9	-14.9	8.8	-13.0	-12.3	10.6
10-01-2008	SPEC.	-19.4	-19.9	-21.4	-22.8	-21.3	-21.4	-22.1	-22.8	-19.0	-22.4	-21.6	-21.5	-21.4	-21.5	-21.7	-20.9	-21.4	-20.8	-19.0	-17.5	-19.0
	CLASS	-4.5	-5.1	-6.9	-8.5	-6.8	-6.9	-7.7	-8.5	-4.1	-8.1	-7.1	-7.1	-7.0	-7.1	-7.2	-6.3	-21.4	-6.2	-19.0	-17.5	-4.1
10-01-2009	SPEC.	-5.3	-1.1	-1.6	0.0	-0.6	2.9	-1.2	-1.5	-0.7	-4.2	-0.7	-2.5	-2.5	-2.5	-1.9	-0.7	-2.3	1.0	1.0	8.7	1.0
	CLASS	-17.2	-13.6	-14.0	-12.6	-13.1	-10.1	-13.6	-13.9	-13.2	-16.3	-13.2	-14.8	-14.8	-14.8	-14.3	-13.2	-2.3	-11.7	1.0	8.7	-11.7
10-01-2011	SPEC.	3.6	4.9	3.2	15.9	5.6	1.7	4.1	4.5	8.1	4.9	5.3	5.6	8.4	5.6	4.7	5.4	5.7	6.1	5.2	6.8	5.2
	CLASS	-18.8	-18.3	-18.8	-9.7	-17.8	-18.8	-18.8	-18.6	-15.8	-18.3	-18.0	-17.8	-15.5	-17.8	-18.5	-17.9	5.7	-17.4	5.2	6.8	-18.1
11-01-2012	SPEC.	-12.6	-8.9	-9.7	-1.1	-8.9	-6.1	-8.1	-3.7	-8.7	-10.6	-8.3	-8.9	-6.6	-8.9	-8.1	-8.7	-9.3	-13.2	-13.2	-11.6	-13.2
	CLASS	-24.1	-21.0	-21.7	-14.2	-21.0	-18.5	-20.2	-16.4	-20.8	-22.4	-20.5	-21.0	-18.9	-21.0	-20.3	-20.8	-9.3	-24.7	-13.2	-11.6	-24.7
12-01-2015	SPEC.	-12.4	-10.5	-10.4	5.1	-12.4	-12.4	-12.4	-12.4	-3.0	-6.7	-10.5	-12.4	-5.2	-12.4	-9.5	-7.6	-5.5	-5.5	-5.5	-4.1	-5.5
	CLASS	-9.7	4.0	4.1	22.3	-1.4	-1.4	1.0	-12.4	12.9	8.6	4.0	-1.4	10.2	-1.4	5.2	7.5	-5.5	10.0	-5.5	-4.1	10.0
12-01-2017	SPEC.	10.8	5.7	-4.2	-4.2	-2.7	-0.6	-1.2	-4.2	5.4	1.1	-2.7	-2.7	0.4	-2.7	-2.7	-0.5	1.9	-4.0	-4.0	-4.0	-4.0
	CLASS	10.8	5.7	-4.2	-4.2	-2.7	-0.6	-1.2	-4.2	5.4	1.1	-2.7	-2.7	0.4	-2.7	-2.7	-0.5	1.9	-4.0	-4.0	-4.0	-4.0

EXPLANATORY NOTES TO TABLE 16

HISTORY OF BASIC GROUP I LOSS COST/RATE CHANGES  
BY TERRITORY, RATING ID AND RATING GROUP

TERRITORY

The loss cost/rate level changes shown apply to the rating territory shown here.

EFFECTIVE DATE

The effective dates of the latest loss cost/rate level changes are shown.

LOSS COST/RATE LEVEL CHANGES

Loss cost/rate level changes are shown in percent form for each rating group.

ARIZONA  
TABLE 17

SPECIAL CAUSES OF LOSS

HISTORY OF LOSS COST/RATE LEVEL CHANGES BY CATEGORY

(1) EFFECTIVE DATE	(2) CATEGORY													
	01	02	03	04	05	06	07	08	09	10	11	12	13	14
09-01-2006	-2.1	-9.2	0.4	-11.9	-6.2									
09-01-2007	-5.3	-11.7	-7.3	-18.1	-4.4									
10-01-2008	2.1	-4.9	0.2	-7.2	0.0									
10-01-2009	2.1	-2.7	1.3	-5.3	5.8									
10-01-2011	7.1	11.8	10.3	8.8	11.8	12.1	11.8	10.1	9.1	15.1	24.3	15.6	15.6	23.2
11-01-2012	-1.2	3.3	2.4	2.3	4.5	3.8	3.7	2.7	1.5	13.1	14.3	5.4	7.2	12.3
12-01-2015	6.8	6.4	3.1	16.0	15.4	6.8	8.6	6.4	6.4	11.2	13.0	10.9	10.5	14.2
12-01-2017	-0.6	-2.4	-5.2	4.7	7.6	-0.1	0.3	-3.2	-4.6	1.0	2.5	-0.1	2.4	0.7

EXPLANATORY NOTES TO TABLE 17

HISTORY OF SPECIAL CAUSES OF LOSS  
LOSS COST/RATE LEVEL CHANGES BY CATEGORY

COLUMN (1)

EFFECTIVE DATE

The effective dates of the latest loss cost/rate level changes are shown.

COLUMN (2)

LOSS COST/RATE LEVEL CHANGES BY CATEGORY

Loss cost/rate changes are shown in percent form for each category. Refer to Table 37 for definitions of the current 14 categories.

The prior category definitions (before implementation of the revised rating for Special Causes of Loss) are:

- 01 - Buildings
- 02 - Apartments Contents
- 03 - Office Contents
- 04 - Mercantile, Motel/Hotel and Institutional Contents
- 05 - Service, Industrial/Processing, and Contractors Contents

COMMERCIAL PACKAGE POLICY IMPLICIT PACKAGE MODIFICATION FACTORS (IPMF's)  
AND IPMF CAPS

IMPLICIT PACKAGE  
MODIFICATION  
FACTORS

Since multiline experience is included in the loss cost level evaluations, an additional adjustment is made to multiline aggregate loss costs after they have been brought to current ISO loss cost level. This adjustment is the application of implicit CPP package modification factors which vary for each of the eight CPP types of policy.

The loss costs used to price a Commercial Package Policy (CPP) are the monoline loss costs multiplied by the PMF to reflect the package policy discount for the particular type of CPP policy relative to the individual monoline policies. However, these PMF's measure the amount of multiline discount for all property coverages combined. A more accurate measure of the amount of multiline discount for each subline (e.g., Basic Group I, Basic Group II, or Special Causes of Loss) is the implicit package modification factor that was used to calculate the overall PMF for all property coverages combined.

For example, the published PMF for Apartments (all property coverages combined) may be .85, but the implicit PMF for Apartments, Commercial Basic Group I coverage only, may be .80. The average of the implicit PMF's for the various coverages is equal to the published PMF for each type of policy.

The current IPMF's by coverage for each CPP type of policy are applied to multiline aggregate loss costs at current level for Basic Group I, Basic Group II and Special Causes of Loss.

IPMF CAPS

For Basic Group I, Basic Group II, and Special Causes of Loss, the IPMF's lower caps are set at 0.50 and the upper caps are set at 1.50 for all TOP's.

ARIZONA  
TABLE 18  
BASIC GROUP I IMPLICIT PACKAGE  
MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

CPP IMPLICIT PACKAGE MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

TOP	DESCRIPTION	IPMF	LOW CAP	HIGH CAP
-----				
31	MOTEL/HOTEL	1.306	0.500	1.500
32	APARTMENT	0.813	0.500	1.500
33	OFFICE	1.164	0.500	1.500
34	MERCANTILE	1.103	0.500	1.500
35	INSTITUTIONAL	1.270	0.500	1.500
36	SERVICES	1.119	0.500	1.500
37	INDUST/PROCESSING	1.190	0.500	1.500
38	CONTRACTORS	1.087	0.500	1.500

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TABLE 19  
BASIC GROUP II IMPLICIT PACKAGE  
MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

CPP IMPLICIT PACKAGE MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

TOP	DESCRIPTION	IPMF	LOW CAP	HIGH CAP
-----				
31	MOTEL/HOTEL	0.790	0.500	1.500
32	APARTMENT	0.821	0.500	1.500
33	OFFICE	0.782	0.500	1.500
34	MERCANTILE	0.729	0.500	1.500
35	INSTITUTIONAL	0.684	0.500	1.500
36	SERVICES	1.022	0.500	1.500
37	INDUST/PROCESSING	0.630	0.500	1.500
38	CONTRACTORS	0.853	0.500	1.500

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TABLE 20  
SPECIAL CAUSES OF LOSS IMPLICIT PACKAGE  
MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

CPP IMPLICIT PACKAGE MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

TOP	DESCRIPTION	IPMF	LOW CAP	HIGH CAP
-----				
31	MOTEL/HOTEL	0.708	0.500	1.500
32	APARTMENT	1.199	0.500	1.500
33	OFFICE	0.994	0.500	1.500
34	MERCANTILE	1.082	0.500	1.500
35	INSTITUTIONAL	1.057	0.500	1.500
36	SERVICES	0.790	0.500	1.500
37	INDUST/PROCESSING	0.912	0.500	1.500
38	CONTRACTORS	0.992	0.500	1.500



EXPLANATORY NOTES TO TABLES 18, 19, AND 20

IMPLICIT PACKAGE MODIFICATION  
FACTORS (IPMF's) AND IPMF CAPS

TABLES 18, 19,  
AND 20

These tables provide the current IPMF's and IPMF caps for Basic Group I, Basic Group II, and Special Causes of Loss. The IPMF's shown here are those which resulted from the most recent CPP revision. The IPMF lower caps are set at .50 and the upper caps are set at 1.50 for all TOP's.

## TREND PROCEDURE

### INTRODUCTION

The prospective loss cost levels established in this document reflect the anticipated claim cost and claim frequency levels and changes in revenue due to increased amounts of insurance purchased for the period when the new loss costs are assumed to be in effect.

### LOSS TREND

#### EXTERNAL LOSS DATA

For Commercial Property, the loss trend factors are referred to as current cost factors (CCF's) and loss projection factors (LPF's). These CCF's and LPF's are based on the following accepted economic indices:

1. Xactware Commercial Index (XCI) for buildings loss projection factors and current cost factors
2. Producer Price Index (PPI) published by the US Department of Labor (Finished Goods Less Energy, Not Seasonally Adjusted) for contents factors
3. Index for Manufacturers' Sales Exposure (IMSEP) developed by ISO using indices published by the Department of Commerce and Chain-Type Price Index for Retail Sales (RSALES) produced by the Bureau of the Census, Bureau of Economic Analysis for time element factors

The CCF's adjust losses for actual inflationary changes which have taken place between the accident date and the midpoint of the latest period of external trend information, i.e. November 15, 2018 for property damage and time element. The LPF's adjust losses for projected inflationary changes from the midpoint of the latest period of external trend information to the anticipated average date of accident for policies written under the proposed loss costs (assumed to be 12 months after the assumed revision date based on all one-year policies).

The CCF's and LPF's are calculated separately for buildings, contents, and time element coverages. For coverage 3 (buildings and contents on a combined basis), combined trend factors are calculated using the following weights for buildings and contents: 70%/30% for Basic Group I, 75%/25% for Basic Group II, and 50%/50% for Special Causes of Loss. For time element (coverages 4-9) the combined trend factors are calculated using 70%/30% weights for RSALES/IMSEP. The factors are applied by coverage to the losses reported under CSP and CMSP on an individual occurrence basis.

## TREND PROCEDURE (cont'd)

### LOSS TREND (cont'd)

#### LOSS TREND ADJUSTMENT - SEVERITY

An evaluation of the latest Commercial Property insurance data shows that the cost levels inherent in the property damage coverages are increasing at a different rate than those measured by the external indices. Therefore, to insure adequate prospective loss cost levels during the period for which loss costs are to be determined, loss trend adjustments (LTA's) have been applied. These factors were developed by comparing the annual rate of change in average claim costs to the annual rate of change in the external indices. (Refer to Table 23 for the calculations.)

#### LOSS TREND ADJUSTMENT - FREQUENCY

In order to reflect total trend more precisely, a frequency component is included in the loss trend adjustment factors (LTA's) separately for buildings and contents for Basic Group I and contents only for Special Causes of Loss. No frequency component is used for Basic Group II and Special Causes of Loss buildings due to the extremely volatile nature of the coverages.

### AMOUNT-OF- INSURANCE TREND

Cost changes over time to both real and personal property result in insureds purchasing increased amounts of insurance. To reflect the impact of this phenomenon, amount of insurance trend factors are applied to collected loss costs to bring them to prospective amount of insurance levels. These factors are developed by measuring amount of insurance trends on a sample of renewal policies.

The application and development of these factors parallels loss trend factors in that separate factors are developed for buildings, contents, and time element, and the adjustment to prospective amount of insurance levels is done in two steps. The current written factors adjust loss costs to the amount of insurance level for the midpoint of the latest period of renewal information, i.e. July 1, 2018. Total amount of insurance trend factors are then calculated by projecting these current factors to the average date of writing (i.e. to the amount of insurance level six months beyond the assumed effective date).

TABLE 21

Development of Current Cost Factors and Loss Projection Factors  
For Commercial Property Building and Contents Experience  
 Period ending December 31, 2018

## Part A: Quarterly Indices for Buildings, Contents and Time Element

Building Loss Projection Factors - Xactware Commercial Index (XCI) (Base: 2009 = 100.0)

Contents - Producer Price Index (PPI) - U.S. Dept. of Labor (Finished Goods Less Energy) (Base: 2009 = 100.0)

Time Element Combined Index - Weighted average of IMSEP and RSALES indices <sup>(a)</sup>

<u>Quarter</u>	<u>XCI</u>	<u>PPI</u>	<u>IMSEP</u>	<u>RSALES</u>	Time Element Combined <u>Index</u>
Q1-2016	110.5	114.4	1.026	0.950	0.973
Q2-2016	110.7	114.3	1.031	0.955	0.978
Q3-2016	111.3	114.3	1.029	0.953	0.976
Q4-2016	111.9	114.6	1.033	0.956	0.979
Q1-2017	112.7	115.5	1.038	0.963	0.986
Q2-2017	114.0	116.5	1.036	0.957	0.981
Q3-2017	115.0	116.3	1.042	0.959	0.984
Q4-2017	115.5	117.1	1.044	0.965	0.989
Q1-2018	116.6	117.6	1.048	0.971	0.994
Q2-2018	117.5	118.1	1.055	0.974	0.998
Q3-2018	118.4	118.2	1.058	0.974	0.999
Q4-2018	118.8	119.5	1.058	0.977	1.001

## Part B: Computation of Loss Projection Factor (LPF) for Buildings based on 12 points

$$\text{Annual Rate of Change} = 0.0294 = 2.9\% \quad R^2 = 0.990$$

$$\text{Loss Projection Factor for Buildings} = 1.0294^{22.5/12 (b)} = 1.0558$$

## Part C: Computation of Loss Projection Factor (LPF) for Contents based on 12 points

$$\text{Annual Rate of Change} = 0.0166 = 1.7\% \quad R^2 = 0.956$$

$$\text{Loss Projection Factor for Contents} = 1.0166^{22.5/12 (b)} = 1.0314$$

## Part D: Computation of Loss Projection Factor (LPF) for Time Element Based on 12 points

$$\text{Annual Rate of Change} = 0.0105 = 1.05\% \quad R^2 = 0.935$$

$$\text{Loss Projection Factor for Time Element} = 1.0105^{22.5/12 (b)} = 1.0198$$

- (a) 30% weight for IMSEP and 70% weight for RSALES. IMSEP & RSALES indices were rescaled to a 2012 year base.
- (b) Assuming a rate or loss cost revision date of October 1 2019, and all one year policies, the time interval between the midpoint of the latest period (11/15/2018) and the average date of accident (10/01/2020) would be 22.5 months.

TABLE 21

Development of Current Cost Factors and Loss Projection Factors

## Part E: Calculation of Current Cost Factors (CCF)

Calendar Year Averages				Current Cost Factors Based on Average Index Values for Period ending December 31, 2018		
Year	XCI	PPI	Time Element Index	Buildings	Contents	Time Element
2008	97.0	98.5	0.948	$118.8 / 97.0 = 1.225$	$119.5 / 98.5 = 1.213$	$1.001 / 0.948 = 1.056$
2009	100.0	100.0	0.940	$118.8 / 100.0 = 1.188$	$119.5 / 100.0 = 1.195$	$1.001 / 0.940 = 1.065$
2010	99.3	101.8	0.953	$118.8 / 99.3 = 1.197$	$119.5 / 101.8 = 1.174$	$1.001 / 0.953 = 1.050$
2011	100.0	105.2	0.985	$118.8 / 100.0 = 1.188$	$119.5 / 105.2 = 1.136$	$1.001 / 0.985 = 1.016$
2012	101.0	108.0	1.000	$118.8 / 101.0 = 1.176$	$119.5 / 108.0 = 1.107$	$1.001 / 1.000 = 1.001$
2013	102.7	109.7	1.003	$118.8 / 102.7 = 1.157$	$119.5 / 109.7 = 1.089$	$1.001 / 1.003 = 0.998$
2014	104.7	112.5	1.006	$118.8 / 104.7 = 1.135$	$119.5 / 112.5 = 1.062$	$1.001 / 1.006 = 0.995$
2015	109.1	113.8	0.987	$118.8 / 109.1 = 1.089$	$119.5 / 113.8 = 1.05$	$1.001 / 0.987 = 1.014$
2016	111.1	114.4	0.977	$118.8 / 111.1 = 1.069$	$119.5 / 114.4 = 1.044$	$1.001 / 0.977 = 1.025$
2017	114.3	116.4	0.985	$118.8 / 114.3 = 1.039$	$119.5 / 116.4 = 1.027$	$1.001 / 0.985 = 1.016$
2018	117.8	118.3	0.998	$118.8 / 117.8 = 1.008$	$119.5 / 118.3 = 1.01$	$1.001 / 0.998 = 1.003$

## EXPLANATORY NOTES TO TABLE 21

### PART A: XACTWARE, PRODUCER PRICE, IMSEP, RSALES INDICES AND COMBINED TIME ELEMENT

QUARTER	The quarter for which the indices shown apply.
XACTWARE COMMERCIAL INDEX (XCI)	The Xactware Commercial Index measures the costs of building material and repairs for commercial properties. The index, which is available since 1st Quarter 2005, is based on regular surveys of over 42,000 material and equipment suppliers and over 9,500 contractors, in addition to claims settlement data. The index values are created by estimating the cost to rebuild a sample set of different structures ranging in size, style, and quality in each economic market. The Xactware index is used in this filing to adjust for current cost from 1/1/05 to the midpoint of the latest index point and for determining the loss projection factor.
PRODUCER PRICE INDEX (PPI)	The Producer Price Index is a time series which measures the price level for a predetermined group of goods produced relative to the price level for an earlier point in time (2009). The PPI Finished Goods Less Energy is published by the U.S. Department of Labor.
PRICE DEFLATOR INDEX FOR MANUFACTURERS' SALES EXPOSURE (IMSEP)	<p>The price deflator index for manufacturers' sales exposure is a quarter's model of Manufacturers' Sales Exposure Proxy (MSEP) for the period in question relative to MSEP measured in chained 2009 dollars. The price deflator is defined as the GNP (Gross National Product) price deflator with government expenditures, investment in intellectual property products, inventory changes, and all services except food services removed.</p> $\text{MSEP} = (\text{CD} + \text{CN} + \text{FS}) + (\text{EXD\&N} - \text{IMD\&N}) + (\text{IFIX} - \text{IPP}), \text{ where}$ <p>CD and CN represent consumption of durables and nondurables, respectively; EXD&amp;N and IMD&amp;N represent exports and imports of merchandise, respectively; FS represents food services and IFIX represents gross private domestic fixed investment (including residential fixed investment as well as nonresidential fixed investment in structures, equipment, and intellectual property products); and IPP represents nonresidential fixed investment in intellectual property products.</p>
CHAIN-TYPE PRICE INDEX FOR RETAIL SALES (RSALES)	The Chain-Type Price Index for Retail Sales measures changes in losses due solely to inflation.

