

LOSS COSTS – IMPLEMENTATION

AUGUST 13, 2018

COMMERCIAL AUTOMOBILE

LI-CA-2018-193

## MARYLAND REVISED COMMERCIAL AUTO ADVISORY PROSPECTIVE LOSS COSTS, INCLUDING REVISED NON-OWNERSHIP LIABILITY AND UNINSURED AND UNDERINSURED MOTORISTS LOSS COSTS, TO BE IMPLEMENTED

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### KEY MESSAGE

Loss costs representing a +4.7% statewide change to be implemented.

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### BACKGROUND

In circular [LI-CA-2018-153](#), we provided you with information about the Commercial Auto loss cost level experience review.

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### ISO ACTION

We are implementing CA-2018-BRLA1, which:

- Revises the liability and physical damage loss costs for Trucks, Tractors and Trailers, Private Passenger Types and Public Autos;
- Introduces relativities that are different for each territory;
- Revises the loss costs for non-ownership liability coverage and introduces new employee count ranges;
- Revises the loss costs for uninsured and underinsured motorists coverage; and
- Revises the liability loss cost for Hired Autos in Rule **90.B.3.b**.

Refer to the attached explanatory material for complete details about the filing.

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### SUPPLEMENTARY INFORMATION

We are including the following supplementary information:

- Supplementary Information – Maryland, which provides additional information on the attached loss cost level experience review.
- 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 effective on or after February 1, 2019.

This effective date applies only to those insurers who have filed their Commercial Auto 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 February 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 DECEMBER 14, 2018. 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 CA-2018-BRLA1, NOT this circular number.

CAUTION: This reference filing revises only certain advisory prospective loss costs for Commercial Auto 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.

**TERRITORY CERTIFICATION**

- We have submitted the certification statement contained in Maryland Regulation 31.07.03.04 Section A. "Certification Statement for Insurers and Rating Organizations" certifying the territories on file.
- If you utilize ISO territories and loss costs without deviation or modification, you may satisfy the certification requirement by filing the "Certification Statement for Insurers Adopting the Certification Statement of a Rating Organization" contained in Maryland Regulation 31.07.03.04 Section B. by referencing ISO's territory certification.
- If you utilize ISO territories and loss costs, but have filed a deviation or modification that varies by territory, or if you do not utilize ISO's territories, you must certify your own territories by filing the "Certification Statement for Insurers and Rating Organizations" contained in Maryland Regulation 31.07.03.04 Section A.

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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-2017-074](#) 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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## FUTURE ISO ACTION

We will provide a status report for this and other Basic Limits Loss Costs (BRLA1) revisions. Please refer to the Insurance Lines Services web site ([www.verisk.com/ils](http://www.verisk.com/ils)). In addition to other information, this web site contains copies of major multistate filing status reports that are updated approximately every two weeks.

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## REVISION DISTRIBUTION

We will issue a Notice to Manualholders with an edition date of 2-19 (or the earliest possible subsequent date), along with any new and/or revised manual pages.

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## REFERENCE(S)

- [LI-CA-2018-153](#) (06/06/2018) Commercial Auto Experience Level Indications Reviewed By Staff
- [LI-CL-2017-074](#) (11/20/2017) Revised Lead Time Requirements Listing

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## ATTACHMENT(S)

- Filing [CA-2018-BRLA1](#)
- Supplementary Information Exhibit
- 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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## ACKNOWLEDGEMENT OF ACTUARIAL QUALIFICATIONS

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

I, David Terné, am a Managing Director of Actuarial Operations for ISO and I, James Davidson, am an Actuarial Director for Commercial Auto 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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## CONTACT INFORMATION

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MARYLAND  
BASIC LIMITS PROSPECTIVE LOSS COST LEVEL – COMMERCIAL AUTOMOBILE  
FILING CA-2018-BRLA1  
EXECUTIVE SUMMARY

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**PURPOSE**

This document:

- revises the advisory prospective loss costs for the major Commercial Automobile classes. These loss costs represent a 4.7% statewide change from the loss costs currently in effect.
  - provides the analyses used to derive these advisory loss costs.
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**DEFINITION OF  
THE ISO ADVISORY  
PROSPECTIVE  
LOSS COSTS**

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 through development to their ultimate value and projected through trending to a future point in time. Throughout this document the words “loss cost” are synonymous with the words “prospective loss cost.”

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**OPTIONAL CLASS  
PLAN LOSS COSTS**

The loss costs contained in this filing CA-2018-BRLA1 are intended for use with the class plan in our standard manual. The prospective loss costs in this filing have also been used as the basis to develop the loss costs for the Optional Class Plan, which are located in companion filing CA-2018-BRLB1.

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**AUTO DEALERS  
LIABILITY AND  
PIP COVERAGES**

The Auto Dealers Liability and PIP coverages are not being reviewed this year.

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**NON-OWNERSHIP  
LIABILITY  
COVERAGE**

A revision of the Non-ownership Liability loss costs contained in Rule 89.C.1.a.(1) is included in this document. The overall change for this coverage is reflected in the overall change quoted in this filing. The documentation for this revision can be found in Section D.

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UNINSURED/  
UNDERINSURED  
MOTORISTS  
COVERAGES

A revision of the Uninsured and Underinsured Motorists loss costs contained in Rule 97 is included in this document. The overall change for the Private Passenger Types and Other than Private Passenger Types UM and UIM revision is reflected in the overall change quoted in this filing. The documentation for this revision can be found in Section E.

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REVISED LOSS  
COST CHANGES

The statewide advisory loss cost level changes are:

<u>Trucks, Tractors &amp; Trailers</u>	<u>Indicated</u>	<u>Filed</u>
Liability		
Single Limit Liability	6.2%	6.2%
Personal Injury Protection	-8.1%	-8.1%
Uninsured/Underinsured Motorists	-20.0%	-20.0%
Physical Damage		
Other than Collision	4.9%	4.9%
Collision	1.8%	N.C.
Total Trucks, Tractors & Trailers	4.3%	4.0%
 <u>Private Passenger Types</u>		
Liability		
Single Limit Liability	7.8%	7.8%
Personal Injury Protection	4.2%	4.2%
Uninsured/Underinsured Motorists	-4.4%	-8.4%
Physical Damage		
Other than Collision	6.7%	6.7%
Collision	1.9%	N.C.
Total Private Passenger Types	5.4%	4.7%
 <u>Non-ownership Liability</u>	127.4%	127.4%
 <u>Grand Total</u>	5.0%	4.7%

Loss cost level changes are relative to the current loss costs.

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INDICATED VS.  
FILED

Indicated changes are based on standard ISO methodology, utilizing a 2/1/2019 trend effective date. The filed loss cost level changes are the same as the indicated with the following exceptions: No Change (N.C.) was selected for Trucks, Tractors & Trailers Collision and Private Passenger Types Collision due to the modest indications. The Private Passenger Types UM indication was capped for stability.

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PRIOR ISO  
REVISIONS

The latest selected revisions in this state are:

<u>Filing</u>	CA-17-BRLA1	CA-16-BRLA1	CA-14-BRLA1
Rate Level/ Loss Costs	Loss Costs	Loss Costs	Loss Costs
Effective Date	2/1/2018	2/1/2017	2/1/2015
<u>Changes</u>			
Indicated	8.9%	6.2%	3.0%
Filed	8.9%	6.1%	2.4%
Approved	8.9%	6.1%	2.4%

HISTORICAL  
SOURCE DATA

The sources of the data underlying this loss cost review are:

- ISO companies reporting voluntary automobile experience under the Commercial Automobile modules of ISO's statistical plans.
- Accident year data through year ended 06/30/2017 for all coverages.
- Various external price index data from the Bureau of Labor Statistics.

ADJUSTMENTS TO  
REPORTED  
EXPERIENCE

Loss Trend

To adjust the loss data to levels expected to prevail during the period when the revised loss costs will be in effect, historical losses have been multiplied by trend factors. These trend factors are based on the changes in claim cost and claim frequency that are expected to arise between the historical experience period and the prospective period during which the revised loss costs are anticipated to be in effect. Based on earlier analyses, there had been differences in historical frequency trends between Trucks, Tractors, and Trailers (TTT) and Private Passenger Types (PPT) liability classes. In general, Commercial Auto classes had experienced an abnormally long period of negative frequency trends prior to 2010. For the most recent 6 years, however, the frequency trends have been slightly increasing (TTT BI) or somewhat cyclical and/or flat (TTT PD and PPT BI and PD) over the experience period. An exponential curve of the form  $Y=A(B^X)$  does not fit the data well. To reflect these recent patterns and the difficulty in predicting turning points and rates of change, frequency trend is being selected to be 0% for TTT and PPT for both the Bodily Injury and Property Damage coverages.

Claim cost trend data through second quarter 2017 and claim frequency trend data through first quarter 2017 were used in selecting the following annual liability trend factors:

ADJUSTMENTS TO REPORTED EXPERIENCE (CONT'D)	<u>Coverage</u>	<u>Annual Trend Factor</u>
	Trucks, Tractors, and Trailers Liability:	
	Bodily Injury	+2.4%
	Property Damage	+5.6%
	Private Passenger Types Liability:	
	Bodily Injury	+2.4%
	Property Damage	+5.6%
	Trucks, Tractors & Trailers PIP	+0.0%*
	Private Passenger Types PIP	+0.0%*
	Trucks, Tractors & Trailers OTC	+7.0%
	Trucks, Tractors & Trailers Collision	+5.0%
	Private Passenger Types OTC	+6.0%
	Private Passenger Types Collision	+5.0%

\* Due to the low basic limit PIP threshold in Maryland (\$2,500), the indicated PIP claim cost trend factors of +3.5% for Trucks, Tractors & Trailers and +3.6% for Private Passenger Types (see Section C) are not appropriate for use in the development of loss cost level indications at the basic limit. That is, it is not reasonable to assume that basic limit PIP losses will continue to increase at such a rate in Maryland.

Consequently, ISO has applied the claim cost trend factor, projected accordingly for the given accident year, to the reported PIP loss data in Maryland. These trended losses were then capped at \$2,500 on a per claim/per occurrence basis. The incurred losses presented in Section B are the reported basic limit PIP losses for Maryland and have already been adjusted to reflect a claim cost trend component that will not cause any individual claim to exceed \$2,500. The frequency trend component (0.0% this year) is applied after the losses are trended and capped at \$2,500.

#### OCN Trend

To recognize the trend in the Original Cost New (OCN) relativities for Trucks, Tractors & Trailers and Private Passenger Type's physical damage, aggregate loss costs at current level have been multiplied by trend factors. The selected annual OCN trend factors for Trucks, Tractors & Trailers are +0.9% and +1.3% for OTC and Collision respectively. For Private Passenger Types, the OCN Trend factors are +1.0% and +0.6% for OTC and Collision respectively.

Standard actuarial procedures have been used in calculating the loss costs including adjusting the losses to ultimate settlement level, reflecting all loss adjustment expenses.

TEN LARGEST  
COMPANIES/  
GROUPS  
IN THIS REVIEW

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LIABILITY (ASLOB 19.3 & 19.4)

1. Travelers Indemnity Company
2. Selective Insurance Co. of America
3. Hartford Accident & Indemnity Co.
4. Zurich American Insurance Company
5. Nationwide Mutual Insurance Co.
6. Liberty Mutual Insurance Company
7. Cincinnati Insurance Company
8. Tokio Marine Companies
9. American International Group
10. Harleysville Insurance

PHYSICAL DAMAGE (ASLOB 21.2)

1. Travelers Indemnity Company
2. Liberty Mutual Insurance Company
3. Hartford Accident & Indemnity Co.
4. Cincinnati Insurance Company
5. Tokio Marine Companies
6. Zurich American Insurance Company
7. Hartford Mutual Insurance Company
8. Government Employees Insurance Co.
9. Harleysville Insurance
10. Pennsylvania Nat. Mut. Cas. Ins. Co.

Insurers are listed in descending order based on the percent of statewide written premium volume from Annual Statement Page 15 for the year ending 12/31/2016 for the Annual Statement Line of Business (ASLOB) indicated.

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MARKET SHARE

The market share of ISO participating insurers used in this review as measured by Annual Statement Page 15 written premium for the year ending 12/31/2016 is:

Liability (ASLOB 19.3 & 19.4)  
52.4%

Physical Damage (ASLOB 21.2)  
41.9%

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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 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 a 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.

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COMMERCIAL AUTOMOBILE  
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MARYLAND  
COMMERCIAL AUTOMOBILE

SECTION A - SCOPE OF REVISION

Summary of Prospective Loss Cost Level Changes .....	A2
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MARYLAND  
STATEWIDE LOSS COST LEVEL CHANGES (A)

Coverages	Aggregate Loss Cost at Current Level (B)	Loss Cost Changes (C)
<b>TRUCKS, TRACTORS &amp; TRAILERS (D)</b>		
Liability		
Single Limit Liability	\$ 85,598,440	6.2%
Personal Injury Protection	1,138,134	-8.1%
Uninsured (Includes Underinsured) Motorists	4,868,762	-20.0%
Combined	91,605,336	4.6%
Physical Damage		
Other Than Collision	3,849,982	4.9%
Collision	14,955,351	N.C.
Combined	18,805,333	1.0%
Total Trucks, Tractors & Trailers	110,410,669	4.0%
<b>PRIVATE PASSENGER TYPES</b>		
Liability		
Single Limit Liability	14,188,688	7.8%
Personal Injury Protection	396,346	4.2%
Uninsured (Includes Underinsured) Motorists	1,722,852	-8.4%
Combined	16,307,886	6.0%
Physical Damage		
Other Than Collision	1,621,567	6.7%
Collision	5,214,163	N.C.
Combined	6,835,730	1.6%
Total Private Passenger Types	23,143,616	4.7%
NON-OWNERSHIP LIABILITY	609,541	127.4%
GRAND TOTAL ALL COVERAGES	134,163,826	4.7%
TOTAL LIABILITY	108,522,763	5.5%
TOTAL PHYSICAL DAMAGE	25,641,063	1.2%

(A) An implementation date of 2/1/2019 is assumed for purposes of trending.

(B) Accident Year ending 06/30/2017 Aggregate Loss Cost at Current Level for Liability, Personal Injury Protection, Uninsured (Includes Underinsured Motorists) and Physical Damage coverages. Accident Year 12/31/2016 Aggregate Loss Cost at Current Level for Non-ownership Liability coverage. The Liability loss costs are on a Total Limits basis.

(C) Loss Cost changes are calculated on a \$100,000 CSL Basic Limits basis for Liability and on an all deductibles combined basis for Physical Damage.

(D) For Liability, Personal Injury Protection and Physical Damage, classes related to Trucks, Tractors & Trailers, such as the Public Automobile classes, are impacted by the Trucks, Tractors & Trailers loss cost level changes.

## TERRITORY LOSS COST LEVEL CHANGES

## FOR TRUCKS, TRACTORS &amp; TRAILERS POLICY COVERAGES

TERRITORY CODE	\$100,000 CSL LIABILITY	PIP
101	11.8%	0.0%
102	3.3%	0.0%
108	9.4%	0.0%
109	2.7%	-11.8%
110	9.9%	-6.2%
111	2.9%	-8.3%
112	4.6%	0.0%
113	8.5%	0.0%
114	6.3%	-9.1%

## TERRITORY LOSS COST LEVEL CHANGES

## FOR TRUCKS, TRACTORS &amp; TRAILERS POLICY COVERAGES

## PHYSICAL DAMAGE

TERRITORY CODE	COMPREHENSIVE	SPECIFIED CAUSES OF LOSS
101	3.6%	3.8%
102	5.3%	5.9%
108	11.0%	11.1%
109	1.6%	2.2%
110	2.7%	2.9%
111	3.7%	3.4%
112	4.7%	5.2%
113	6.9%	6.8%
114	4.5%	4.8%

REVISED BASE LOSS COSTS BY TERRITORY  
FOR TRUCKS, TRACTORS & TRAILERS POLICY COVERAGES

TERRITORY	LIABILITY		PHYSICAL DAMAGE	SPECIFIED CAUSES
CODE	\$100,000		COMPREHENSIVE	OF LOSS
	CSL	PIP	(a)	(b)
101	680	29	114	82
102	653	20	100	72
108	695	16	111	80
109	725	15	126	91
110	586	15	150	108
111	700	22	84	60
112	708	20	112	81
113	295	6	108	78
114	488	10	92	66

(a) COMPREHENSIVE BASE LOSS COST IS THE \$15,001 - \$20,000 OCN, AGE 1, \$500 DEDUCTIBLE LOSS COST.

(b) THE LOSS COSTS FOR SPECIFIED CAUSES OF LOSS HAVE BEEN CALCULATED BY A RELATIVITY OF 0.720 TO THE TRUCKS, TRACTORS & TRAILERS COMPREHENSIVE BASE LOSS COSTS.

## TERRITORY LOSS COST LEVEL CHANGES

## FOR PRIVATE PASSENGER TYPES POLICY COVERAGES

TERRITORY CODE	\$100,000 CSL LIABILITY	PIP
101	7.4%	-2.8%
102	13.3%	7.7%
108	7.0%	6.9%
109	11.0%	2.9%
110	8.5%	3.0%
111	13.4%	4.2%
112	9.2%	4.9%
113	8.6%	12.5%
114	4.8%	4.3%

TERRITORY LOSS COST LEVEL CHANGES

FOR PRIVATE PASSENGER TYPES POLICY COVERAGES

PHYSICAL DAMAGE

TERRITORY CODE	COMPREHENSIVE
101	3.8%
102	8.8%
108	4.3%
109	9.8%
110	4.8%
111	6.3%
112	5.2%
113	7.9%
114	6.5%

REVISED BASE LOSS COSTS BY TERRITORY  
FOR PRIVATE PASSENGER TYPES POLICY COVERAGES

TERRITORY	\$100,000 CSL		PHYSICAL DAMAGE
CODE	LIABILITY	PIP	COMPREHENSIVE
			(a)
101	563	35	109
102	486	42	74
108	506	31	73
109	474	36	90
110	460	34	87
111	507	25	67
112	536	43	101
113	253	18	96
114	373	24	82

(a) COMPREHENSIVE BASE LOSS COST IS THE \$15,001-20,000 OCN, AGE 1, \$500 DEDUCTIBLE LOSS COST.

## TERRITORY LOSS COST LEVEL CHANGES

## FOR VAN POOLS POLICY COVERAGES

TERRITORY CODE	\$100,000 CSL LIABILITY	PIP
101	11.8%	0.0%
102	3.4%	0.0%
108	9.4%	0.0%
109	2.7%	-16.7%
110	9.9%	-9.1%
111	2.9%	-6.2%
112	4.5%	0.0%
113	8.6%	0.0%
114	6.2%	0.0%

## TERRITORY LOSS COST LEVEL CHANGES

## FOR VAN POOLS POLICY COVERAGES

## PHYSICAL DAMAGE

TERRITORY CODE	COMPREHENSIVE	SPECIFIED CAUSES OF LOSS
101	3.6%	3.7%
102	5.2%	5.8%
108	10.8%	12.3%
109	2.4%	2.2%
110	2.7%	2.8%
111	3.6%	3.4%
112	4.6%	5.1%
113	6.8%	8.1%
114	4.4%	4.7%

## REVISED BASE LOSS COSTS BY TERRITORY

## FOR VAN POOLS POLICY COVERAGES

TERRITORY	LIABILITY		PHYSICAL DAMAGE	SPECIFIED CAUSES
CODE	\$100,000	PIP	COMPREHENSIVE	OF LOSS
	CSL (a)	(b)	(c)	(d)
101	1020	20	116	84
102	980	14	102	73
108	1043	11	113	82
109	1088	10	129	93
110	879	10	153	110
111	1050	15	86	61
112	1062	14	114	83
113	443	4	110	80
114	732	7	94	67

- (a) THE LOSS COSTS FOR VAN POOLS HAVE BEEN CALCULATED BY A RELATIVITY OF 1.50 TO THE TRUCKS, TRACTORS AND TRAILERS CSL LIABILITY LOSS COSTS.
- (b) THE LOSS COSTS FOR PIP HAVE BEEN CALCULATED BY A RELATIVITY OF 0.68 TO THE TRUCKS, TRACTORS AND TRAILERS PIP LOSS COSTS.
- (c) COMPREHENSIVE BASE LOSS COST IS THE \$15,001 - \$20,000 OCN, AGE 1, \$500 DEDUCTIBLE LOSS COST, AND HAS BEEN CALCULATED BY A RELATIVITY OF 1.02 TO THE TRUCKS, TRACTORS & TRAILERS LOSS COST.
- (d) THE LOSS COSTS FOR SPECIFIED CAUSES OF LOSS HAVE BEEN CALCULATED BY A RELATIVITY OF 1.02 TO THE CORRESPONDING TRUCKS, TRACTORS & TRAILERS LOSS COST.

TERRITORY LOSS COST LEVEL CHANGES  
FOR TAXIS AND LIMOUSINES POLICY COVERAGES

TERRITORY CODE	\$100,000 CSL LIABILITY	PIP
101	11.8%	0.0%
102	3.3%	0.0%
108	9.4%	0.0%
109	2.7%	-11.6%
110	9.9%	-6.2%
111	2.9%	-8.2%
112	4.6%	0.0%
113	8.5%	0.0%
114	6.3%	-8.9%

TERRITORY LOSS COST LEVEL CHANGES  
FOR TAXIS AND LIMOUSINES POLICY COVERAGES

PHYSICAL DAMAGE		
TERRITORY CODE	COMPREHENSIVE	SPECIFIED CAUSES OF LOSS
101	3.6%	3.7%
102	5.2%	5.8%
108	10.8%	12.3%
109	2.4%	2.2%
110	2.7%	2.8%
111	3.6%	3.4%
112	4.6%	5.1%
113	6.8%	8.1%
114	4.4%	4.7%

REVISED BASE LOSS COSTS BY TERRITORY  
FOR TAXIS AND LIMOUSINES POLICY COVERAGES

TERRITORY	LIABILITY		PHYSICAL DAMAGE	SPECIFIED CAUSES
CODE	\$100,000	PIP	COMPREHENSIVE	OF LOSS
	CSL (a)	(b)	(c)	(d)
101	4216	147	116	84
102	4049	101	102	73
108	4309	81	113	82
109	4495	76	129	93
110	3633	76	153	110
111	4340	112	86	61
112	4390	101	114	83
113	1829	30	110	80
114	3026	51	94	67

- (a) THE LOSS COSTS FOR TAXIS AND LIMOUSINES HAVE BEEN CALCULATED BY A RELATIVITY OF 6.20 TO THE TRUCKS, TRACTORS AND TRAILERS CSL LIABILITY LOSS COSTS.
- (b) THE LOSS COSTS FOR PIP HAVE BEEN CALCULATED BY A RELATIVITY OF 5.07 TO THE TRUCKS, TRACTORS AND TRAILERS PIP LOSS COSTS.
- (c) COMPREHENSIVE BASE LOSS COST IS THE \$15,001 - \$20,000 OCN, AGE 1, \$500 DEDUCTIBLE LOSS COST, AND HAS BEEN CALCULATED BY A RELATIVITY OF 1.02 TO THE TRUCKS, TRACTORS & TRAILERS LOSS COST.
- (d) THE LOSS COSTS FOR SPECIFIED CAUSES OF LOSS HAVE BEEN CALCULATED BY A RELATIVITY OF 1.02 TO THE CORRESPONDING TRUCKS, TRACTORS & TRAILERS LOSS COST.