EXPLANATORY NOTES TO TABLE 21 (cont'd)

PARTS B, C and D: COMPUTATION OF THE LOSS PROJECTION FACTOR

LOSS PROJECTION  
FACTOR

The loss projection factor is calculated by fitting a least squares exponential curve to the appropriate number of points (where the appropriate number of points is determined based on judgment and an examination of the goodness of fit as determined by the R-squared values subject to a maximum of 12 quarterly points for property damage and time element).

The table displays the indices for those points used in fitting the curve. The relevant equations are shown and the annual rate of change in the indices based on the exponential fit is developed. This annual rate of change is projected over the period which extends from the latest period of cost information to the average accident date of the projection period.

PART E: CALCULATION OF CURRENT COST FACTORS (CCF'S)

CALENDAR YEAR  
AVERAGES

The calendar year averages are the averages of the Xactware, PPI and Time Element indices for the given year. These average indices measure the average cost level of each year relative to the base.

CURRENT COST  
FACTORS

The current cost factors are the ratios of the indices for the latest period of cost information divided by the average indices for each calendar year. These factors measure the changes in cost levels which have occurred from the midpoint of the given year to the latest point of cost information. In this regard, they represent average factors which would result if each year's losses were distributed evenly throughout the year.

For buildings, the index for the latest point is based on the latest available Xactware point.

Since losses are trended on a record by record basis, these calendar year factors are not actually used in ISO's trend calculations. Instead, factors are calculated from the bi-monthly or quarterly indices and applied to the unit losses based on the date of occurrence.

TABLE 22

SUMMARY OF LOSS TREND ADJUSTMENTS (LTA'S)

<u>BUILDINGS</u>	<u>5 YEAR INCURRED LOSSES</u>	<u>LTA'S*</u>
BASIC GROUP I	3,397,603,765	-0.3
BASIC GROUP II	3,091,434,408	0.2
SPECIAL CAUSES OF LOSS	1,852,163,757	0.2
TOTAL	8,341,201,930	0.0
<u>CONTENTS</u>		
	964,588,247	0.7
BASIC GROUP I		
BASIC GROUP II	283,850,498	0.6
SPECIAL CAUSES OF LOSS	724,827,074	0.0
TOTAL	1,973,265,819	0.4
<u>TIME ELEMENT</u>		
BASIC GROUP I	397,520,411	2.8
BASIC GROUP II	75,461,620	2.6
SPECIAL CAUSES OF LOSS	138,773,134	2.8
TOTAL	611,755,165	2.8
GRAND TOTAL	10,926,222,913	0.2

\* The LTA's are based on internal severity and frequency data. They apply to both the historical period and projection period.



EXPLANATORY NOTES TO TABLE 22

SUMMARY OF LOSS TREND ADJUSTMENTS (LTA'S)

COLUMN (1)

COVERAGE

The LTA's vary by coverage (buildings, contents, and time element) and line of business (BG I, BG II, and SCL).

COLUMN (2)

FIVE-YEAR INCURRED LOSSES

The five-year multistate incurred losses are used as weights to determine the annual LTA for all lines of business and coverages combined.

COLUMN (3)

ANNUAL LTA's

The LTA's are the factors which are applied to losses to supplement the external indices in order to correctly reflect cost level and claim frequency changes. These are shown here as annual factors. However, they are applied over the entire length of the trend period, i.e. from the date of loss occurrence to the anticipated average accident date under the revised loss costs. The severity portion of the LTA is applied on an individual record basis in the same manner as the CCF's and LPF's. The frequency portion of the LTA is applied to the aggregate losses.

## OVERVIEW

### DEVELOPMENT OF LOSS TREND ADJUSTMENTS

#### INTRODUCTION

In order to supplement the external indices reflected in CCF's and LPF's, loss trend adjustments (LTA's) have been developed based on internal loss data. This is necessary because the external indices alone have been insufficient in reflecting cost level and claim frequency changes in Commercial Property Insurance. The following tables show the calculations used to develop these LTA's. Please note the development of the LTA's for the 2019 COMFAL reviews is based on internal commercial property experience through 12/31/2017 and external cost indices through 12/31/2017. Therefore, the CCF's and LPF's shown on Table 23 will not necessarily match those shown on Table 21. ISO has determined that the selected LTAs are appropriate to be used with the latest external indices shown on Table 21.

TABLE 23  
DEVELOPMENT OF LTA'S

I. EXTERNAL RATE OF CHANGE<sup>a</sup>

Calendar Year	(1) Buildings Current Cost Factor	(2) Contents Current Cost Factor	(3) Time Element Cost Factor	(4) Basic Group I (BGI)& Special Causes of Loss (SCL) Weights	(5) Basic Group II (BGII) Weights
2008	1.247	1.240	1.062		0.10
2009	1.191	1.189	1.043		0.10
2010	1.155	1.171	1.052		0.10
2011	1.164	1.150	1.038		0.10
2012	1.155	1.113	1.004		0.10
2013	1.144	1.085	0.989	0.10	0.10
2014	1.125	1.067	0.986	0.15	0.10
2015	1.103	1.041	0.983	0.20	0.10
2016	1.058	1.029	1.002	0.25	0.10
2017	1.040	1.023	1.012	0.30	0.10

(6) AVERAGE CURRENT COST FACTORS

	Buildings	Contents	Time Element
Basic Group I and Special Causes of Loss (Weighted on Column (4))	1.080	1.041	0.998
Basic Group II (Weighted on Column (5))	1.138	1.111	1.017

(7) LOSS PROJECTION FACTORS

	Buildings	Contents	Time Element
Annual Rate of Change	0.024	0.011	-0.001
Loss Projection Factor: <sup>b</sup> $(1.0 + \text{Annual Rate of Change})^{(X/12)}$	1.063	1.029	0.998

(8) TOTAL TREND FACTOR (Average Current Cost Factor  $\times$  Loss Projection Factor)

	Buildings	Contents	Time Element
Basic Group I and Special Causes of Loss	1.148	1.071	0.996
Basic Group II	1.210	1.143	1.015

(9) EXTERNAL ANNUAL RATE OF CHANGE<sup>c</sup>

	Buildings	Contents	Time Element
Basic Group I and Special Causes of Loss: $(\text{Total Trend Factor})^{12/54}$	1.031	1.015	0.999
Basic Group II: $(\text{Total Trend Factor})^{12/90}$	1.026	1.018	1.002

- (a) The Current Cost Factors and Loss Projection Factors on this exhibit are based on external economic indices through December 31, 2017 for Buildings, Contents and Time Element.
- (b) Assuming a loss cost revision date of July 1, 2019, the time interval between the midpoint of the latest period of external trend information (November 15, 2018) and the prospective average date of loss (July 1, 2020) is 31.5 months for Buildings, Contents and Time Element.
- (c) The time interval from the weighted midpoint of the experience period to the prospective average date of loss (July 1, 2020) is 54 months for BG I and SCL, and 90 months for BG II. The weighted midpoint is January 1, 2016 for BG I and SCL, and January 1, 2013 for BG II.

TABLE 23  
DEVELOPMENT OF LTA'S

II. INTERNAL ANNUAL RATES OF CHANGE:

(10) SELECTED COMFAL

	Buildings	Contents	Time Element
Basic Group I (BGI)	1.045	1.050	1.055
Basic Group II (BGII)	1.030	1.030	1.055
Special Causes of Loss	1.035	1.025	1.055

III. LTA CALCULATION:

CALCULATION OF LTAs - BUILDINGS

	(11) External Rate of Change <sup>d</sup>	(12) Internal Rate of Change	(13) Indicated Severity LTA [(12)/(11)-1.0]	(14) Formula Severity LTA <sup>e</sup>	(15) Frequency Effect	(16) Final LTA <sup>f</sup>
Basic Group I (BGI)	1.031	1.045	1.4	0.7	-1.0	-0.3
Basic Group II (BGII)	1.026	1.030	0.4	0.2	0.0	0.2
Special Causes of Loss	1.031	1.035	0.4	0.2	0.0	0.2

CALCULATION OF LTAs - CONTENTS

	(11) External Rate of Change <sup>d</sup>	(12) Internal Rate of Change	(13) Indicated Severity LTA [(12)/(11)-1.0]	(14) Formula Severity LTA <sup>e</sup>	(15) Frequency Effect	(16) Final LTA <sup>f</sup>
Basic Group I (BGI)	1.015	1.050	3.4	1.7	-1.0	0.7
Basic Group II (BGII)	1.018	1.030	1.2	0.6	0.0	0.6
Special Causes of Loss	1.015	1.025	1.0	0.5	-0.5	0.0

CALCULATION OF LTAs - TIME ELEMENT

	(11) External Rate of Change <sup>d</sup>	(12) Internal Rate of Change	(13) Indicated Severity LTA [(12)/(11)-1.0]	(14) Formula Severity LTA <sup>e</sup>	(15) Frequency Effect	(16) Final LTA <sup>f</sup>
Basic Group I (BGI)	0.999	1.055	5.6	2.8	0.0	2.8
Basic Group II (BGII)	1.002	1.055	5.3	2.6	0.0	2.6
Special Causes of Loss	0.999	1.055	5.6	2.8	0.0	2.8

(d) The external rates of change are based on external economic indices through December 31, 2017 for Buildings, Contents and Time Element.

(e) The formula severity LTA for Buildings, Contents and Time Element is calculated as one-half of the indicated severity LTA. This is equivalent to calculating the overall severity trend giving 50% weight to the external trend and 50% weight to the selected internal trend.

(f) The final LTA is calculated as the product (in factor form) of the formula severity LTA and frequency effect.

## EXPLANATORY NOTES TO TABLE 23

### DEVELOPMENT OF LOSS TREND ADJUSTMENTS (LTA'S)

#### I. EXTERNAL RATE OF CHANGE

COLUMN (1), (2)  
AND (3)

##### CURRENT COST FACTORS

The CCF's underlying the LTA analysis are based on external cost indices through 12/31/2017 for buildings, contents and time element.

COLUMNS (4)  
AND (5)

##### WEIGHTS

The standard review weights are shown for each line of business.

LINES (6)

##### AVERAGE CURRENT COST FACTORS

The average CCF's for the experience period are calculated based on the weights shown in columns (4) and (5).

LINE (7)

##### LOSS PROJECTION FACTORS

The LPF's underlying the LTA analysis are shown here.

LINE (8)

##### TOTAL TREND

The total trend is the product of the average CCF and the LPF.

LINE (9)

##### EXTERNAL ANNUAL RATE OF CHANGE

The total trend is converted to an annual basis by raising it to the reciprocal of the number of years between the weighted midpoint of the experience period and the anticipated average accident date. For BG I and SCL the weighted midpoint of the experience period is 1/1/2016, for BG II it is 1/1/2013. Accordingly, there are 54 and 90 months, respectively, to the anticipated average accident date of 7/1/2020.

#### II. INTERNAL ANNUAL RATES OF CHANGES

LINE (10)

##### SELECTED COMFAL

The displayed annual rates of change in the average claim costs for BG I, BG II, and SCL were selected based on several least squares exponential fits of the annual claim costs for each subline. This was done to the most recent ten years of Commercial Property data using all companies in the ratemaking data base.

EXPLANATORY NOTES TO TABLE 23 (cont'd)

III. LTA CALCULATION

COLUMN (11)

ANNUAL EXTERNAL

The annual external rates of change from column (9) are shown here.

COLUMN (12)

ANNUAL INTERNAL

The adjusted annual internal rates of change in average loss from line (10) are shown here.

COLUMN (13)

INDICATED SEVERITY LTA

The indicated severity LTA's are calculated by dividing the annual internal rates of change by the annual external rates of change.

COLUMN (14)

FORMULA SEVERITY LTA

The severity LTA's in column (13) are then selected to temper the full effect of internal trend data. Without such tempering, full weight would in effect be given to the internal data without any consideration of the external cost indices.

COLUMN (15)

FREQUENCY EFFECT

The displayed annual rates of change in claim frequency for BG I and SCL were selected based on several least squares exponential fits of the claim frequency by subline. No frequency trend was selected for BG II and SCL buildings due to the extremely volatile nature of the coverage.

COLUMN (16)

FINAL LTA

The final LTA is the combination of the severity and frequency trend adjustments, calculated as column (14) times column (15), in factor form.

TABLE 24A

**EXPOSURE TREND**  
**DEVELOPMENT OF CURRENT AND PROJECTED EARNED EXPOSURE FACTORS**

	<u>Buildings</u>				<u>Contents</u>			
	(1) <sup>a</sup>	(2) <sup>a</sup>	(3) <sup>b</sup>	(4) <sup>c</sup>	(5) <sup>a</sup>	(6) <sup>a</sup>	(7) <sup>b</sup>	(8) <sup>c</sup>
	Annual	07-01-2018	04-01-2020	04-01-2020	Annual	07-01-2018	04-01-2020	04-01-2020
	Written	Written	Projected	Earned	Written	Written	Projected	Earned
<u>Year</u>	<u>Increase</u>	<u>Factors</u>	<u>Factors</u>	<u>Factors</u>	<u>Increase</u>	<u>Factors</u>	<u>Factors</u>	<u>Factors</u>
2006	3.8%	1.380	1.443	1.484	2.1%	1.268	1.310	1.331
2007	3.9%	1.328	1.389	1.430	2.4%	1.238	1.279	1.302
2008	3.5%	1.283	1.342	1.377	2.4%	1.209	1.249	1.272
2009	3.3%	1.242	1.299	1.331	2.2%	1.183	1.223	1.243
2010	2.5%	1.212	1.268	1.292	1.7%	1.163	1.202	1.218
2011	2.5%	1.182	1.236	1.260	1.8%	1.142	1.180	1.196
2012	2.7%	1.151	1.204	1.228	1.8%	1.122	1.160	1.175
2013	2.6%	1.122	1.174	1.197	2.1%	1.099	1.136	1.154
2014	2.5%	1.095	1.145	1.167	2.1%	1.076	1.112	1.130
2015	2.3%	1.070	1.119	1.139	1.9%	1.056	1.091	1.107
2016	2.1%	1.048	1.096	1.113	1.8%	1.037	1.072	1.086
2017	2.1%	1.026	1.073	1.090	1.8%	1.019	1.053	1.067
2018	2.6%	1.000	1.046	1.066	1.9%	1.000	1.033	1.048

## Notes

a The percentages in columns (1) and (5) represent the change in written exposures from 07/01/n-1 to 07/01/n. Columns (2) and (6) contain the cumulative changes in written exposures for each year relative to the latest year.

b The selected average annual changes in Amount of Insurance for projection purposes are 2.6% and 1.9% for Buildings and Contents, respectively. Consequently, the written factors at 07/01/2018 levels in column (2) and column (6) are brought to the level of the average date of writing in the effective period, 04/01/2020 (i.e., 6 months beyond an assumed revision date of 10/01/2019), by applying a factor of  $(1.026)^{18/12}$  for Buildings and  $(1.019)^{18/12}$  for Contents.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

	<u>Earning Factors</u>
<u>Year</u>	<u>All Years</u>
n-2	1/32
n-1	11/16
n	9/32

For example, the factors used to adjust earned exposures for the period from 01/01/2018 to 12/31/2018 to the projected level are 1.066 for Buildings and 1.048 for Contents.

TABLE 24A (cont'd)

EXPOSURE TREND  
DEVELOPMENT OF CURRENT AND PROJECTED EARNED EXPOSURE FACTORS

<u>Time Element</u>				
	(1) <sup>a</sup>	(2) <sup>a</sup>	(3) <sup>b</sup>	(4) <sup>c</sup>
<u>Year</u>	<u>Annual</u> <u>Written</u> <u>Increase</u>	<u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>04-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>04-01-2020</u> <u>Earned</u> <u>Factors</u>
2006	1.4%	1.118	1.130	1.142
2007	1.3%	1.104	1.116	1.127
2008	1.3%	1.090	1.101	1.112
2009	0.8%	1.081	1.092	1.099
2010	0.7%	1.073	1.084	1.090
2011	0.8%	1.064	1.075	1.082
2012	0.8%	1.056	1.067	1.073
2013	0.9%	1.047	1.058	1.065
2014	1.0%	1.037	1.048	1.055
2015	1.1%	1.026	1.037	1.045
2016	1.1%	1.015	1.026	1.034
2017	0.9%	1.006	1.017	1.024
2018	0.6%	1.000	1.011	1.016

Notes

a The percentage in column (1) represents the change in written exposures from 07/01/n-1 to 07/01/n. Column (2) is the cumulative change in written exposures for each year relative to the latest year.

b The selected average annual change in Net Income (Time Element exposure) for projection purposes is 0.6%. Consequently, the written factors at 07/01/2018 levels in column (2) are brought to the level of the average date of writing in the effective period, 04/01/2020 (i.e., 6 months beyond an assumed revision date of 10/01/2019), by applying a factor of  $(1.006)^{18/12}$  for Time Element.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

<u>Earning Factors</u>	
<u>Year</u>	<u>All Years</u>
n-2	1/32
n-1	11/16
n	9/32

For example, the factor used to adjust earned exposures for the period from 01/01/2018 to 12/31/2018 to the projected level is 1.016.



TABLE 24B

**PREMIUM TREND - BASIC GROUP I**  
**DEVELOPMENT OF CURRENT AND PROJECTED EARNED PREMIUM FACTORS**

	<u>Buildings</u>				<u>Contents</u>			
	(1) <sup>a</sup>	(2) <sup>a</sup>	(3) <sup>b</sup>	(4) <sup>c</sup>	(5) <sup>a</sup>	(6) <sup>a</sup>	(7) <sup>b</sup>	(8) <sup>c</sup>
<u>Year</u>	<u>Annual</u> <u>Written</u> <u>Increase</u>	<u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>04-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>04-01-2020</u> <u>Earned</u> <u>Factors</u>	<u>Annual</u> <u>Written</u> <u>Increase</u>	<u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>04-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>04-01-2020</u> <u>Earned</u> <u>Factors</u>
2006	3.1%	1.297	1.345	1.376	1.8%	1.219	1.253	1.270
2007	3.1%	1.258	1.305	1.335	2.0%	1.195	1.229	1.247
2008	2.8%	1.224	1.269	1.296	2.0%	1.172	1.205	1.223
2009	2.7%	1.192	1.236	1.261	1.8%	1.151	1.183	1.200
2010	2.0%	1.169	1.212	1.230	1.4%	1.135	1.167	1.179
2011	2.0%	1.146	1.188	1.206	1.5%	1.118	1.149	1.162
2012	2.2%	1.121	1.163	1.182	1.5%	1.101	1.132	1.145
2013	2.1%	1.098	1.139	1.157	1.8%	1.082	1.112	1.127
2014	2.0%	1.076	1.116	1.133	1.8%	1.063	1.093	1.107
2015	1.9%	1.056	1.095	1.111	1.6%	1.046	1.075	1.089
2016	1.7%	1.038	1.076	1.090	1.5%	1.031	1.060	1.071
2017	1.7%	1.021	1.059	1.072	1.5%	1.016	1.045	1.056
2018	2.1%	1.000	1.037	1.053	1.6%	1.000	1.028	1.041

## Notes

a The percentages in columns (1) and (5) represent the change in written premium (reflecting the combined effect of change in exposures and limit of insurance factors) from 07/01/n-1 to 07/01/n. Columns (2) and (6) contain the cumulative changes in written premiums for each year relative to the latest year.

b The average annual changes in Premium for projection purposes are 2.1% and 1.6% for Buildings and Contents, respectively. Consequently, the written factors at 07/01/2018 levels in column (2) and column (6) are brought to the level of the average date of writing in the effective period, 04/01/2020 (i.e., 6 months beyond an assumed revision date of 10/01/2019), by applying a factor of  $(1.021)^{18/12}$  for Buildings and  $(1.016)^{18/12}$  for Contents.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

	<u>Earning Factors</u>
<u>Year</u>	<u>All Years</u>
n-2	1/32
n-1	11/16
n	9/32

For example, the factors used to adjust earned exposures for the period from 01/01/2018 to 12/31/2018 to the projected level are 1.053 for Buildings and 1.041 for Contents.