## TERRITORY LOSS COST LEVEL CHANGES

## FOR SCHOOL AND CHURCH BUSES POLICY COVERAGES

TERRITORY CODE	\$100,000 CSL LIABILITY	PIP
101	12.0%	0.0%
102	3.2%	0.0%
108	9.5%	0.0%
109	2.8%	-18.2%
110	9.9%	-10.0%
111	2.9%	-6.7%
112	4.6%	0.0%
113	8.0%	0.0%
114	6.3%	-14.3%

TERRITORY LOSS COST LEVEL CHANGES  
FOR SCHOOL AND CHURCH BUSES POLICY COVERAGES

PHYSICAL DAMAGE		
TERRITORY CODE	COMPREHENSIVE	SPECIFIED CAUSES OF LOSS
101	3.9%	3.6%
102	4.5%	4.2%
108	11.4%	12.0%
109	1.1%	3.2%
110	2.9%	2.7%
111	3.5%	2.4%
112	4.0%	5.6%
113	7.0%	7.8%
114	3.2%	4.5%

REVISED BASE LOSS COSTS BY TERRITORY  
FOR SCHOOL AND CHURCH BUSES POLICY COVERAGES

TERRITORY	LIABILITY \$100,000	PIP	PHYSICAL DAMAGE COMPREHENSIVE	SPECIFIED CAUSES OF LOSS
CODE	CSL (a)	(b)	(c)	(d)
101	374	18	80	57
102	359	12	70	50
108	382	10	78	56
109	399	9	88	64
110	322	9	105	76
111	385	14	59	42
112	389	12	78	57
113	162	4	76	55
114	268	6	64	46

- (a) THE LOSS COSTS FOR SCHOOL AND CHURCH BUSES HAVE BEEN CALCULATED BY A RELATIVITY OF 0.55 TO THE TRUCKS, TRACTORS AND TRAILERS CSL LIABILITY LOSS COSTS.
- (b) THE LOSS COSTS FOR PIP HAVE BEEN CALCULATED BY A RELATIVITY OF 0.62 TO THE TRUCKS, TRACTORS AND TRAILERS PIP LOSS COSTS.
- (c) COMPREHENSIVE BASE LOSS COST IS THE \$15,001 - \$20,000 OCN, AGE 1, \$500 DEDUCTIBLE LOSS COST, AND HAS BEEN CALCULATED BY A RELATIVITY OF 0.70 TO THE TRUCKS, TRACTORS & TRAILERS LOSS COST.
- (d) THE LOSS COSTS FOR SPECIFIED CAUSES OF LOSS HAVE BEEN CALCULATED BY A RELATIVITY OF 0.70 TO THE CORRESPONDING TRUCKS, TRACTORS & TRAILERS LOSS COST.

## MARYLAND

TERRITORY LOSS COST LEVEL CHANGES  
FOR ALL OTHER BUSES POLICY COVERAGES

TERRITORY CODE	\$100,000 CSL LIABILITY	PIP
101	11.9%	0.0%
102	3.3%	0.0%
108	9.4%	0.0%
109	2.7%	-11.0%
110	10.0%	-6.3%
111	2.9%	-8.5%
112	4.5%	0.0%
113	8.4%	0.0%
114	6.3%	-9.2%

TERRITORY LOSS COST LEVEL CHANGES  
FOR ALL OTHER BUSES POLICY COVERAGES

PHYSICAL DAMAGE		
TERRITORY CODE	COMPREHENSIVE	SPECIFIED CAUSES OF LOSS
101	3.9%	3.6%
102	4.5%	4.2%
108	11.4%	12.0%
109	1.1%	3.2%
110	2.9%	2.7%
111	3.5%	2.4%
112	4.0%	5.6%
113	7.0%	7.8%
114	3.2%	4.5%

REVISED BASE LOSS COSTS BY TERRITORY  
FOR ALL OTHER BUSES POLICY COVERAGES

TERRITORY	LIABILITY \$100,000	PIP	PHYSICAL DAMAGE COMPREHENSIVE	SPECIFIED CAUSES OF LOSS
CODE	CSL (a)	(b)	(c)	(d)
101	2584	171	80	57
102	2481	118	70	50
108	2641	95	78	56
109	2755	89	88	64
110	2227	89	105	76
111	2660	130	59	42
112	2690	118	78	57
113	1121	35	76	55
114	1854	59	64	46

- (a) THE LOSS COSTS FOR ALL OTHER BUSES HAVE BEEN CALCULATED BY A RELATIVITY OF 3.80 TO THE TRUCKS, TRACTORS AND TRAILERS CSL LIABILITY LOSS COSTS.
- (b) THE LOSS COSTS FOR PIP HAVE BEEN CALCULATED BY A RELATIVITY OF 5.91 TO THE TRUCKS, TRACTORS AND TRAILERS PIP LOSS COSTS.
- (c) COMPREHENSIVE BASE LOSS COST IS THE \$15,001 - \$20,000 OCN, AGE 1, \$500 DEDUCTIBLE LOSS COST, AND HAS BEEN CALCULATED BY A RELATIVITY OF 0.70 TO THE TRUCKS, TRACTORS & TRAILERS LOSS COST.
- (d) THE LOSS COSTS FOR SPECIFIED CAUSES OF LOSS HAVE BEEN CALCULATED BY A RELATIVITY OF 0.70 TO THE CORRESPONDING TRUCKS, TRACTORS & TRAILERS LOSS COST.

MARYLAND  
COMMERCIAL AUTOMOBILE

SECTION B - CALCULATION OF CHANGES

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## OVERVIEW OF ISO ACTUARIAL PROCEDURES – COMMERCIAL AUTOMOBILE

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INTRODUCTION	Commercial Automobile advisory 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 by coverage for the major classes.
STEP 1: DETERMINATION OF STATEWIDE LOSS COST INDICATION	The first step in this process is the determination of the statewide loss cost indication by major class/coverage. In other words, what percentage changes on average 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 "Determination of Statewide Advisory Loss Cost Level Change."
STEP 2: DISTRIBUTION TO TERRITORIES	For all of the liability coverages and for Trucks, Tractors & Trailers and Private Passenger Types Physical Damage, ISO then distributes the filed statewide basic limit loss cost change to the individual territorial loss costs by comparing the relative loss experience by territory to the statewide average.
STEP 3: APPLICATION OF PERCENT CHANGES	The last step is the calculation of the ISO advisory prospective loss costs. This is achieved by applying either the filed statewide or territorial changes to the current ISO loss costs. For liability, the percentage change is applied at the basic limit; for physical damage, it is applied at the base OCN, age and deductible. The resulting Loss Costs are displayed in Section G.

## OVERVIEW OF ISO ACTUARIAL PROCEDURES – COMMERCIAL AUTOMOBILE

### STEP 1 – DETERMINATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGE

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OBJECTIVE	<p>The objective of this procedure is to determine the indicated statewide advisory loss cost level change. This procedure answers the question: what percentage changes must be made on average 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 developed and trended incurred losses and loss adjustment expenses with the aggregate loss costs at current ISO loss cost level, which is the aggregate amount that would have been collected if the current ISO loss costs were used during the experience period. This experience ratio (losses and all loss adjustment expenses divided by aggregate loss costs) is calculated for several years and a weighted average is calculated. The weights are determined as a function of the credibility or volume of claim experience. 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. This 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 as reported under the ISO Commercial Statistical Plan. All coverages are on an accident year basis. For liability, the review is conducted on a \$100,000 basic limits basis - indemnity losses are limited to \$100,000 per occurrence.</p>
AGGREGATE LOSS COSTS (Item 1)	<p>The aggregate loss costs at current ISO loss cost level are the loss-related revenue that would have been collected if the current ISO loss costs were used during the experience period. It is calculated by extending the exposures by the current ISO loss costs. For liability, the \$100,000 basic limit loss costs are used. For Trucks, Tractors, and Trailers and Private Passenger Types Physical Damage, loss costs are on an all deductibles combined basis.</p> <p>Trucks, Tractors &amp; Trailers and Private Passenger Types physical damage aggregate loss costs are placed on the prospective OCN relativity level by the application of OCN trend factors.</p>

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INCURRED  
LOSSES & LAE  
(Item 2)

The incurred losses and loss adjustment expenses are our best estimate of the ultimate payment for indemnity losses and loss adjustment expenses using the claim frequency and severity levels ISO expects to occur during the prospective period for which the revised loss costs will be used.

For the liability coverages, the reported incurred losses and allocated loss adjustment expenses are subject to the following adjustments:

- Incurred indemnity losses are capped at the basic limit;
- Developed to an ultimate settlement basis by the application of loss development factors;
- Loaded for unallocated loss adjustment expenses;
- Placed on the prospective cost/frequency levels by the application of trend factors.

For the physical damage coverages, the reported paid (accident year) losses are subject to the following adjustments:

- Paid Other Than Collision losses are adjusted using an Excess Wind and Water procedure;
- Developed to an ultimate settlement basis by the application of loss development factors;
- Loaded for all loss adjustment expenses;
- Placed on the prospective cost/frequency levels by the application of trend factors.

Refer to Section C for the support for these loss related adjustments.

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EXPERIENCE  
RATIO  
(Item 3)

The experience ratio is the ratio of the incurred losses and loss adjustment expenses to the aggregate loss costs at current ISO loss cost level. It measures the adequacy of the current ISO loss costs for the prospective period.

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YEAR WEIGHTS  
(Item 4)

The number of years of experience used and year weights are determined by the total number of claims in the experience period. To the extent there is adequate credibility, ISO uses fewer years and gives greater weight to the most recent years. Refer to the credibility pages of Section C for the methodology used to arrive at both the number of years used and the year weights.

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EXPECTED  
EXPERIENCE  
RATIO  
(Item 7)

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

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CREDIBILITY

Credibility is based upon the number of claims for all years in the experience period. The procedure for assigning credibility is outlined in the credibility pages of Section C.

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CREDIBILITY  
WEIGHTED  
EXPERIENCE  
RATIO

The average experience ratio is credibility weighted with the expected experience ratio. The resulting credibility weighted experience ratio, converted to a percentage, is the indicated change to the current ISO loss costs.

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INSURANCE SERVICES OFFICE, INC.

MARYLAND

AUTOMOBILE LIABILITY INSURANCE - TRUCKS, TRACTORS AND TRAILERS (A)

DETERMINATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGES

SINGLE LIMIT LIABILITY COVERAGE

	(1)	(2)	(3)	(4)	(5)
ACCIDENT	AGGREGATE		EXPERIENCE	ACCIDENT	NUMBER
YEAR	LOSS COST	\$ 100,000	RATIO	YEAR	OF
ENDING	AT CURRENT	INCURRED	(2) / (1)	WEIGHTS	INCURRED
	LEVEL (B)	LOSSES (C)			CLAIMS
06/30/15	\$ 48,999,441	\$ 48,601,320	0.992	20%	5,713
06/30/16	\$ 51,043,873	\$ 54,305,818	1.064	30%	6,248
06/30/17	\$ 53,869,377	\$ 58,731,370	1.090	50%	6,501
(6)	AVERAGE EXPERIENCE RATIO (SUM OF (3) * (4)).				1.062
(7)	EXPECTED EXPERIENCE RATIO (D).				1.037
(8)	CREDIBILITY (E).				1.00
(9)	CREDIBILITY WEIGHTED EXPERIENCE RATIO: ((6) * (8)) + ((7) * (1.000 - (8))).				1.062
(10)	INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ((9) - 1.000).				6.2%
(11)	FILED CHANGE.				6.2%

- (A) TRUCK, TRACTOR AND TRAILER EXPERIENCE IS FOR VEHICLES WRITTEN IN ACCORDANCE WITH RULE 23 OF THE COMMERCIAL LINES MANUAL, DIVISION 1, AUTOMOBILE.
- (B) THE AGGREGATE LOSS COST AT CURRENT LEVEL IS CALCULATED BY EXTENDING EXPOSURES BY THE CURRENT LOSS COSTS FROM THE LAST REVISION.
- (C) LOSSES INCLUDE ALL LOSS ADJUSTMENT EXPENSES FOR BODILY INJURY AND PROPERTY DAMAGE LIABILITY. SEE FOLLOWING PAGE.
- (D) EXPECTED EXPERIENCE RATIO IS EQUAL TO THE COMBINED TREND FACTOR SHOWN ON THE FOLLOWING PAGE, PROJECTED FOR M YEARS. THE PERIOD M IS EQUAL TO THE NUMBER OF YEARS FROM ONE YEAR BEYOND THE IMPLEMENTATION DATE OF THE LAST REVISION TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 02/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING, SUBJECT TO A MAXIMUM OF THE N-VALUE CORRESPONDING TO THE LATEST YEAR SHOWN ON THE FOLLOWING PAGE, FOOTNOTE B. IN THIS REVISION, THE PERIOD M IS 1.00 YEAR(S).
- (E) CREDIBILITY IS BASED ON A 3 YEAR TOTAL OF CLAIMS FOR B.I. AND P.D. SHOWN IN COLUMN (5). THE STANDARD FOR FULL CREDIBILITY IS 11,500 CLAIMS (SEE CREDIBILITY TABLES IN SECTION C).

## INSURANCE SERVICES OFFICE, INC.

MARYLAND  
TRUCKS, TRACTORS AND TRAILERS  
AUTOMOBILE LIABILITY INSURANCE  
DETERMINATION OF SINGLE LIMIT LOSSES

	ACC. YEAR ENDING	BODILY INJURY	PROPERTY DAMAGE	COMBINED
(1) INCURRED LOSSES AND	06/30/15	\$19,286,507	\$15,920,494	
ALLOCATED LOSS	06/30/16	\$20,964,546	\$17,908,998	
ADJUSTMENT EXPENSES.	06/30/17	\$20,904,916	\$18,035,092	
(2) DEVELOPED LOSSES AND	06/30/15	\$22,412,463	\$17,680,107	
ALL LOSS ADJUSTMENT	06/30/16	\$26,536,084	\$20,066,495	
EXPENSES (A).	06/30/17	\$31,292,152	\$21,184,291	
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C).		+ 2.4%	+ 5.6%	+ 3.7%
(4) TRENDED LOSSES AND	06/30/15	\$25,281,260	\$23,320,060	\$48,601,320
ALL LOSS ADJUSTMENT	06/30/16	\$29,242,765	\$25,063,053	\$54,305,818
EXPENSES (B).	06/30/17	\$33,670,355	\$25,061,015	\$58,731,370

- (A) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES ARE ADJUSTED BY THE FOLLOWING FACTORS:
- 1 - UNALLOCATED LOSS ADJUSTMENT FACTORS: B.I. 1.080 P.D. 1.105
- 2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	B.I.	P.D.
06/30/15	1.076	1.005
06/30/16	1.172	1.014
06/30/17	1.386	1.063

- (B) TRENDED LOSSES ARE EQUAL TO (2) \* ((1.0 + (3))\*\*N), WHERE N IS EQUAL TO THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF ACCIDENT TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 02/01/19, WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
06/30/15	01/01/15	5.083
06/30/16	01/01/16	4.083
06/30/17	01/01/17	3.083

INSURANCE SERVICES OFFICE, INC.

MARYLAND

AUTOMOBILE LIABILITY INSURANCE - TRUCKS, TRACTORS AND TRAILERS (A)  
DETERMINATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGES  
PERSONAL INJURY PROTECTION

	(1)	(2)	(3)	(4)	(5)
ACCIDENT YEAR ENDING	AGGREGATE LOSS COST AT CURRENT LEVEL (B)	INCURRED LOSSES (C)	EXPERIENCE RATIO (2) / (1)	ACCIDENT YEAR WEIGHTS	NUMBER OF INCURRED CLAIMS
06/30/15	\$ 1,058,121	\$ 898,329	0.849	20%	407
06/30/16	\$ 1,088,939	\$ 1,022,443	0.939	30%	444
06/30/17	\$ 1,138,134	\$ 1,051,255	0.924	50%	450
(6)	AVERAGE EXPERIENCE RATIO (SUM OF (3)*(4)).				0.914
(7)	EXPECTED EXPERIENCE RATIO (D).				1.006
(8)	CREDIBILITY (E).				0.95
(9)	CREDIBILITY WEIGHTED EXPERIENCE RATIO: ((6) * (8)) + ((7) * (1.000 - (8))).				0.919
(10)	INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ((9) - 1.000).				-8.1%
(11)	FILED CHANGE.				-8.1%

- (A) TRUCK, TRACTOR AND TRAILER EXPERIENCE IS FOR ALL THOSE VEHICLES WRITTEN IN ACCORDANCE WITH RULE 23 OF THE COMMERCIAL LINES MANUAL, DIVISION 1, AUTOMOBILE, ELIGIBLE FOR FIRST PARTY COVERAGE.
- (B) THE AGGREGATE LOSS COST AT CURRENT LEVEL IS CALCULATED BY EXTENDING EXPOSURES BY THE CURRENT LOSS COSTS FROM THE LAST REVISION.
- (C) LOSSES INCLUDE ALL LOSS ADJUSTMENT EXPENSES FOR PERSONAL INJURY PROTECTION. SEE FOLLOWING PAGE.
- (D) EXPECTED EXPERIENCE RATIO IS EQUAL TO THE TREND FACTOR SHOWN ON THE FOLLOWING PAGE, PROJECTED FOR M YEARS. THE PERIOD M IS EQUAL TO THE NUMBER OF YEARS FROM ONE YEAR BEYOND THE IMPLEMENTATION DATE OF THE LAST REVISION TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 02/01/19, WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING, SUBJECT TO A MAXIMUM OF THE N-VALUE CORRESPONDING TO THE LATEST YEAR SHOWN ON THE FOLLOWING PAGE, FOOTNOTE B. IN THIS REVISION, THE PERIOD M IS 1.00 YEAR(S).
- (E) CREDIBILITY IS BASED ON A 3 YEAR TOTAL OF CLAIMS FOR PIP SHOWN IN COLUMN (5). THE STANDARD FOR FULL CREDIBILITY IS 1,400 CLAIMS (SEE CREDIBILITY TABLES IN SECTION C).

INSURANCE SERVICES OFFICE, INC.

MARYLAND  
TRUCKS, TRACTORS AND TRAILERS  
AUTOMOBILE LIABILITY INSURANCE  
DETERMINATION OF PERSONAL INJURY PROTECTION LOSSES

	ACC. YEAR ENDING	PIP
(1) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES.	06/30/15 06/30/16 06/30/17	\$831,787 \$946,706 \$973,386
(2) INCURRED LOSSES AND ALL LOSS ADJUSTMENT EXPENSES (A).	06/30/15 06/30/16 06/30/17	\$898,329 \$1,022,443 \$1,051,255
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C)		+ 0.0%
(4) TRENDED LOSSES & ALL LOSS ADJUSTMENT EXPENSES (B)	06/30/15 06/30/16 06/30/17	\$898,329 \$1,022,443 \$1,051,255
(A) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES ARE ADJUSTED BY THE UNALLOCATED LOSS ADJUSTMENT FACTOR OF 1.080.		
(B) TRENDED LOSSES ARE EQUAL TO (2) * ((1.0 + (3))**N), WHERE N IS EQUAL TO THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF ACCIDENT TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 02/01/19, WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING.		

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
06/30/15	01/01/15	5.083
06/30/16	01/01/16	4.083
06/30/17	01/01/17	3.083

\*TO ARRIVE AT THE INCURRED LOSSES PRESENTED IN (1), ISO APPLIED A +3.5% CLAIM COST TREND FACTOR AND THEN CAPPED THE TRENDED LOSSES ON A PER CLAIM/PER OCCURRENCE BASIS USING THE MARYLAND BASIC LIMIT PIP THRESHOLD (\$2,500). THE RESULTING IMPLIED CLAIM COST TREND FACTOR FOR THE 2017 ACCIDENT YEAR IS +0.6%.

\*\*THE LOSS TREND SHOWN IN (3) REPRESENTS ONLY THE FREQUENCY TREND COMPONENT AND HAS BEEN APPLIED AFTER THE LOSSES WERE TRENDED AND CAPPED AT \$2,500.

## INSURANCE SERVICES OFFICE, INC.

## MARYLAND

AUTOMOBILE PHYSICAL DAMAGE INSURANCE - TRUCKS, TRACTORS AND TRAILERS (A)  
DETERMINATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGES

		(1)	(2)	(3)	(4)	(5)
	ACCIDENT	AGGREGATE		EXPERIENCE	ACCIDENT	NUMBER
COV-	YEAR	LOSS COST	INCURRED	RATIO	YEAR	OF
ERAGE	ENDING	AT CURRENT	LOSSES (C)	(2) / (1)	WEIGHTS	PAID
O.T.C.		LEVEL (B)				CLAIMS
	06/30/13	\$ 3,680,835	\$ 4,391,510	1.193	10%	838
	06/30/14	\$ 3,765,174	\$ 4,432,211	1.177	15%	975
	06/30/15	\$ 3,757,911	\$ 3,719,181	0.990	20%	821
	06/30/16	\$ 3,797,861	\$ 4,140,178	1.090	25%	790
	06/30/17	\$ 3,849,982	\$ 3,510,735	0.912	30%	708
COLL.	06/30/15	\$ 13,433,204	\$ 13,800,581	1.027	20%	1,586
	06/30/16	\$ 14,318,377	\$ 14,501,704	1.013	30%	1,727
	06/30/17	\$ 14,955,351	\$ 15,204,717	1.017	50%	1,755

O.T.C. COLLISION

(6) AVERAGE EXPERIENCE RATIO (SUM OF (3)\*(4)). 1.041 1.018

(7) EXPECTED EXPERIENCE RATIO (D). 1.060 1.037

(8) CREDIBILITY (E). 0.60 1.00

(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO:  
((6) \* (8)) + ((7) \* (1.000 - (8))). 1.049 1.018(10) INDICATED PERCENTAGE CHANGE IN ADVISORY  
LOSS COST LEVEL ((9) - 1.000). 4.9% 1.8%

(11) FILED CHANGE. 4.9% N.C.

(A) TRUCK, TRACTOR AND TRAILER EXPERIENCE IS FOR VEHICLES WRITTEN IN  
ACCORDANCE WITH RULE 23 OF THE COMMERCIAL LINES MANUAL, DIVISION 1,  
AUTOMOBILE.(B) THE AGGREGATE LOSS COST AT CURRENT LEVEL IS CALCULATED BY EXTENDING  
EXPOSURES BY THE CURRENT LOSS COSTS AND ADJUSTING TO A PROSPECTIVE  
OCN LEVEL BY THE APPLICATION OF OCN TREND FACTORS. (SEE SUBSEQUENT PAGE).(C) LOSSES INCLUDE ALL LOSS ADJUSTMENT EXPENSES FOR O.T.C. AND COLL.  
SEE FOLLOWING PAGE.(D) EXPECTED EXPERIENCE RATIO IS EQUAL TO THE TREND FACTOR DIVIDED BY THE OCN  
TREND FACTOR, PROJECTED FOR M YEARS. THE PERIOD M IS EQUAL TO THE NUMBER  
OF YEARS FROM ONE YEAR BEYOND THE IMPLEMENTATION DATE OF THE LAST REVISION  
TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 02/01/19, WHICH  
IS ASSUMED FOR THE PURPOSE OF TRENDING, SUBJECT TO A MAXIMUM OF THE N-VALUE  
CORRESPONDING TO THE LATEST YEAR SHOWN ON THE FOLLOWING PAGE, FOOTNOTE B.  
IN THIS REVISION, THE PERIOD IS 1.00 YEAR(S).(E) CREDIBILITY IS BASED ON A 5 YEAR TOTAL OF CLAIMS FOR O.T.C. AND A  
3 YEAR TOTAL OF CLAIMS FOR COLLISION SHOWN IN COLUMN (5).  
THE STANDARDS FOR FULL CREDIBILITY ARE 11,000 CLAIMS FOR O.T.C.  
AND 4,500 CLAIMS FOR COLLISION (SEE CREDIBILITY TABLES IN SECTION C).

## INSURANCE SERVICES OFFICE, INC.

MARYLAND  
TRUCKS, TRACTORS AND TRAILERS  
AUTOMOBILE PHYSICAL DAMAGE INSURANCE  
DETERMINATION OF PHYSICAL DAMAGE LOSSES

	ACC. YEAR ENDING	O.T.C.	COLLISION
(1) PAID LOSSES.	06/30/13	\$2,385,264	----
	06/30/14	\$2,576,478	----
	06/30/15	\$2,313,786	\$9,459,712
	06/30/16	\$2,752,737	\$10,479,276
	06/30/17	\$2,426,864	\$11,784,424
(2) DEVELOPED LOSSES AND	06/30/13	\$2,719,202	----
ALL LOSS ADJUSTMENT	06/30/14	\$2,937,184	----
EXPENSES (A).	06/30/15	\$2,637,715	\$10,773,286
	06/30/16	\$3,141,259	\$11,886,642
	06/30/17	\$2,849,624	\$13,084,955
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C)		+ 7.0%	+ 5.0%
(4) TRENDED LOSSES & ALL LOSS	06/30/13	\$4,391,510	----
ADJUSTMENT EXPENSES (B).	06/30/14	\$4,432,211	----
	06/30/15	\$3,719,181	\$13,800,581
	06/30/16	\$4,140,178	\$14,501,704
	06/30/17	\$3,510,735	\$15,204,717

## (A) PAID LOSSES ARE ADJUSTED BY THE FOLLOWING:

## 1-LOSS ADJUSTMENT EXPENSE FACTORS:

O.T.C.	COLL.
1.140	1.140

## 2-LOSS DEVELOPMENT FACTORS:

YEAR ENDING	O.T.C.	COLL.
06/30/13	1.000	----
06/30/14	1.000	----
06/30/15	1.000	0.999
06/30/16	1.001	0.995
06/30/17	1.030	0.974

(B) TRENDED LOSSES ARE EQUAL TO (2) \* ((1.0 + (3))\*\*N), WHERE N IS EQUAL TO THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF ACCIDENT TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATES OF 02/01/19 FOR OTC AND 02/01/19 FOR COLLISION, WHICH ARE ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD OTC	PROJECTION PERIOD COLL
06/30/13	01/01/13	7.083	-----
06/30/14	01/01/14	6.083	-----
06/30/15	01/01/15	5.083	5.083
06/30/16	01/01/16	4.083	4.083
06/30/17	01/01/17	3.083	3.083

INSURANCE SERVICES OFFICE, INC.

MARYLAND  
TRUCKS, TRACTORS AND TRAILERS  
AUTOMOBILE PHYSICAL DAMAGE INSURANCE  
DETERMINATION OF PHYSICAL DAMAGE TRENDED  
AGGREGATE LOSS COSTS

	ACC. YEAR ENDING	O.T.C.	COLLISION
(1) AGGREGATE LOSS COSTS	06/30/13	\$3,452,941	----
AT CURRENT LEVEL.	06/30/14	\$3,565,506	----
	06/30/15	\$3,589,217	\$12,577,908
	06/30/16	\$3,662,354	\$13,584,797
	06/30/17	\$3,745,118	\$14,366,333
(2) SELECTED ANNUAL OCN TREND		0.9%	1.3%
(SEE OCN EXHIBIT IN SECTION C).			
(3) TRENDED AGGREGATE	06/30/13	\$3,680,835	----
LOSS COSTS AT	06/30/14	\$3,765,174	----
CURRENT LEVEL (A).	06/30/15	\$3,757,911	\$13,433,204
	06/30/16	\$3,797,861	\$14,318,377
	06/30/17	\$3,849,982	\$14,955,351
(A) TRENDED AGGREGATE LOSS COSTS ARE EQUAL TO (1) * ((1.0 + (2))**N), WHERE N IS EQUAL TO THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF WRITING TO SIX MONTHS BEYOND THE ANTICIPATED IMPLEMENTATION DATES OF 02/01/19 FOR OTC AND 02/01/19 FOR COLLISION, WHICH ARE ASSUMED FOR THE PURPOSE OF TRENDING.			

YEAR ENDING	AVERAGE DATE OF WRITING	PROJECTION PERIOD OTC	PROJECTION PERIOD COLL
06/30/13	07/01/12	7.083	-----
06/30/14	07/01/13	6.083	-----
06/30/15	07/01/14	5.083	5.083
06/30/16	07/01/15	4.083	4.083
06/30/17	07/01/16	3.083	3.083

INSURANCE SERVICES OFFICE, INC.

MARYLAND

AUTOMOBILE LIABILITY INSURANCE - PRIVATE PASSENGER TYPES (A)  
DETERMINATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGES  
SINGLE LIMIT LIABILITY COVERAGE

	(1)	(2)	(3)	(4)	(5)
ACCIDENT	AGGREGATE		EXPERIENCE	ACCIDENT	NUMBER
YEAR	LOSS COST	\$ 100,000	RATIO	YEAR	OF
ENDING	AT CURRENT	INCURRED	(2) / (1)	WEIGHTS	INCURRED
	LEVEL (B)	LOSSES (C)			CLAIMS
06/30/13	\$ 9,127,127	\$ 9,448,071	1.035	10%	1,285
06/30/14	\$ 8,887,562	\$ 8,376,777	0.943	15%	1,203
06/30/15	\$ 8,754,523	\$ 9,582,851	1.095	20%	1,295
06/30/16	\$ 8,806,234	\$ 10,585,141	1.202	25%	1,287
06/30/17	\$ 8,796,459	\$ 9,688,358	1.101	30%	1,285

(6) AVERAGE EXPERIENCE RATIO (SUM OF (3)\*(4)). 1.095

(7) EXPECTED EXPERIENCE RATIO (D). 1.038

(8) CREDIBILITY (E). 0.70

(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO:  
((6) \* (8)) + ((7) \* (1.000 - (8))). 1.078

(10) INDICATED PERCENTAGE CHANGE IN ADVISORY  
LOSS COST LEVEL ((9) - 1.000). 7.8%

(11) FILED CHANGE. 7.8%

(A) PRIVATE PASSENGER TYPE EXPERIENCE IS FOR VEHICLES WRITTEN IN  
ACCORDANCE WITH RULE 31 OF THE COMMERCIAL LINES MANUAL, DIVISION 1,  
AUTOMOBILE.

(B) THE AGGREGATE LOSS COST AT CURRENT LEVEL IS CALCULATED BY EXTENDING  
EXPOSURES BY THE CURRENT LOSS COSTS FROM THE LAST REVISION.

(C) LOSSES INCLUDE ALL LOSS ADJUSTMENT EXPENSES FOR BODILY INJURY  
AND PROPERTY DAMAGE LIABILITY. SEE FOLLOWING PAGE.

(D) EXPECTED EXPERIENCE RATIO IS EQUAL TO THE COMBINED TREND FACTOR SHOWN ON  
THE FOLLOWING PAGE, PROJECTED FOR M YEARS. THE PERIOD M IS EQUAL TO THE  
NUMBER OF YEARS FROM ONE YEAR BEYOND THE IMPLEMENTATION DATE OF THE LAST  
REVISION TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF  
02/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING, SUBJECT TO A MAXI-  
MUM OF THE N-VALUE CORRESPONDING TO THE LATEST YEAR SHOWN ON THE FOLLOWING  
PAGE, FOOTNOTE B. IN THIS REVISION, THE PERIOD M IS 1.00 YEAR(S).

(E) CREDIBILITY IS BASED ON A 5 YEAR TOTAL OF CLAIMS FOR B.I. AND P.D.  
SHOWN IN COLUMN (5). THE STANDARD FOR FULL CREDIBILITY IS 11,500  
CLAIMS (SEE CREDIBILITY TABLES IN SECTION C).

## INSURANCE SERVICES OFFICE, INC.

MARYLAND  
PRIVATE PASSENGER TYPES  
AUTOMOBILE LIABILITY INSURANCE  
DETERMINATION OF SINGLE LIMIT LOSSES

	ACC. YEAR ENDING	BODILY INJURY	PROPERTY DAMAGE	COMBINED
(1) INCURRED LOSSES AND	06/30/13	\$3,722,985	\$2,865,866	
ALLOCATED LOSS	06/30/14	\$3,479,734	\$2,563,682	
ADJUSTMENT EXPENSES.	06/30/15	\$3,988,534	\$3,006,346	
	06/30/16	\$4,262,750	\$3,413,095	
	06/30/17	\$3,700,793	\$3,201,581	
(2) DEVELOPED LOSSES AND	06/30/13	\$4,040,928	\$3,173,116	
ALL LOSS ADJUSTMENT	06/30/14	\$3,825,759	\$2,841,367	
EXPENSES (A).	06/30/15	\$4,587,613	\$3,341,944	
	06/30/16	\$5,266,713	\$3,828,041	
	06/30/17	\$4,916,133	\$3,718,173	
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C).		+ 2.4%	+ 5.6%	+ 3.8%
(4) TRENDED LOSSES AND	06/30/13	\$4,780,418	\$4,667,653	\$9,448,071
ALL LOSS ADJUSTMENT	06/30/14	\$4,418,753	\$3,958,024	\$8,376,777
EXPENSES (B).	06/30/15	\$5,174,828	\$4,408,023	\$9,582,851
	06/30/16	\$5,803,917	\$4,781,224	\$10,585,141
	06/30/17	\$5,289,760	\$4,398,598	\$9,688,358

- (A) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES ARE ADJUSTED  
BY THE FOLLOWING FACTORS:
- 1 - UNALLOCATED LOSS ADJUSTMENT FACTORS: B.I. 1.080 P.D. 1.105
- 2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	B.I.	P.D.
06/30/13	1.005	1.002
06/30/14	1.018	1.003
06/30/15	1.065	1.006
06/30/16	1.144	1.015
06/30/17	1.230	1.051

- (B) TRENDED LOSSES ARE EQUAL TO (2) \* ((1.0 + (3))\*\*N), WHERE N IS EQUAL TO  
THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF ACCIDENT TO ONE  
YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 02/01/19, WHICH IS  
ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
06/30/13	01/01/13	7.083
06/30/14	01/01/14	6.083
06/30/15	01/01/15	5.083
06/30/16	01/01/16	4.083
06/30/17	01/01/17	3.083

INSURANCE SERVICES OFFICE, INC.

MARYLAND

AUTOMOBILE LIABILITY INSURANCE - PRIVATE PASSENGER TYPES (A)  
DETERMINATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGES  
PERSONAL INJURY PROTECTION

ACCIDENT YEAR ENDING	(1) AGGREGATE LOSS COST AT CURRENT LEVEL (B)	(2) INCURRED LOSSES (C)	(3) EXPERIENCE RATIO (2) / (1)	(4) ACCIDENT YEAR WEIGHTS	(5) NUMBER OF INCURRED CLAIMS
06/30/15	\$ 398,426	\$ 436,974	1.097	20%	202
06/30/16	\$ 394,023	\$ 396,801	1.007	30%	179
06/30/17	\$ 396,346	\$ 431,341	1.088	50%	186
(6) AVERAGE EXPERIENCE RATIO (SUM OF (3)*(4)).					1.065
(7) EXPECTED EXPERIENCE RATIO (D).					1.008
(8) CREDIBILITY (E).					0.60
(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO: ((6) * (8)) + ((7) * (1.000 - (8))).					1.042
(10) INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ((9) - 1.000).					4.2%
(11) FILED CHANGE.					4.2%

- (A) PRIVATE PASSENGER EXPERIENCE INCLUDES ALL CLASSES WRITTEN IN ACCORDANCE WITH RULE 31 OF THE COMMERCIAL LINES MANUAL, DIVISION 1, AUTOMOBILE, ELIGIBLE FOR FIRST PARTY COVERAGE.
- (B) THE AGGREGATE LOSS COST AT CURRENT LEVEL IS CALCULATED BY EXTENDING EXPOSURES BY THE CURRENT LOSS COSTS FROM THE LAST REVISION.
- (C) LOSSES INCLUDE ALL LOSS ADJUSTMENT EXPENSES FOR PERSONAL INJURY PROTECTION. SEE FOLLOWING PAGE.
- (D) EXPECTED EXPERIENCE RATIO IS EQUAL TO THE TREND FACTOR SHOWN ON THE FOLLOWING PAGE, PROJECTED FOR M YEARS. THE PERIOD M IS EQUAL TO THE NUMBER OF YEARS FROM ONE YEAR BEYOND THE IMPLEMENTATION DATE OF THE LAST REVISION TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 02/01/19, WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING, SUBJECT TO A MAXIMUM OF THE N-VALUE CORRESPONDING TO THE LATEST YEAR SHOWN ON THE FOLLOWING PAGE, FOOTNOTE B. IN THIS REVISION, THE PERIOD M IS 1.00 YEAR(S).
- (E) CREDIBILITY IS BASED ON A 3 YEAR TOTAL OF CLAIMS FOR PIP SHOWN IN COLUMN (5). THE STANDARD FOR FULL CREDIBILITY IS 1,400 CLAIMS (SEE CREDIBILITY TABLES IN SECTION C).

INSURANCE SERVICES OFFICE, INC.

MARYLAND  
PRIVATE PASSENGER TYPES  
AUTOMOBILE LIABILITY INSURANCE  
DETERMINATION OF PERSONAL INJURY PROTECTION LOSSES

	ACC. YEAR ENDING	PIP
(1) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES.	06/30/15 06/30/16 06/30/17	\$404,605 \$367,410 \$399,389
(2) INCURRED LOSSES AND ALL LOSS ADJUSTMENT EXPENSES (A).	06/30/15 06/30/16 06/30/17	\$436,974 \$396,801 \$431,341
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C)		+ 0.0%
(4) TRENDED LOSSES & ALL LOSS ADJUSTMENT EXPENSES (B)	06/30/15 06/30/16 06/30/17	\$436,974 \$396,801 \$431,341
(A) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES ARE ADJUSTED BY THE UNALLOCATED LOSS ADJUSTMENT FACTOR OF 1.080.		
(B) TRENDED LOSSES ARE EQUAL TO (2) * ((1.0 + (3))**N), WHERE N IS EQUAL TO THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF ACCIDENT TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 02/01/19, WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING.		

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
06/30/15	01/01/15	5.083
06/30/16	01/01/16	4.083
06/30/17	01/01/17	3.083

\*TO ARRIVE AT THE INCURRED LOSSES PRESENTED IN (1), ISO APPLIED A +3.6% CLAIM COST TREND FACTOR AND THEN CAPPED THE TRENDED LOSSES ON A PER CLAIM/PER OCCURRENCE BASIS USING THE MARYLAND BASIC LIMIT PIP THRESHOLD (\$2,500). THE RESULTING IMPLIED CLAIM COST TREND FACTOR FOR THE 2017 ACCIDENT YEAR IS +0.8%.

\*\*THE LOSS TREND SHOWN IN (3) REPRESENTS ONLY THE FREQUENCY TREND COMPONENT AND HAS BEEN APPLIED AFTER THE LOSSES WERE TRENDED AND CAPPED AT \$2,500.

## INSURANCE SERVICES OFFICE, INC.

## MARYLAND

AUTOMOBILE PHYSICAL DAMAGE INSURANCE - PRIVATE PASSENGER TYPES (A)  
DETERMINATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGES

COV- ERAGE	ACCIDENT YEAR ENDING	(1) AGGREGATE LOSS COST AT CURRENT LEVEL (B)	(2) INCURRED LOSSES (C)	(3) EXPERIENCE RATIO (2) / (1)	(4) ACCIDENT YEAR WEIGHTS	(5) NUMBER OF PAID CLAIMS
O.T.C.	06/30/13	\$ 1,743,266	\$ 1,888,765	1.083	10%	704
	06/30/14	\$ 1,733,736	\$ 1,927,562	1.112	15%	715
	06/30/15	\$ 1,688,600	\$ 1,932,953	1.145	20%	608
	06/30/16	\$ 1,636,662	\$ 1,827,297	1.116	25%	602
	06/30/17	\$ 1,621,567	\$ 1,596,562	0.985	30%	531
COLL.	06/30/15	\$ 5,367,455	\$ 5,943,229	1.107	20%	893
	06/30/16	\$ 5,259,236	\$ 5,305,037	1.009	30%	893
	06/30/17	\$ 5,214,163	\$ 5,105,540	0.979	50%	885

O.T.C. COLLISION

(6) AVERAGE EXPERIENCE RATIO (SUM OF (3)\*(4)). 1.079 1.014

(7) EXPECTED EXPERIENCE RATIO (D). 1.050 1.044

(8) CREDIBILITY (E). 0.60 0.85

(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO:  
((6) \* (8)) + ((7) \* (1.000 - (8))). 1.067 1.019(10) INDICATED PERCENTAGE CHANGE IN ADVISORY  
LOSS COST LEVEL ((9) - 1.000). 6.7% 1.9%

(11) FILED CHANGE. 6.7% N.C.

(A) PRIVATE PASSENGER TYPE EXPERIENCE IS FOR VEHICLES WRITTEN IN  
ACCORDANCE WITH RULE 31 OF THE COMMERCIAL LINES MANUAL, DIVISION 1,  
AUTOMOBILE.(B) THE AGGREGATE LOSS COST AT CURRENT LEVEL IS CALCULATED BY EXTENDING  
EXPOSURES BY THE CURRENT LOSS COSTS AND ADJUSTING TO A PROSPECTIVE  
OCN LEVEL BY THE APPLICATION OF OCN TREND FACTORS. (SEE SUBSEQUENT PAGE).(C) LOSSES INCLUDE ALL LOSS ADJUSTMENT EXPENSES FOR O.T.C. AND COLL.  
SEE FOLLOWING PAGE.(D) EXPECTED EXPERIENCE RATIO IS EQUAL TO THE LOSS TREND FACTOR DIVIDED BY THE  
OCN TREND FACTOR, PROJECTED FOR M YEARS. THE PERIOD M IS EQUAL TO THE  
NUMBER OF YEARS FROM ONE YEAR BEYOND THE IMPLEMENTATION DATE OF THE LAST  
REVISION TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF  
02/01/19, WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING, SUBJECT TO A MAXI-  
MUM OF THE N-VALUE CORRESPONDING TO THE LATEST YEAR SHOWN ON THE FOLLOWING  
PAGE, FOOTNOTE B. IN THIS REVISION, THE PERIOD IS 1.00 YEAR(S).(E) CREDIBILITY IS BASED ON A 5 YEAR TOTAL OF CLAIMS FOR O.T.C. AND A  
3 YEAR TOTAL OF CLAIMS FOR COLLISION SHOWN IN COLUMN (5).  
THE STANDARDS FOR FULL CREDIBILITY ARE 8,500 CLAIMS FOR O.T.C.  
AND 3,500 CLAIMS FOR COLLISION (SEE CREDIBILITY TABLES IN SECTION C).

## INSURANCE SERVICES OFFICE, INC.

MARYLAND  
PRIVATE PASSENGER TYPES  
AUTOMOBILE PHYSICAL DAMAGE INSURANCE  
DETERMINATION OF PHYSICAL DAMAGE LOSSES

	ACC. YEAR ENDING	O.T.C.	COLLISION
(1) PAID LOSSES.	06/30/13	\$1,096,500	----
	06/30/14	\$1,186,557	----
	06/30/15	\$1,260,649	\$4,073,830
	06/30/16	\$1,261,853	\$3,837,402
	06/30/17	\$1,151,578	\$4,057,020
(2) DEVELOPED LOSSES AND	06/30/13	\$1,250,010	----
ALL LOSS ADJUSTMENT	06/30/14	\$1,352,676	----
EXPENSES (A).	06/30/15	\$1,437,139	\$4,639,521
	06/30/16	\$1,439,951	\$4,348,391
	06/30/17	\$1,333,803	\$4,393,753
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C)		+ 6.0%	+ 5.0%
(4) TRENDED LOSSES & ALL LOSS	06/30/13	\$1,888,765	----
ADJUSTMENT EXPENSES (B).	06/30/14	\$1,927,562	----
	06/30/15	\$1,932,953	\$5,943,229
	06/30/16	\$1,827,297	\$5,305,037
	06/30/17	\$1,596,562	\$5,105,540

## (A) PAID LOSSES ARE ADJUSTED BY THE FOLLOWING:

## 1-LOSS ADJUSTMENT EXPENSE FACTORS:

O.T.C.	COLL.
1.140	1.140

## 2-LOSS DEVELOPMENT FACTORS:

YEAR ENDING	O.T.C.	COLL.
06/30/13	1.000	----
06/30/14	1.000	----
06/30/15	1.000	0.999
06/30/16	1.001	0.994
06/30/17	1.016	0.950

(B) TRENDED LOSSES ARE EQUAL TO (2) \* ((1.0 + (3))\*\*N), WHERE N IS EQUAL TO THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF ACCIDENT TO ONE YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATES OF 02/01/19 FOR OTC AND 02/01/19 FOR COLLISION, WHICH ARE ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD OTC	PROJECTION PERIOD COLL
06/30/13	01/01/13	7.083	-----
06/30/14	01/01/14	6.083	-----
06/30/15	01/01/15	5.083	5.083
06/30/16	01/01/16	4.083	4.083
06/30/17	01/01/17	3.083	3.083

## INSURANCE SERVICES OFFICE, INC.

## MARYLAND

## PRIVATE PASSENGER TYPES

## AUTOMOBILE PHYSICAL DAMAGE INSURANCE

## DETERMINATION OF PHYSICAL DAMAGE TRENDED

## AGGREGATE LOSS COSTS

	ACC. YEAR ENDING	O.T.C.	COLLISION
(1) AGGREGATE LOSS COSTS	06/30/13	\$1,624,665	----
AT CURRENT LEVEL.	06/30/14	\$1,632,521	----
	06/30/15	\$1,605,132	\$5,206,066
	06/30/16	\$1,572,202	\$5,130,962
	06/30/17	\$1,572,811	\$5,116,940
(2) SELECTED ANNUAL OCN TREND		1.0%	0.6%
(SEE OCN EXHIBIT IN SECTION C) .			