TABLE 24C

**PREMIUM TREND - BASIC GROUP II - OTHER THAN SOUTHEAST  
DEVELOPMENT OF CURRENT AND PROJECTED EARNED PREMIUM FACTORS**

	<u>Buildings</u>				<u>Contents</u>			
	(1) <sup>a</sup>	(2) <sup>a</sup>	(3) <sup>b</sup>	(4) <sup>c</sup>	(5) <sup>a</sup>	(6) <sup>a</sup>	(7) <sup>b</sup>	(8) <sup>c</sup>
<u>Year</u>	<u>Annual</u> <u>Written</u> <u>Increase</u>	<u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>04-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>04-01-2020</u> <u>Earned</u> <u>Factors</u>	<u>Annual</u> <u>Written</u> <u>Increase</u>	<u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>04-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>04-01-2020</u> <u>Earned</u> <u>Factors</u>
2006	2.8%	1.272	1.315	1.343	1.6%	1.197	1.226	1.241
2007	2.9%	1.236	1.277	1.305	1.8%	1.176	1.205	1.221
2008	2.6%	1.205	1.245	1.269	1.8%	1.155	1.183	1.199
2009	2.4%	1.177	1.216	1.238	1.7%	1.136	1.164	1.178
2010	1.9%	1.155	1.194	1.211	1.3%	1.121	1.149	1.160
2011	1.9%	1.133	1.171	1.188	1.4%	1.106	1.133	1.145
2012	2.0%	1.111	1.148	1.165	1.4%	1.091	1.118	1.129
2013	1.9%	1.090	1.127	1.143	1.6%	1.074	1.100	1.113
2014	1.9%	1.070	1.106	1.122	1.6%	1.057	1.083	1.096
2015	1.7%	1.052	1.087	1.101	1.4%	1.042	1.068	1.079
2016	1.6%	1.035	1.070	1.083	1.4%	1.028	1.053	1.064
2017	1.6%	1.019	1.053	1.066	1.4%	1.014	1.039	1.050
2018	1.9%	1.000	1.033	1.048	1.4%	1.000	1.025	1.036

## Notes

a The percentages in columns (1) and (5) represent the change in written premium (reflecting the combined effect of change in exposures and limit of insurance factors) from 07/01/n-1 to 07/01/n. Columns (2) and (6) contain the cumulative changes in written premiums for each year relative to the latest year.

b The average annual changes in Premium for projection purposes are 1.9% and 1.4% for Buildings and Contents, respectively. Consequently, the written factors at 07/01/2018 levels in column (2) and column (6) are brought to the level of the average date of writing in the effective period, 04/01/2020 (i.e., 6 months beyond an assumed revision date of 10/01/2019), by applying a factor of  $(1.019)^{18/12}$  for Buildings and  $(1.014)^{18/12}$  for Contents.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

	<u>Earning Factors</u>
<u>Year</u>	<u>All Years</u>
n-2	1/32
n-1	11/16
n	9/32

For example, the factors used to adjust earned premium for the period from 01/01/2018 to 12/31/2018 to the projected level are 1.048 for Buildings and 1.036 for Contents.

TABLE 24D

**PREMIUM TREND - SPECIAL CAUSES OF LOSS**  
**DEVELOPMENT OF CURRENT AND PROJECTED EARNED PREMIUM FACTORS**

	<u>Buildings</u>				<u>Contents</u>			
	(1) <sup>a</sup>	(2) <sup>a</sup>	(3) <sup>b</sup>	(4) <sup>c</sup>	(5) <sup>a</sup>	(6) <sup>a</sup>	(7) <sup>b</sup>	(8) <sup>c</sup>
	Annual	07-01-2018	04-01-2020	04-01-2020	Annual	07-01-2018	04-01-2020	04-01-2020
	Written	Written	Projected	Earned	Written	Written	Projected	Earned
<u>Year</u>	<u>Increase</u>	<u>Factors</u>	<u>Factors</u>	<u>Factors</u>	<u>Increase</u>	<u>Factors</u>	<u>Factors</u>	<u>Factors</u>
2006	2.9%	1.281	1.326	1.354	1.4%	1.168	1.193	1.205
2007	3.0%	1.244	1.288	1.317	1.6%	1.150	1.174	1.188
2008	2.7%	1.211	1.254	1.280	1.6%	1.132	1.156	1.170
2009	2.5%	1.181	1.223	1.246	1.4%	1.116	1.140	1.152
2010	1.9%	1.159	1.200	1.218	1.1%	1.104	1.127	1.137
2011	1.9%	1.137	1.177	1.194	1.2%	1.091	1.114	1.124
2012	2.1%	1.114	1.153	1.171	1.2%	1.078	1.101	1.111
2013	2.0%	1.092	1.131	1.148	1.4%	1.063	1.085	1.097
2014	1.9%	1.072	1.110	1.126	1.4%	1.048	1.070	1.081
2015	1.8%	1.053	1.090	1.105	1.2%	1.036	1.058	1.067
2016	1.6%	1.036	1.073	1.086	1.2%	1.024	1.046	1.055
2017	1.6%	1.020	1.056	1.069	1.2%	1.012	1.033	1.043
2018	2.0%	1.000	1.035	1.051	1.2%	1.000	1.021	1.030

## Notes

a The percentages in columns (1) and (5) represent the change in written premium (reflecting the combined effect of change in exposures and limit of insurance factors) from 07/01/n-1 to 07/01/n. Columns (2) and (6) contain the cumulative changes in written premiums for each year relative to the latest year.

b The average annual changes in Premium for projection purposes are 2.0% and 1.2% for Buildings and Contents, respectively. Consequently, the written factors at 07/01/2018 levels in column (2) and column (6) are brought to the level of the average date of writing in the effective period, 01/01/2020 (i.e., 6 months beyond an assumed revision date of 07/01/2019), by applying a factor of  $(1.020)^{18/12}$  for Buildings and  $(1.012)^{18/12}$  for Contents.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

	<u>Earning Factors</u>
<u>Year</u>	<u>All Years</u>
n-2	1/32
n-1	11/16
n	9/32

For example, the factors used to adjust earned premium for the period from 01/01/2018 to 12/31/2018 to the projected level are 1.051 for Buildings and 1.030 for Contents.

EXPLANATORY NOTES TO TABLES 24A - 24D  
EXPOSURE AND PREMIUM TREND FACTORS

Table 24A contains Exposure trend factors.

Tables 24B, 24C and 24D contain Premium trend factors for Basic Group I, Basic Group II and Special Causes of Loss respectively, building and contents. As annual written exposures increase (decrease), the resulting limit of insurance factors used for rating decrease (increase) and the combined effect should be reflected when trending premiums to future level. There are separate premium trend factor tables for Basic Group I, Basic Group II and Special Causes of Loss since there are separate limit of insurance curves for BG I, BG II and SCL.

For Time Element, exposure trend factors are also used to trend premiums, i.e., there are not separate Time Element premium trend factors because Time Element does not use limit of insurance factors for rating.

COLUMNS (1)  
AND (5)                      ANNUAL WRITTEN INCREASE

The annual written increases for buildings, contents, and time element are calculated from the actual changes in amount of insurance from one year to the next for a sample of renewal policies (based on BG I experience). The change in amount of insurance for each policy in the sample was weighted with its prior year's premiums to obtain a weighted average change for each year. The Annual Written Increase in Premiums (Tables 24B, 24C and 24D) are calculated as the Annual Written Increase in Exposure tempered by the change in Limit of Insurance factor.

COLUMNS (2)  
AND (6)                      07-01-2018 WRITTEN FACTORS

The written factors for a given year are the product of the written annual changes for all years subsequent to that year. Although the 2018 written changes are based on two quarters of data, the consistency of this experience allows for the assumption that written changes for the first half of 2018 are applicable for the entire year.

COLUMNS (3)  
AND (7)                      04-01-2020 PROJECTED FACTORS

The 01-01-2020 factors are calculated by applying a factor to adjust the 07-01-2018 written factors to the amount of insurance level at the average date of writing, 01-01-2020. This is done using the selected annual changes in exposure or premium.

COLUMNS (4)  
AND (8)                      04-01-2020 EARNED EXPOSURES/PREMIUM FACTORS

The projected earned factors at the 01-01-2020 level (where 01-01-2020 is the average date of writing in the effective period) are calculated by earning the written factors assuming all one-year policies. The earning factors are shown in footnote (c).

ARIZONA  
TABLE 25

BASIC GROUP I

ADDITIONAL INFORMATION ON TREND ADJUSTMENTS

YEAR	(1)	(2)	(3)	(4)		
	UNADJUSTED INCURRED LOSSES	TRENDED INCURRED LOSSES	AVERAGE TOTAL LOSS TREND FACTOR (2) / (1)	----- BUILDINGS	SPLIT % CONTENTS	----- TIME ELEMENT
2014	5,459,995	7,070,921	1.295	70.4%	28.8%	0.8%
2015	9,545,685	11,785,728	1.235	83.5%	12.8%	3.7%
2016	8,676,509	10,349,284	1.193	81.5%	15.1%	3.4%
2017	8,950,382	10,385,275	1.160	69.9%	21.6%	8.5%
2018	15,281,755	16,990,340	1.112	69.9%	21.6%	8.5%

ARIZONA  
TABLE 26

BASIC GROUP II

ADDITIONAL INFORMATION ON TREND ADJUSTMENTS

YEAR	(1)	(2)	(3)	(4)		
	UNADJUSTED INCURRED LOSSES	TRENDED INCURRED LOSSES	AVERAGE TOTAL LOSS TREND FACTOR (2) / (1)	SPLIT %		
				BUILDINGS	CONTENTS	TIME ELEMENT
2009	5,222,176	6,926,470	1.326	81.1%	12.3%	6.6%
2010	5,379,891	6,473,901	1.203	77.0%	12.1%	10.9%
2011	92,628,007	118,635,129	1.281	98.2%	1.4%	0.4%
2012	6,449,543	8,294,812	1.286	91.7%	6.3%	2.0%
2013	3,197,376	4,059,115	1.270	94.6%	4.7%	0.7%
2014	4,179,692	5,170,969	1.237	93.6%	4.9%	1.5%
2015	2,628,031	3,173,041	1.207	93.6%	6.3%	0.1%
2016	7,315,257	8,429,198	1.152	95.6%	4.1%	0.3%
2017	3,673,287	4,150,253	1.130	73.3%	23.3%	3.4%
2018	3,366,848	3,704,909	1.100	85.0%	15.0%	0.0%

ARIZONA  
TABLE 27

SPECIAL CAUSES OF LOSS

ADDITIONAL INFORMATION ON TREND ADJUSTMENTS

YEAR	(1)	(2)	(3)	(4)		
	UNADJUSTED INCURRED LOSSES	TRENDED INCURRED LOSSES	AVERAGE TOTAL LOSS TREND FACTOR (2) / (1)	----- BUILDINGS	SPLIT % CONTENTS	----- TIME ELEMENT
2014	5,216,875	6,361,691	1.219	62.6%	28.9%	8.5%
2015	5,279,169	6,236,849	1.181	69.8%	27.3%	2.9%
2016	3,552,890	4,088,905	1.151	68.9%	29.5%	1.6%
2017	11,908,083	13,375,291	1.123	62.6%	37.0%	0.4%
2018	3,652,413	4,017,994	1.100	69.1%	23.5%	7.4%

## EXPLANATORY NOTES TO TABLES 25, 26 AND 27

### BG I, BG II, AND SCL ADDITIONAL INFORMATION ON TREND ADJUSTMENTS

#### COLUMN (1) UNADJUSTED INCURRED LOSSES

The unadjusted incurred losses are the reported losses prior to any adjustment.

#### COLUMN (2) TRENDED INCURRED LOSSES

The trended incurred losses are the aggregate of the individual losses trended on a unit record basis.

#### COLUMN (3) AVERAGE TREND FACTOR

The average trend factors are the trended incurred losses in column (2) divided by the unadjusted incurred losses in column (1). Although average factors could be calculated from the information contained in Tables 21 through 23, they would differ from the factors shown in this table for the following reasons:

- (1) In calculating such averages, the usual assumption is that the losses are spread evenly throughout the year, yielding the midpoint of each year as the average date of loss. A predominance of losses at a certain time of the year could shift the average accident date away from the midpoint.
- (2) The average trend factors will be slightly higher due to the impact of trend on the deductible.

#### COLUMN (4) PERCENTAGE SPLIT BETWEEN BUILDINGS, CONTENTS, AND TIME ELEMENT

The current cost factors and loss projection factors are different for buildings, contents, and time element. Therefore, in addition to the reasons cited above, the average trend factors will differ from state to state depending on the buildings/contents/time element split. Companies with splits substantially different from the industrywide averages shown here may find it appropriate to develop trend factors which reflect their own coverage mix.



## LOSS DEVELOPMENT

### INTRODUCTION

For Commercial Property, losses are evaluated as of June 30, 2018, three months after the end of the latest experience year used in the review. In order to account for development of losses beyond fifteen months and to reflect overall loss development patterns, loss development was incorporated into the adjustment process of incurred losses to their ultimate settlement value.

### LOSS DEVELOPMENT PROCEDURES

The application of loss development factors recognizes the fact that not all of the Commercial Property losses for a particular accident year have been finally determined at the time the experience is compiled.

The incurred losses underlying the statewide loss cost level indications were evaluated as of June 30, 2018.

Accident year ended March 31, 2018 includes all losses paid on accidents from April 1, 2017 to March 31, 2017 and all losses outstanding on those accidents as of June 30, 2018, fifteen months after the inception of the accident year. Similarly, accident years ended March 31, 2017, 2016, 2015 and 2014 include all losses paid and outstanding as of 27, 39, 51 and 63 months, respectively, after the inception of the accident year.

Thus, the immature experience reported as of 15, 27, 39 or 51 months must be adjusted to an ultimate settlement basis. This adjustment is accomplished through the use of loss development factors based on the historic multistate Basic Group I, Basic Group II, and Special Causes of Loss incurred losses as shown in Table 28.

TABLE 28  
BASIC GROUP I  
INCURRED LOSSES  
LOSS YEARS 2009-2018  
EVALUATED AS OF 6/2018

LOSSES AS OF					
YEAR ENDING	15 MONTHS	27 MONTHS	39 MONTHS	51 MONTHS	63 MONTHS
3/31/2009	1,010,225,344	981,124,795	971,554,550	979,004,019	974,997,018
3/31/2010	1,013,149,000	1,001,797,626	992,803,528	985,111,714	981,419,745
3/31/2011	977,338,560	963,686,293	946,573,904	936,166,526	933,988,492
3/31/2012	911,872,089	884,689,375	867,014,048	860,163,345	854,710,667
3/31/2013	972,908,245	942,260,058	924,882,683	918,689,717	904,497,515
3/31/2014	943,492,590	946,676,916	935,880,739	927,611,663	923,912,160
3/31/2015	878,966,753	861,237,700	855,479,959	845,410,025	
3/31/2016	840,511,253	817,679,989	810,258,497		
3/31/2017	943,292,500	911,567,235			
3/31/2018	1,389,876,104				

RATIOS				
YEAR ENDING	27:15 MONTHS	39:27 MONTHS	51:39 MONTHS	63:51 MONTHS
3/31/2009	0.971	0.990	1.008	0.996
3/31/2010	0.989	0.991	0.992	0.996
3/31/2011	0.986	0.982	0.989	0.998
3/31/2012	0.970	0.980	0.992	0.994
3/31/2013	0.968	0.982	0.993	0.985
3/31/2014	1.003	0.989	0.991	0.996
3/31/2015	0.980	0.993	0.988	
3/31/2016	0.973	0.991		
3/31/2017	0.966			
5 POINT AVERAGE	0.978	0.987	0.991	0.994

DEVELOPMENT FACTORS TO ULTIMATE

15 MONTHS TO ULTIMATE =  $0.978 \times 0.987 \times 0.991 \times 0.994 = 0.951$

27 MONTHS TO ULTIMATE =  $0.987 \times 0.991 \times 0.994 = 0.972$

39 MONTHS TO ULTIMATE =  $0.991 \times 0.994 = 0.985$

51 MONTHS TO ULTIMATE =  $0.994 = 0.994$

TABLE 28  
BASIC GROUP II  
INCURRED LOSSES  
LOSS YEARS 2009-2018  
EVALUATED AS OF 6/2018

LOSSES AS OF					
YEAR ENDING	15 MONTHS	27 MONTHS	39 MONTHS	51 MONTHS	63 MONTHS
3/31/2009	724,550,944	760,778,906	766,227,055	767,172,311	768,232,716
3/31/2010	514,444,233	523,537,373	523,118,703	525,445,682	528,539,835
3/31/2011	671,009,527	702,138,332	709,290,184	713,721,667	718,118,814
3/31/2012	1,352,006,075	1,369,111,241	1,382,493,799	1,396,305,898	1,406,874,392
3/31/2013	946,729,632	979,261,588	991,521,665	1,001,702,136	1,008,582,561
3/31/2014	606,976,113	615,050,046	618,601,207	624,331,565	629,988,346
3/31/2015	555,581,362	575,187,756	592,705,970	597,612,318	
3/31/2016	541,299,432	567,393,672	591,774,507		
3/31/2017	809,702,100	849,858,689			
3/31/2018	692,841,182				

RATIOS				
YEAR ENDING	27:15 MONTHS	39:27 MONTHS	51:39 MONTHS	63:51 MONTHS
3/31/2009	1.050	1.007	1.001	1.001
3/31/2010	1.018	0.999	1.004	1.006
3/31/2011	1.046	1.010	1.006	1.006
3/31/2012	1.013	1.010	1.010	1.008
3/31/2013	1.034	1.013	1.010	1.007
3/31/2014	1.013	1.006	1.009	1.009
3/31/2015	1.035	1.030	1.008	
3/31/2016	1.048	1.043		
3/31/2017	1.050			
5 POINT AVERAGE	1.036	1.020	1.009	1.007

DEVELOPMENT FACTORS TO ULTIMATE

15 MONTHS TO ULTIMATE =  $1.036 \times 1.020 \times 1.009 \times 1.007 = 1.074$

27 MONTHS TO ULTIMATE =  $1.020 \times 1.009 \times 1.007 = 1.036$

39 MONTHS TO ULTIMATE =  $1.009 \times 1.007 = 1.016$

51 MONTHS TO ULTIMATE =  $1.007 = 1.007$

TABLE 28  
SPECIAL CAUSES OF LOSS  
INCURRED LOSSES  
LOSS YEARS 2009-2018  
EVALUATED AS OF 6/2018

LOSSES AS OF					
YEAR ENDING	15 MONTHS	27 MONTHS	39 MONTHS	51 MONTHS	63 MONTHS
3/31/2009	694,843,355	684,921,958	686,971,759	682,513,977	679,983,921
3/31/2010	662,342,917	653,447,795	648,647,149	649,326,628	648,769,206
3/31/2011	717,031,206	699,764,258	704,564,350	701,835,965	699,988,301
3/31/2012	514,013,967	514,164,777	511,224,814	512,209,033	511,882,749
3/31/2013	438,777,933	433,868,660	424,435,369	426,275,617	426,414,581
3/31/2014	723,106,733	713,629,938	708,629,281	708,790,768	706,874,405
3/31/2015	590,113,994	607,927,033	605,015,789	604,225,609	
3/31/2016	431,477,358	432,757,519	427,396,937		
3/31/2017	402,779,003	425,031,286			
3/31/2018	867,967,710				

RATIOS				
YEAR ENDING	27:15 MONTHS	39:27 MONTHS	51:39 MONTHS	63:51 MONTHS
3/31/2009	0.986	1.003	0.994	0.996
3/31/2010	0.987	0.993	1.001	0.999
3/31/2011	0.976	1.007	0.996	0.997
3/31/2012	1.000	0.994	1.002	0.999
3/31/2013	0.989	0.978	1.004	1.000
3/31/2014	0.987	0.993	1.000	0.997
3/31/2015	1.030	0.995	0.999	
3/31/2016	1.003	0.988		
3/31/2017	1.055			
5 POINT AVERAGE	1.013	0.990	1.000	0.998

DEVELOPMENT FACTORS TO ULTIMATE

15 MONTHS TO ULTIMATE =  $1.013 \times 0.990 \times 1.000 \times 0.998 = 1.001$

27 MONTHS TO ULTIMATE =  $0.990 \times 1.000 \times 0.998 = 0.988$

39 MONTHS TO ULTIMATE =  $1.000 \times 0.998 = 0.998$

51 MONTHS TO ULTIMATE =  $0.998 = 0.998$

## EXPLANATORY NOTES TO TABLE 28

### LOSS DEVELOPMENT

#### INTRODUCTION

Table 28 shows multistate incurred loss development exhibits for Basic Group I, Basic Group II and Special Causes of Loss. The exhibits on Table 28 are arranged identically for each subline and can be summarized as listing the following information: incurred losses by accident year and age, age-to-age factors by accident year, and age-to-ultimate factors.