(3) TRENDED AGGREGATE	06/30/13	\$1,743,266	----
LOSS COSTS AT	06/30/14	\$1,733,736	----
CURRENT LEVEL (A) .	06/30/15	\$1,688,600	\$5,367,455
	06/30/16	\$1,636,662	\$5,259,236
	06/30/17	\$1,621,567	\$5,214,163

(A) TRENDED AGGREGATE LOSS COSTS ARE EQUAL TO (1) \* ((1.0 + (2))\*\*N),  
 WHERE N IS EQUAL TO THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF  
 WRITING TO SIX MONTHS BEYOND THE ANTICIPATED IMPLEMENTATION DATES OF  
 02/01/19 FOR OTC AND 02/01/19 FOR COLLISION, WHICH ARE ASSUMED FOR THE  
 PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF WRITING	PROJECTION PERIOD OTC	PROJECTION PERIOD COLL
06/30/13	07/01/12	7.083	-----
06/30/14	07/01/13	6.083	-----
06/30/15	07/01/14	5.083	5.083
06/30/16	07/01/15	4.083	4.083
06/30/17	07/01/16	3.083	3.083

## OVERVIEW OF ISO ACTUARIAL PROCEDURES – COMMERCIAL AUTOMOBILE

### STEP 2 – DETERMINATION OF TERRITORY RELATIVITIES

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OBJECTIVE	The objective of this procedure is to distribute the statewide loss cost indication by territory. In other words, what percentage changes by territory should be made in order to equitably achieve an adequate statewide prospective loss cost level?
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TRUCKS, TRACTORS & TRAILERS AND PRIVATE PASSENGER TYPES LIABILITY AND PHYSICAL DAMAGE	For Trucks, Tractors & Trailers and Private Passenger Types, this procedure compares the individual territory experience ratios to the statewide average experience ratio. The territory experience ratio is calculated for the latest 5 years and a statewide weighted-average experience ratio for the same period is calculated using the aggregate loss costs (product of earned car years (col 1) and underlying loss cost (col 2)) as weights. The territory experience ratio is then credibility weighted with the statewide average experience ratio to produce a formula experience ratio. The territory formula experience ratio is then compared to the statewide weighted average formula experience ratio to determine the territory index to state. The territory index is then multiplied by the filed loss cost level change in order to produce the indicated change to the individual territories. This change is then applied to the current territory base loss cost.
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## INSURANCE SERVICES OFFICE

MARYLAND  
COMMERCIAL AUTOMOBILE INSURANCE  
SINGLE LIMIT LIABILITY

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
TRUCKS, TRACTORS, AND TRAILERS (TTT)+

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T	EARNED	\$100000	EXPER								ADV
E	CAR YRS	UND	LOSS COST				INDEX	BASE CLASS			LOSS
R	YR ENDED	LOSS	5YRS END	EXPER		FORM	(6) TO	LOSS COST			COST
R	06/30/2017	COST	06/30/2017	RATIO	CRED	RATIO	STATE	PRES	IND*	REV	CHG**
101	4675	701.89	827.23	1.179	0.40	1.099	1.053	608	680	680	11.8%
102	10754	700.34	696.33	0.994	0.55	1.017	.974	632	653	653	3.3%
108	1554	725.63	847.79	1.168	0.25	1.076	1.031	635	695	695	9.4%
109	3989	785.60	742.39	0.945	0.35	1.010	.967	706	725	725	2.7%
110	2914	587.04	698.27	1.189	0.25	1.081	1.035	533	586	586	9.9%
111	2559	751.30	701.47	0.934	0.30	1.012	.969	680	700	700	2.9%
112	3970	780.99	777.78	0.996	0.35	1.028	.985	677	708	708	4.6%
113	18073	247.74	270.85	1.093	0.45	1.067	1.022	272	295	295	8.5%
114	58352	472.72	493.94	1.045	1.00	1.045	1.001	459	488	488	6.3%
SW	106840	504.20	526.67	1.045		1.044					

+ REFER TO EXPLANATORY NOTE ON PAGE B-25

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 6.2 PERCENT

\*\* PERCENTAGE CHANGE IN LOSS COST IS (COL 10/COL 8)

## INSURANCE SERVICES OFFICE

MARYLAND  
COMMERCIAL AUTOMOBILE INSURANCE  
PERSONAL INJURY PROTECTION

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
TRUCKS, TRACTORS, AND TRAILERS (TTT)+

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T	EARNED	P.I.P.	EXPER								ADV
E	CAR YRS	UND	LOSS COST				INDEX	BASE	CLASS		LOSS
R	YR ENDED	LOSS	5YRS END	EXPER		FORM	(6) TO	LOSS	COST		COST
R	06/30/2017	COST	06/30/2017	RATIO	CRED	RATIO	STATE	PRES	IND*	REV	CHG**
101	5103	22.04	22.40	1.016	0.35	.928	1.070	29	29	29	0.0%
102	10033	18.03	17.71	0.982	0.45	.926	1.068	20	20	20	0.0%
108	1525	15.22	19.33	1.270	0.20	.958	1.105	16	16	16	0.0%
109	3700	15.73	11.02	0.701	0.20	.844	.973	17	15	15	-11.8%
110	2738	13.86	12.29	0.887	0.20	.881	1.016	16	15	15	-6.2%
111	2393	22.74	19.38	0.852	0.25	.873	1.007	24	22	22	-8.3%
112	3743	17.88	18.29	1.023	0.30	.923	1.065	20	20	20	0.0%
113	17451	4.94	4.37	0.885	0.35	.882	1.017	6	6	6	0.0%
114	54443	9.51	7.61	0.800	0.75	.820	.946	11	10	10	-9.1%
SW	101129	11.25	9.90	0.880		.867					

+ REFER TO EXPLANATORY NOTE ON PAGE B-25

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF -8.1 PERCENT

\*\* PERCENTAGE CHANGE IN LOSS COST IS (COL 10/COL 8)

## INSURANCE SERVICES OFFICE

MARYLAND  
COMMERCIAL AUTOMOBILE INSURANCE  
SINGLE LIMIT LIABILITY

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
PRIVATE PASSENGER TYPES+

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T	EARNED	\$100000	EXPER								ADV
E	CAR YRS	UND	LOSS COST				INDEX	BASE CLASS			LOSS
R	YR ENDED	LOSS	5YRS END	EXPER		FORM	(6) TO	LOSS COST			COST
R	06/30/2017	COST	06/30/2017	RATIO	CRED	RATIO	STATE	PRES	IND*	REV	CHG**
101	1358	518.89	528.79	1.019	0.20	1.066	.996	524	563	563	7.4%
102	3247	430.82	531.65	1.234	0.30	1.125	1.051	429	486	486	13.3%
108	807	470.64	458.28	0.974	0.15	1.062	.993	473	506	506	7.0%
109	887	428.00	533.40	1.246	0.15	1.103	1.031	427	474	474	11.0%
110	729	424.64	458.57	1.080	0.10	1.078	1.007	424	460	460	8.5%
111	1297	449.96	591.97	1.316	0.20	1.126	1.052	447	507	507	13.4%
112	667	491.14	551.38	1.123	0.10	1.083	1.012	491	536	536	9.2%
113	2345	236.93	254.90	1.076	0.15	1.078	1.007	233	253	253	8.6%
114	11609	358.10	355.46	0.993	0.45	1.040	.972	356	373	373	4.8%
SW	22946	383.35	413.20	1.078		1.070					

+ REFER TO EXPLANATORY NOTE ON PAGE B-25

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 7.8 PERCENT

\*\* PERCENTAGE CHANGE IN LOSS COST IS (COL 10/COL 8)

## INSURANCE SERVICES OFFICE

MARYLAND  
COMMERCIAL AUTOMOBILE INSURANCE  
PERSONAL INJURY PROTECTION

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
PRIVATE PASSENGER TYPES+

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T	EARNED	P.I.P.	EXPER								ADV
E	CAR YRS	UND	LOSS COST				INDEX	BASE	CLASS		LOSS
R	YR ENDED	LOSS	5YRS END	EXPER		FORM	(6) TO	LOSS	COST		COST
R	06/30/2017	COST	06/30/2017	RATIO	CRED	RATIO	STATE	PRES	IND*	REV	CHG**
101	1182	25.91	14.91	0.575	0.15	.941	.934	36	35	35	-2.8%
102	2869	28.14	30.94	1.100	0.35	1.039	1.031	39	42	42	7.7%
108	703	21.52	23.41	1.088	0.15	1.018	1.010	29	31	31	6.9%
109	760	25.93	23.94	0.923	0.15	.994	.986	35	36	36	2.9%
110	674	23.46	22.39	0.954	0.15	.998	.990	33	34	34	3.0%
111	1012	17.94	18.78	1.047	0.15	1.012	1.004	24	25	25	4.2%
112	556	31.12	34.01	1.093	0.15	1.019	1.011	41	43	43	4.9%
113	2080	11.92	15.24	1.279	0.20	1.061	1.053	16	18	18	12.5%
114	10217	17.04	16.94	0.994	0.55	.999	.991	23	24	24	4.3%
SW	20053	19.76	19.88	1.006		1.008					

+ REFER TO EXPLANATORY NOTE ON PAGE B-25

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 4.2 PERCENT

\*\* PERCENTAGE CHANGE IN LOSS COST IS (COL 10/COL 8)

EXPLANATORY MEMORANDUM FOR TRUCKS, TRACTORS & TRAILERS AND PRIVATE  
PASSENGER TYPES LIABILITY AND PIP TERRITORY DEVELOPMENT

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COLUMN (1) EARNED CAR YEARS	Number of car-years, or exposures, earned in the latest year. These exposures are used to calculate the weighted averages through the analysis. (For calculating the weighted average of the Experience Ratio in Col (4) and the Formula Experience Ratio in Col (6) the product of [Col(1) x Col(2)] are used as weights).
COLUMN (2) \$100,000 LIABILITY OR BASIC PIP LOSS COST	Average loss cost at current level (earned aggregate loss cost at current level divided by exposures) is based on the latest accident year experience available and reflects the \$100,000 liability or basic PIP loss cost at present ISO manual level.
COLUMN (3) 5 YEAR ENDED EXPERIENCE LOSS COST	Loss cost based on the latest 5 years of experience (for purposes of stability). The loss cost is Bodily Injury and Property Damage combined or basic PIP and is trended and developed to an ultimate settlement basis including all loss adjustment expenses.
COLUMN (4) EXPERIENCE RATIO LOSS COST	For each coverage, an experience ratio by territory is derived by dividing the 5 year experience loss cost by the average \$100,000 liability or basic PIP loss cost at present ISO manual level. [Col. (3) / Col. (2)]
COLUMN (5) CREDIBILITY	The experience ratio thus calculated is assigned a credibility value on the basis of the number of claims underlying the 5 year pure premium (See Section C for credibility standards). The complement of the credibility is assigned to the statewide experience ratio which appears in Col. (4).
COLUMN (6) FORMULA EXPERIENCE RATIO	<p>The formula experience ratio is a credibility weighted average of the territory group experience ratio and statewide experience ratio. The formula is as follows:</p> $\frac{[\text{Terr. Group Col. (4)} \times \text{Terr. Group Col. (5)}] + [\text{SW Total Col. (4)} \times (1.0 - \text{Terr. Group Col. (5)})]}{[\text{Terr. Group Col. (4)} + \text{SW Total Col. (4)}]}$

COLUMN (7)  
INDEX TO  
STATE

Territory indices to state are calculated by dividing the territory formula experience ratio by the statewide average formula experience ratio

[Terr. Col (6) / SW Total Col. (6)]

(Statewide Total Col. (6) is the weighted average formula experience ratio using the individual products of [ Col. (1) x Col. (2) ] as weights.)

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COLUMN (8)  
BASE CLASS  
LOSS COST

Present ISO \$100,000 liability base class loss cost or basic PIP loss cost.

---

COLUMN (9)  
INDICATED BASE  
LOSS COST

Indicated base class loss cost for a particular territory. It is calculated by applying the product of the statewide loss cost level change and the territory index [Col. (7)] to the present ISO loss cost.

---

COLUMN (10)  
REVISED BASE  
LOSS COST

Revised \$100,000 liability base loss cost or basic PIP loss cost.

---

COLUMN (11)  
ADVISORY  
LOSS COST  
CHANGE

Percentage change from the present base loss cost to the revised base loss cost.

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INSURANCE SERVICES OFFICE

MARYLAND  
COMMERCIAL AUTOMOBILE INSURANCE  
PHYSICAL DAMAGE - COMPREHENSIVE

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
TRUCKS, TRACTORS AND TRAILERS+

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T E R R	EARNED CAR YRS YR ENDED 06/30/2017	UND LOSS COST	EXPER LOSS COST 5YRS END 06/30/2017	EXPER RATIO		FORM CRED RATIO	INDEX (6) TO STATE	BASE CLASS LOSS COST PRES	IND*	REV	ADV LOSS COST CHG**
101	2935	76.59	73.25	0.956	0.10	1.067	.988	110	114	114	3.6%
102	6841	65.81	73.63	1.119	0.20	1.087	1.006	95	100	100	5.3%
108	1020	76.92	178.25	2.317	0.05	1.141	1.056	100	111	111	11.0%
109	2548	81.43	62.07	0.762	0.10	1.047	.969	124	126	126	1.6%
110	1954	109.95	96.75	0.880	0.10	1.059	.981	146	150	150	2.7%
111	1655	56.01	44.09	0.787	0.05	1.064	.985	81	84	84	3.7%
112	2330	75.27	79.68	1.059	0.10	1.077	.997	107	112	112	4.7%
113	7553	62.30	74.21	1.191	0.20	1.101	1.019	101	108	108	6.9%
114	32269	59.98	64.69	1.079	0.40	1.079	.999	88	92	92	4.5%
SW	59105	65.13	70.28	1.079		1.080					

+ REFER TO EXPLANATORY NOTE ON PAGE B-31

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 4.9 PERCENT

\*\* PERCENTAGE CHANGE IN LOSS COST IS (COL 10/COL 8)

INSURANCE SERVICES OFFICE

MARYLAND  
COMMERCIAL AUTOMOBILE INSURANCE  
PHYSICAL DAMAGE - COLLISION

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
TRUCKS, TRACTORS AND TRAILERS+

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
T	EARNED		EXPER						
E	CAR YRS	UND	LOSS COST				INDEX	BASE	CLASS
R	YR ENDED	LOSS	5YRS END	EXPER		FORM	(6) TO	LOSS	COST
R	06/30/2017	COST	06/30/2017	RATIO	CRED	RATIO	STATE	PRES	IND*
101	3360	289.35	267.88	0.926	0.30	.956	.994	306	310
102	7397	254.10	255.25	1.005	0.45	.985	1.024	288	300
108	1213	246.08	279.80	1.137	0.20	1.003	1.043	269	286
109	2800	217.70	206.29	0.948	0.25	.964	1.002	255	260
110	2042	280.69	305.61	1.089	0.20	.993	1.032	259	272
111	2082	244.87	242.33	0.990	0.25	.974	1.012	292	301
112	2844	258.29	262.81	1.017	0.30	.983	1.022	283	294
113	7939	168.69	162.04	0.961	0.35	.966	1.004	232	237
114	35739	224.93	213.38	0.949	0.90	.951	.989	256	258
SW	65416	228.62	221.56	0.969		.962			

+ REFER TO EXPLANATORY NOTE ON PAGE B-31

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 1.8 PERCENT. DUE TO THE MODEST INDICATION, WE WILL NOT BE FILING THESE INDICATED LOSS COSTS. THE LOSS COSTS IN COLUMN (8) REMAIN IN EFFECT.

INSURANCE SERVICES OFFICE

MARYLAND  
COMMERCIAL AUTOMOBILE INSURANCE  
PHYSICAL DAMAGE - COMPREHENSIVE

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
PRIVATE PASSENGER TYPES+

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T	EARNED		EXPER								ADV
E	CAR YRS	UND	LOSS COST				INDEX	BASE CLASS			LOSS
R	YR ENDED	LOSS	5YRS END	EXPER		FORM	(6) TO	LOSS COST			COST
R	06/30/2017	COST	06/30/2017	RATIO	CRED	RATIO	STATE	PRES	IND*	REV	CHG**
101	1113	124.10	100.54	0.810	0.10	1.084	.970	105	109	109	3.8%
102	2503	79.53	99.07	1.246	0.20	1.140	1.021	68	74	74	8.8%
108	675	87.83	82.29	0.937	0.10	1.096	.981	70	73	73	4.3%
109	732	91.80	129.56	1.411	0.10	1.144	1.024	82	90	90	9.8%
110	544	103.46	103.12	0.997	0.10	1.102	.987	83	87	87	4.8%
111	1065	77.14	92.03	1.193	0.10	1.122	1.004	63	67	67	6.3%
112	517	102.69	94.67	0.922	0.05	1.104	.988	96	101	101	5.2%
113	1536	101.96	122.63	1.203	0.15	1.127	1.009	89	96	96	7.9%
114	8880	91.19	101.95	1.118	0.40	1.116	.999	77	82	82	6.5%
SW	17565	92.31	102.87	1.114		1.117					

+ REFER TO EXPLANATORY NOTE ON PAGE B-31

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 6.7 PERCENT

\*\* PERCENTAGE CHANGE IN LOSS COST IS (COL 10/COL 8)

## INSURANCE SERVICES OFFICE

MARYLAND  
COMMERCIAL AUTOMOBILE INSURANCE  
PHYSICAL DAMAGE - COLLISION

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
PRIVATE PASSENGER TYPES+

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
T	EARNED		EXPER						
E	CAR YRS	UND	LOSS COST				INDEX	BASE	CLASS
R	YR ENDED	LOSS	5YRS END	EXPER		FORM	(6) TO	LOSS	COST
R	06/30/2017	COST	06/30/2017	RATIO	CRED	RATIO	STATE	PRES	IND*
101	1077	416.50	373.65	0.897	0.30	.982	.966	483	475
102	2361	329.26	365.47	1.110	0.45	1.059	1.041	382	405
108	638	391.31	447.12	1.143	0.25	1.049	1.031	427	449
109	663	371.94	338.16	0.909	0.20	.996	.979	445	444
110	526	318.80	311.59	0.977	0.15	1.012	.995	353	358
111	969	375.76	376.11	1.001	0.30	1.013	.996	419	425
112	483	306.21	288.49	0.942	0.15	1.007	.990	383	386
113	1481	216.54	244.06	1.127	0.25	1.045	1.028	263	276
114	8424	295.77	297.24	1.005	0.75	1.008	.991	342	345
SW	16622	313.69	319.32	1.018		1.017			

+ REFER TO EXPLANATORY NOTE ON PAGE B-31

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 1.9 PERCENT. DUE TO THE MODEST INDICATION, WE WILL NOT BE FILING THESE INDICATED LOSS COSTS. THE LOSS COSTS IN COLUMN (8) REMAIN IN EFFECT.

EXPLANATORY MEMORANDUM FOR TRUCKS, TRACTORS & TRAILERS AND  
PRIVATE PASSENGER TYPES  
PHYSICAL DAMAGE TERRITORY DEVELOPMENT

---

COLUMN (1) EARNED CAR YEARS	Number of car-years, or exposures, earned in the latest year. These exposures are used to calculate the weighted averages through the analysis. (For calculating the weighted average of the Experience Ratio in Col (4) and the Formula Experience Ratio in Col (6) the product of [Col(1) x Col(2)] are used as weights).
COLUMN (2) UNDERLYING LOSS COST	Average loss cost at current level (earned aggregate loss cost at current level divided by exposures) is based on the latest accident year experience available and reflects the present ISO manual loss cost trended to a prospective OCN level by the application of OCN factors.
COLUMN (3) 5 YEAR ENDED EXPERIENCE LOSS COST	Loss cost based on the latest 5 years of experience (for purposes of stability). The loss cost is trended and include all loss adjustment expenses.
COLUMN (4) EXPERIENCE RATIO LOSS COST	For each coverage, an experience ratio by territory is derived by dividing the 5 year experience loss cost by the average loss cost at present ISO manual level. [Col. (3) / Col. (2)]
COLUMN (5) CREDIBILITY	The experience ratio thus calculated is assigned a credibility value on the basis of the number of claims underlying the 5 year pure premium (See Section C for credibility standards). The complement of the credibility is assigned to the statewide experience ratio which appears in Col. (4).
COLUMN (6) FORMULA EXPERIENCE RATIO	<p>The formula experience ratio is a credibility weighted average of the territory group experience ratio and statewide experience ratio. The formula is as follows:</p> $\begin{aligned} &[\text{Terr. Group Col. (4)} \times \text{Terr. Group Col. (5)}] \\ &+ [\text{SW Total Col. (4)} \times (1.0 - \text{Terr. Group Col. (5)})] \end{aligned}$

---

COLUMN (7)  
INDEX TO  
STATE

Territory indices to state are calculated by dividing the territory formula experience ratio by the statewide average formula experience ratio

$$[\text{Terr. Col (6)} / \text{SW Total Col. (6)}]$$

(Statewide Total Col. (6) is the weighted average formula experience ratio using the individual products of [ Col. (1) x Col. (2) ] as weights.)

---

COLUMN (8)  
BASE CLASS  
LOSS COST

Present ISO base class loss cost.

---

COLUMN (9)  
INDICATED BASE  
LOSS COST

Indicated base class loss cost for a particular territory. It is calculated by applying the product of the statewide loss cost level change and the territory index [Col. (7)] to the present ISO loss cost.

---

COLUMN (10)  
REVISED BASE  
LOSS COST

Revised base loss cost.

---

COLUMN (11)  
ADVISORY  
LOSS COST  
CHANGE

Percentage change:  
 $[\text{Col. (10)} / \text{Col. (8)}]$

---

MARYLAND  
COMMERCIAL AUTOMOBILE

SECTION C - SUPPORTING MATERIAL

Loss Adjustment Expense .....	C2-C4
Loss Trend.....	C5-C30
Physical Damage OCN Trend .....	C31-C33
Loss Development for Liability.....	C34-C45
Loss Development for Physical Damage.....	C46-C54
Credibility Procedures and Tables.....	C55-C62
Claims for Credibility.....	C63-C64
Relativities for Developing Minor Class & Coverage Loss Costs .....	C65
Excess Wind and Water Procedure .....	C66-C71

## 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.
LIABILITY COVERAGES	For the liability coverages, allocated loss adjustment expenses are reported in detail to ISO under the Commercial Statistical Plan. Unallocated loss adjustment expenses must be loaded into the losses. A factor representing the ratio of the sum of the incurred indemnity losses plus all LAE to the sum of the incurred indemnity losses plus allocated LAE was selected based on multistate financial data from a Special Call Submission for available writers.
PHYSICAL DAMAGE COVERAGES	For the physical damage coverages, accident year paid indemnity losses are reported. All loss adjustment expenses must be loaded into the reported losses. A factor representing the ratio of incurred losses plus all LAE to incurred losses was selected based on multistate financial data from the Insurance Expense Exhibits for agency and direct writers.

COMMERCIAL AUTOMOBILE LIABILITY INSURANCE  
MULTISTATE LOSS ADJUSTMENT EXPENSE EXPERIENCE

Calendar Year

Development of Unallocated Loss Adjustment Expense Factor

Bodily Injury  
(000's)

<u>ITEM</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>3 YR AVG</u>	<u>5 YR AVG</u>
(1) Direct Losses Incurred	4,059,001	4,205,932	4,811,095	5,400,783	5,769,671		
(2) Allocated Loss Adjustment Expenses Incurred	458,941	481,717	517,613	610,635	670,289		
(3) Unallocated Loss Adjustment Expenses Incurred	383,262	432,507	471,784	479,398	479,146		
(4) Unallocated LAE as a Ratio to Losses + Allocated LAE (3) / [(1) + (2)]	8.5%	9.2%	8.9%	8.0%	7.4%	8.1%	8.4%
(5) Selected Factor							8.0%

Property Damage  
(000's)

<u>ITEM</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>3 YR AVG</u>	<u>5 YR AVG</u>
(1) Direct Losses Incurred	855,668	964,805	1,033,470	1,128,053	1,203,935		
(2) Allocated Loss Adjustment Expenses Incurred	57,874	70,950	69,317	85,116	71,849		
(3) Unallocated Loss Adjustment Expenses Incurred	108,187	112,861	128,692	129,040	123,937		
(4) Unallocated LAE as a Ratio to Losses + Allocated LAE (3) / [(1) + (2)]	11.8%	10.9%	11.7%	10.6%	9.7%	10.7%	11.0%
(5) Selected Factor							10.5%

All items are from Special Call Submission for available writers.

COMMERCIAL AUTOMOBILE PHYSICAL DAMAGE INSURANCE  
MULTISTATE LOSS ADJUSTMENT EXPENSE EXPERIENCE

Calendar Year

Development of Factor to Include all Loss Adjustment Expenses

(000's)

<u>ITEM</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>3 YR AVG</u>	<u>5 YR AVG</u>
(1) Direct Losses Incurred	3,776,678	3,729,471	4,160,445	4,385,421	4,973,189		
(2) Loss Adjustment Expenses Incurred	551,510	589,857	664,010	585,458	628,271		
(3) Losses + LAE Incurred as Ratio to Losses Incurred [(1)+(2)]/(1)	1.146	1.158	1.160	1.134	1.126	1.140	1.145
(4) Selected							1.140

Items (1) and (2) are from the Insurance Expense Exhibits for agency and direct writers.

## AVERAGE ANNUAL CHANGE IN LOSSES (LOSS TREND)

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OBJECTIVE	The application of the average annual change in losses to historical data recognizes that advisory loss costs are being made for use in a future period based on historical experience. Due to economic and social factors, claim cost and frequency levels continue to change from those underlying the historical data.
DETERMINATION OF HISTORICAL AVERAGE CLAIM COST TREND	To determine the historical average claim cost trend, ISO makes use of the Least Squares Method fitted to the reported time series data; specifically, an exponential curve represented by the equation $Y=A(B^X)$ is fitted to the paid claim cost data. The parameters A and B are calculated by regressing Y, which is the applicable claim cost on X, which is the unit of time. The resulting fitted curve allows the determination of a historical average trend for the data under review.
LIABILITY LOSS TREND	The historical average annual change in claim costs for both Bodily Injury and Property Damage coverages are measured in this document using a credibility-weighted mix of multistate and statewide data. Prospective average annual changes for claim frequency have been selected based on the historical multistate data, as well as other relevant factors. Combining the state credibility-weighted claim cost trends with the selected claim frequency trends results in the selected Bodily Injury and Property Damage pure premium trend used to adjust the losses to a prospective level.
TREND CREDIBILITY FOR LIABILITY CLAIM SEVERITY	<p>Trend credibility is based on a full credibility standard of 975,000 claims for BI and 390,000 claims for PD. These standards were developed using a Bayesian analysis. Partial credibility is determined by the following formula:</p> $A = C/(C+K)$ <p>where C equals the number of claims for the latest year ended point and K equals 25,000 for bodily injury and 10,000 for property damage. The resulting table of partial credibilities is shown in this section.</p>

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LIABILITY:  
FREQUENCY  
TREND

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The data underlying the claim frequency trend selections is shown on the attached claim frequency exhibits. The exhibits include quarterly points for Multistate incurred frequency trend separately for Trucks, Tractors, and Trailers and Private Passenger Types. As can be seen from these exhibits (and corresponding graphs), frequency for both bodily injury and property damage has generally changed from year to year in an unpredictable manner.

Commercial Auto classes had experienced an abnormally long period of negative frequency trends prior to 2010. For the most recent 6 years, however, the frequency trends have been slightly increasing (TTT BI) or somewhat cyclical and/or flat (TTT PD and PPT BI and PD) over the experience period. An exponential curve of the form  $Y=A(B^X)$  does not fit the data well. To reflect these recent patterns and the difficulty in predicting turning points and rates of change, frequency trend is being selected to be 0% for TTT and PPT for both the Bodily Injury and Property Damage coverages

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PHYSICAL  
DAMAGE:  
LOSS TREND

Data Selections

- In our Physical Damage Trend review, we try to include as much data as possible for each deductible level that we analyze. With this goal in mind, for a given deductible level, we include all losses written at or below that deductible level. For example, consider an event causing \$1,500 of damage on a policy written with a \$250 deductible. This would be reported as a \$1,250 loss. In order to include as much data as possible in our review, we would generate 3 different records for this loss, one at each deductible that we analyze:

At \$250 deductible: \$1,250 loss

At \$500 deductible: \$1,000 loss

At \$1,000 deductible: \$500 loss

so Each of these deductible levels is analyzed independently of the other levels, that there are no instances of double-counting loss records.

- Wind and Water losses are removed from our Other Than Collision trend reviews due to the high variability of these types of losses from year to year.

Data Adjustments

In our Physical Damage trend review, we employ two adjustments to the data with the objective of diminishing distortions in the trend that we do not wish to measure. Our goal is to only measure inflationary effects.

1) All losses are divided by the appropriate class plan and age factors that correspond to that record in order to diminish the effect that variations in these factors from one year to the next have on the trend calculation.

PHYSICAL  
DAMAGE:

For example, consider 12 Truck exposures reported with Age Code 1 (current model year, age factor of 1.00). Each exposure experiences a loss of \$500. The average

## LOSS TREND (CONT'D)

severity of the losses for these 12 exposures is \$500.

Now consider these 12 exposures 5 years in the future. The exposures are now reported with Age Code A (6th preceding model year, age factor of 0.80). Assume that there is 10% inflation per year on all severities. Also assume that each of these 12 exposures experience the same amount of damage as they did 5 years ago. The average severity of the losses for these 12 exposures is now \$644 (taking into account both inflation and the older age of the vehicles).

If we analyze the severity trend without dividing each loss by its corresponding age factor, we get an annual trend of  $(\$644/\$500)^{1/5} - 1 = 5.2\%$

If we first divide each loss by its corresponding age factor, we get an annual trend of  $((\$644/0.80) / (\$500/1.00))^{1/5} - 1 = 10.0\%$

The first calculated severity is not equal to the assumed inflation because the calculation includes the decrease in average severity caused by aging of the vehicles. By dividing each loss record by its corresponding class plan and age factors, we remove distortions on the severity trend caused by the change in the distribution of classes and ages from one year to the next.

2) All Other Than Collision losses are adjusted to correct for the distortion on trend results created by a change in the distribution of types of loss from one year to the next. The Other Than Collision severity is a weighted-average of the severities for each type of loss (glass, fire, theft, etc.). Since each type of loss has a different severity (for example, glass losses have a much smaller severity than other types of loss), then variations in the distribution of types of loss may lead to changes in the severity that we do not want to measure (if one year 5% of losses are glass losses, and the next year 30% of losses are glass losses, we would expect the average severity of all Other Than Collision losses to decrease). To correct this, we calculate the proportion of losses for each type of loss averaged over all years in the experience period.

Consider the following example, where an adjustment is NOT made to the data. Assume 10% annual inflation for all losses:

	Year 1		Year 2	
	Glass	Fire	Glass	Fire
Type of Loss				
Claims	10	3	15	5
Severity of Each				
Loss	\$50	\$1,000	\$55	\$1,100
Total Losses	\$500	\$3,000	\$825	\$5,500

Average severity of losses in Year 1 is  $(\$500 + \$3,000) / 13 \text{ claims} = \$269$

Average severity of losses in Year 2 is  $(\$825 + \$5,500) / 20 \text{ claims} = \$316.25$

Average Severity trend =  $(\$316.25/\$269) - 1 = 17.6\%$

Now consider the same scenario, where an adjustment IS made to the data:

## PHYSICAL DAMAGE:

LOSS TREND  
(CONT'D)

	Year 1		Year 2	
Type of Loss	Glass	Fire	Glass	Fire
Claims	10	3	15	5
Percentage of Total Claims	10/13 = 77%	3/13 = 23%	15/20 = 75%	5/20 = 25%

Average Percentage of Claims for Glass losses:  $(77\% + 75\%) / 2 = 76\%$

Average Percentage of Claims for Fire losses:  $(23\% + 25\%) / 2 = 24\%$

The number of claims for each type of loss for each year is replaced by these averages:

	Year 1		Year 2	
Type of Loss	Glass	Fire	Glass	Fire
Claims	76% x 13 = 9.88	24 % x 13 = 3.12	76% x 20 = 15.2	24% x 20 = 4.8
Severity of Each Loss	\$50	\$1,000	\$55	\$1,100
Total Losses	\$494	\$3,120	\$836	\$5,280

Average severity of losses in Year 1 is  $(\$494 + \$3,120) / 13 \text{ claims} = \$278$

Average severity of losses in Year 2 is  $(\$836 + \$5,280) / 20 \text{ claims} = \$305.80$

Average Severity trend =  $(\$305.80/\$278) - 1 = 10.0\%$

Note that the total number of claims each year remains unchanged from the total before the adjustment is made.

Year 1 claims =  $9.88 + 3.12 = 13 \text{ claims}$

Year 2 claims =  $15.2 + 4.8 = 20 \text{ claims}$

Although new claims totals by type of loss are used in the calculation, the impact of the adjustment is to change only the loss totals, so frequency figures are not changed. The result is equivalent to a re-weighting of the severities so that each type of loss has a consistent weight from year to year.

By keeping each type of loss' proportion of total claims constant from year to year, we remove distortions in the trend caused by changes in the distribution of types of loss.

PHYSICAL  
DAMAGE:  
LOSS TREND  
(CONT'D)

For the OTC coverages, there is a change to how glass losses are handled when shifting from one deductible to another. ISO collects a coverage code indicating if the deductible is waived for glass losses or not ("full glass" and "non-full glass", respectively). However some insurers waive deductibles on glass losses even when the policy isn't a "full glass" coverage policy. Recently we began to also collect a Type of Loss code indicating if a deductible has been waived for the particular claim. In situations where a claim is reported with a coverage code and Type of Loss code that aren't consistent on how a glass loss was handled, we previously used the coverage code to determine how we interpreted the loss amount. Now this scenario is handled based on the information in the new Type of Loss code.

The trend selections for physical damage are based on the data in the attached exhibits. Each exhibit includes the distribution of losses, by deductible, for the most recent year. We analyze frequency trend and severity trend separately, using data at the \$250, \$500, and \$1,000 deductibles for OTC, and at the \$500, \$1,000, and \$2,000 deductibles for Collision.

Historically, claim frequency (like liability claim frequency) had been variable from year to year, often cyclical. As a result, an exponential curve of the form  $Y=A(B^x)$  did not fit the frequency data well. In the interest of long-term stability, we have selected 0.0% trend factors for frequency.

Based on this multistate experience and on the continued positive trends in the Consumer Price Index for Bodywork, ISO has selected the following annual trends:

	Trucks, Tractors & Trailers	Private Passenger Types
	<u>Pure Premium</u>	<u>Pure Premium</u>
OTC:	+7.0%	+6.0%
COLL:	+5.0%	+5.0%

PERSONAL  
INJURY  
PROTECTION  
TREND

The average annual trend for personal injury protection coverage is based on consumer price indices for medical and hospital related services, and wage data from the Bureau of Labor statistics. The average annual claim cost trend uses a weighted average of the medical and wage trends using weights based on type of loss data for this state. The weighted average annual trend in claim cost is then multiplied by the selected average annual trend in claim frequency. The average annual trend in claim frequency for PIP that is used is the same for bodily injury claim frequency.

## INSURANCE SERVICES OFFICE

COMMERCIAL AUTO LIABILITY  
DETERMINATION OF FACTORS TO ADJUST ACCIDENT YEAR  
LOSS RATIOS FOR SUBSEQUENT CHANGES

## AVERAGE PAID CLAIM COST DATA

MARYLAND					MULTISTATE*			
BODILY INJURY (\$100000 LIMITS)		PROPERTY DAMAGE (\$100000 LIMITS)			BODILY INJURY (\$100000 LIMITS)		PROPERTY DAMAGE (\$100000 LIMITS)	
(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
YEAR ENDED	ACTUAL	EXPONEN- TIAL FIT	ACTUAL	EXPONEN- TIAL FIT	ACTUAL	EXPONEN- TIAL FIT	ACTUAL	EXPONEN- TIAL FIT
9/30/2014	13279.18	13998.56	3424.46	3359.99	20728.02	20631.40	3755.21	3762.83
12/31/2014	13809.55	13963.92	3464.82	3406.88	20929.25	20776.48	3802.99	3814.34
3/31/2015	13826.06	13929.37	3472.27	3454.44	21102.67	20922.58	3865.00	3866.56
6/30/2015	14277.99	13894.91	3436.19	3502.65	21143.21	21069.70	3909.97	3919.49
9/30/2015	14339.73	13860.53	3425.09	3551.54	21180.44	21217.86	3967.67	3973.15
12/31/2015	14028.40	13826.24	3542.54	3601.11	21028.99	21367.07	4024.49	4027.54
3/31/2016	14347.19	13792.03	3633.48	3651.37	21147.61	21517.32	4110.36	4082.68
6/30/2016	14080.56	13757.90	3768.65	3702.34	21399.12	21668.63	4181.95	4138.57
9/30/2016	13591.03	13723.86	3769.30	3754.01	21762.14	21821.01	4212.11	4195.23
12/31/2016	13558.56	13689.91	3829.15	3806.41	22110.90	21974.45	4259.42	4252.66
3/31/2017	13309.78	13656.04	3901.42	3859.54	22370.06	22128.98	4305.10	4310.88
6/30/2017	13326.12	13622.25	3902.20	3913.41	22490.21	22284.59	4320.06	4369.89

	<u>BODILY INJURY</u>	<u>PROPERTY DAMAGE</u>
(9) AVERAGE ANNUAL PERCENT CHANGE IN PAID CLAIM COST (12TH POINT / 8TH POINT)		
(A) MARYLAND	-1.0%	5.7%
(B) MULTISTATE	2.8%	5.6%
(10) CREDIBILITY	0.10	0.40
(11) WEIGHTED AVERAGE ANNUAL PERCENT CHANGE IN PAID CLAIM COSTS { (10) * (9A) } + { (1.0 - (10)) * (9B) }	2.4%	5.6%
(12) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM FREQUENCY		
(A) TRUCKS, TRACTORS, TRAILERS	0.0%	0.0%
(B) PRIVATE PASSENGER TYPES	0.0%	0.0%
(13) AVERAGE ANNUAL PERCENT CHANGE IN LIABILITY LOSS RATIO		
(A) TRUCKS, TRACTORS, TRAILERS { 1.0 + (11) } * { 1.0 + (12A) }	2.4%	5.6%
(B) PRIVATE PASSENGER TYPES { 1.0 + (11) } * { 1.0 + (12B) }	2.4%	5.6%

\* EXCLUDES MASSACHUSETTS

INSURANCE SERVICES OFFICE, INC.

CLAIM COST TREND DATA FOR PIP  
TRUCKS, TRACTORS, TRAILERS

MARYLAND

QUARTER ENDING	MEDICAL INDEX*		HOSPITAL AND RELATED SERVICES*		INCOME LOSSES**	
	ACTUAL	EXPONENT. FIT	ACTUAL	EXPONENT. FIT	ACTUAL	EXPONENT. FIT
3/31/2015	442.6	443.0	751.6	750.1	705.05	701.10
6/30/2015	446.7	446.3	763.5	758.2	702.10	705.33
9/30/2015	446.9	449.7	759.0	766.4	710.14	709.59
12/31/2015	450.9	453.1	773.3	774.6	718.06	713.87
3/31/2016	457.0	456.6	785.6	783.0	713.89	718.18
6/30/2016	461.1	460.0	790.3	791.4	722.00	722.51
9/30/2016	467.3	463.5	799.1	800.0	724.62	726.87
12/31/2016	469.3	467.0	805.5	808.6	732.42	731.26
3/31/2017	473.6	470.6	818.6	817.3	732.29	735.67
6/30/2017	473.8	474.1	829.6	826.1	739.21	740.11
9/30/2017	476.5	477.7	835.6	835.0	745.96	744.58
12/31/2017@	477.4	481.4	843.0	844.0	752.46	749.07

	(A) MEDICAL	(B) HOSPITAL	(C) COMBINED+	(D) INCOME
(1) AVERAGE ANNUAL PERCENT CHANGE IN INDICES (12TH POINT/8TH POINT)	3.1%	4.4%	3.8%	2.4%
(2) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM COST $0.79*(1C) + 0.21*(1D)$ . BASED ON RESPECTIVE WEIGHT OF MEDICAL AND INCOME FROM PRICING. (SHEET 2)				3.5%
(3) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM FREQUENCY				0.0%
(4) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM RATIOS $\{1.0 + (2)\} * \{1.0 + (3)\}$				3.5%

\* MEDICAL INDEX AND HOSPITAL AND RELATED SERVICES INDEX BASED ON  
CONSUMER PRICE INDEX.

\*\* INCOME LOSS BASED ON BUREAU OF LABOR STATISTICS DATA.

+ WEIGHT MEDICAL AND HOSPITAL AVERAGE ANNUAL PERCENT CHANGE  
IN INDEX =  $\{(1A) * .5\} + \{(1B) * .5\}$ .

@ PRELIMINARY.

INSURANCE SERVICES OFFICE, INC.

CLAIM COST TREND DATA FOR PIP  
PRIVATE PASSENGER TYPES

MARYLAND

QUARTER ENDING	MEDICAL INDEX*		HOSPITAL AND RELATED SERVICES*		INCOME LOSSES**	
	ACTUAL	EXPONENT. FIT	ACTUAL	EXPONENT. FIT	ACTUAL	EXPONENT. FIT
3/31/2015	442.6	443.0	751.6	750.1	705.05	701.10
6/30/2015	446.7	446.3	763.5	758.2	702.10	705.33
9/30/2015	446.9	449.7	759.0	766.4	710.14	709.59
12/31/2015	450.9	453.1	773.3	774.6	718.06	713.87
3/31/2016	457.0	456.6	785.6	783.0	713.89	718.18
6/30/2016	461.1	460.0	790.3	791.4	722.00	722.51
9/30/2016	467.3	463.5	799.1	800.0	724.62	726.87
12/31/2016	469.3	467.0	805.5	808.6	732.42	731.26
3/31/2017	473.6	470.6	818.6	817.3	732.29	735.67
6/30/2017	473.8	474.1	829.6	826.1	739.21	740.11
9/30/2017	476.5	477.7	835.6	835.0	745.96	744.58
12/31/2017@	477.4	481.4	843.0	844.0	752.46	749.07

	(A) MEDICAL	(B) HOSPITAL	(C) COMBINED+	(D) INCOME
(1) AVERAGE ANNUAL PERCENT CHANGE IN INDICES (12TH POINT/8TH POINT)	3.1%	4.4%	3.8%	2.4%
(2) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM COST $0.84*(1C) + 0.16*(1D)$ . BASED ON RESPECTIVE WEIGHT OF MEDICAL AND INCOME FROM PRICING. (SHEET 2)				3.6%
(3) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM PASSENGER TYPES CLAIM FREQUENCY				0.0%
(4) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM RATIOS $\{1.0 + (2)\} * \{1.0 + (3)\}$				3.6%

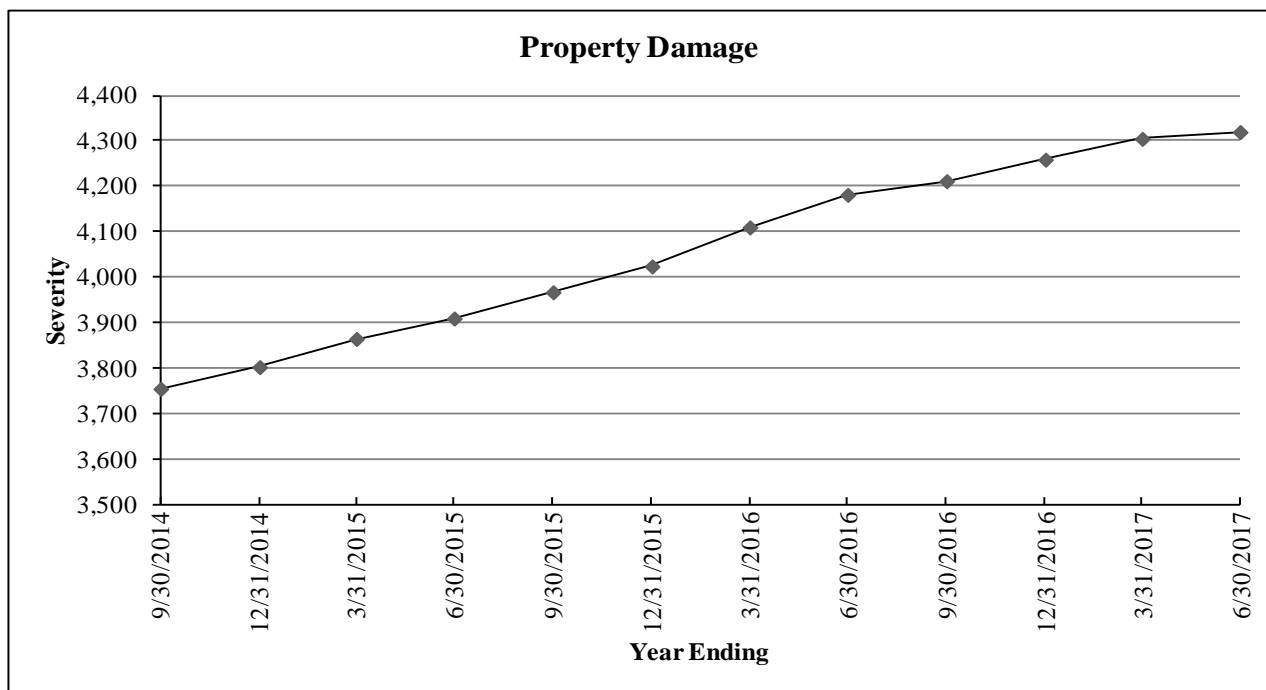
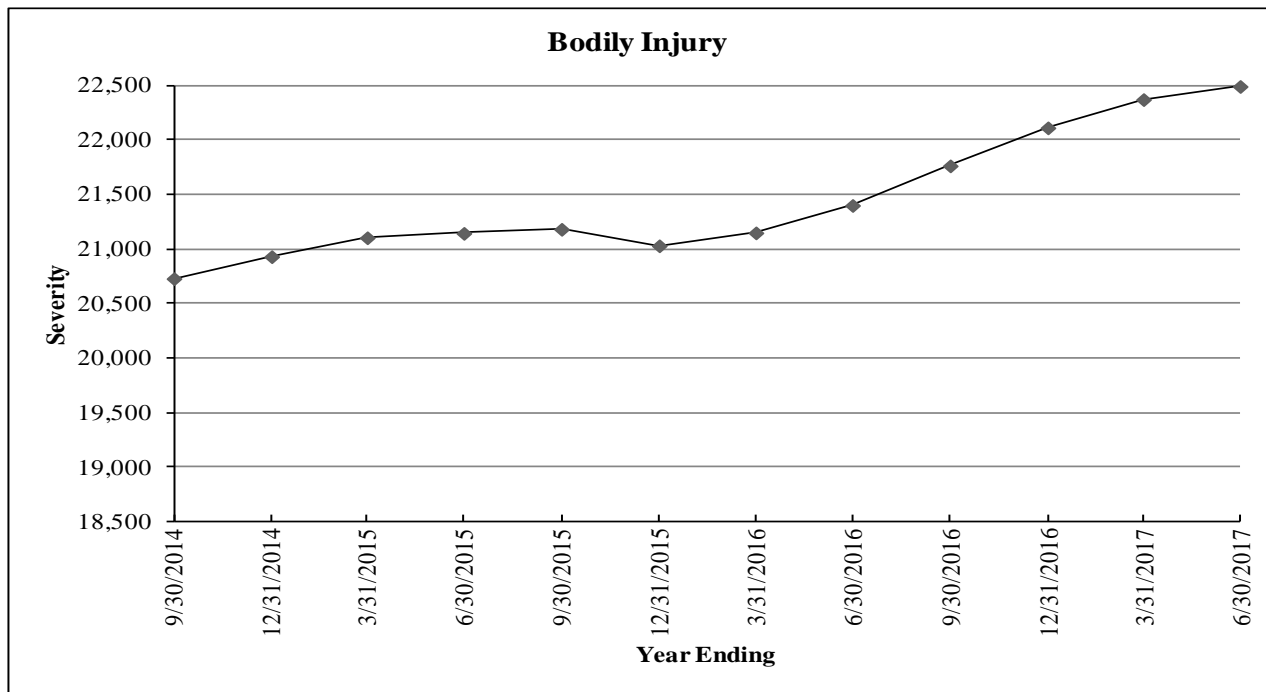
\* MEDICAL INDEX AND HOSPITAL AND RELATED SERVICES INDEX BASED ON  
CONSUMER PRICE INDEX.

\*\* INCOME LOSS BASED ON BUREAU OF LABOR STATISTICS DATA.

+ WEIGHT MEDICAL AND HOSPITAL AVERAGE ANNUAL PERCENT CHANGE  
IN INDEX =  $\{(1A) * .5\} + \{(1B) * .5\}$ .

@ PRELIMINARY.

Commercial Automobile Liability  
Average Paid Claim Cost Experience  
Multistate\*



\* Excludes Massachusetts

## INSURANCE SERVICES OFFICE, INC.

COMMERCIAL AUTO LIABILITY  
INCURRED CLAIM FREQUENCY

## MULTISTATE\*

TRUCKS, TRACTORS, AND TRAILERS

<u>YEAR ENDING</u>	<u>BODILY INJURY ACTUAL</u>	<u>BODILY INJURY ACTUAL CHANGE@</u>	<u>PROPERTY DAMAGE ACTUAL</u>	<u>PROPERTY DAMAGE ACTUAL CHANGE@</u>
6/30/2011	0.7917		2.9394	
9/30/2011	0.7941		2.9467	
12/31/2011	0.7922		2.9351	
3/31/2012	0.7912		2.8296	
6/30/2012	0.7925	0.1% &	2.8182	-4.1% &
9/30/2012	0.7842		2.7789	
12/31/2012	0.7932		2.7720	
3/31/2013	0.7965	0.7%	2.8080	-0.8%
6/30/2013	0.8162		2.8528	
9/30/2013	0.8364		2.8986	
12/31/2013	0.8348		2.9132	
3/31/2014	0.8426	5.8%	3.0046	7.0%
6/30/2014	0.8222		3.0002	
9/30/2014	0.8101		3.0034	
12/31/2014	0.8144		3.0048	
3/31/2015	0.8047	-4.5%	2.9701	-1.1%
6/30/2015	0.8138		2.9658	
9/30/2015	0.8235		2.9832	
12/31/2015	0.8311		2.9931	
3/31/2016	0.8407	4.5%	2.9621	-0.3%
6/30/2016	0.8461		2.9686	
9/30/2016	0.8486		2.9726	
12/31/2016	0.8425		2.9642	
3/31/2017	0.8444	0.4%	2.9324	-1.0%

\* EXCLUDES MASSACHUSETTS

@ CHANGE BASED ON YEARS ENDING 3/31/XXXX

&amp; CHANGE BASED ON YEAR ENDING 6/30/2012 DIVIDED BY 6/30/2011

INSURANCE SERVICES OFFICE, INC.