#### INCURRED LOSSES

The multistate incurred losses are shown by accident year and age at the top of Table 28. The multistate incurred losses are evaluated as of 15, 27, 39, 51 and 63 months. For Basic Group II, losses due to hurricanes reflected in the modeled hurricane loss costs have been removed from the experience for each rating territory and loss month.

#### AGE-TO-AGE DEVELOPMENT FACTORS

Age-to-age development factors or link ratios are calculated for each accident year. These age-to-age factors are calculated by dividing the incurred losses evaluated at each age by the incurred losses evaluated at the immediately preceding age. For example, 27:15 month age-to-age factors are calculated by taking the losses evaluated as of 27 months and dividing them by the losses evaluated as of 15 months, for each accident year. Age-to-age development factors are also calculated for 39:27 months, 51:39 months and 63:51 months. Latest five-year averages are then determined for each age-to-age interval.

#### AGE-TO-ULTIMATE DEVELOPMENT FACTORS

Age-to-ultimate factors are then calculated for the latest four years by multiplying the five-year average age-to-age development factors. These age-to-ultimate factors are then used in the adjustment of incurred losses to develop losses to their ultimate settlement value.

## EXCESS LOSS PROCEDURES

### INTRODUCTION

If not addressed, the presence or absence of large losses during the review period can produce significant fluctuations in loss cost levels. In order to develop a more stable body of experience, large losses have been smoothed. This procedure removes any excess losses from the experience and applies excess loss factors to the resultant state normal losses to generate the adjusted incurred losses. The adjusted losses developed in this manner replace the incurred losses in the loss cost level evaluation.

### BASIC GROUP I

First, the excess portion of each large loss is removed from the trended loss experience.

Individual claim amounts that result from the same occurrence are grouped together, and if the total loss for one occurrence exceeds the normal loss cutoff (at 2005 cost levels), the total loss is identified as a large loss. Each large loss is then split into its normal and excess portions based on the normal loss cutoff.

The Basic Group I normal loss cutoff begins at \$250,000 and varies with the size of loss up to a maximum normal amount (approached asymptotically) of \$1,250,000. (The formula and a graph are shown on Table 29.) The portion of each large loss exceeding the cutoff is considered excess and the portion of any loss up to the cutoff is considered normal.

As noted above, the excess loss procedure is performed on trended loss experience (i.e. loss experience adjusted to prospective cost levels by the current cost factors, loss projection factors, and loss trend adjustment factors (for claim cost only) shown in Tables 21 through 22). The loss trend adjustment for frequency trend is not reflected at this step in the process. The normal breakpoint of \$250,000 for BGI and the parameters in the normal loss formula are at 2005 cost levels and therefore have been similarly adjusted to prospective cost levels.

Both the normal and total incurred losses are aggregated over all states by construction, protection, and amount of insurance intervals. The most recent ten years of experience are used in this analysis. Excess loss factors by construction, protection and amount of insurance are then calculated as the ratios of the ten year multistate incurred losses to the ten-year multistate normal losses.

These factors are then smoothed by fitting curves (by amount of insurance intervals) to the indicated factors. The resulting factors are then balanced so the original ten-year multistate incurred loss level is maintained.

## EXCESS LOSS PROCEDURES (cont'd)

### BASIC GROUP I (cont'd)

The excess factors are then applied to the state normal losses, which are maintained in the same detail (construction, protection and amount of insurance) as well as by year, territory, rating group and TOP. The state normal losses used in this calculation have also been trended for frequency.

The excess loss factors vary by construction, protection and the amount of insurance because these are the most significant severity-related rating variables.

### BASIC GROUP II

Since catastrophic wind losses affect both the frequency and severity of loss, the Basic Group II excess procedure identifies periods of overall adverse experience, rather than individual large losses. Also, due to the extreme volatility of windstorm losses, a long-term review period (1950 - present) is used to estimate the expected excess losses.

Loss ratio cutoffs are used to determine normal losses, state excess losses, and regional excess losses for each year in the long-term review period. The application of these cutoffs is detailed in the explanatory notes to Table 31A. The state excess losses are used to determine the state excess component of the state excess multiplier, and the regional excess losses are used to determine the regional excess component. (Table 31B is a list of states by region.) The state excess multiplier is derived in such a manner as to provide an estimate of the expected excess loss dollars per normal loss dollar.

The state excess multiplier is applied to each accident year in the ten-year experience period used in the review. In this way, a review database is created reflecting both the current normal loss experience and the average excess loss experience based on the long-term review. This allows a concurrent evaluation of both the normal and the excess components of the BG II loss cost level.

### SPECIAL CAUSES OF LOSS

Similar to Basic Group II, the Special Causes of Loss (SCL) smoothing procedure uses a loss ratio approach to reflect both the frequency and severity of unusual loss events which may produce significant fluctuations in loss cost levels. The excess procedure uses longer term statewide SCL experience (1985 - present) to account for the volatile nature of weather related losses (water damage from bursting pipes, or the weight of ice, sleet, or snow) which are the predominant cause of large SCL losses in a given experience period. A monthly normal loss ratio cutoff of 2.0 is used to define normal and excess losses. The resulting ratio of excess to normal losses over the long-term experience period is then applied to the normal losses used in the loss cost level review. SCL has a lower loss ratio cutoff than that used in Basic Group II in order to reflect the less catastrophic nature of unusual SCL loss events. The calculations underlying the smoothing procedure are described in the Explanatory Notes to Table 32.

**TABLE 29 - COUNTRYWIDE BASIC GROUP I EXCESS LOSS FACTORS  
BY CONSTRUCTION, PROTECTION AND EXPOSURE**

		Amount of Insurance *										
		1	2	3	4	5	6	7	8	9	10	11
Const. 1-3	Prot. 1-4	1.000	1.043	1.089	1.136	1.186	1.237	1.291	1.347	1.405	1.467	2.048
	Prot. 5-7	1.000	1.054	1.112	1.172	1.235	1.302	1.373	1.448	1.526	1.609	2.436
	Prot. 8-10	1.000	1.062	1.129	1.199	1.274	1.353	1.437	1.527	1.622	1.723	2.770

		Amount of Insurance *										
		1	2	3	4	5	6	7	8	9	10	11
Const. 4-6	Prot. 1-4	1.000	1.042	1.086	1.132	1.180	1.229	1.281	1.335	1.392	1.450	2.005
	Prot. 5-7	1.000	1.053	1.109	1.167	1.229	1.294	1.363	1.435	1.511	1.591	2.386
	Prot. 8-10	1.000	1.061	1.126	1.195	1.267	1.345	1.427	1.514	1.606	1.704	2.712

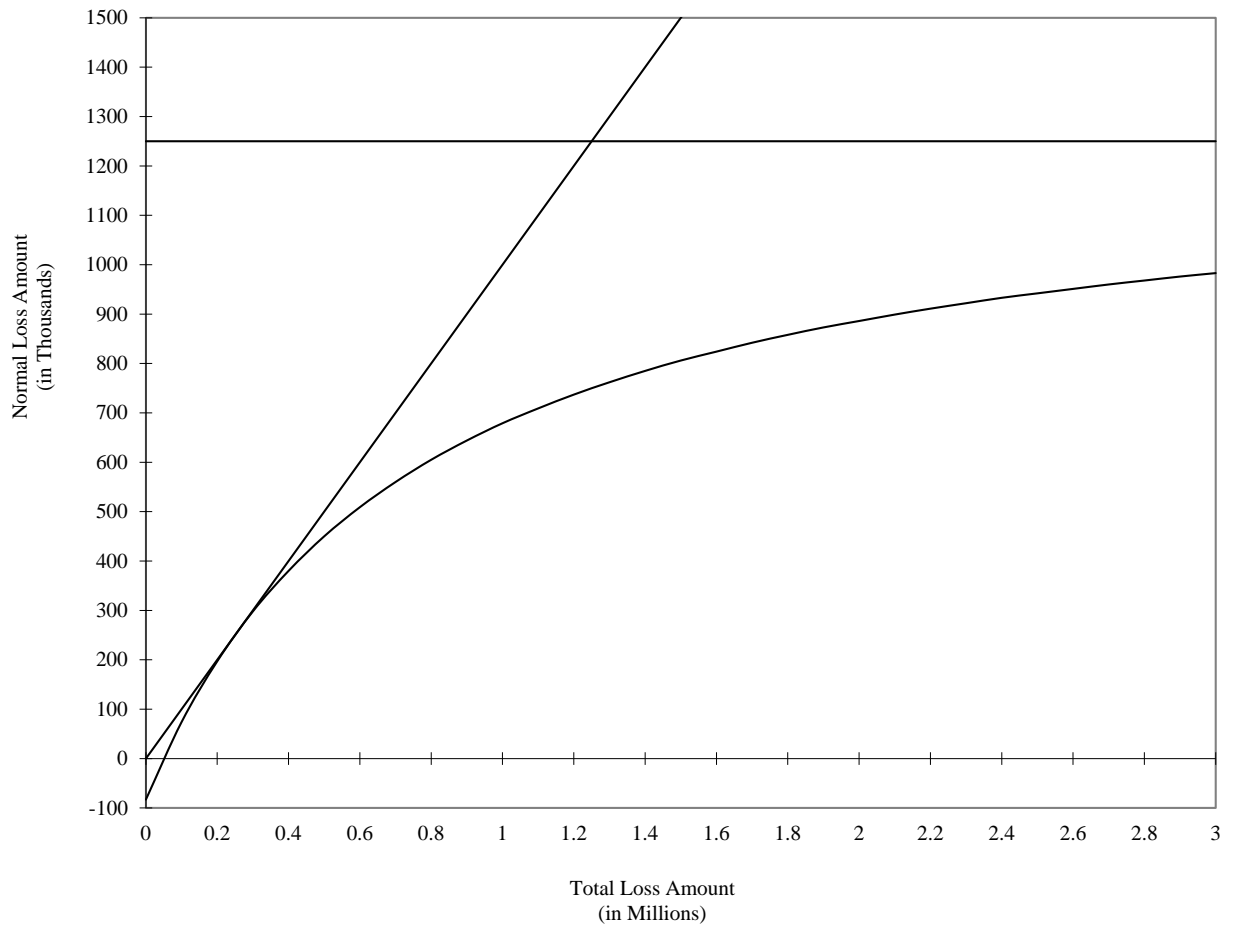
*	<u>Amount of Insurance</u>	<u>Intervals</u>
1		0-421,000
2		421,001-500,000
3		500,001-700,000
4		700,001-1,000,000
5		1,000,001-1,500,000
6		1,500,001-2,500,000
7		2,500,001-3,500,000
8		3,500,001-5,500,000
9		5,500,001-7,500,000
10		7,500,001-10,000,000
11		10,000,001 and over



Table 29 (cont'd)

Countrywide Basic Group I  
Normal vs. Total Loss Amount

$$\text{Normal Loss} = \$1,250,000 \times (1 - (\$800,000 \div (\text{Total Loss} + \$750,000)))$$



## EXPLANATORY NOTES TO TABLES 29

### COUNTRYWIDE BASIC GROUP I EXCESS LOSS FACTORS

#### EXCESS LOSS FACTORS

The multistate excess loss factors are the ratios of the ten-year multistate adjusted incurred losses to the ten-year multistate adjusted normal losses (both adjusted for severity trend). They are determined separately by construction, protection and amount of insurance range. Due to credibility considerations, both constructions and protections have been consolidated as shown. The amount of insurance ranges are also shown.

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TABLE 30

BASIC GROUP I  
ADDITIONAL EXCESS LOSS INFORMATION

	(1)	(2)	(3)	(4)	(5)	(6)
YEAR	TRENDED INCURRED LOSSES	TRENDED NORMAL LOSSES	STATE NORMAL % (2) / (1)	MULTI- STATE NORMAL %	ADJUSTED INCURRED LOSSES	STATE AVERAGE EXCESS FACTOR (5) / (2)
2014	7,070,921	6,503,957	92.0%	73.4%	9,968,514	1.533
2015	11,785,728	9,002,615	76.4%	75.6%	12,789,330	1.421
2016	10,349,284	7,037,994	68.0%	71.8%	11,231,889	1.596
2017	10,385,275	8,481,754	81.7%	71.2%	11,985,608	1.413
2018	16,990,340	14,164,726	83.4%	57.2%	21,396,633	1.511

## EXPLANATORY NOTES TO TABLE 30

### BASIC GROUP I ADDITIONAL EXCESS LOSS INFORMATION

#### COLUMN (1) TRENDED INCURRED LOSSES

The trended incurred losses are the aggregate of all individually-trended loss records prior to any adjustment for large losses. They are shown here fully trended for severity.

#### COLUMN (2) TRENDED NORMAL LOSSES

The normal losses are the aggregate of the normal portions of each loss occurrence. These are also fully trended.

#### COLUMN (3) STATE NORMAL PERCENTAGE

The state normal percentages are the statewide normal losses divided by the statewide trended incurred losses. These percentages can be used in conjunction with the multistate percentages and actual dollar amounts of normal losses to assess the state loss experience. For example, consistently lower state normal percentages relative to multistate normal percentages could indicate that the state has a greater propensity for large losses.

#### COLUMN (4) MULTISTATE NORMAL PERCENTAGES

The multistate normal percentages are the multistate normal losses divided by the multistate trended incurred losses. As noted above these can be used as a yardstick against which the statewide experience can be measured.

#### COLUMN (5) ADJUSTED INCURRED LOSSES

The adjusted incurred losses are the totals across all constructions, protections and exposures of the fully trended normal losses multiplied by the excess loss factors.

#### COLUMN (6) STATE AVERAGE EXCESS FACTOR

The state average excess factors are the adjusted incurred losses in column (5) divided by the normal losses in column (2). These factors represent the annual averages of the factors calculated separately by construction, protection and amount of insurance. The average excess factor reflects the normal loss mix by construction, protection and exposure. Heavy concentration in those subsets of the data with high excess factors will result in large average factors.

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TABLE 31A

DEVELOPMENT OF BASIC GROUP II EXCESS MULTIPLIER

	(1)	(2)	(3)	(4)	(5)	(6)
YEAR	EARNED PREMIUMS	INCURRED LOSSES	NORMAL INCURRED LOSSES	NORMAL LOSS RATIO	STATE EXCESS LOSS RATIO	REGIONAL EXCESS LOSS RATIO
1950	314,214	468,602	295,047	0.939	0.441	0.111
1951	351,328	333,340	329,897	0.939	0.010	
1952	399,695	455,434	375,314	0.939	0.184	0.016
1953	458,343	286,555	286,555	0.625		
1954	565,376	550,800	530,888	0.939	0.035	
1955	672,245	613,838	613,838	0.913		
1956	752,001	460,720	460,720	0.613		
1957	834,958	557,995	557,995	0.668		
1958	959,219	656,190	656,190	0.684		
1959	1,178,207	1,590,739	1,106,336	0.939	0.346	0.065
1960	1,377,026	713,889	713,889	0.518		
1961	1,529,264	1,027,103	1,027,103	0.672		
1962	1,593,054	559,439	559,439	0.351		
1963	1,576,350	1,025,848	1,025,848	0.651		
1964	1,519,969	609,323	609,323	0.401		
1965	1,437,049	451,922	451,922	0.314		
1966	1,358,654	435,833	435,833	0.321		
1967	1,337,441	574,633	574,633	0.430		
1968	1,223,872	699,190	699,190	0.571		
1969	1,411,472	786,108	786,108	0.557		
1970	2,538,894	1,602,376	1,602,376	0.631		
1971	2,644,179	1,209,716	1,209,716	0.458		
1972	3,322,281	1,850,187	1,850,187	0.557		
1973	3,578,288	814,182	814,182	0.228		
1974	4,005,832	1,880,451	1,880,451	0.469		
1975	5,511,564	2,189,852	2,189,852	0.397		
1976	7,533,597	2,067,659	2,067,659	0.274		
1977	8,753,673	1,669,449	1,669,449	0.191		
1978	9,739,939	2,459,517	2,459,517	0.253		
1979	9,999,333	4,684,592	4,684,592	0.468		
1980	9,120,533	2,697,553	2,697,553	0.296		
1981	8,091,090	2,295,736	2,295,736	0.284		
1982	7,779,048	4,298,625	4,298,625	0.553		
1983	7,684,476	5,917,612	4,637,084	0.603	0.151	0.016
1984	7,433,304	5,519,350	5,221,977	0.703	0.039	0.001
1985	10,520,748	2,617,667	2,617,667	0.249		
1986	12,682,704	1,767,737	1,767,737	0.139		
1987	11,208,252	2,652,073	2,652,073	0.237		

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TABLE 31A

DEVELOPMENT OF BASIC GROUP II EXCESS MULTIPLIER

	(1)	(2)	(3)	(4)	(5)	(6)
YEAR	EARNED PREMIUMS	INCURRED LOSSES	NORMAL INCURRED LOSSES	NORMAL LOSS RATIO	STATE EXCESS LOSS RATIO	REGIONAL EXCESS LOSS RATIO
1988	9,673,533	4,284,204	4,284,204	0.443		
1989	7,748,457	1,916,146	1,916,146	0.247		
1990	7,254,789	4,733,753	4,491,284	0.619	0.033	0.001
1991	7,508,118	1,901,829	1,901,829	0.253		
1992	7,803,504	2,738,904	2,738,904	0.351		
1993	7,299,186	1,228,157	1,228,157	0.168		
1994	6,673,665	3,194,938	2,929,883	0.439	0.039	0.001
1995	6,285,417	2,756,047	2,756,047	0.438		
1996	5,221,605	7,237,683	3,702,084	0.709	0.483	0.194
1997	4,920,039	2,018,486	2,018,486	0.410		
1998	4,801,275	1,670,424	1,670,424	0.348		
1999	4,931,733	4,704,954	3,927,240	0.796	0.144	0.014
2000	4,831,539	1,890,986	1,848,224	0.383	0.009	
2001	4,673,103	1,196,555	1,196,555	0.256		
2002	5,422,614	3,697,950	2,813,518	0.519	0.149	0.014
2003	6,161,226	1,143,718	1,143,718	0.186		
2004	7,017,009	2,212,026	2,212,026	0.315		
2005	7,370,928	2,440,293	2,440,293	0.331		
2006	7,483,833	2,151,090	2,151,090	0.287		
2008	9,830,430	3,535,466	3,350,103	0.341	0.019	
2009	8,602,887	5,222,176	3,703,380	0.430	0.159	0.018
2010	8,996,460	5,379,891	3,770,622	0.419	0.162	0.017
2011	8,815,757	92,628,007	6,287,945	0.713	1.414	8.380
2012	8,390,395	6,449,543	5,303,532	0.632	0.126	0.011
2013	8,688,539	3,197,376	3,197,376	0.368		
2014	9,261,064	4,179,692	4,179,692	0.451		
2015	10,100,436	2,628,031	2,628,031	0.260		
2016	10,550,353	7,315,257	6,438,139	0.610	0.079	0.004
2017	10,765,536	3,673,287	3,673,287	0.341		
2018	10,795,324	3,366,848	3,366,848	0.312		
TOTALS				32.349	4.022	8.863
(7) STATE EXCESS COMPONENT = (SELR / NLR)					=	0.124
(8) REGIONAL EXCESS COMPONENT					=	0.094
(9) STATE EXCESS MULTIPLIER = (1 + SEC) * (1 + REC)					=	1.230

NOTE: FOR YEARS PRIOR TO 2006, THE DISPLAYED YEAR INCLUDES DATA FOR ACCIDENT YEAR ENDING 12/31. FOR YEARS 2009 TO 2018, THE DISPLAYED YEAR INCLUDES DATA FOR ACCIDENT YEAR ENDING 03/31. THE DISPLAYED YEAR 2008 INCLUDES DATA FOR FIRST QUARTER 2007 THROUGH FIRST QUARTER 2008.