COMMERCIAL AUTO LIABILITY  
INCURRED CLAIM FREQUENCY

MULTISTATE\*

PRIVATE PASSENGER TYPES

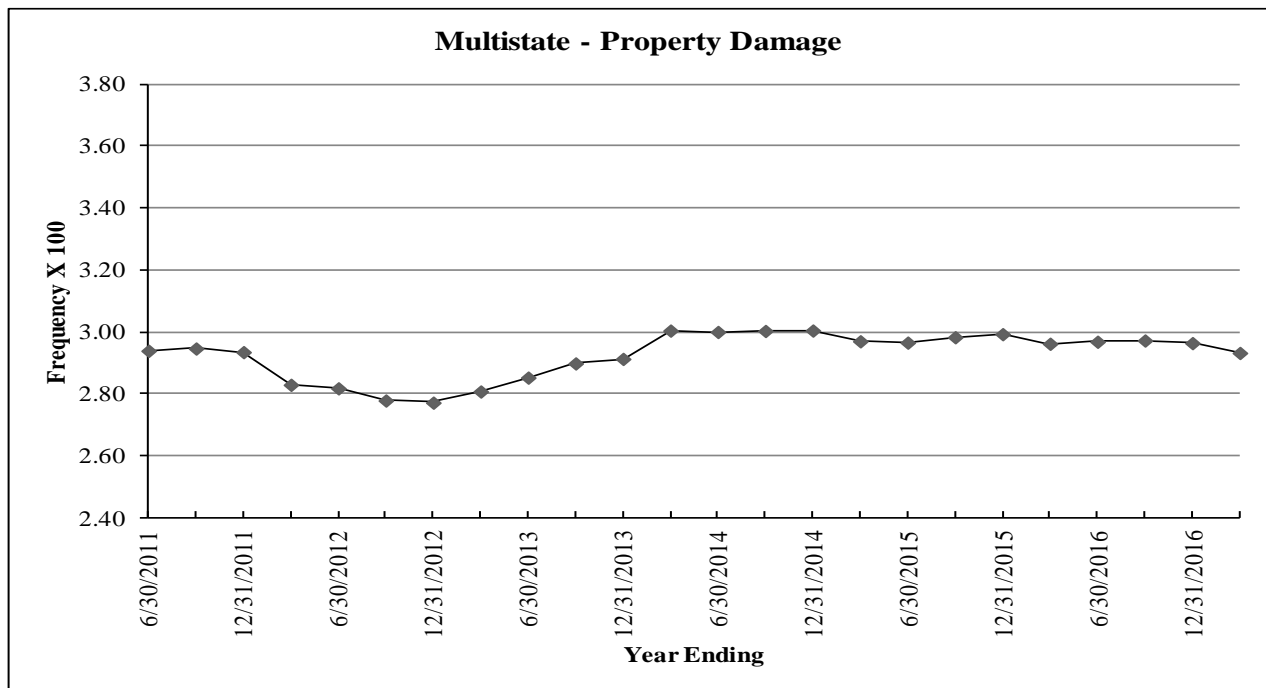
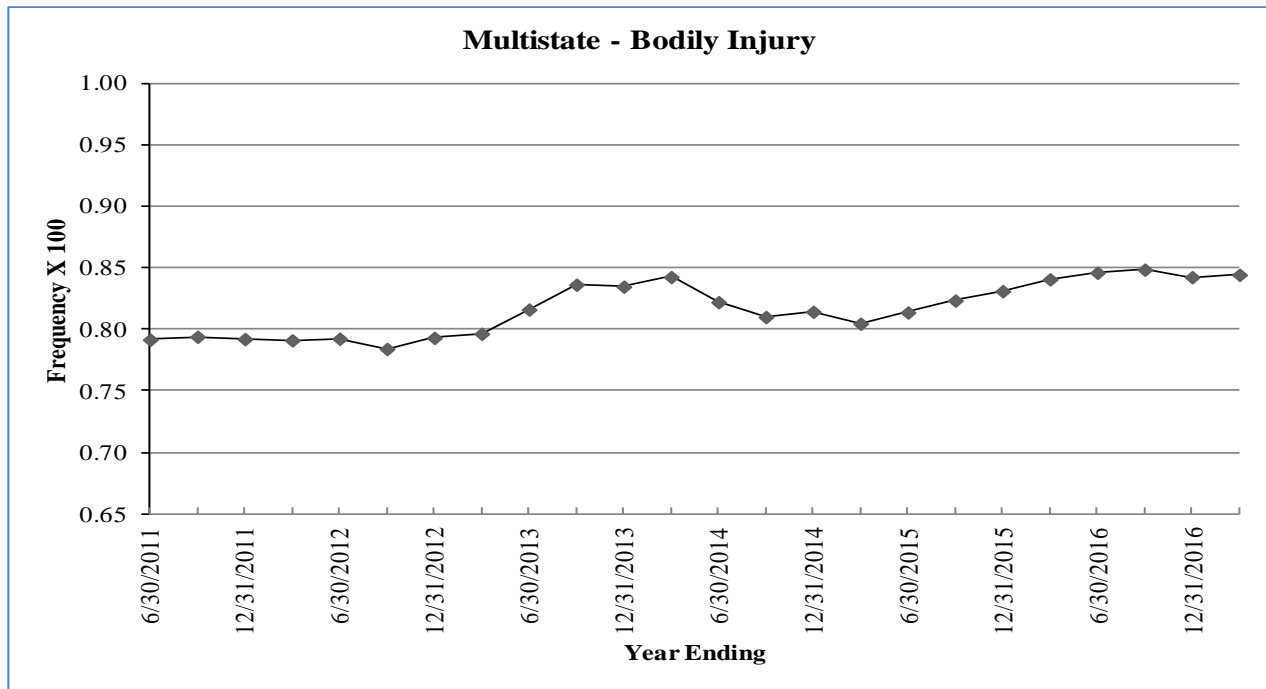
<u>YEAR ENDING</u>	<u>BODILY INJURY ACTUAL</u>	<u>BODILY INJURY ACTUAL CHANGE@</u>	<u>PROPERTY DAMAGE ACTUAL</u>	<u>PROPERTY DAMAGE ACTUAL CHANGE@</u>
6/30/2011	0.9204		3.3849	
9/30/2011	0.9382		3.3831	
12/31/2011	0.9370		3.3425	
3/31/2012	0.9616		3.3283	
6/30/2012	0.9469	2.9% &	3.3352	-1.5% &
9/30/2012	0.9339		3.3193	
12/31/2012	0.9198		3.2783	
3/31/2013	0.9115	-5.2%	3.2541	-2.2%
6/30/2013	0.9179		3.2185	
9/30/2013	0.9321		3.2234	
12/31/2013	0.9326		3.2489	
3/31/2014	0.9282	1.8%	3.2834	0.9%
6/30/2014	0.9212		3.2822	
9/30/2014	0.9072		3.2559	
12/31/2014	0.8985		3.2272	
3/31/2015	0.8703	-6.2%	3.1828	-3.1%
6/30/2015	0.8525		3.1420	
9/30/2015	0.8425		3.1566	
12/31/2015	0.8391		3.1576	
3/31/2016	0.8564	-1.6%	3.1597	-0.7%
6/30/2016	0.8627		3.1927	
9/30/2016	0.8803		3.2059	
12/31/2016	0.8726		3.1857	
3/31/2017	0.8664	1.2%	3.1040	-1.8%

\* EXCLUDES MASSACHUSETTS

@ CHANGE BASED ON YEARS ENDING 3/31/XXXX

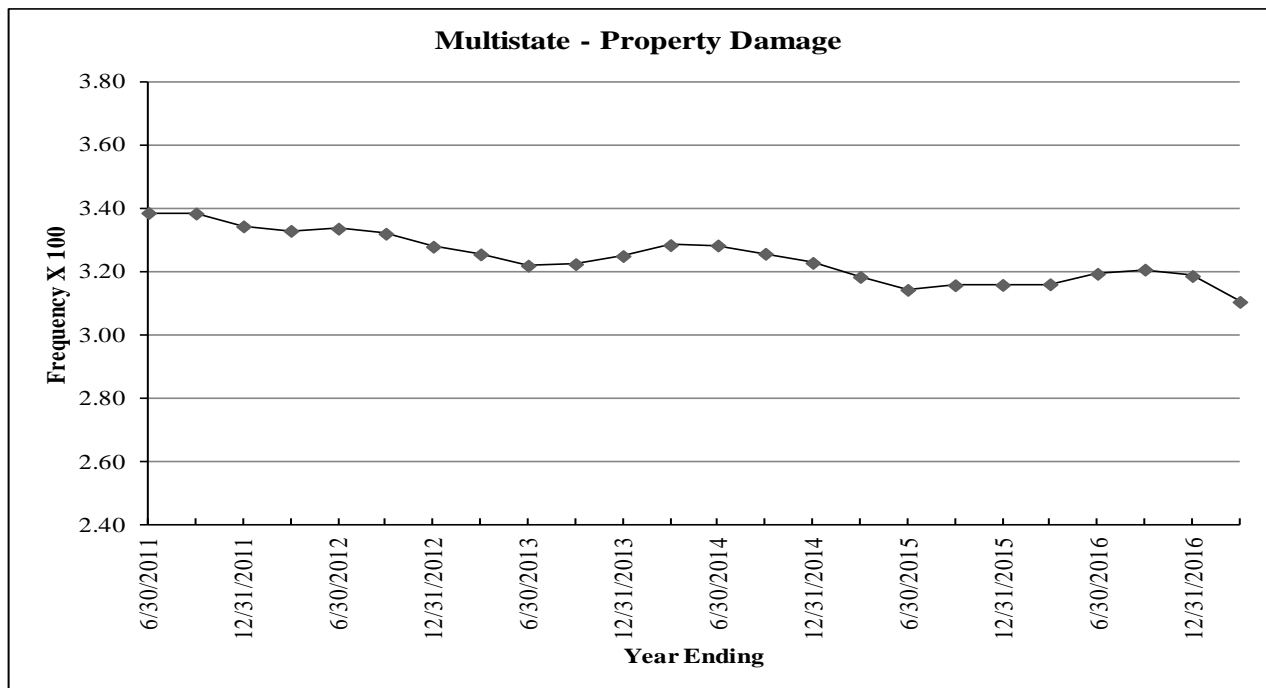
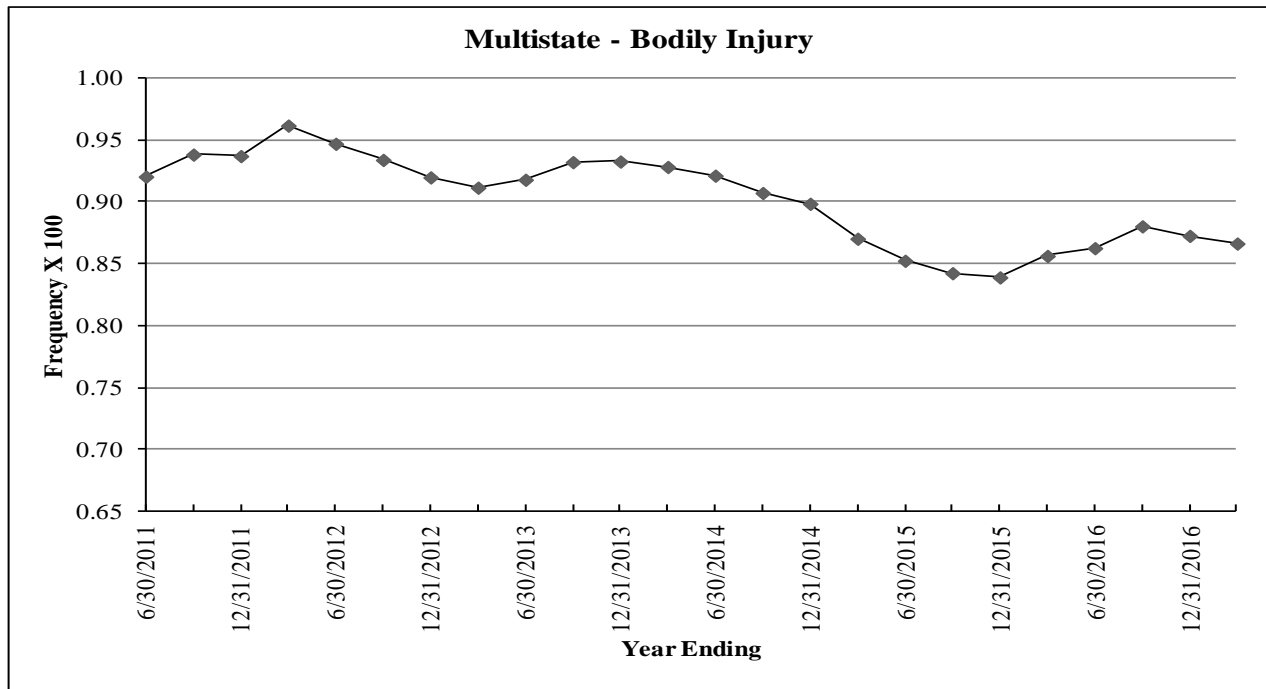
& CHANGE BASED ON YEAR ENDING 6/30/2012 DIVIDED BY 6/30/2011

Commercial Automobile Liability  
Incurred Claim Frequency Experience  
Trucks, Tractors, and Trailers  
Multistate\*



\* Excludes Massachusetts

Commercial Automobile Liability  
Incurred Claim Frequency Experience  
Private Passenger Types  
Multistate\*



\* Excludes Massachusetts

Multistate\*  
Trucks, Tractors & Trailers Physical Damage  
Other Than Collision

Frequency (expressed as claims per 100 exposures)

	\$250 Deductible		\$500 Deductible		\$1,000 Deductible	
Year Ending:	Actual	Change **	Actual	Change **	Actual	Change **
12/31/2012	2.44		1.44		0.95	
06/30/2013	2.39		1.42		0.94	
12/31/2013	2.32		1.39		0.91	
06/30/2014	2.39	0.0%	1.39	-2.1%	0.91	-3.2%
12/31/2014	2.35		1.36		0.90	
06/30/2015	2.24	-6.3%	1.34	-3.6%	0.88	-3.3%
12/31/2015	2.16		1.34		0.90	
06/30/2016	2.07	-7.6%	1.33	-0.7%	0.92	4.5%
12/31/2016	2.08		1.33		0.91	
06/30/2017	2.07	0.0%	1.33	0.0%	0.89	-3.3%

Volume\*\*\* of losses for the most recent year by deductible:

Deductible	Percent of Losses
Full	0.5%
\$50	1.0%
\$100	2.3%
\$200	0.3%
\$250	9.4%
\$500	34.3%
\$1,000	43.9%
\$2,000	4.7%
\$3,000	0.5%
\$5,000	1.9%

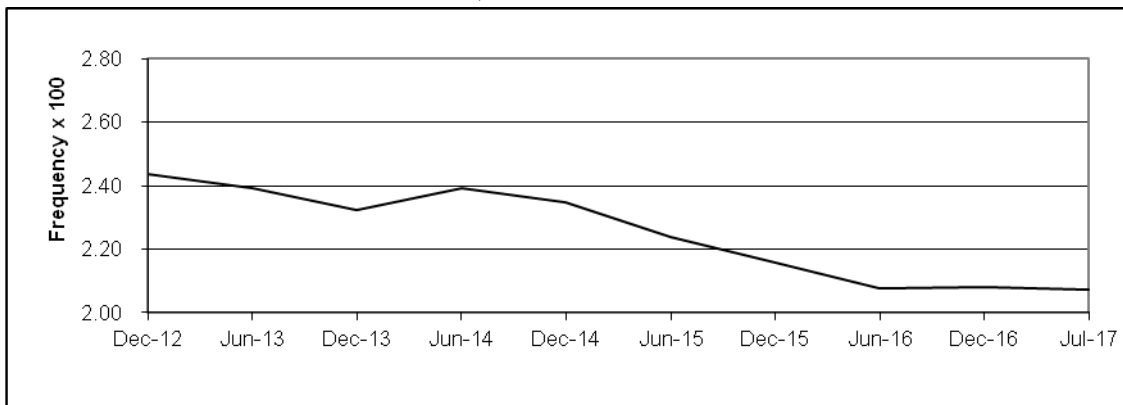
\* Multistate data excludes Massachusetts

\*\* Change based on years ending 6/30/xxxx

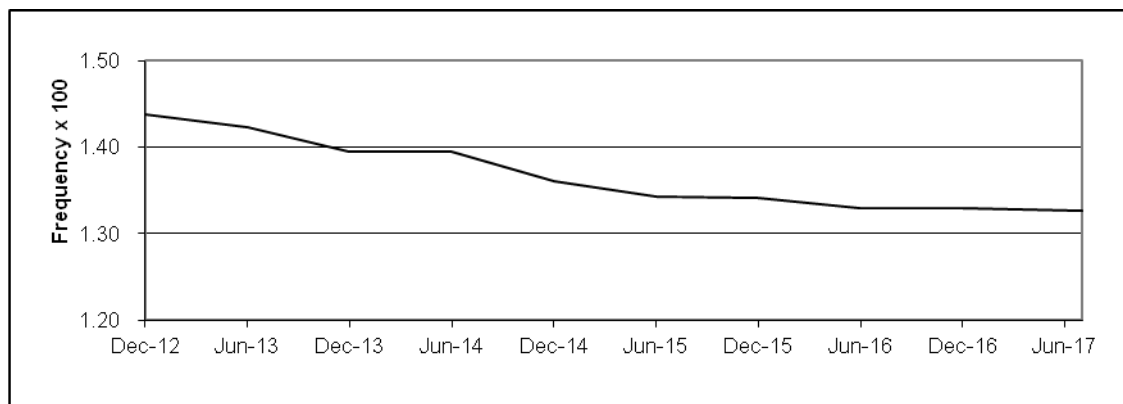
\*\*\*Deductibles above \$1,000, totaling 7.1% of losses, are excluded from the trend calculations.

Multistate\*  
Trucks, Tractors & Trailers Physical Damage  
Other Than Collision Frequency Trend

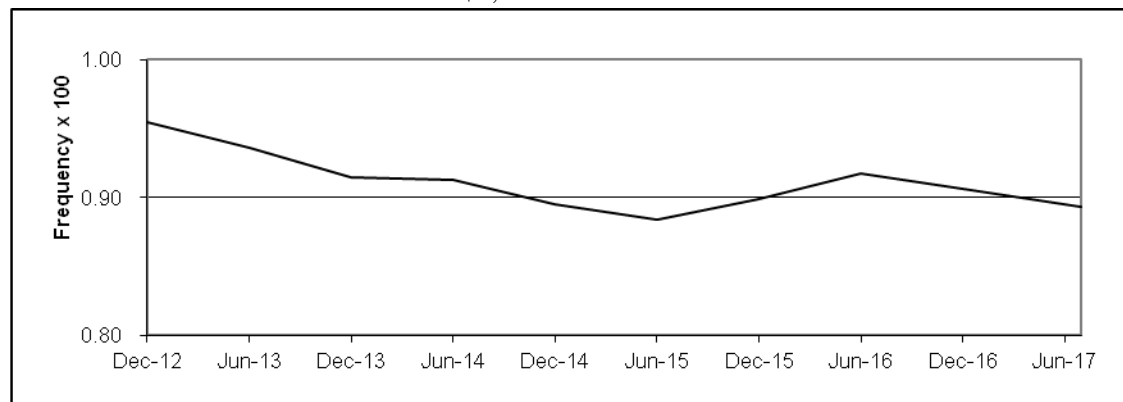
\$250 Deductible



\$500 Deductible



\$1,000 Deductible



\* Multistate data excludes Massachusetts  
Selected Other Than Collision Frequency Trend Factor: 0.0%

Multistate\*  
Trucks, Tractors & Trailers Physical Damage  
Other Than Collision Loss Trend

Severity Trend

Year Ending:	\$250 Deductible	\$500 Deductible	\$1,000 Deductible
12/31/2012	2,853.36	4,755.64	7,043.91
06/30/2013	2,907.10	4,893.58	7,152.25
12/31/2013	2,903.46	4,823.20	7,121.88
06/30/2014	2,976.56	5,032.68	7,393.70
12/31/2014	3,166.11	5,262.53	7,561.42
06/30/2015	3,295.87	5,436.29	7,758.83
12/31/2015	3,393.91	5,698.45	8,110.12
06/30/2016	4,006.99	6,036.25	8,418.35
12/31/2016	4,117.84	6,165.16	8,819.79
06/30/2017	4,098.34	6,521.36	9,489.59

Average Annual Change Using Exponential Fits:

10 point fit:	9.8%	7.5%	6.6%
8 point fit:	12.0%	8.9%	8.1%
6 point fit:	12.9%	9.0%	9.3%

Selected severity trend:	7.0%
Selected frequency trend:	0.0%
Selected pure premium trend:	7.0%

\* Multistate data excludes Massachusetts

Multistate\*  
Trucks, Tractors & Trailers Physical Damage  
Collision

Frequency (expressed as claims per 100 exposures)

	\$500 Deductible		\$1,000 Deductible		\$2,000 Deductible	
Year Ending:	Actual	Change **	Actual	Change **	Actual	Change **
12/31/2012	2.18		1.84		1.44	
06/30/2013	2.24		1.90		1.50	
12/31/2013	2.23		1.90		1.51	
06/30/2014	2.30	2.7%	1.96	3.2%	1.56	4.0%
12/31/2014	2.28		1.96		1.57	
06/30/2015	2.26	-1.7%	1.94	-1.0%	1.57	0.6%
12/31/2015	2.28		1.97		1.60	
06/30/2016	2.25	-0.4%	1.97	1.5%	1.61	2.5%
12/31/2016	2.34		2.04		1.66	
06/30/2017	2.33	3.6%	2.00	1.5%	1.65	2.5%

Volume\*\*\* of losses for the most recent year by deductible:

Deductible	Percent of Losses
\$100	0.1%
\$200	0.0%
\$250	2.0%
\$500	37.1%
\$1,000	50.9%
\$2,000	5.3%
\$3,000	1.5%
\$5,000	3.1%

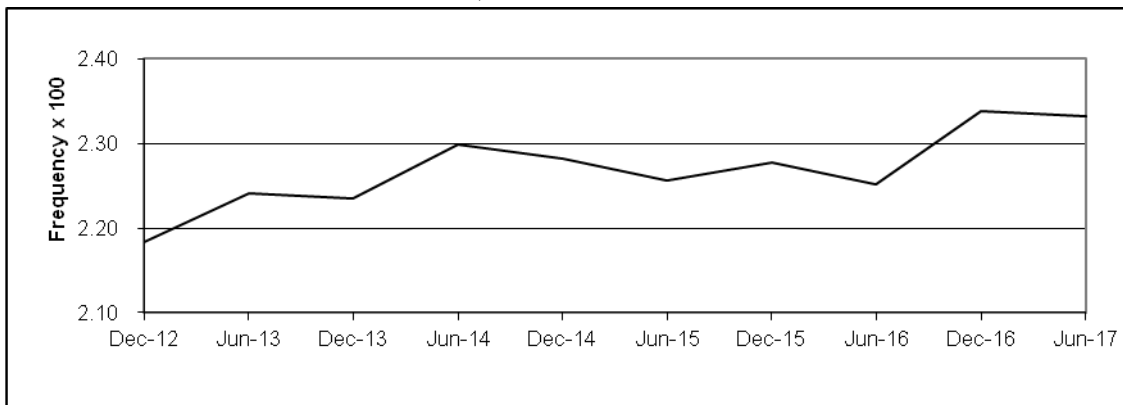
\* Multistate data excludes Massachusetts

\*\* Change based on years ending 6/30/xxxx

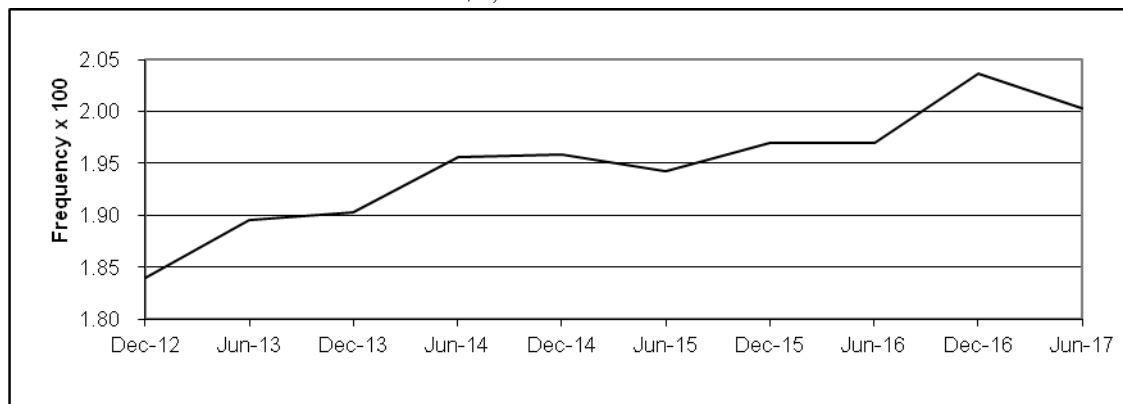
\*\*\*Deductibles above \$2,000, totaling 4.6% of losses, are excluded from the trend calculations.