## EXPLANATORY NOTES TO TABLE 31A

### COLUMN (1) EARNED PREMIUMS

The unadjusted earned premiums are shown for each year.

### COLUMN (2) INCURRED LOSSES

The unadjusted incurred losses are shown for each year.

### COLUMN (3) NORMAL INCURRED LOSSES

Normal losses which are shown for each year are defined as follows:

- for losses reported under CSP (for which month of loss detail is available), that portion of each month's losses which does not exceed 2.5 times that month's earned premiums.
- for losses reported under CRSP, SCOH and SMP (for which month of loss detail is not available), that part of each year's losses which does not exceed 0.939 times that year's earned premiums.

### COLUMN (4) NORMAL LOSS RATIO

For each year in the excess review period, the normal loss ratio is calculated as the ratio of the normal losses (for CSP data the sum of each month's normal losses) to the earned premiums for the same year.

### COLUMN (5) STATE EXCESS LOSS RATIO

The state excess loss ratio is the ratio of the state excess losses to the unadjusted earned premium. The state excess losses are determined by the following formulas:

$$\cdot \quad EP \times \frac{20(LR-2.5)}{(LR-2.5)+20} \text{ if } LR > 2.5; \text{ otherwise } 0$$

for CSP, where EP = the monthly earned premiums, LR = the monthly loss ratio and the yearly state excess losses are the sum of the monthly state excess losses.

$$\cdot \quad EP \times \frac{2.2(LR-.939)}{(LR-.939)+2.2} \text{ if } LR > 0.939; \text{ otherwise } 0$$

for CRSP, SCOH, SMP, where EP = the earned premiums and LR = the yearly loss ratio.

EXPLANATORY NOTES TO TABLE 31A (cont'd)

COLUMN (6)

REGIONAL EXCESS LOSS RATIO

If  $LR > NLR$ , then the regional excess loss ratio is:

regional excess loss ratio =  $LR - SELR - NLR$

where             $SELR$  = the state excess loss ratio,  
                      $NLR$  = the normal loss ratio, and  
                      $LR$  = the loss ratio

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).

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 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. See Table 31B for the appropriate BG II region for the state.

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.



TABLE 31B

BASIC GROUP II REGIONS

NORTHEAST REGION

CONNECTICUT  
DELAWARE  
DIST OF COLUMBIA  
MAINE  
MARYLAND  
MASSACHUSETTS  
NEW HAMPSHIRE  
NEW JERSEY  
NEW YORK  
PENNSYLVANIA  
RHODE ISLAND  
VERMONT  
VIRGINIA

PLAINS REGION

ARKANSAS  
COLORADO  
IOWA  
KANSAS  
MINNESOTA  
MISSOURI  
MONTANA  
NEBRASKA  
NORTH DAKOTA  
OKLAHOMA  
SOUTH DAKOTA  
WYOMING

SOUTHEAST REGION

ALABAMA  
FLORIDA  
GEORGIA  
LOUISIANA  
MISSISSIPPI  
NORTH CAROLINA  
SOUTH CAROLINA  
HAWAII

MIDWEST REGION

ILLINOIS  
INDIANA  
KENTUCKY  
MICHIGAN  
OHIO  
TENNESSEE  
WEST VIRGINIA  
WISCONSIN

WEST REGION

ARIZONA  
CALIFORNIA  
IDAHO  
NEVADA  
NEW MEXICO  
OREGON  
UTAH  
WASHINGTON  
ALASKA

ARIZONA

TABLE 32 - DEVELOPMENT OF SPECIAL CAUSES OF LOSS EXCESS MULTIPLIER

YEAR	(1) EARNED PREMIUMS	(2) INCURRED LOSSES	(3) NORMAL INCURRED LOSSES	(4) NORMAL LOSS RATIO	(5) STATE EXCESS LOSS RATIO
1986	5,463,525	3,539,520	3,539,520	0.648	
1987	6,657,723	2,658,348	2,658,348	0.399	
1988	6,623,496	2,360,452	2,360,452	0.356	
1989	5,994,543	3,835,098	3,835,098	0.640	
1990	6,068,472	4,256,350	4,256,350	0.701	
1991	7,035,258	5,268,677	5,268,677	0.749	
1992	7,313,337	5,631,267	5,589,209	0.764	0.006
1993	7,809,936	4,875,205	4,875,205	0.624	
1994	7,725,087	5,716,080	5,716,080	0.740	
1995	8,033,982	4,202,916	4,202,916	0.523	
1996	8,099,352	6,465,099	6,406,399	0.791	0.007
1997	7,857,420	4,184,853	4,184,853	0.533	
1998	7,186,566	4,066,674	4,066,674	0.566	
1999	7,324,878	5,079,092	5,079,092	0.693	
2000	7,481,772	6,525,469	6,482,624	0.866	0.006
2001	6,613,566	4,662,693	4,662,693	0.705	
2002	6,460,527	3,555,243	3,555,243	0.550	
2003	7,058,607	4,680,690	4,680,690	0.663	
2004	8,271,291	6,353,310	5,945,297	0.719	0.049
2005	9,052,767	6,197,801	5,403,718	0.597	0.088
2006	9,208,500	7,414,239	6,301,721	0.684	0.121
2007	9,194,211	6,574,335	6,574,335	0.715	
2008	8,656,455	5,122,339	5,122,339	0.592	
2009	8,985,309	9,376,675	8,365,705	0.931	0.113
2010	9,729,873	7,758,007	7,669,468	0.788	0.009
2011	9,796,734	12,131,436	9,732,264	0.993	0.245
2012	9,582,687	9,076,579	9,076,579	0.947	
2013	9,611,613	6,926,599	6,926,599	0.721	
2014	9,583,897	5,216,875	5,216,875	0.544	
2015	9,786,802	5,279,169	5,126,537	0.524	0.015
2016	10,077,679	3,543,890	3,543,890	0.352	
2017	10,092,884	11,908,083	6,291,409	0.623	0.557
2018	10,353,823	3,652,413	3,652,413	0.353	
TOTALS		188,095,476	176,369,272	21.594	1.216

(6) STATE EXCESS COMPONENT = (SELR / NLR) = 0.056

(7) STATE EXCESS MULTIPLIER = (1 + SEC) = 1.056

EXPLANATORY NOTES TO TABLE 32

SPECIAL CAUSES OF LOSS ADDITIONAL EXCESS LOSS FACTOR

COLUMN (1)                      EARNED PREMIUMS

These are the unadjusted earned premiums for each year.

COLUMN (2)                      INCURRED LOSSES

These are the unadjusted incurred losses for each year.

COLUMN (3)                      NORMAL INCURRED LOSSES

The normal incurred losses are shown for each year. The normal incurred losses are defined to be that portion of each month's losses which does not exceed 2.0 times the monthly earned premiums.

COLUMN (4)                      NORMAL LOSS RATIO

The normal loss ratio for each year is the ratio of the normal incurred losses for each year divided by the earned premiums for the year.

Column (4) = Column (3) ÷ Column (1)

COLUMN (5)                      EXCESS LOSS RATIO

The excess loss ratio for each year is the ratio of the excess losses to the earned premium for the year. The excess losses are calculated as the incurred losses minus the normal incurred losses for each year.

LINE (6)                          EXCESS COMPONENT

The excess component is determined by dividing the sum of the excess loss ratios by the sum of the normal loss ratios, where the sums are taken across all years in the excess review period.

LINE (7)                          EXCESS MULTIPLIER

The excess multiplier is derived by adding unity to the excess component.

## OVERVIEW

### APPLICATION OF CREDIBILITY

#### INTRODUCTION

Credibility,  $Z$ , is a weight given to the most recent body of data. The complement of credibility,  $1-Z$ , is the weight assigned to net trend. The final estimate is a weighted average obtained by using the formula  $C = Z \times R + (1-Z) \times N$ , where:

$Z$  = credibility

$C$  = final estimate

$R$  = estimate based on the most recent data

$N$  = net trend

Credibility may range from 0 to 1, where  $Z=1$  is full credibility and  $Z=0$  is no credibility. The actual numerical value of  $Z$  is calculated by considering how the state's volume of experience compares with an established full credibility standard. Credibility is capped at 25% if the credibility calculated is below 25%. See Tables 33, 33A, and 34 for a complete explanation of the credibility standards for Basic Group I, Basic Group II, and Special Causes of Loss.

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TABLE 33 - BASIC GROUP I STATEWIDE CREDIBILITY CALCULATION

(1a) FULL CREDIBILITY CLAIMS STANDARD FOR FREQUENCY WITH (P,K) = ( 95.00% , 5.00%)	1,537
(1b) SEVERITY MODIFICATION FACTOR	8.844
(1c) FULL CREDIBILITY CLAIMS STANDARD ADJUSTED FOR SEVERITY ((1a) X (1b))	13,593
(2) MULTISTATE FIVE YEAR RATIO OF EARNED RISKS TO CLAIMS	339.824
(3) FULL CREDIBILITY EARNED RISKS STANDARD (1c)X(2)	4,619,228
(4) FIVE YEAR STATEWIDE EARNED RISKS	312,671
(5) FIVE YEAR AGGREGATE LOSS COSTS	60,276,947
(6) AGGREGATE LOSS COSTS PER EARNED RISK (5)/(4)	192.781
(7) AGGREGATE LOSS COSTS FOR 100% CREDIBILITY (3) X (6)	890,499,393
(8) STATEWIDE CREDIBILITY ((5)/(7))**(.5)	26.0%

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TABLE 33A - BASIC GROUP II STATEWIDE CREDIBILITY CALCULATION

(1) FULL CREDIBILITY CLAIMS STANDARD	30,000
(2) MULTISTATE TEN YEAR RATIO OF EARNED RISKS TO CLAIMS	139.458
(3) FULL CREDIBILITY EARNED RISKS STANDARD (1)X(2)	4,183,740
(4) TEN YEAR STATEWIDE EARNED RISKS	628,326
(5) TEN YEAR AGGREGATE LOSS COSTS	66,193,270
(6) AGGREGATE LOSS COSTS PER EARNED RISK (5)/(4)	105.349
(7) AGGREGATE LOSS COSTS FOR 100% CREDIBILITY (3) X (6)	440,752,825
(8) STATEWIDE CREDIBILITY ( (5) / (7) ) ** (.5)	38.8%

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TABLE 34 - SPECIAL CAUSES OF LOSS STATEWIDE CREDIBILITY CALCULATION

(1) FULL CREDIBILITY CLAIMS STANDARD	25,000
(2) MULTISTATE FIVE YEAR RATIO OF EARNED RISKS TO CLAIMS	175.478
(3) FULL CREDIBILITY EARNED RISKS STANDARD (1)X(2)	4,386,950
(4) FIVE YEAR STATEWIDE EARNED RISKS	307,672
(5) FIVE YEAR AGGREGATE LOSS COSTS	38,715,921
(6) AGGREGATE LOSS COSTS PER EARNED RISK (5)/(4)	125.835
(7) AGGREGATE LOSS COSTS FOR 100% CREDIBILITY (3) X (6)	552,031,853
(8) STATEWIDE CREDIBILITY ((5)/(7))**(.5)	26.5%

EXPLANATORY NOTES TO TABLES 33, 33A AND 34

BASIC GROUP I, BASIC GROUP II, AND SPECIAL CAUSES OF LOSS  
STATEWIDE CREDIBILITY CALCULATION

LINE (1a)  
(BGI only)

Full Credibility Claims Standard of Frequency

Based on a Poisson distribution, the minimum sample size of claims is determined such that the probability that the actual number of claims will be within 5% of the expected number of claims is greater than 95%.

LINE (1b)  
(BGI only)

Severity Modification Factor

This factor, defined as  $(1 + S^2 / M^2)$ , is used to modify the claims standard to reflect variance due to severity, where S is the standard deviation and M is the mean of the loss severity distribution (on a normal loss basis).

LINE (1c) - BGI  
LINE (1) - BGII, SCL

Full Credibility Claims Standard

For Basic Group I, this standard is the product of the frequency standard in line (1a) and the severity modification factor in line (1b). For Basic Group II and Special Causes of Loss, standards for full credibility of 30,000 claims for BGII and 25,000 claims for SCL were selected to balance stability and responsiveness.

LINE (2)

Multistate Experience Period Ratio of Earned Risks to Claims

This ratio was determined based on Commercial Statistical Plan data for the latest experience period (Five years for Basic Group I and Special Causes of Loss; Ten years for Basic Group II).

LINE (3)

Full Credibility Earned Risks Standard

To translate the claims standard to an equivalent standard based on earned risks, the claims standard (line (1c) for BGI, (1) for BGII and SCL) is multiplied by the multistate experience period ratio of earned risks to claims (line (2)).

LINE (4)

Experience Period Statewide Earned Risks

This is the number of earned risks in the state for the experience period.



EXPLANATORY NOTES TO TABLE 33, 33A, AND 34 (cont'd)

LINE (5) Experience Period Aggregate Loss Costs

These are the state's experience period adjusted aggregate loss costs.

LINE (6) Statewide Experience Period Ratio of Aggregate Loss Costs to Earned Risks

This ratio is determined by dividing the state's experience period adjusted aggregate loss costs by its experience period earned risks.

LINE (7) Full Credibility Aggregate Loss Costs Standard

To translate the risk standard into an aggregate loss cost standard on a state by state basis, the ratio (line (6)) is multiplied by the full credibility earned risks standard (line (3)).

LINE (8) Credibility

The state's credibility is calculated by using the square root credibility formula:

$$Z = \sqrt{\frac{P}{C}}$$

where Z = credibility,  
P = statewide five-year adjusted aggregate loss costs (line (5)), and  
C = full credibility aggregate loss costs standard (line (7)).

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SECTION D - ADDITIONAL SUPPORTING MATERIAL

Basic Group I Rating Group Definitions (Table 36) .....	D2-6
Special Causes of Loss Category Definitions (Table 37) .....	D7-9
Unadjusted Loss Costs, Incurred Losses, Experience Ratios (Tables 38 - 40) .....	D10-12
Loss Adjustment Expense Factors (Table 41) .....	D13-14

TABLE 36

BASIC GROUP I RATING GROUP DEFINITIONS

THE FOLLOWING CSP CLASSES COMPRISE THE BASIC GROUP I RATING GROUPS

01      APARTMENTS

- 0311 Apartments without Mercantile Occupancies - Up to 10 Units
- 0312 Apartments without Mercantile Occupancies - 11 to 30 Units
- 0313 Apartments without Mercantile Occupancies - Over 30 Units
- 0321 Apartments with Mercantile Occupancies - Up to 10 Units
- 0322 Apartments with Mercantile Occupancies - 11 to 30 Units
- 0323 Apartments with Mercantile Occupancies - Over 30 Units
- 0331 Residential Condominiums without Mercantile Occupancies - Up to 10 Units
- 0332 Residential Condominiums without Mercantile Occupancies - 11 to 30 Units
- 0333 Residential Condominiums without Mercantile Occupancies - Over 30 Units
- 0341 Residential Condominiums with Mercantile Occupancies - Up to 10 Units
- 0342 Residential Condominiums with Mercantile Occupancies - 11 to 30 Units
- 0343 Residential Condominiums with Mercantile Occupancies - Over 30 Units

02      OTHER HABITATIONAL

- 0074 Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories - Up to 10 Units
- 0075 Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories - 11 to 30 Units
- 0076 Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories - Over 30 Units
- 0077 Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes - Up to 10 Units
- 0078 Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes - 11 to 30 Units
- 0079 Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes - Over 30 Units
- 0196 Dwellings Written in Conjunction with Commercial Risks from the Commercial Lines Manual - 1 Family
- 0197 Dwellings Written in Conjunction with Commercial Risks from the Commercial Lines Manual - 2 Family
- 0198 Dwellings Written in Conjunction with Commercial Risks from the Commercial Lines Manual - 3 and 4 Family
- 0300 Large Area Housing Developments (Special Rating Treatment)

03      RESTAURANTS & BARS

- 0541 Bars and Taverns
- 0542 Restaurants with Commercial Cooking
- 0545 Restaurants with Limited Cooking

#### 04 OTHER MERCANTILES

- 0431 Sole Occupancy Mercantile, Over 15,000 Square Feet, Building Coverage, Other than Food Risks
- 0432 Sole Occupancy Mercantile, Over 15,000 Square Feet, Food Risks, Buildings and Personal Property
- 0433 Multiple Occupancy Mercantile, Over 15,000 Square Feet, Building Coverage Only, Not Fire Class Rated
- 0434 Multiple Occupancy Mercantile, Less than 15,000 Square Feet, Building Coverage Only, Not Fire Class Rated
- 0511 Risks Having Low Susceptibility Personal Property, NOC
- 0512 Tire, Battery and Accessory Dealers Without Tire Recapping and Vulcanizing
- 0520 Wearing Apparel, Textiles, Shoes
- 0531 Alcoholic Beverages other than Bars
- 0532 Food Products including Retail Bakeries (no baking and no cooking on premises; sales only); Beverages other than Alcoholic
- 0533 Retail Bakeries - Baking on Premises (No delivery to other outlets)
- 0534 Food Products with Limited Cooking, Excluding Bakeries
- 0550 Motor Vehicle (Auto, Aircraft, Marine) Sales, No Repair
- 0561 Boat and Marine Supply Dealers
- 0562 Drugs
- 0563 Electrical Goods, Hardware and Machinery
- 0564 Furniture and Home Furnishings other than Appliances
- 0565 Jewelry
- 0566 Sporting Goods
- 0567 Risks Having Moderate Susceptibility Personal Property, NOC
- 0570 Risks Having High Susceptibility Personal Property, NOC
- 0580 Greenhouses
- 0581 Multiple Occupancy Mercantile, Fire Class Rated, without furniture Occupant
- 0582 Multiple Occupancy Mercantile, Fire Class Rated, with furniture Occupant