Multistate\*  
Trucks, Tractors & Trailers Physical Damage  
Collision Frequency Trend

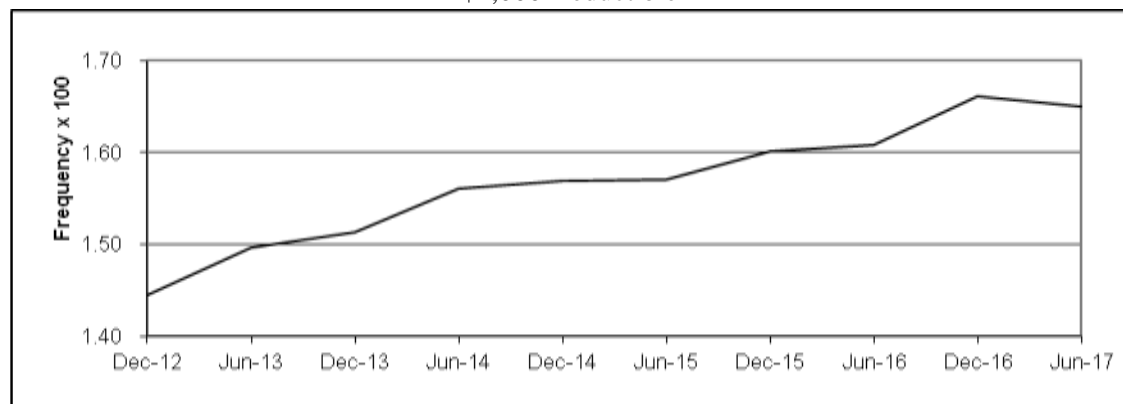
\$500 Deductible



\$1,000 Deductible



\$2,000 Deductible



\* Multistate data excludes Massachusetts  
Selected Collision Frequency Trend Factor: 0.0%

Multistate\*  
Trucks, Tractors & Trailers Physical Damage  
Collision Loss Trend

Severity Trend

Year Ending:	\$500 Deductible	\$1,000 Deductible	\$2,000 Deductible
12/31/2012	7,570.23	9,273.59	10,206.98
06/30/2013	7,671.49	9,379.84	10,183.74
12/31/2013	7,871.47	9,510.40	10,310.08
06/30/2014	8,061.03	9,810.29	10,722.11
12/31/2014	8,367.39	10,192.07	11,181.23
06/30/2015	8,647.05	10,387.56	11,302.64
12/31/2015	8,791.56	10,572.24	11,483.98
06/30/2016	9,168.92	10,915.53	11,861.91
12/31/2016	9,360.39	11,197.66	12,155.24
06/30/2017	9,539.71	11,340.96	12,206.26

Average Annual Change Using Exponential Fits:

10 point fit:	5.6%	4.9%	4.7%
8 point fit:	5.8%	5.2%	4.9%
6 point fit:	5.5%	4.6%	4.0%

Selected severity trend:	5.0%
Selected frequency trend:	0.0%
Selected pure premium trend:	5.0%

\* Multistate data excludes Massachusetts

Multistate\*  
Private Passenger Types Physical Damage  
Other Than Collision

Frequency (expressed as claims per 100 exposures)

	\$250 Deductible		\$500 Deductible		\$1,000 Deductible	
Year Ending:	Actual	Change **	Actual	Change **	Actual	Change **
12/31/2012	5.01		3.07		1.89	
06/30/2013	4.98		3.06		1.88	
12/31/2013	5.02		3.06		1.85	
06/30/2014	5.26	5.6%	3.17	3.6%	1.90	1.1%
12/31/2014	5.11		3.14		1.91	
06/30/2015	4.81	-8.6%	3.04	-4.1%	1.88	-1.1%
12/31/2015	4.91		3.14		1.95	
06/30/2016	4.95	2.9%	3.20	5.3%	1.98	5.3%
12/31/2016	4.97		3.10		1.92	
06/30/2017	4.81	-2.8%	2.99	-6.6%	1.89	-4.5%

Volume\*\*\* of losses for the most recent year by deductible:

Deductible	Percent of Losses
Full	0.7%
\$50	0.5%
\$100	2.8%
\$200	0.7%
\$250	12.2%
\$500	43.4%
\$1,000	37.8%
\$2,000	1.7%
\$3,000	0.1%
\$5,000	0.2%

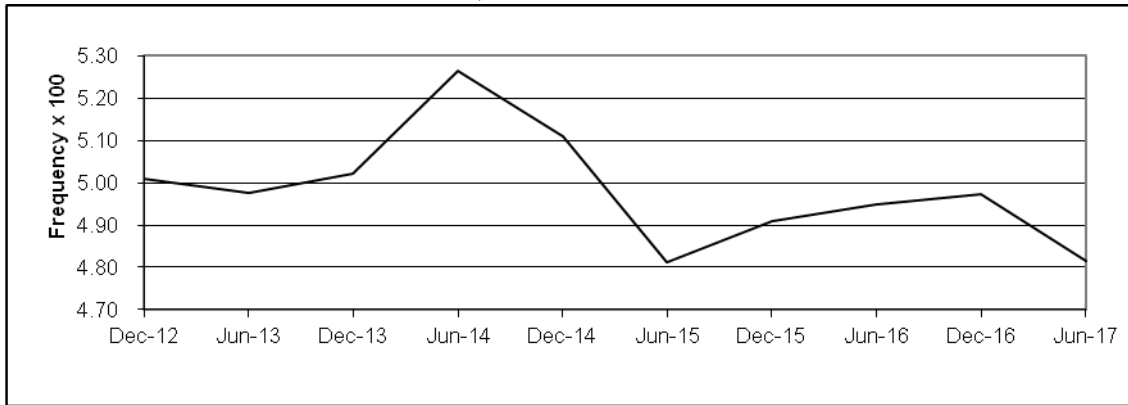
\* Multistate data excludes Massachusetts

\*\* Change based on years ending 6/30/xxxx

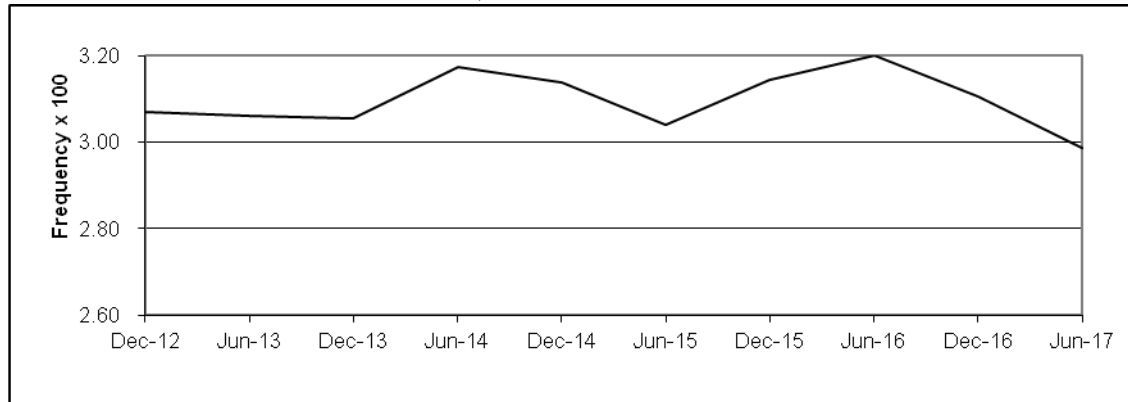
\*\*\*Deductibles above \$1,000, totaling 2.0% of losses, are excluded from the trend calculations.

Multistate\*  
Private Passenger Types Physical Damage  
Other Than Collision Frequency Trend

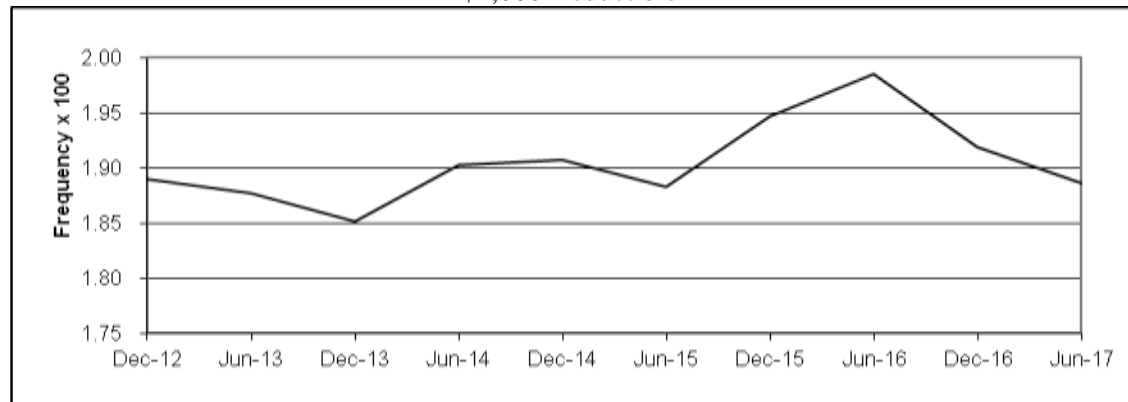
\$250 Deductible



\$500 Deductible



\$1,000 Deductible



\* Multistate data excludes Massachusetts  
Selected Other Than Collision Frequency Trend Factor: 0.0%

Multistate\*  
Private Passenger Types Physical Damage  
Other Than Collision Loss Trend

Severity Trend

Year Ending:	\$250 Deductible	\$500 Deductible	\$1,000 Deductible
12/31/2012	1,359.32	1,875.40	2,489.52
06/30/2013	1,443.17	1,947.57	2,609.53
12/31/2013	1,418.06	1,962.75	2,662.60
06/30/2014	1,399.18	2,006.46	2,717.53
12/31/2014	1,527.69	2,098.22	2,847.07
06/30/2015	1,620.83	2,153.59	2,887.49
12/31/2015	1,692.17	2,264.58	2,971.61
06/30/2016	1,779.50	2,366.68	3,079.13
12/31/2016	1,810.67	2,382.65	3,097.41
06/30/2017	1,961.80	2,510.67	3,267.07

Average Annual Change Using Exponential Fits:

10 point fit:	8.4%	6.7%	5.8%
8 point fit:	10.2%	7.4%	5.8%
6 point fit:	9.8%	7.4%	5.5%

Selected severity trend:	6.0%
Selected frequency trend:	0.0%
Selected pure premium trend:	6.0%

\* Multistate data excludes Massachusetts

Multistate\*  
Private Passenger Types Physical Damage  
Collision

Frequency (expressed as claims per 100 exposures)

	\$500 Deductible		\$1,000 Deductible		\$2,000 Deductible	
Year Ending:	Actual	Change **	Actual	Change **	Actual	Change **
12/31/2012	5.05		4.05		2.91	
06/30/2013	5.10		4.13		2.95	
12/31/2013	5.10		4.16		2.97	
06/30/2014	5.26	3.1%	4.32	4.6%	3.11	5.4%
12/31/2014	5.30		4.42		3.21	
06/30/2015	5.27	0.2%	4.37	1.2%	3.20	2.9%
12/31/2015	5.28		4.41		3.26	
06/30/2016	5.15	-2.3%	4.35	-0.5%	3.24	1.3%
12/31/2016	5.16		4.38		3.28	
06/30/2017	5.11	-0.8%	4.34	-0.2%	3.29	1.5%

Volume\*\*\* of losses for the most recent year by deductible:

Deductible	Percent of Losses
\$ 100	0.4%
\$ 200	0.2%
\$ 250	2.4%
\$ 500	46.3%
\$ 1,000	48.6%
\$ 2,000	1.2%
\$ 3,000	0.4%
\$ 5,000	0.4%

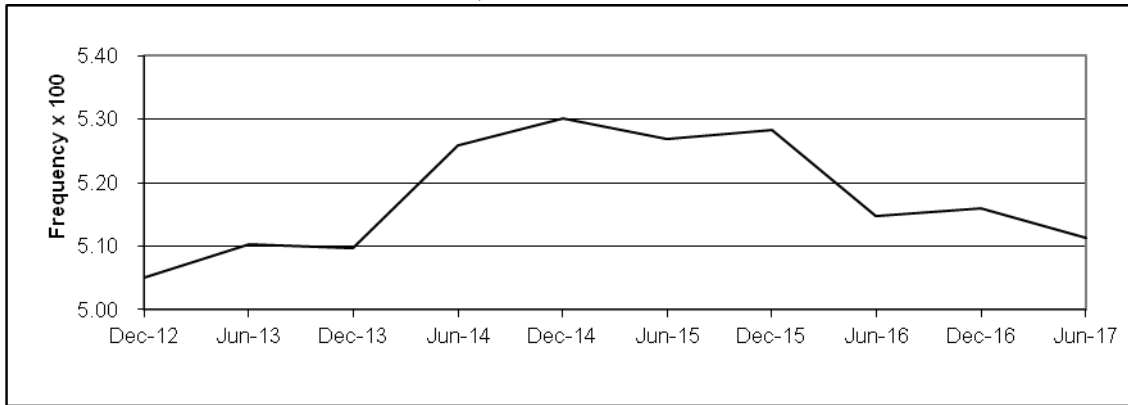
\* Multistate data excludes Massachusetts

\*\* Change based on years ending 6/30/xxxx

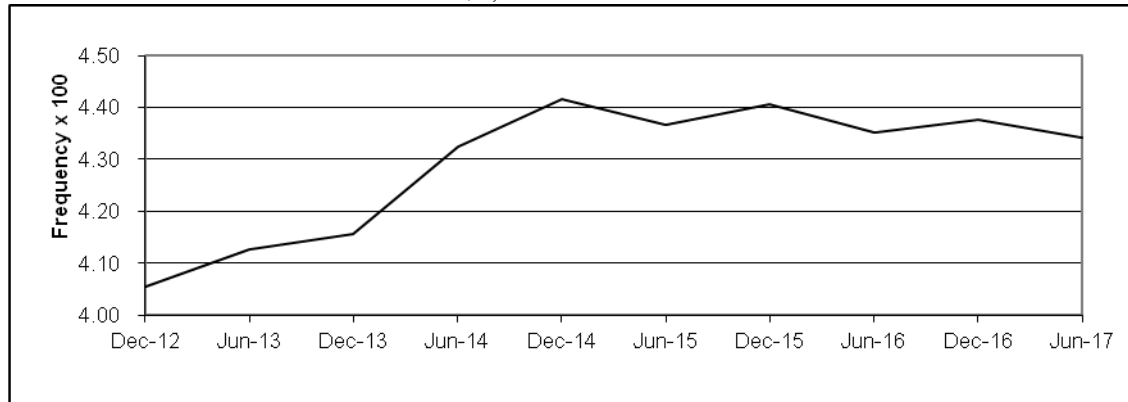
\*\*\*Deductibles above \$2,000, totaling 0.8% of losses, are excluded from the trend calculations.

Multistate\*  
Private Passenger Types Physical Damage  
Collision Frequency Trend

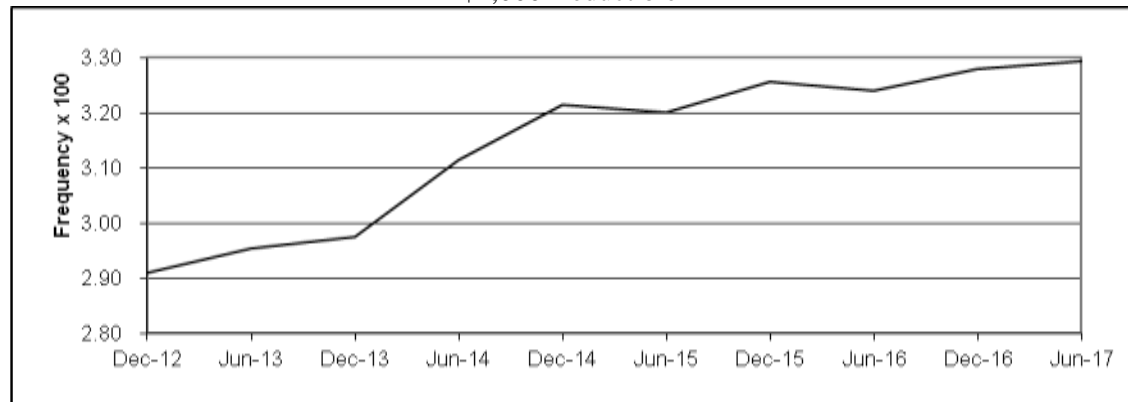
\$500 Deductible



\$1,000 Deductible



\$2,000 Deductible



\* Multistate data excludes Massachusetts  
Selected Collision Frequency Trend Factor: 0.0%

Multistate\*  
Private Passenger Types Physical Damage  
Collision Loss Trend

Severity Trend

Year Ending:	\$500 Deductible	\$1,000 Deductible	\$2,000 Deductible
12/31/2012	4,936.36	5,442.41	6,001.83
06/30/2013	5,004.78	5,454.32	6,026.20
12/31/2013	5,055.36	5,507.41	6,092.85
06/30/2014	5,162.88	5,595.84	6,163.37
12/31/2014	5,387.33	5,761.10	6,342.91
06/30/2015	5,513.54	5,917.13	6,492.58
12/31/2015	5,626.74	6,092.31	6,633.77
06/30/2016	5,810.14	6,238.78	6,790.29
12/31/2016	5,991.59	6,318.88	6,877.90
06/30/2017	6,125.98	6,451.16	6,931.81

Average Annual Change Using Exponential Fits:

10 point fit:	5.2%	4.3%	3.7%
8 point fit:	5.7%	4.8%	4.1%
6 point fit:	5.4%	4.6%	3.7%

Selected severity trend:	5.0%
Selected frequency trend:	0.0%
Selected pure premium trend:	5.0%

\* Multistate data excludes Massachusetts

COMMERCIAL AUTOMOBILE PHYSICAL DAMAGE  
SUPPLEMENTARY EXHIBIT

Quarterly Values <u>Ending</u>	Consumer Price Index for Bodywork	
	<u>Actual</u>	<u>Exponential Fit</u>
6/30/2014	2.785	2.755
9/30/2014	2.784	2.770
12/31/2014	2.785	2.784
3/31/2015	2.792	2.799
6/30/2015	2.804	2.814
9/30/2015	2.805	2.829
12/31/2015	2.831	2.843
3/31/2016	2.847	2.858
6/30/2016	2.866	2.873
9/30/2016	2.877	2.888
12/31/2016	2.913	2.904
3/31/2017	2.925	2.919
6/30/2017	2.942	2.934
9/30/2017	2.945	2.950
12/31/2017	2.966	2.965
3/31/2018	2.999	2.981
		Average
		Annual
		<u>Change</u>
16 Point Fit	<u>R-Squared</u>	
12 Point Fit		
	0.9639	2.1%
	0.9874	2.5%

## PHYSICAL DAMAGE OCN TREND

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### OBJECTIVE

In Physical Damage for Trucks, Tractors & Trailers and Private Passenger Types, as new, higher-valued commercial automobiles are introduced, there is an increase in revenue due to the original cost new component of the rating procedure. In order to reflect the revenue impact of the higher-valued vehicles during the prospective period, ISO uses an OCN trend procedure. The effect of this procedure is to reduce the indicated loss costs for Trucks, Tractors & Trailers and Private Passenger Types physical damage coverages.

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### DESCRIPTION OF ORIGINAL COST NEW DATA

The average original cost new (OCN) relativities for Comprehensive and Collision are displayed on the following exhibits. The data is displayed by coverage. To determine the historical average trend for OCN, ISO makes use of the Least Squares Method to fit a curve to the reported time series data. Specifically, an exponential curve represented by the equation

$$Y = A(B^X)$$

is fitted to the average OCN relativities. Based on the results of these curves, ISO has selected annual OCN trends of 0.9% and 1.3% for Trucks, Tractors & Trailers OTC and Collision coverages respectively. This trend is necessary to reflect the additional revenue generated by the shift in the OCN distribution as new, higher-priced automobiles are introduced.

For Private Passenger Types, OCN trends of 1.0% and 0.6% were selected for the OTC and Collision coverages respectively.

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MULTISTATE  
TRUCKS, TRACTORS & TRAILERS  
PHYSICAL DAMAGE  
OCN TREND CALCULATION

AVERAGE OCN RELATIVITIES

YEAR ENDING	OTHER THAN COLLISION	COLLISION
12/31/2012	1.219	1.352
6/30/2013	1.224	1.360
12/31/2013	1.231	1.369
6/30/2014	1.237	1.378
12/31/2014	1.243	1.387
6/30/2015	1.249	1.396
12/31/2015	1.255	1.405
6/30/2016	1.260	1.415
12/31/2016	1.266	1.425
6/30/2017	1.269	1.431

EXPONENTIAL TREND (AVERAGE ANNUAL CHANGE)

9 POINTS	0.9%	1.3%
7 POINTS	0.9%	1.3%
5 POINTS	0.8%	1.3%

Selected Other Than Collision Physical Damage Annual OCN Trend: 0.9%

Selected Collision Physical Damage Annual OCN Trend: 1.3%

Data excludes the following state: Massachusetts.

MULTISTATE  
PRIVATE PASSENGER TYPES  
PHYSICAL DAMAGE  
OCN TREND CALCULATION

AVERAGE OCN RELATIVITIES

YEAR ENDING	OTHER THAN COLLISION	COLLISION
12/31/2012	1.300	1.148
6/30/2013	1.304	1.150
12/31/2013	1.309	1.153
6/30/2014	1.315	1.155
12/31/2014	1.320	1.158
6/30/2015	1.326	1.162
12/31/2015	1.332	1.166
6/30/2016	1.340	1.170
12/31/2016	1.348	1.174
6/30/2017	1.352	1.175

EXPONENTIAL TREND (AVERAGE ANNUAL CHANGE)

9 POINTS	0.9%	0.6%
7 POINTS	1.0%	0.6%
5 POINTS	1.0%	0.6%
Selected Other Than Collision Physical Damage Annual OCN Trend:		1.0%
Selected Collision Physical Damage Annual OCN Trend:		0.6%

Data excludes the following state: Massachusetts.