#### 05 PUBLIC BUILDINGS

- 0701 Governmental Offices
- 1000 Penal Institutions
- 1051 Museums, Libraries, Art Galleries (non-profit)
- 1070 Other Public Buildings, Fire Dept., Police, Water/Sewer

#### 06 CHURCHES

- 0900 Churches and Synagogues

#### 07 SCHOOLS

- 1052 Schools, Academic

#### 08 OFFICE AND BANKS

- 0702 Non-Governmental Offices and Banks

## 09 RECREATIONAL FACILITIES

- 0755 Golf Clubs, Tennis Clubs and Similar Sports Facilities with Cooking
- 0756 Golf Clubs, Tennis Clubs and Similar Sports Facilities without Cooking
- 0757 Clubs, NOC, Including Fraternal and Union Halls
- 0831 Motion Picture Studios
- 0832 Theaters
- 0833 Drive-in Theaters
- 0834 Skating Rinks--Roller Rinks
- 0841 Bowling Alleys
- 0843 Halls and Auditoriums
- 0844 Recreational Facilities, NOC
- 0845 Boys' and Girls' Camps
- 0846 Dance Halls, Ballrooms & Discotheques
- 0951 Gambling Casinos with Restaurants
- 0952 Gambling Casinos without Restaurants

## 10 HOTELS & MOTELS

- 0742 Motels and Hotels with Restaurant - Up to 10 Units
- 0743 Motels and Hotels with Restaurant - 11 to 30 Units
- 0744 Motels and Hotels with Restaurant - Over 30 Units
- 0745 Motels and Hotels without Restaurant - Up to 10 Units
- 0746 Motels and Hotels without Restaurant - 11 to 30 Units
- 0747 Motels and Hotels without Restaurant - Over 30 Units

## 11 HOSPITALS & NURSING HOMES

- 0851 Hospitals
- 0852 Nursing and Convalescent Homes

## 12 BUILDINGS UNDER CONSTRUCTION

- 1150 Buildings Under Construction

## 13 MOTOR VEHICLE RISKS

- 0931 Auto Parking Garages, Car Washes
- 0932 Gasoline Service Stations
- 0933 Aircraft Hangars with Repairing, Motor Vehicle Repairing Including Auto Body Shops, with or without Sales
- 0934 Tire Recapping and Vulcanizing with or without Sales
- 0940 Aircraft Hangars without Repairing

## 14 OTHER NON-MANUFACTURING

- 0911 Dry Cleaner and Dyeing Plants, other than Self-Service
- 0912 Laundries, other than Self-Service
- 0913 Self-Service Laundries and Dry Cleaners
- 0921 Light Hazard Service Occupancies
- 0922 Services Occupancies, Other than Light Hazard, NOC
- 0923 Funeral Homes
- 1180 Vacant Buildings
- 1185 Billboards and Signs
- 1190 Yard Property, NOC, Including Property in the Open

## 15 STORAGE

- 1200 Piers, Wharves, Bridges
- 1211 Freight Terminals
- 1212 General Storage Warehouses - Bailee
- 1213 Miscellaneous Products Storage - (other than Retail or Wholesale or Cold Storage)
- 1220 Household Goods Storage
- 1230 Cold Storage Warehouses
- 1251 Farm Products (other than Grain, Cotton, Tobacco)
- 1252 Grain, Seed, Bean Warehouses
- 1300 Cotton Compresses and Storage
- 1400 Waste and Reclaimed Material, including Yards
- 1450 Whiskey and Liquor Warehouses in Connection with Distilleries
- 1501 Tobacco Warehouses, Storage
- 1502 Tobacco Sales Warehouses
- 1550 Grain Elevators - Terminal
- 1610 Grain Elevators - Country
- 1650 Building Supply Yards, including Retail Lumberyards, Coal and Coke Yards
- 1700 Mill Yards
- 1751 Oil Distributing, Oil Terminals and LPG Tank Farms, Including Stock
- 1752 Oil Distributing, Oil Terminals and LPG Tank Farms, Excluding Stock

## 17 FOOD MANUFACTURING

- 2000 Dairy Products
- 2059 Meat, Poultry and Fish Products
- 2150 Grain Milling, Including Feed, Stock, Flour Mills
- 2200 Bakeries and Bakery Products
- 2250 Fruit, Nut and Vegetable Products
- 2300 Sugar, Molasses and Syrup Refining
- 2350 Beverages excluding Alcoholic Beverages
- 2400 Breweries
- 2459 Distilleries and Wineries
- 2550 Tobacco and Tobacco Products
- 2600 Food Products, NOC

## 18 WOOD MANUFACTURING

- 3809 Basic Wood Production including Veneer and Plywood Plants
- 3959 Furniture and Other Wood Products, NOC

## 19 WEARING APPAREL

- 2800 Textile Mill Products - Natural and Synthetic
- 3009 Clothing and Apparel including Furs and Finished Products

## 20 CHEMICAL MANUFACTURING

- 5000 Chemicals and Pharmaceuticals - Low Hazard
- 5050 Chemicals and Pharmaceuticals - Moderate Hazard
- 5100 Chemicals and Pharmaceuticals - High Hazard

## 21 METAL MANUFACTURING

- 6810 Heavy Metalworking including Basic Metalwork
- 6850 Metalworking, NOC

## 22 OTHER MANUFACTURING

- 2750 Cotton Gins
- 3409 Leather and Leather Products
- 4400 Paper Manufacturing
- 4450 Paper and Paper Products Processing
- 4809 Printing
- 5500 Plastic Products
- 5759 Rubber Products
- 6009 Stone, Glass, Concrete, Gypsum, Brick, Tile and Clay Products, Abrasives, Plaster and Other Mineral, NOC
- 6210 Mining Other than Coal
- 6250 Coal Mining
- 6900 Precision Products, Electronic, Radio and Television Manufacturing

## TABLE 37

### SPECIAL CAUSES OF LOSS CATEGORY DEFINITIONS

#### CATEGORY 01 - BUILDING AND TIME ELEMENT COVERAGE

#### CATEGORY 02 - APARTMENT AND CONDOMINIUM CONTENTS COVERAGE

#### CATEGORY 03 - OFFICE CONTENTS COVERAGE

#### CATEGORIES 04, 05, & 06 - MERCANTILE CONTENTS COVERAGE

An establishment in which the principal business is the retail or wholesale buying or selling of goods, wares and merchandise. Included are bars, grills and restaurants.

##### CATEGORY 04 - MERCANTILE CONTENTS COVERAGE (HIGH)

Occupancy classes 0511, 0520, 0550, 0562, 0566, 0567, 0581, 0702, 1180, 1185, 1190, 1200, 1211, 1212, 1213, 1251, 1300, 1400, 1751, or 1752

##### CATEGORY 05 - MERCANTILE CONTENTS COVERAGE (MEDIUM)

Occupancy classes not listed in Category 04 or Category 06

##### CATEGORY 06 - MERCANTILE CONTENTS COVERAGE (LOW)

Occupancy classes 0512, 0541, 0563, 0921, 0922, 0933, 0940, or 1230

#### CATEGORY 07 - MOTEL & HOTEL CONTENTS COVERAGE

Hotels, motels, motor inns, motor lodges, tourist courts and similar risks whose business is principally the providing of lodging accommodations for transients, including premises and operations necessary or incidental to such lodging accommodations.



### TABLE 37

#### SPECIAL CAUSES OF LOSS CATEGORY DEFINITIONS

##### CATEGORIES 08 & 09 - INSTITUTIONAL CONTENTS COVERAGE

An establishment principally occupied by an educational, religious, sanitary, charitable or governmental organization. It does not include buildings containing manufacturing of any kind, or sale, storage, processing, or repair of clothing or furniture, or paper or rag storage, or sorting or supplying of food or lodging to itinerants.

##### CATEGORY 08 - INSTITUTIONAL CONTENTS COVERAGE (HIGH)

Occupancy classes 0701, 0702, 0851, 0921, 1051, or 1052

##### CATEGORY 09 - INSTITUTIONAL CONTENTS COVERAGE (LOW)

Occupancy classes not listed in Category 08

##### CATEGORIES 10 & 11 - INDUSTRIAL & PROCESSING CONTENTS COVERAGE

An establishment in which the principal activity is the manufacturing of goods and wares or processing of raw materials or finished goods.

##### CATEGORY 10 - INDUSTRIAL & PROCESSING CONTENTS COVERAGE (HIGH)

Occupancy classes 1252, 1300, 1400, 1700, 2000, 2059, 2150, 2200, 2250, 2300, 2350, 2400, 2459, 2550, 2600, 2750, 2800, 2805, 3009, 3409, 3809, 3959, or 4400

##### CATEGORY 11 - INDUSTRIAL & PROCESSING CONTENTS COVERAGE (LOW)

Occupancy classes not listed in Category 10

## TABLE 37

### SPECIAL CAUSES OF LOSS CATEGORY DEFINITIONS

#### CATEGORIES 12 & 13 - SERVICE CONTENTS COVERAGE

An establishment in which the principal operation is the providing of a personal or commercial service. Included are establishments providing entertainment or recreation; warehousing of property of others; and automobile risks, such as service, repair or garaging of automobiles and parking lots.

##### CATEGORY 12 - SERVICE CONTENTS COVERAGE (HIGH)

Occupancy classes 0520, 0542, 0545, 0550, 0567, 0702, 0755, 0831, 0832, 0911, 0912, 0913, 0921, 0931, 0932, 0934, 1213, or 4809

##### CATEGORY 13 - SERVICE CONTENTS COVERAGE (LOW)

Occupancy classes not listed in Category 12

#### CATEGORY 14 - CONTRACTOR CONTENTS COVERAGE

An establishment in which the principal operation is that of installation, construction, demolition or maintenance. This includes any owner/contractor, general contractor or sub-contractor whether or not he or she actually performs any part of such work or has employees on the site.

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TABLE 38

BASIC GROUP I

UNADJUSTED AGGREGATE LOSS COSTS, LOSSES, AND EXPERIENCE RATIOS

YEAR	TOTAL UNADJUSTED LOSS COSTS	TOTAL UNADJUSTED INCURRED LOSSES	EXPERIENCE RATIO
2014	9,406,770	5,459,995	0.580
2015	8,924,391	9,545,685	1.070
2016	8,899,228	8,676,509	0.975
2017	9,017,590	8,950,382	0.993
2018	8,722,396	15,281,755	1.752

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TABLE 39

BASIC GROUP II

UNADJUSTED AGGREGATE LOSS COSTS, LOSSES, AND EXPERIENCE RATIOS

YEAR	TOTAL UNADJUSTED LOSS COSTS	TOTAL UNADJUSTED INCURRED LOSSES	EXPERIENCE RATIO
2009	4,832,561	5,222,176	1.081
2010	5,052,552	5,379,891	1.065
2011	4,950,720	92,628,007	18.710
2012	4,714,542	6,449,543	1.368
2013	4,882,909	3,197,376	0.655
2014	5,205,232	4,179,692	0.803
2015	5,675,117	2,628,031	0.463
2016	5,930,519	7,315,257	1.233
2017	6,050,999	3,673,287	0.607
2018	6,067,486	3,366,848	0.555

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TABLE 40

SPECIAL CAUSES OF LOSS

UNADJUSTED AGGREGATE LOSS COSTS, LOSSES, AND EXPERIENCE RATIOS

YEAR	TOTAL UNADJUSTED LOSS COSTS	TOTAL UNADJUSTED INCURRED LOSSES	EXPERIENCE RATIO
2014	5,384,336	5,216,875	0.969
2015	5,499,175	5,279,169	0.960
2016	5,662,780	3,552,890	0.627
2017	5,671,446	11,908,083	2.100
2018	5,820,694	3,652,413	0.627

## OVERVIEW

### LOSS ADJUSTMENT EXPENSE FACTORS

OBJECTIVE	The reported indemnity losses must be loaded for any loss adjustment expenses (LAE) that are not reported in statistical detail to ISO.
PROPERTY COVERAGES	For the property coverages, only the incurred indemnity losses are reported to ISO under the Commercial Statistical Plan. All loss adjustment expenses must be loaded in. A factor representing the ratio of incurred losses plus all LAE to incurred losses was selected based on multistate financial data (see Table 41 for the underlying data).
EXPERIENCE INCLUDED	Fire and Allied Lines incurred loss and loss adjustment expense experience for 2013-2017 is displayed on Table 41. The experience is based on Insurance Expense Exhibit information compiled by A.M. Best. For Allied Lines, the loss adjustment expense ratios [Table 41, line (3)(b)] for a few years are distorted by unusual catastrophe-related losses and loss adjustment expenses. The selected Allied Lines loss adjustment expense factor used for this review was selected after consideration of this distortion and based on a review of average loss adjustment expense ratios over a longer time period.
SELECTED FACTORS	The following factors have been used in this review to load incurred losses for all loss adjustment expenses:

Basic Group I	1.100
Basic Group II	1.125
Special Causes of Loss	1.125

TABLE 41  
FIRE AND ALLIED LINES INSURANCE  
COUNTRYWIDE LOSS ADJUSTMENT EXPENSE EXPERIENCE (A)

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>Selected</u>
(1) Fire						
(a) Direct Losses Incurred	4,684,461	5,449,566	5,303,941	5,626,602	7,720,282	
(b) Direct Loss Adjustment Expense Incurred	466,590	540,067	520,392	540,922	688,647	
(2) Allied Lines						
(a) Direct Losses Incurred	4,800,449	4,486,897	4,725,289	6,319,875	17,490,979	
(b) Direct Loss Adjustment Expense Incurred	700,795	617,569	650,048	707,895	1,112,736	
(3) Loss Adjustment Expense as a Ratio to Losses						
(a) Fire (1b) / (1a)	10.0%	9.9%	9.8%	9.6%	8.9%	10.0%
(b) Allied Lines (2b) / (2a)	14.6%	13.8%	13.8%	11.2%	6.4%	12.5%

NOTE: All dollar amounts are displayed in thousands.

(A) Items (1) and (2) are based on Insurance Expense Exhibit information compiled by A. M. Best.

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SECTION E - REVISED LOSS COST PAGES

Basic Group II Loss Costs.....	E2
Special Causes of Loss Loss Costs.....	E3
Basic Group I Loss Costs.....	E4-14



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**70. CAUSES OF LOSS – BASIC FORM**

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**E. Rating Procedure****2. Property Damage – Group II Causes Of Loss****e. Loss Costs**

- (1) Determine the Basic Group II Symbol from the specific publication or from Rule **70.E.2.a**.
- (2) For Symbols **AA**, **A**, **AB** and **B** use the applicable rate.
- (3) For symbols with numerical prefixes, multiply the applicable rate by the prefix shown in Rule **70.E.2.a**.

Symbol	Building Loss Cost	Contents Loss Cost
<b>AA</b>	<u>.030-.032</u>	<u>.043-.046</u>
<b>A</b>	<u>.034-.036</u>	<u>.049-.052</u>
<b>AB</b>	<u>.044-.047</u>	<u>.058-.062</u>
<b>B</b>	<u>.050-.054</u>	<u>.064-.069</u>

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**72. CAUSES OF LOSS – SPECIAL FORM**

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**E.2. Rating Procedure – Property Damage – Other than Builders' Risk****b.(1)** Building Coverage – Loss Cost: .043-.040**c.(2)** Personal Property Coverage – Loss Costs

<b>Occupancy Category</b>	<b>Loss Cost</b>
Residential Apartments and Condominiums	<u>.164.170</u>
Offices	<u>.212.217</u>
Mercantile – High	<u>.189.197</u>
Mercantile – Medium	<u>.180.165</u>
Mercantile – Low	<u>.119.114</u>
Motels and Hotels	<u>.089.083</u>
Institutional – High	<u>.097.094</u>
Institutional – Low	<u>.052.051</u>
Industrial and Processing – High	<u>.238.224</u>
Industrial and Processing – Low	<u>.212.191</u>
Service – High	<u>.196.191</u>
Service – Low	<u>.157.141</u>
Contractors	<u>.295.273</u>
<b>Territory (County)</b>	<b>Territorial Multiplier</b>
Maricopa	1.159
Remainder of State	1.000

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**85. BASIC GROUP I CLASS LOSS COSTS**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0074</b>	Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories – Up to 10 Units					
<b>0075</b>	Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories – 11 to 30 Units					
<b>0076</b>	Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories – Over 30 Units					
<b>0077</b>	Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes – Up to 10 Units					
<b>0078</b>	Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes – 11 to 30 Units					
<b>0079</b>	Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes – Over 30 Units					
<b>0196</b>	1 Family Dwellings (Lessor's Risk)					
<b>0197</b>	2 Family Dwellings (Lessor's Risk)					
<b>0198</b>	3 or 4 Family Dwellings (Lessor's Risk)					
<b>0311</b>	Apartments without Mercantile Occupancies – Up to 10 Units					
<b>0312</b>	Apartments without Mercantile Occupancies – 11 to 30 Units					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0074</b>	<b>Building (1)</b>	0.046	0.042	0.037	0.030	0.027
	<b>Contents (2)</b>	0.047	0.042	0.040	0.035	0.032
<b>0075</b>	<b>Building (1)</b>	0.046	0.042	0.037	0.030	0.027
	<b>Contents (2)</b>	0.047	0.042	0.040	0.035	0.032
<b>0076</b>	<b>Building (1)</b>	0.046	0.042	0.037	0.030	0.027
	<b>Contents (2)</b>	0.047	0.042	0.040	0.035	0.032
<b>0077</b>	<b>Building (1)</b>	0.042	0.037	0.034	0.027	0.026
	<b>Contents (2)</b>	0.045	0.040	0.037	0.033	0.031
<b>0078</b>	<b>Building (1)</b>	0.042	0.037	0.034	0.027	0.026
	<b>Contents (2)</b>	0.045	0.040	0.037	0.033	0.031
<b>0079</b>	<b>Building (1)</b>	0.042	0.037	0.034	0.027	0.026
	<b>Contents (2)</b>	0.045	0.040	0.037	0.033	0.031
<b>0196</b>	<b>Building (1)</b>	0.028	0.026	0.023	0.019	0.018
	<b>Contents (2)</b>	0.032	0.028	0.027	0.024	0.023
<b>0197</b>	<b>Building (1)</b>	0.028	0.026	0.023	0.019	0.018
	<b>Contents (2)</b>	0.032	0.028	0.027	0.024	0.023
<b>0198</b>	<b>Building (1)</b>	0.028	0.026	0.023	0.019	0.018
	<b>Contents (2)</b>	0.032	0.028	0.027	0.024	0.023
<b>0311</b>	<b>Building (1)</b>	0.154	0.139	0.123	0.099	0.094
	<b>Contents (2)</b>	0.173	0.157	0.150	0.131	0.122
<b>0312</b>	<b>Building (1)</b>	0.154	0.139	0.123	0.099	0.094
	<b>Contents (2)</b>	0.173	0.157	0.150	0.131	0.122
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0313</b>	Apartments without Mercantile Occupancies – Over 30 Units					
<b>0321</b>	Apartments with Mercantile Occupancies – Up to 10 Units					
<b>0322</b>	Apartments with Mercantile Occupancies – 11 to 30 Units					
<b>0323</b>	Apartments with Mercantile Occupancies – Over 30 Units					
<b>0331</b>	Residential Condominiums without Mercantile Occupancies – Up to 10 Units					
<b>0332</b>	Residential Condominiums without Mercantile Occupancies – 11 to 30 Units					
<b>0333</b>	Residential Condominiums without Mercantile Occupancies – Over 30 Units					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0313</b>	<b>Building (1)</b>	0.154	0.139	0.123	0.099	0.094
	<b>Contents (2)</b>	0.173	0.157	0.150	0.131	0.122
<b>0321</b>	<b>Building (1)</b>	0.237	0.215	0.190	0.154	0.142
	<b>Contents (2)</b>					
	<b>A</b>	0.353	0.317	0.300	0.264	0.248
	<b>B&amp;C</b>	0.414	0.372	0.352	0.310	0.290
<b>0322</b>	<b>Building (1)</b>	0.237	0.215	0.190	0.154	0.142
	<b>Contents (2)</b>					
	<b>A</b>	0.353	0.317	0.300	0.264	0.248
	<b>B&amp;C</b>	0.414	0.372	0.352	0.310	0.290
<b>0323</b>	<b>Building (1)</b>	0.237	0.215	0.190	0.154	0.142
	<b>Contents (2)</b>					
	<b>A</b>	0.353	0.317	0.300	0.264	0.248
	<b>B&amp;C</b>	0.414	0.372	0.352	0.310	0.290
<b>0331</b>	<b>Building (1)</b>	0.086	0.077	0.069	0.056	0.052
	<b>Contents (2)</b>	0.076	0.068	0.065	0.058	0.052
<b>0332</b>	<b>Building (1)</b>	0.086	0.077	0.069	0.056	0.052
	<b>Contents (2)</b>	0.076	0.068	0.065	0.058	0.052
<b>0333</b>	<b>Building (1)</b>	0.086	0.077	0.069	0.056	0.052
	<b>Contents (2)</b>	0.076	0.068	0.065	0.058	0.052
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0341</b>	Residential Condominiums with Mercantile Occupancies – Up to 10 Units					
<b>0342</b>	Residential Condominiums with Mercantile Occupancies – 11 to 30 Units					
<b>0343</b>	Residential Condominiums with Mercantile Occupancies – Over 30 Units					
<b>0511</b>	Mercantile – Sole Occupancy Only – Not Otherwise Classified – Low Susceptibility					
<b>0512</b>	Mercantile – Sole Occupancy Only – Tire, Battery and Accessory Dealers without Tire Recapping and Vulcanizing					
<b>0520</b>	Mercantile – Sole Occupancy Only – Wearing Apparel, Textiles, Shoes					
<b>0531</b>	Mercantile – Sole Occupancy Only – Alcoholic Beverages other than Bars					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0341</b>	<b>Building (1)</b>	0.135	0.121	0.108	0.088	0.080
	<b>Contents (2)</b>					
	<b>A</b>	0.153	0.138	0.129	0.113	0.106
	<b>B&amp;C</b>	0.179	0.160	0.153	0.135	0.125
<b>0342</b>	<b>Building (1)</b>	0.135	0.121	0.108	0.088	0.080
	<b>Contents (2)</b>					
	<b>A</b>	0.153	0.138	0.129	0.113	0.106
	<b>B&amp;C</b>	0.179	0.160	0.153	0.135	0.125
<b>0343</b>	<b>Building (1)</b>	0.135	0.121	0.108	0.088	0.080
	<b>Contents (2)</b>					
	<b>A</b>	0.153	0.138	0.129	0.113	0.106
	<b>B&amp;C</b>	0.179	0.160	0.153	0.135	0.125
<b>0511</b>	<b>Building (1)</b>	0.073	0.067	0.060	0.048	0.045
	<b>Contents (2)</b>	0.153	0.138	0.129	0.115	0.108
<b>0512</b>	<b>Building (1)</b>	0.071	0.063	0.056	0.046	0.041
	<b>Contents (2)</b>	0.135	0.122	0.115	0.102	0.096
<b>0520</b>	<b>Building (1)</b>	0.087	0.078	0.071	0.058	0.052
	<b>Contents (2)</b>	0.197	0.179	0.169	0.149	0.140
<b>0531</b>	<b>Building (1)</b>	0.074	0.068	0.060	0.050	0.045
	<b>Contents (2)</b>	0.161	0.145	0.135	0.122	0.114
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0532</b>	Merc – Sole Occy Only – Food Products Inc. Retail Bakeries; Non-Alcoholic Beverages (Sales Only – No Baking or Cooking)					
<b>0533</b>	Mercantile – Sole Occupancy Only – Baking on Premises, No Delivery to Outlets					
<b>0534</b>	Mercantile – Sole Occupancy Only – Food Products with Limited Cooking, Excluding Bakeries					
<b>0541</b>	Mercantile – Sole Occupancy Only – Bars and Taverns					
<b>0545</b>	Mercantile – Sole Occupancy Only – Restaurants with Limited Cooking					
<b>0550</b>	Mercantile – Sole Occupancy Only – Motor Vehicles, No Repair					
<b>0561</b>	Mercantile – Sole Occupancy Only – Boat and Marine Supply Dealers					
<b>0562</b>	Mercantile – Sole Occupancy Only – Drugs					
<b>0563</b>	Mercantile – Sole Occupancy Only – Electrical Goods, Hardware and Machinery					
<b>0564</b>	Mercantile – Sole Occupancy Only – Furniture and Home Furnishings other than Appliances					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0532</b>	<b>Building (1)</b>	0.115	0.103	0.092	0.073	0.069
	<b>Contents (2)</b>	0.197	0.179	0.169	0.149	0.140
<b>0533</b>	<b>Building (1)</b>	0.089	0.080	0.072	0.058	0.054
	<b>Contents (2)</b>	0.161	0.143	0.135	0.120	0.113
<b>0534</b>	<b>Building (1)</b>	0.124	0.114	0.101	0.081	0.076
	<b>Contents (2)</b>	0.167	0.150	0.143	0.124	0.117
<b>0541</b>	<b>Building (1)</b>	0.177	0.160	0.142	0.115	0.105
	<b>Contents (2)</b>	0.190	0.171	0.161	0.142	0.131
<b>0545</b>	<b>Building (1)</b>	0.209	0.188	0.168	0.135	0.125
	<b>Contents (2)</b>	0.236	0.212	0.200	0.177	0.164
<b>0550</b>	<b>Building (1)</b>	0.068	0.060	0.054	0.045	0.041
	<b>Contents (2)</b>	0.165	0.149	0.141	0.123	0.115
<b>0561</b>	<b>Building (1)</b>	0.071	0.064	0.057	0.046	0.042
	<b>Contents (2)</b>	0.165	0.149	0.141	0.123	0.115
<b>0562</b>	<b>Building (1)</b>	0.080	0.072	0.066	0.052	0.050
	<b>Contents (2)</b>	0.184	0.165	0.156	0.138	0.128
<b>0563</b>	<b>Building (1)</b>	0.078	0.072	0.064	0.052	0.048
	<b>Contents (2)</b>	0.135	0.122	0.115	0.102	0.096
<b>0564</b>	<b>Building (1)</b>	0.112	0.100	0.087	0.072	0.066
	<b>Contents (2)</b>	0.240	0.215	0.205	0.180	0.168
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0565</b>	Mercantile – Sole Occupancy Only – Jewelry					
<b>0566</b>	Mercantile – Sole Occupancy Only – Sporting Goods					
<b>0567</b>	Mercantile – Sole Occupancy Only – Not Otherwise Classified – Moderate Susceptibility					
<b>0570</b>	Mercantile – Sole Occupancy Only – Not Otherwise Classified – High Susceptibility					
<b>0580</b>	Greenhouses – Sole Occupancy Only					
<b>0581</b>	Mercantile – Multiple Occupancy without 0564 Occupant					
<b>0582</b>	Mercantile – Multiple Occupancy with 0564 Occupant					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0565</b>	<b>Building (1)</b>	0.073	0.066	0.058	0.048	0.045
	<b>Contents (2)</b>	0.133	0.120	0.114	0.101	0.094
<b>0566</b>	<b>Building (1)</b>	0.082	0.074	0.067	0.054	0.051
	<b>Contents (2)</b>	0.180	0.163	0.153	0.135	0.127
<b>0567</b>	<b>Building (1)</b>	0.073	0.067	0.060	0.048	0.045
	<b>Contents (2)</b>	0.153	0.138	0.129	0.115	0.108
<b>0570</b>	<b>Building (1)</b>	0.073	0.067	0.060	0.048	0.045
	<b>Contents (2)</b>	0.161	0.145	0.135	0.122	0.114
<b>0580</b>	<b>Building (1)</b>	0.073	0.067	0.060	0.048	0.045
	<b>Contents (2)</b>	0.168	0.151	0.143	0.127	0.118
<b>0581</b>	<b>Building (1)</b>	0.078	0.071	0.063	0.052	0.047
	<b>Contents (2)</b>					
	<b>A</b>	0.161	0.145	0.135	0.122	0.114
	<b>B</b>	0.196	0.176	0.167	0.148	0.138
<b>0582</b>	<b>Building (1)</b>	0.087	0.078	0.069	0.057	0.052
	<b>Contents (2)</b>					
	<b>A</b>	0.143	0.129	0.122	0.108	0.101
	<b>B</b>	0.176	0.159	0.150	0.133	0.122
	<b>C</b>	0.161	0.143	0.135	0.120	0.113
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0701</b>	Government Offices					
<b>0702</b>	Banks and Offices other than Governmental					
<b>0742</b>	Motels and Hotels with Limited Cooking Restaurant – Up to 10 Units					
<b>0743</b>	Motels and Hotels with Limited Cooking Restaurant – 11 to 30 Units					
<b>0744</b>	Motels and Hotels with Limited Cooking Restaurant – Over 30 Units					
<b>0745</b>	Motels and Hotels without Restaurant – Up to 10 Units					
<b>0746</b>	Motels and Hotels without Restaurant – 11 to 30 Units					
<b>0747</b>	Motels and Hotels without Restaurant – Over 30 Units					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0701</b>	<b>Building (1)</b>	0.024	0.022	0.019	0.017	0.015
	<b>Contents (2)</b>					
	<b>A</b>	0.027	0.024	0.023	0.020	0.019
	<b>B</b>	0.040	0.035	0.034	0.030	0.028
<b>0702</b>	<b>Building (1)</b>	0.042	0.038	0.033	0.028	0.026
	<b>Contents (2)</b>					
	<b>A</b>	0.051	0.046	0.042	0.037	0.034
	<b>B</b>	0.070	0.063	0.059	0.053	0.049
<b>0742</b>	<b>Building (1)</b>	0.112	0.101	0.090	0.073	0.069
	<b>Contents (2)</b>	0.122	0.112	0.105	0.093	0.087
<b>0743</b>	<b>Building (1)</b>	0.112	0.101	0.090	0.073	0.069
	<b>Contents (2)</b>	0.122	0.112	0.105	0.093	0.087
<b>0744</b>	<b>Building (1)</b>	0.112	0.101	0.090	0.073	0.069
	<b>Contents (2)</b>	0.122	0.112	0.105	0.093	0.087
<b>0745</b>	<b>Building (1)</b>	0.049	0.043	0.038	0.031	0.029
	<b>Contents (2)</b>	0.053	0.049	0.044	0.040	0.037
<b>0746</b>	<b>Building (1)</b>	0.049	0.043	0.038	0.031	0.029
	<b>Contents (2)</b>	0.053	0.049	0.044	0.040	0.037
<b>0747</b>	<b>Building (1)</b>	0.049	0.043	0.038	0.031	0.029
	<b>Contents (2)</b>	0.053	0.049	0.044	0.040	0.037
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	



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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0755</b>	Golf, Tennis and Similar Sport Facilities with Limited Cooking					
<b>0756</b>	Golf, Tennis and Similar Sport Facilities without Cooking					
<b>0757</b>	Clubs, Not Otherwise Classified, Including Fraternal and Union Halls					
<b>0831</b>	Motion Picture Studios					
<b>0832</b>	Theaters Excluding Drive-in Theaters					
<b>0833</b>	Drive-in Theaters					
<b>0834</b>	Skating Rinks – Roller Rinks					
<b>0841</b>	Bowling Alleys without Cooking					
<b>0843</b>	Halls and Auditoriums					
<b>0844</b>	Recreational Facilities, Not Otherwise Classified					
<b>0845</b>	Boys' and Girls' Camps					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0755</b>	<b>Building (1)</b>	0.180	0.162	0.143	0.115	0.107
	<b>Contents (2)</b>	0.206	0.186	0.175	0.154	0.145
<b>0756</b>	<b>Building (1)</b>	0.072	0.067	0.058	0.047	0.043
	<b>Contents (2)</b>	0.083	0.076	0.070	0.062	0.058
<b>0757</b>	<b>Building (1)</b>	0.080	0.070	0.062	0.051	0.047
	<b>Contents (2)</b>	0.083	0.076	0.070	0.062	0.058
<b>0831</b>	<b>Building (1)</b>	0.062	0.057	0.048	0.041	0.037
	<b>Contents (2)</b>	0.070	0.062	0.060	0.051	0.049
<b>0832</b>	<b>Building (1)</b>	0.079	0.070	0.062	0.051	0.047
	<b>Contents (2)</b>	0.083	0.076	0.070	0.062	0.058
<b>0833</b>	<b>Building (1)</b>	0.067	0.060	0.051	0.043	0.041
	<b>Contents (2)</b>	0.078	0.069	0.067	0.058	0.053
<b>0834</b>	<b>Building (1)</b>	0.107	0.097	0.087	0.069	0.064
	<b>Contents (2)</b>	0.108	0.099	0.092	0.082	0.076
<b>0841</b>	<b>Building (1)</b>	0.108	0.099	0.088	0.070	0.065
	<b>Contents (2)</b>	0.112	0.102	0.097	0.084	0.080
<b>0843</b>	<b>Building (1)</b>	0.053	0.048	0.043	0.035	0.033
	<b>Contents (2)</b>	0.058	0.051	0.048	0.043	0.041
<b>0844</b>	<b>Building (1)</b>	0.072	0.067	0.058	0.047	0.043
	<b>Contents (2)</b>	0.080	0.071	0.069	0.061	0.058
<b>0845</b>	<b>Building (1)</b>	0.047	0.043	0.039	0.031	0.030
	<b>Contents (2)</b>	0.057	0.049	0.047	0.042	0.039
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0846</b>	Dance Halls, Ballrooms and Discotheques					
<b>0851</b>	Hospitals					
<b>0852</b>	Nursing and Convalescent Homes					
<b>0900</b>	Churches and Synagogues					
<b>0911</b>	Dry Cleaners and Dyeing Plants, other than Self-Service					
<b>0912</b>	Laundries, other than Self-Service					
<b>0913</b>	Self-Service Laundries and Dry Cleaners					
<b>0921</b>	Light Hazard Service Occupancies					
<b>0922</b>	Service Occupancies, other than Light Hazard					
<b>0923</b>	Funeral Homes					
<b>0931</b>	Auto Parking Garages, Car Washes					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0846</b>	<b>Building (1)</b>	0.102	0.091	0.080	0.067	0.061
	<b>Contents (2)</b>	0.100	0.089	0.084	0.073	0.069
<b>0851</b>	<b>Building (1)</b>	0.021	0.018	0.018	0.014	0.014
	<b>Contents (2)</b>	0.024	0.021	0.020	0.018	0.018
<b>0852</b>	<b>Building (1)</b>	0.021	0.020	0.018	0.015	0.014
	<b>Contents (2)</b>	0.025	0.022	0.021	0.018	0.018
<b>0900</b>	<b>Building (1)</b>	0.036	0.034	0.030	0.023	0.022
	<b>Contents (2)</b>	0.038	0.035	0.034	0.030	0.026
<b>0911</b>	<b>Building (1)</b>	0.120	0.107	0.096	0.078	0.072
	<b>Contents (2)</b>	0.142	0.127	0.121	0.106	0.099
<b>0912</b>	<b>Building (1)</b>	0.159	0.143	0.126	0.103	0.095
	<b>Contents (2)</b>	0.194	0.174	0.166	0.146	0.136
<b>0913</b>	<b>Building (1)</b>	0.103	0.093	0.083	0.068	0.062
	<b>Contents (2)</b>	0.122	0.110	0.103	0.092	0.086
<b>0921</b>	<b>Building (1)</b>	0.062	0.055	0.050	0.040	0.037
	<b>Contents (2)</b>	0.074	0.067	0.063	0.055	0.053
<b>0922</b>	<b>Building (1)</b>	0.069	0.062	0.055	0.045	0.041
	<b>Contents (2)</b>	0.085	0.076	0.072	0.063	0.059
<b>0923</b>	<b>Building (1)</b>	0.046	0.041	0.036	0.030	0.027
	<b>Contents (2)</b>	0.049	0.044	0.042	0.036	0.034
<b>0931</b>	<b>Building (1)</b>	0.035	0.031	0.029	0.023	0.021
	<b>Contents (2)</b>	0.042	0.037	0.035	0.031	0.029
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>0932</b>	Gasoline Service Stations					
<b>0933</b>	Motor Vehicle and Aircraft Repair, with or without Sales					
<b>0934</b>	Tire Recapping and Vulcanizing, with or without Sales					
<b>0940</b>	Aircraft Hangars without Repair					
<b>0951</b>	Gambling Casinos with Limited Cooking Restaurants					
<b>0952</b>	Gambling Casinos without Restaurants					
<b>1000</b>	Penal Institutions					
<b>1051</b>	Museums, Libraries, Art Galleries (Non-Profit)					
<b>1052</b>	Schools, Academic					
<b>1070</b>	Fire Departments, Police, Sewage, Water Works and Other Public Buildings					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>0932</b>	<b>Building (1)</b>	0.052	0.046	0.042	0.032	0.031
	<b>Contents (2)</b>	0.063	0.056	0.053	0.047	0.044
<b>0933</b>	<b>Building (1)</b>	0.044	0.040	0.034	0.028	0.026
	<b>Contents (2)</b>	0.055	0.049	0.047	0.042	0.038
<b>0934</b>	<b>Building (1)</b>	0.056	0.051	0.046	0.037	0.033
	<b>Contents (2)</b>	0.067	0.061	0.057	0.051	0.047
<b>0940</b>	<b>Building (1)</b>	0.026	0.024	0.022	0.017	0.017
	<b>Contents (2)</b>	0.033	0.031	0.029	0.025	0.023
<b>0951</b>	<b>Building (1)</b>	0.210	0.189	0.169	0.137	0.125
	<b>Contents (2)</b>	0.231	0.208	0.195	0.173	0.162
<b>0952</b>	<b>Building (1)</b>	0.070	0.062	0.058	0.047	0.042
	<b>Contents (2)</b>	0.102	0.091	0.087	0.076	0.070
<b>1000</b>	<b>Building (1)</b>	0.023	0.021	0.019	0.016	0.015
	<b>Contents (2)</b>	0.020	0.019	0.018	0.017	0.015
<b>1051</b>	<b>Building (1)</b>	0.016	0.013	0.013	0.010	0.009
	<b>Contents (2)</b>	0.019	0.018	0.017	0.015	0.013
<b>1052</b>	<b>Building (1)</b>	0.031	0.028	0.025	0.020	0.019
	<b>Contents (2)</b>	0.037	0.032	0.030	0.026	0.025
<b>1070</b>	<b>Building (1)</b>	0.023	0.020	0.018	0.016	0.014
	<b>Contents (2)</b>	0.027	0.024	0.023	0.020	0.019
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

**COMMERCIAL LINES MANUAL**  
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**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>1150</b>	Builders' Risk					
<b>1180</b>	Vacant Buildings – See CSP Class Code of previous or intended occupancy. Add loss cost of .015 unless Class Code of previous or intended occupancy is 0580, 0742-0747, 0833, 0834, 0841, 0843, 0844, 0846, 0900, 0951, 0952, 1051 or 1052.					
<b>1211</b>	Freight Terminals					
<b>1212</b>	General Storage Warehouses – Bailee					
<b>1213</b>	Miscellaneous Products Storage – (Other Than Retail Or Wholesale Or Cold Storage)					
<b>1220</b>	Household Goods Storage					
<b>1230</b>	Cold Storage Warehouses					
<b>1400</b>	Waste and Reclaimed Materials Including Yards					
<b>1650</b>	Building Supply Yards, Including Retail Lumberyards, Coal and Coke Yards					

<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>1150</b>	<b>Building (1)</b>	0.030	0.027	0.023	0.019	0.018
<b>1211</b>	<b>Building (1)</b>	0.077	0.068	0.061	0.051	0.046
	<b>Contents (2)</b>	0.090	0.081	0.077	0.066	0.062
<b>1212</b>	<b>Building (1)</b>	0.060	0.054	0.048	0.039	0.037
	<b>Contents (2)</b>	0.075	0.066	0.062	0.055	0.053
<b>1213</b>	<b>Building (1)</b>	0.054	0.048	0.042	0.034	0.032
	<b>Contents (2)</b>	0.071	0.063	0.060	0.054	0.051
<b>1220</b>	<b>Building (1)</b>	0.063	0.057	0.051	0.042	0.038
	<b>Contents (2)</b>	0.078	0.071	0.066	0.058	0.054
<b>1230</b>	<b>Building (1)</b>	0.055	0.051	0.044	0.036	0.034
	<b>Contents (2)</b>	0.075	0.067	0.063	0.055	0.053
<b>1400</b>	<b>Building (1)</b>	0.164	0.149	0.131	0.106	0.098
	<b>Contents (2)</b>	0.199	0.180	0.171	0.151	0.140
	<b>Yard</b>	0.249		0.026		
<b>1650</b>	<b>Building (1)</b>	0.098	0.088	0.079	0.063	0.059
	<b>Contents (2)</b>	0.124	0.112	0.106	0.093	0.087
	<b>Yard</b>	0.068		0.009		
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

**COMMERCIAL LINES MANUAL**  
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**ARIZONA (02)**

**85. BASIC GROUP I CLASS LOSS COSTS (Cont'd)**

All rates are subject to protection class and territorial multipliers.

<b>CSP Class Codes And Description</b>						
<b>1700</b>	Mill Yards					
<b>1751</b>	Oil Distributing, Oil Terminals and LPG Tank Farms – Including Stock					
<b>1752</b>	Oil Distributing, Oil Terminals and LPG Tank Farms – Excluding Stock					
<b>2200</b>	Baking on Premises, Delivery to Outlets					
<b>2350</b>	Beverage Bottlers Excluding Alcoholic Beverages					
<b>2459</b>	Distilleries and Wineries					
<b>2800</b>	Textile Mill Products					
<b>3409</b>	Leather and Leather Products					
<b>4809</b>	Printing					
<b>CSP Class Code</b>	<b>Coverage</b>	<b>Construction (Code)</b>				
		<b>Frame (1)</b>	<b>Joisted Masonry (2)</b>	<b>Non-Comb. (3)</b>	<b>Mas. Non-Comb. (4)</b>	<b>Mod. F.R. (5) Or Fire Res. (6)</b>
<b>1700</b>	<b>Building (1)</b>	0.081	0.072	0.064	0.053	0.048
	<b>Contents (2)</b>	0.123	0.110	0.103	0.091	0.086
	<b>Yard</b>	0.066		0.008		
<b>1751</b>	<b>Building (1)</b>	0.052	0.046	0.042	0.034	0.031
	<b>Contents (2)</b>	0.066	0.060	0.057	0.051	0.047
<b>1752</b>	<b>Building (1)</b>	0.048	0.044	0.038	0.032	0.028
	<b>Contents (2)</b>	0.048	0.043	0.042	0.036	0.034
<b>2200</b>	<b>Building (1)</b>	0.210	0.189	0.170	0.138	0.127
	<b>Contents (2)</b>	0.253	0.227	0.213	0.187	0.176
<b>2350</b>	<b>Building (1)</b>	0.135	0.121	0.109	0.089	0.082
	<b>Contents (2)</b>	0.160	0.145	0.135	0.119	0.113
<b>2459</b>	<b>Building (1)</b>	0.089	0.081	0.070	0.057	0.052
	<b>Contents (2)</b>	0.113	0.101	0.098	0.087	0.081
<b>2800</b>	<b>Building (1)</b>	0.158	0.144	0.129	0.104	0.095
	<b>Contents (2)</b>	0.210	0.189	0.178	0.156	0.147
<b>3409</b>	<b>Building (1)</b>	0.206	0.185	0.165	0.133	0.123
	<b>Contents (2)</b>	0.239	0.214	0.203	0.178	0.166
<b>4809</b>	<b>Building (1)</b>	0.157	0.142	0.126	0.102	0.094
	<b>Contents (2)</b>	0.191	0.174	0.163	0.144	0.134
<b>Territory</b>					<b>Territorial Multiplier</b>	
Phoenix					1.446	
Tucson					0.900	
Balance of State (Arizona)					1.000	

ARIZONA  
COMMERCIAL PROPERTY  
LOSS COST LEVEL REVIEW  
ACTUARIAL ANALYSIS SUPPLEMENT

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PURPOSE                      This document provides discussion and analysis of changes in the experience and adjustments used to derive the advisory prospective loss cost level indications.

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MONOLINE  
INDICATIONS

The indicated statewide monoline changes are:

<u>Subline</u>	<u>Current Review</u>	<u>Prior Review</u>
Basic Group I	+3.5%	-3.2%
Basic Group II	-6.6%	+0.6%
Special Causes of Loss	+5.8%	+4.8%
All Coverages Combined	+1.8%	0.0%

The prior review's indications were not filed and there has been no change in the Implicit Package Modification Factors since the prior review.

Given below is a brief discussion and comparison of the multistate factors (premium and loss trend, loss adjustment expense, and loss development) used in this year's and last year's reviews. The discussion is followed by a state specific analysis by subline and a list of events occurring during the experience period in this state that have been identified as catastrophes by ISO's Property Claims Services.

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IMPACT OF  
LIMIT OF  
INSURANCE (LOI)  
FACTOR  
IMPLEMEN-  
TATION

Instructions for companies that have not adopted the Limit of Insurance Curves or revised rating for Special Causes of Loss

Class-rated Loss Costs

The loss costs contained in this filing reflect the introduction of limit of insurance (LOI) curves and revised rating for Special Causes of Loss. For those companies which have not adopted those changes, the loss costs in effect immediately prior to the introduction of the LOI curves and revised SCL rating can be adjusted by applying the loss cost changes in Section A of this filing. These changes are changes from the current loss cost level; therefore, any other loss cost level changes effective subsequent to the introduction of LOI should also be applied. The loss cost changes based on this filing for Special Causes of Loss on an old category basis are given below. For Basic Group II, the loss cost changes by territory (not coverage and symbol) should be applied to the pre-LOI loss costs, since the loss cost changes by coverage and symbol reflect revised coverage and symbol relativities based on the introduction of the LOI curves.

Please note that the Basic Group I and Basic Group II loss costs in this filing reflect revised class, construction, and coverage (building and contents) relativities associated with the introduction of LOI curves in addition to the LOI curves themselves. Therefore, dividing the revised loss costs in this filing by the off-balance factors found in Section A of filing CF-2009-RLC09, Commercial Fire and Allied Lines Loss Cost Revision for the Introduction of Limit of Insurance Curves, will not result in the same loss costs as the procedure described above.

Schedule-rated Loss Costs

Section A of filing CF-2009-RLC09, Commercial Fire and Allied Lines Loss Cost Revision for the Introduction of Limit of Insurance Curves, displayed off-balance factors that are being applied to specifically-rated loss costs to reflect the introduction of LOI curves. Those off-balance factors can be divided out of the schedule-rated loss costs effective after the implementation of the LOI curves to bring them to a level appropriate for use without the application of LOI factors.

Special Causes of Loss (SCL) Indications on an Old Category Basis

Given below are the current SCL review indications on an old category basis for those companies that have not yet adopted the current SCL rating that was introduced in conjunction with the limit of insurance curves.

<u>Category</u>	<u>Loss Cost Change</u>
01 Buildings	+7.2%
02 Apartment and Condominium Contents	-3.4%
03 Office Contents	+1.0%
04 Mercantile, Motel-Hotel, and Institutional Contents	+4.1%
05 Service, Industrial-Processing and Contractors Contents	+8.0%
Personal Property (Contents) Excluding Theft	+4.3%

IMPACT OF  
LIMIT OF  
INSURANCE (LOI)  
FACTOR  
IMPLEMEN-  
TATION (cont'd)

Limit of Insurance Transition Rule and Public Protection Class Factors

The transition rule, which caps rate changes for renewal policies due to the implementation of limit of insurance curves and revised rating, does not apply to rate changes produced by changes in protection class, deductible level, coinsurance level and/or optional coverages. Protection class factors for specifically-rated properties are included in the Basic Group I loss cost quote. In order to measure the impact of a change in protection class for specifically-rated properties, the public protection class factors are given below.

Protection Class	Non-Sprinklered <u>Schedule Rated</u>		<u>Sprinklered</u>
	Const. <u>1-3 *</u>	Const. <u>4-6 **</u>	All <u>Const.</u>
1	0.88	0.90	0.65
2	0.92	0.94	0.67
3	0.96	0.97	0.68
4	0.98	0.98	0.69
5	1.00	1.00	0.70
6	1.06	1.05	0.72
7	1.18	1.14	0.77
8	1.30	1.24	0.82
8B	1.35	1.28	0.84
9	1.42	1.34	0.88
10	1.72	1.58	1.00
1X - 5X	1.14	1.09	0.75
6X - 7X	1.35	1.28	0.84
8X	1.42	1.34	0.88
1Y - 5Y	1.14	1.09	0.75
6Y - 8Y	1.35	1.28	0.84
10W	1.63	1.51	0.97

\* Frame, Joisted Masonry and Non-combustible

\*\* Masonry Non-combustible, Modified Fire Resistive and Fire Resistive

Protection class factors for class-rated risks can be found in Rule **85.M** of the Commercial Lines manual.

DATA QUALITY

Statistical plan data reported to ISO is first processed through a system of rigorous automated data verification processes so that only valid data is used for ratemaking. Subsequent to this initial data submission review, additional analyses 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, corrected or adjusted. Specifically, an on-leveling approach was used to determine aggregate loss costs at current level rather than the extension-of-exposures method for some reported exposures, and various loss cost multipliers have been adjusted prior to their use in the calculations. The ISO staff responsible for this loss cost review also reviewed the data for reasonableness.



LOSS  
ADJUSTMENT  
EXPENSE/LOSS  
DEVELOPMENT  
FACTORS

Loss adjustment expense factors have remained the same at 1.100 for BG I and 1.125 for BG II and SCL. Loss development factors changed slightly but are still relatively close to unity for all sublines and years.

LOSS TREND  
FACTORS

Given below is a comparison of the external trend factors, loss trend adjustments (LTAs) and total loss trend factors for the current and prior reviews.

External Trend

The prospective annual rates of change based on the external indices (Xactware for Buildings, PPI for Contents, and IMSEP/RSALLES for Time Element) for the current and prior year reviews are:

<u>Coverage</u>	<u>Current Review</u>	<u>Prior Review</u>	<u>Change</u>
Buildings	+2.9%	+2.4%	+0.5%
Contents	+1.7%	+1.1%	+0.6%
Time Element	+1.1%	-0.2%	+1.3%

Loss Trend Adjustments (LTAs)

The loss trend adjustment factors underlying the current and prior reviews are:

<u>Subline</u>	<u>Current Review</u>			<u>Prior Review</u>		
	<u>Bldg.</u>	<u>Cnts.</u>	<u>TE</u>	<u>Bldg.</u>	<u>Cnts.</u>	<u>TE</u>
Basic Group I	-0.3%	+0.7%	+2.8%	-0.4%	+0.5%	+2.5%
Basic Group II	+0.2%	+0.6%	+2.6%	+0.5%	+0.8%	+2.2%
Special Causes of Loss	+0.2%	0.0%	+2.8%	+0.3%	+0.5%	+2.5%

Total Annual Loss Trend

The prospective total annual loss trend factors are given below and are calculated as the product of the external trend factors and loss trend adjustment factors.

<u>Subline</u>	<u>Current Review</u>			<u>Prior Review</u>		
	<u>Bldg.</u>	<u>Cnts.</u>	<u>TE</u>	<u>Bldg.</u>	<u>Cnts.</u>	<u>TE</u>
Basic Group I	+2.6%	+2.4%	+3.9%	+2.0%	+1.6%	+2.3%
Basic Group II	+3.1%	+2.3%	+3.7%	+2.9%	+1.9%	+2.0%
Special Causes of Loss	+3.1%	+1.7%	+3.9%	+2.7%	+1.6%	+2.3%

CHANGE IN  
AVERAGE LOSS  
TREND

The changes in average loss trend from current year to prior year are:

<u>Subline</u>	<u>Change in Average Trend</u>
Basic Group I	+2.1%
Basic Group II	+0.3%
Special Causes of Loss	+0.5%

Average loss trend is calculated as a weighted average of the total loss trend from the midpoint of the experience year to one year past the assumed effective date for each year in the experience period based on the statewide loss cost level review year weights (.10, .15, .20, .25, .30 for BG I and SCL, and 0.10 for all years for BG II). Total loss trend includes the effect of Current Cost Factors to bring losses to the latest level of external cost information, Loss Projection Factors to project from the external cost level to one year past the assumed effective date, and Loss Trend Adjustment factors over the entire trend period.

PREMIUM TREND  
FACTORS

The prospective annual premium trend factors, based on annual changes in amounts of insurance written, for the current and prior reviews are:

<u>Coverage</u>	<u>Current Review</u>	<u>Prior Review</u>	<u>Change</u>
Buildings	+2.6%	+2.0%	+0.6%
Contents	+1.9%	+1.7%	+0.2%
Time Element	+0.6%	+1.0%	-0.4%

NET TREND

The prospective annual net (loss ÷ premium) trend factors for the current and prior year reviews are:

<u>Subline</u>	<u>Current Review</u>	<u>Prior Review</u>	<u>Change</u>
Basic Group I	+0.5%	+0.1%	+0.4%
Basic Group II	+0.7%	+0.7%	0.0%
Special Causes of Loss	+0.5%	+0.4%	+0.1%

BASIC GROUP I

The statewide five year weighted average experience ratio, before credibility weighting, increased by 24.4%, from 1.004 in the prior review to 1.249 in the current review. The increase is due to a higher-than-average experience ratio of 1.814 for 2018 entering the experience period. The monoline relativity increased by 0.4%.

Statewide Loss Cost Level Review

	<u>Current Review</u>	<u>Prior Review</u>	<u>Ratio</u>
Weighted Experience Ratio	1.249	1.004	1.244
Credibility	0.260	0.265	0.981
Expected Experience Ratio	1.005	1.001	1.004
Coverage Change	1.068	1.002	1.066
Monoline Relativity	0.969	0.965	1.004
Monoline Change	1.035	0.968	1.069

**BASIC GROUP II**

The statewide ten year weighted average experience ratio, before credibility weighting, decreased by 1.4%, from 1.115 in the prior review to 1.099 in the current review. The decrease is due to a lower-than-average experience ratio of 0.889 for 2018 entering the experience period. The monoline relativity decreased by 6.7%, due to a higher-than-overall monoline experience of 4.275 for 2013 exiting the experience period.

Statewide Loss Cost Level Review

	<u>Current Review</u>	<u>Prior Review</u>	<u>Ratio</u>
Weighted Experience Ratio	1.099	1.115	0.986
Credibility	0.388	0.382	1.016
Expected Experience Ratio	1.007	1.007	1.000
Coverage Change	1.043	1.048	0.995
Monoline Relativity	0.8953	0.9596	0.933
Monoline Change	0.934	1.006	0.928

**SPECIAL CAUSES  
OF LOSS**

The statewide five year weighted average experience ratio, before credibility weighting, decreased by 11.9%, from 0.933 in the prior review to 0.822 in the current review. The decrease is due to a higher-than-average experience ratio of 1.088 for 2013 exiting the experience period and a lower-than-average experience ratio of 0.622 for 2018 entering the experience period. The monoline relativity increased by 3.8%, due to a lower-than-overall monoline experience of 1.229 for 2013 exiting the experience period.

Statewide Loss Cost Level Review

	<u>Current Review</u>	<u>Prior Review</u>	<u>Ratio</u>
Weighted Experience Ratio	0.822	0.933	0.881
Credibility	0.265	0.275	0.964
Expected Experience Ratio	1.005	1.004	1.001
Coverage Change	0.957	0.984	0.973
Monoline Relativity	1.106	1.065	1.038
Monoline Change	1.058	1.048	1.010

PROPERTY  
CLAIMS SERVICES  
INFORMATION

The following events have been identified by Property Claims Services as catastrophes occurring in this state from 1/1/1990 through 12/31/2018.

<u>Date From</u>	<u>Date To</u>	<u>Perils</u>
7/21/90	7/21/90	Wind, Hail, Tornadoes, Flooding
9/3/90	9/3/90	Wind, Hail, Tornadoes, Flooding
12/18/90	12/25/90	Wind, Hail, Tornadoes, Flooding, Snow, Freezing
2/27/91	2/28/91	Wind, Hail, Tornadoes, Flooding
1/5/93	1/8/93	Wind, Flooding, Snow
1/12/93	1/18/93	Wind, Hail, Tornadoes, Snow
7/27/94	7/28/94	Wind, Hail, Tornadoes
1/17/96	1/20/96	Wind, Snow, Hail, Tornadoes, Flooding
7/25/96	7/28/96	Wind, Hail, Tornadoes, Flooding
8/14/96	8/14/96	Wind, Hail, Tornadoes
6/23/02	6/28/02	Fire
7/14/02	7/15/02	Flooding, Hail, Tornadoes, Wind
9/6/02	9/8/02	Flooding, Hail, Tornadoes, Wind
12/27/04	12/30/04	Earth Movement, Flooding, Snow, Wind
1/13/07	1/15/07	Freezing, Wind
1/18/10	1/22/10	Flooding, Tornadoes, Wind
10/4/10	10/6/10	Flooding, Hail, Tornadoes, Wind
2/2/11	2/6/11	Freezing, Ice
9/7/14	9/8/14	Flooding, Wind
9/27/14	9/30/14	Flooding, Hail, Wind
7/8/18	7/10/18	Flooding, Hail, Wind
7/30/18	7/31/18	Flooding, Hail, Wind

ISO's Property Claims Services defines a catastrophe as an event that:

- reaches a threshold dollar amount of total insured property losses, and
- affects a significant number of property and casualty insurance policyholders and property and casualty insurers.

From 1949 to 1981, the threshold was \$1 million. From 1982 to 1996, it was \$5 million, and since January 1, 1997, the threshold has been \$25 million.

All of the events listed above may not have resulted in unexpected loss experience for commercial property coverage in this state since catastrophes are defined based on total insured property losses spreading across state lines and lines of business.

For more information concerning Catastrophe Claims Services, please see "Persons to Contact" in the circular cover letter.

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