## LOSS DEVELOPMENT FOR LIABILITY

OBJECTIVE	<p>The application of loss development recognizes the important concept that some of the losses for a particular accident year have not been finally determined at the time the experience is compiled.</p>
DESCRIPTION OF EXPERIENCE PERIOD DATA	<p>For Trucks, Tractors &amp; Trailers and Private Passenger Types Liability, the incurred losses and allocated loss adjustment expenses underlying the statewide loss cost level indications are on an accident year basis and were evaluated as of September 30, 2017. In other words, accident year ended June 30, 2017 includes all losses and allocated loss adjustment expenses paid through September 30, 2017 on accidents occurring from July 1, 2016 to June 30, 2017 and all losses and allocated loss adjustment expenses outstanding on these accidents as of September 30, 2017, 15 months after the inception of the accident year. Similarly, the incurred losses and allocated loss adjustment expenses for accident year ended June 30, 2016 include all loss and loss adjustment expenses paid through September 30, 2017 on accidents occurring from July 1, 2015 to June 30, 2016 and all losses and allocated loss adjustment expenses outstanding on these accidents as of September 30, 2017, 27 months after the inception of the accident year. The immature experience reported as of 15 or as of 27 months must be adjusted to a mature or ultimate settlement basis through the use of a loss development factor.</p>
DESCRIPTION OF LOSS DEVELOPMENT METHODOLOGY	<p>For Bodily Injury Coverage, states are divided into two multistate groups. One group (No-Fault) consists of states with a no-fault law that has a tort threshold. The other group (Tort) contains the remaining states. The applicable multistate group for this state is used in this document. Losses are developed up to 123 months and are based on \$100,000 CSL data. Three-year averages for Trucks, Tractors &amp; Trailers and Private Passenger Types are calculated for each link ratio based on a "best three of five" approach. Specifically, for the latest five years, the highest and lowest ratios were removed from the calculation and the three year average was calculated using the three remaining factors. Beyond 123 months the loss development is assumed to be unity.</p> <p>For Property Damage Coverage, one multistate group is used. Losses are developed up to 111 months and \$100,000 CSL data is used. Three-year averages for Trucks, Tractors &amp; Trailers and Private Passenger Types are calculated for each link ratio based on a "best three of five" years approach. Specifically, for the latest five years, the highest and lowest ratios were removed from the calculation and the three year average was calculated using the three remaining factors. Development beyond 111 months is assumed to be unity.</p>

STATE  
CREDIBILITY  
WEIGHTED  
FACTORS

For Trucks, Tractors & Trailers and Private Passenger Types, statewide loss development factors are credibility weighted with multistate factors. A Bayesian credibility study was done on state 15 to 27 months and 27 to 39 months loss development factors. The study concluded that there is significant statewide variation for bodily injury through 39 months and for property damage through 27 months. For these link ratios, statewide credibility is determined by the formula  $Z = L/(L+K)$ , where Z is the credibility, and L is the 3-year total losses for the particular state (at the earliest of the two evaluations). The complement of credibility is assigned to multistate loss development factors. K is a constant that varies by coverage as follows:

Trucks, Tractors & Trailers

	<u>15 to 27</u>	<u>27 to 39</u>
Bodily Injury (tort)	\$ 2,500,000	\$ 11,000,000
Bodily Injury (no-fault)	900,000	3,000,000
Property Damage	1,500,000	-

Private Passenger Types

	<u>15 to 27</u>	<u>27 to 39</u>
Bodily Injury (tort)	\$ 1,500,000	\$ 4,000,000
Bodily Injury (no-fault)	700,000	1,700,000
Property Damage	600,000	-

TRUCKS,  
TRACTORS &  
TRAILERS AND  
PRIVATE  
PASSENGER  
TYPES

For Trucks, Tractors & Trailers and Private Passenger Types, Bodily Injury loss development factors to ultimate are calculated by accumulating the statewide credibility-weighted 15 to 27 month factor and 27 to 39 month factor, and the multistate average 39 to ultimate factor.

For the property damage coverage, loss development factors to ultimate are calculated by accumulating the statewide credibility-weighted 15-27 month factor and the multistate average 27 to ultimate factor.

## Insurance Services Office

## Maryland

## Automobile Liability Insurance - Trucks, Tractors and Trailers

## Loss Development

## Incurred Losses and Expenses

## Bodily Injury

Accident Year	\$100,000 Basic Limit			Loss Development Factors	
<u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>15 to 27 Months</u>	<u>27 to 39 Months</u>
06/30/2006	15,781,366	19,331,493	20,802,262	1.225	1.076
06/30/2007	15,126,275	17,092,004	18,693,435	1.130	1.094
06/30/2008	14,094,731	16,447,328	18,342,555	1.167	1.115
06/30/2009	11,736,503	13,427,679	14,644,349	1.144	1.091
06/30/2010	14,567,819	17,198,758	17,800,252	1.181	1.035
06/30/2011	15,017,950	16,928,166	18,438,203	1.127	1.089
06/30/2012	14,657,595	16,518,637	17,504,648	1.127	1.060
06/30/2013	13,754,875	16,666,953	17,902,037	1.212	1.074
06/30/2014	14,447,624	17,822,288	19,388,631	1.234	1.088
06/30/2015	14,655,431	16,858,683	18,714,458	1.150	1.110
06/30/2016	17,348,638	20,452,664		1.179	
06/30/2017	19,853,329				

(1) Average Factor (Best 3 of 5) :	(A) State	1.180	1.084
	(B) Multistate	1.240	1.111
(2) Credibility		0.950	0.820
(3) Credibility Weighted Factors		1.183	1.089

## Property Damage

Accident Year	\$100,000 Basic Limit			Loss Development Factors	
<u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>15 to 27 Months</u>	<u>27 to 39 Months</u>
06/30/2006	16,782,365	17,489,168	17,581,159	1.042	1.005
06/30/2007	16,361,361	17,140,607	17,240,603	1.048	1.006
06/30/2008	15,188,124	15,762,219	15,805,523	1.038	1.003
06/30/2009	13,384,804	13,555,183	13,641,895	1.013	1.006
06/30/2010	14,298,347	14,628,749	14,691,474	1.023	1.004
06/30/2011	14,494,557	14,818,283	14,842,193	1.022	1.002
06/30/2012	14,187,623	14,736,083	14,882,537	1.039	1.010
06/30/2013	13,881,902	14,591,579	14,723,386	1.051	1.009
06/30/2014	14,609,995	15,027,989	15,057,164	1.029	1.002
06/30/2015	14,620,738	15,420,675	15,354,611	1.055	0.996
06/30/2016	16,194,580	17,102,880		1.056	
06/30/2017	16,914,106				

(1) Average Factor (Best 3 of 5) :	(A) State	1.048	1.004
	(B) Multistate	1.043	1.009
(2) Credibility		0.970	0.000
(3) Credibility Weighted Factors		1.048	1.009

## Summary of Factors

	<u>Bodily Injury</u>	<u>Property Damage</u>
39 to Ultimate **	1.076	1.005
27 to Ultimate	1.172	1.014
15 to Ultimate	1.386	1.063
** Multistate factors		

## Insurance Services Office

Basic Limits Loss Development  
Trucks, Tractors and Trailers - Bodily Injury  
Tort States #  
Incurred Losses and Expenses

Accident Year Ended	\$100,000 Basic Limit				
	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
06/30/2006	362,717,876	439,264,613	486,430,895	506,634,301	514,643,244
06/30/2007	357,658,430	440,616,925	491,527,124	512,831,335	518,986,813
06/30/2008	345,313,669	421,804,634	468,498,895	489,733,213	495,468,734
06/30/2009	307,599,505	379,355,552	422,136,319	439,565,864	446,097,042
06/30/2010	287,495,474	358,960,556	393,996,105	413,115,266	418,614,243
06/30/2011	314,579,570	382,703,084	423,793,323	444,230,736	450,239,237
06/30/2012	333,901,247	407,258,980	446,617,133	464,313,523	474,559,450
06/30/2013	332,783,737	412,602,687	458,099,582	487,068,897	496,363,782
06/30/2014	364,562,687	445,865,009	497,029,747	531,464,865	
06/30/2015	385,725,457	484,342,063	548,583,791		
06/30/2016	438,436,507	556,031,851			
06/30/2017	470,854,412				

## Ratios

Accident Year Ended	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
06/30/2006	1.211	1.107	1.042	1.016
06/30/2007	1.232	1.116	1.043	1.012
06/30/2008	1.222	1.111	1.045	1.012
06/30/2009	1.233	1.113	1.041	1.015
06/30/2010	1.249	1.098	1.049	1.013
06/30/2011	1.217	1.107	1.048	1.014
06/30/2012	1.220	1.097	1.040	1.022
06/30/2013	1.240	1.110	1.063	1.019
06/30/2014	1.223	1.115	1.069	
06/30/2015	1.256	1.133		
06/30/2016	1.268			

Average Factor : 1.240 1.111 1.053 1.016  
( Best 3 of 5 )

## Summary of factors

63 to Ult:	(75:63) (75:Ult) =	1.006
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.022
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.076
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.196
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.483

# Includes Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Dist. of Col., Georgia, Idaho, Illinois, Indiana, Iowa, Louisiana, Maine, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

## Insurance Services Office

Basic Limits Loss Development  
Trucks, Tractors and Trailers - Bodily Injury  
Tort States #  
Incurred Losses and Expenses

Accident Year	\$100,000 Basic Limit				
<u>Ended</u>	<u>75 Months</u>	<u>87 Months</u>	<u>99 Months</u>	<u>111 Months</u>	<u>123 Months</u>
06/30/2006	517,401,411	518,494,283	518,742,356	518,433,621	518,739,453
06/30/2007	519,756,201	520,170,705	520,411,933	520,267,349	520,398,816
06/30/2008	497,333,752	497,257,825	497,570,828	497,629,923	497,721,071
06/30/2009	448,142,894	448,576,384	448,565,932	448,932,607	
06/30/2010	421,655,871	421,501,107	421,680,900		
06/30/2011	452,801,187	455,300,518			
06/30/2012	477,052,802				

## Ratios

Accident Year					
<u>Ended</u>	<u>75:63</u>	<u>87:75</u>	<u>99:87</u>	<u>111:99</u>	<u>123:111</u>
06/30/2006	1.005	1.002	1.000	0.999	1.001
06/30/2007	1.001	1.001	1.000	1.000	1.000
06/30/2008	1.004	1.000	1.001	1.000	1.000
06/30/2009	1.005	1.001	1.000	1.001	
06/30/2010	1.007	1.000	1.000		
06/30/2011	1.006	1.006			
06/30/2012	1.005				
Average Factor :	1.005	1.001	1.000	1.000	1.000
( Best 3 of 5 )					

## Summary of factors

123 to Ult:	(1.000)	=	1.000
111 to Ult:	(123:111) (123:Ult)	=	1.000
99 to Ult:	(111:99) (123:111) (123:Ult)	=	1.000
87 to Ult:	(99:87) (111:99) (123:111) (123:Ult)	=	1.000
75 to Ult:	(87:75) (99:87) (111:99) (123:111) (123:Ult)	=	1.001

# Includes Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Dist. of Col., Georgia, Idaho, Illinois, Indiana, Iowa, Louisiana, Maine, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

## Insurance Services Office

Basic Limits Loss Development  
Trucks, Tractors and Trailers - Property Damage  
Multistate #  
Incurred Losses and Expenses

Accident Year Ended	\$100,000 Basic Limit				
	15 Months	27 Months	39 Months	51 Months	63 Months
06/30/2006	460,271,860	476,693,405	480,733,944	481,293,195	481,606,442
06/30/2007	470,384,141	490,307,401	493,597,489	494,601,387	494,634,452
06/30/2008	468,087,464	486,105,305	487,868,919	488,753,798	489,657,406
06/30/2009	399,711,346	410,687,740	413,015,828	413,727,773	413,801,616
06/30/2010	376,568,044	388,552,663	391,027,769	392,519,623	393,175,029
06/30/2011	407,311,260	422,312,640	424,148,787	425,393,420	425,622,540
06/30/2012	426,791,748	440,421,966	444,709,803	444,979,041	445,973,613
06/30/2013	438,423,447	454,295,751	458,624,471	460,467,676	460,625,996
06/30/2014	480,489,659	500,216,317	504,241,640	507,128,624	
06/30/2015	500,944,276	526,459,912	533,161,524		
06/30/2016	541,470,004	573,680,361			
06/30/2017	572,600,697				

## Ratios

Accident Year Ended	27:15	39:27	51:39	63:51
06/30/2006	1.036	1.008	1.001	1.001
06/30/2007	1.042	1.007	1.002	1.000
06/30/2008	1.038	1.004	1.002	1.002
06/30/2009	1.027	1.006	1.002	1.000
06/30/2010	1.032	1.006	1.004	1.002
06/30/2011	1.037	1.004	1.003	1.001
06/30/2012	1.032	1.010	1.001	1.002
06/30/2013	1.036	1.010	1.004	1.000
06/30/2014	1.041	1.008	1.006	
06/30/2015	1.051	1.013		
06/30/2016	1.059			

Average Factor : 1.043 1.009 1.004 1.001  
( Best 3 of 5 )

## Summary of factors

63 to Ult:	(75:63) (75:Ult) =	1.000
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.001
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.005
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.014
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.058

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## Insurance Services Office

Basic Limits Loss Development  
Trucks, Tractors and Trailers - Property Damage  
Multistate #  
Incurred Losses and Expenses

Accident Year	\$100,000 Basic Limit			
<u>Ended</u>	<u>75 Months</u>	<u>87 Months</u>	<u>99 Months</u>	<u>111 Months</u>
06/30/2006	481,565,786	481,379,395	481,424,433	481,577,052
06/30/2007	494,567,069	494,482,179	494,636,158	494,541,011
06/30/2008	489,833,712	489,856,322	489,820,523	489,816,233
06/30/2009	413,981,470	413,981,225	414,124,461	414,101,383
06/30/2010	392,768,595	393,078,254	393,171,220	
06/30/2011	426,373,697	426,601,690		
06/30/2012	446,022,051			

Ratios				
Accident Year				
<u>Ended</u>	<u>75:63</u>	<u>87:75</u>	<u>99:87</u>	<u>111:99</u>
06/30/2006	1.000	1.000	1.000	1.000
06/30/2007	1.000	1.000	1.000	1.000
06/30/2008	1.000	1.000	1.000	1.000
06/30/2009	1.000	1.000	1.000	1.000
06/30/2010	0.999	1.001	1.000	
06/30/2011	1.002	1.001		
06/30/2012	1.000			
Average Factor :	1.000	1.000	1.000	1.000
( Best 3 of 5 )				

Summary of factors			
111 to Ult:	(1.000)	=	1.000
99 to Ult:	(111:99) (111:Ult)	=	1.000
87 to Ult:	(99:87) (111:99) (111:Ult)	=	1.000
75 to Ult:	(87:75) (99:87) (111:99) (111:Ult)	=	1.000

# Includes Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

## Insurance Services Office

## Maryland

## Automobile Liability Insurance - Private Passenger Types

## Loss Development

## Incurred Losses and Expenses

## Bodily Injury

Accident Year	\$100,000 Basic Limit			Loss Development Factors	
<u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>15 to 27 Months</u>	<u>27 to 39 Months</u>
06/30/2006	3,334,740	3,960,791	4,411,876	1.188	1.114
06/30/2007	2,877,901	3,382,986	3,932,893	1.176	1.163
06/30/2008	3,112,567	3,611,250	3,751,375	1.160	1.039
06/30/2009	3,373,515	4,261,300	4,518,150	1.263	1.060
06/30/2010	2,950,783	3,280,616	3,491,874	1.112	1.064
06/30/2011	3,127,086	3,574,332	3,877,775	1.143	1.085
06/30/2012	3,209,897	3,478,072	3,635,740	1.084	1.045
06/30/2013	3,234,545	3,224,360	3,292,039	0.997	1.021
06/30/2014	3,006,706	3,095,294	3,306,814	1.029	1.068
06/30/2015	3,139,858	3,305,954	3,824,699	1.053	1.157
06/30/2016	3,477,133	3,889,542		1.119	
06/30/2017	3,390,102				

(1) Average Factor (Best 3 of 5) :	(A) State	1.055	1.066
	(B) Multistate	1.212	1.094
(2) Credibility		0.870	0.710
(3) Credibility Weighted Factors		1.075	1.074

## Property Damage

Accident Year	\$100,000 Basic Limit			Loss Development Factors	
<u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>15 to 27 Months</u>	<u>27 to 39 Months</u>
06/30/2006	3,305,476	3,504,675	3,502,152	1.060	0.999
06/30/2007	2,939,695	3,067,286	3,075,350	1.043	1.003
06/30/2008	3,379,434	3,398,437	3,422,417	1.006	1.007
06/30/2009	3,242,743	3,267,245	3,266,953	1.008	1.000
06/30/2010	2,631,392	2,726,422	2,716,405	1.036	0.996
06/30/2011	2,769,103	2,830,492	2,812,038	1.022	0.993
06/30/2012	2,920,448	2,975,391	2,955,919	1.019	0.993
06/30/2013	2,747,640	2,852,101	2,853,710	1.038	1.001
06/30/2014	2,480,175	2,542,544	2,544,650	1.025	1.001
06/30/2015	2,838,763	2,951,816	2,970,864	1.040	1.006
06/30/2016	2,974,153	3,234,639		1.088	
06/30/2017	3,019,586				

(1) Average Factor (Best 3 of 5) :	(A) State	1.034	0.998
	(B) Multistate	1.043	1.009
(2) Credibility		0.930	0.000
(3) Credibility Weighted Factors		1.035	1.009

## Summary of Factors

	<u>Bodily Injury</u>	<u>Property Damage</u>
39 to Ultimate **	1.065	1.006
27 to Ultimate	1.144	1.015
15 to Ultimate	1.230	1.051
** Multistate factors		

## Insurance Services Office

Basic Limits Loss Development  
Private Passenger Types - Bodily Injury  
Tort States #  
Incurred Losses and Expenses

Accident Year Ended	\$100,000 Basic Limit				
	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
06/30/2006	67,583,749	81,009,369	90,289,246	93,991,142	94,880,397
06/30/2007	68,111,536	84,172,913	93,673,999	97,275,999	98,374,697
06/30/2008	63,407,944	79,182,394	87,563,651	91,000,258	92,012,918
06/30/2009	66,654,281	81,379,323	88,125,407	90,556,635	91,238,239
06/30/2010	64,674,824	77,161,272	82,564,419	85,921,345	87,325,760
06/30/2011	73,237,704	90,377,007	98,075,194	102,782,690	103,379,175
06/30/2012	76,231,417	92,232,596	99,990,025	104,250,028	105,893,453
06/30/2013	72,382,290	85,391,479	92,742,392	96,997,208	98,910,147
06/30/2014	72,239,782	87,002,441	96,601,923	101,876,885	
06/30/2015	71,090,147	88,304,016	100,456,172		
06/30/2016	73,681,193	90,107,432			
06/30/2017	70,218,678				

## Ratios

Accident Year Ended	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
06/30/2006	1.199	1.115	1.041	1.009
06/30/2007	1.236	1.113	1.038	1.011
06/30/2008	1.249	1.106	1.039	1.011
06/30/2009	1.221	1.083	1.028	1.008
06/30/2010	1.193	1.070	1.041	1.016
06/30/2011	1.234	1.085	1.048	1.006
06/30/2012	1.210	1.084	1.043	1.016
06/30/2013	1.180	1.086	1.046	1.020
06/30/2014	1.204	1.110	1.055	
06/30/2015	1.242	1.138		
06/30/2016	1.223			

Average Factor :                      1.212              1.094              1.046              1.013  
( Best 3 of 5 )

## Summary of factors

63 to Ult:	(75:63) (75:Ult) =	1.005
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.018
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.065
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.165
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.412

# Includes Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Dist. of Col., Georgia, Idaho, Illinois, Indiana, Iowa, Louisiana, Maine, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

## Insurance Services Office

Basic Limits Loss Development  
Private Passenger Types - Bodily Injury  
Tort States #  
Incurred Losses and Expenses

Accident Year Ended	\$100,000 Basic Limit				
	<u>75 Months</u>	<u>87 Months</u>	<u>99 Months</u>	<u>111 Months</u>	<u>123 Months</u>
06/30/2006	95,330,986	95,601,812	95,695,429	95,702,003	95,673,577
06/30/2007	98,675,407	98,782,402	98,651,446	98,660,641	98,618,482
06/30/2008	92,160,306	92,547,336	92,585,501	92,532,224	92,650,975
06/30/2009	91,232,356	91,033,915	91,325,827	91,304,530	
06/30/2010	87,457,382	87,329,883	87,492,610		
06/30/2011	103,746,124	103,971,637			
06/30/2012	106,827,814				

## Ratios

Accident Year Ended	<u>75:63</u>	<u>87:75</u>	<u>99:87</u>	<u>111:99</u>	<u>123:111</u>
06/30/2006	1.005	1.003	1.001	1.000	1.000
06/30/2007	1.003	1.001	0.999	1.000	1.000
06/30/2008	1.002	1.004	1.000	0.999	1.001
06/30/2009	1.000	0.998	1.003	1.000	
06/30/2010	1.002	0.999	1.002		
06/30/2011	1.004	1.002			
06/30/2012	1.009				

Average Factor : 1.003      1.001      1.001      1.000      1.000  
( Best 3 of 5 )

## Summary of factors

123 to Ult: (1.000) = 1.000  
 111 to Ult: (123:111) (123:Ult) = 1.000  
 99 to Ult: (111:99) (123:111) (123:Ult) = 1.000  
 87 to Ult: (99:87) (111:99) (123:111) (123:Ult) = 1.001  
 75 to Ult: (87:75) (99:87) (111:99) (123:111) (123:Ult) = 1.002

# Includes Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Dist. of Col., Georgia, Idaho, Illinois, Indiana, Iowa, Louisiana, Maine, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

## Insurance Services Office

Basic Limits Loss Development  
Private Passenger Types - Property Damage  
Multistate #  
Incurred Losses and Expenses

Accident Year Ended	\$100,000 Basic Limit				
	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
06/30/2006	89,362,109	92,114,007	92,692,861	92,899,234	92,945,095
06/30/2007	91,173,540	94,450,278	94,750,553	94,782,619	94,828,528
06/30/2008	91,620,032	94,391,878	95,153,094	95,105,179	95,124,596
06/30/2009	86,654,787	89,263,435	89,752,569	89,917,349	89,822,516
06/30/2010	81,972,024	84,600,527	85,059,368	85,323,092	85,416,141
06/30/2011	87,125,274	90,355,779	91,078,019	91,320,623	91,724,135
06/30/2012	90,369,368	93,096,305	93,647,267	94,251,482	94,386,290
06/30/2013	90,055,811	93,557,486	94,315,966	94,533,289	94,592,040
06/30/2014	92,752,697	96,629,169	97,566,525	97,819,757	
06/30/2015	91,792,187	96,254,212	97,779,168		
06/30/2016	97,469,912	103,163,195			
06/30/2017	94,537,694				

## Ratios

Accident Year Ended	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
06/30/2006	1.031	1.006	1.002	1.000
06/30/2007	1.036	1.003	1.000	1.000
06/30/2008	1.030	1.008	0.999	1.000
06/30/2009	1.030	1.005	1.002	0.999
06/30/2010	1.032	1.005	1.003	1.001
06/30/2011	1.037	1.008	1.003	1.004
06/30/2012	1.030	1.006	1.006	1.001
06/30/2013	1.039	1.008	1.002	1.001
06/30/2014	1.042	1.010	1.003	
06/30/2015	1.049	1.016		
06/30/2016	1.058			

Average Factor : 1.043 1.009 1.003 1.001  
( Best 3 of 5 )

## Summary of factors

63 to Ult:	(75:63) (75:Ult) =	1.002
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.003
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.006
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.015
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.059

# Includes Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

## Insurance Services Office

Basic Limits Loss Development  
 Private Passenger Types - Property Damage  
 Multistate #  
 Incurred Losses and Expenses

Accident Year Ended	\$100,000 Basic Limit 75 Months	87 Months	99 Months	111 Months
06/30/2006	92,972,766	92,929,054	93,050,315	93,046,241
06/30/2007	94,746,820	94,804,848	94,743,873	94,751,501
06/30/2008	95,158,038	95,164,668	95,161,159	95,161,214
06/30/2009	89,893,939	89,856,814	89,862,519	89,883,132
06/30/2010	85,563,037	85,533,762	85,527,037	
06/30/2011	91,948,750	92,113,425		
06/30/2012	94,567,607			

Ratios

Accident Year Ended	75:63	87:75	99:87	111:99
06/30/2006	1.000	1.000	1.001	1.000
06/30/2007	0.999	1.001	0.999	1.000
06/30/2008	1.000	1.000	1.000	1.000
06/30/2009	1.001	1.000	1.000	1.000
06/30/2010	1.002	1.000	1.000	
06/30/2011	1.002	1.002		
06/30/2012	1.002			
Average Factor :	1.002	1.000	1.000	1.000
( Best 3 of 5 )				

Summary of factors

111 to Ult:	(1.000)	=	1.000
99 to Ult:	(111:99) (111:Ult)	=	1.000
87 to Ult:	(99:87) (111:99) (111:Ult)	=	1.000
75 to Ult:	(87:75) (99:87) (111:99) (111:Ult)	=	1.000

# Includes Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

## LOSS DEVELOPMENT FOR PHYSICAL DAMAGE

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OBJECTIVE	The application of loss development recognizes the important concept that some of the losses for a particular accident year have not been finally determined at the time the experience is compiled.
DESCRIPTION OF EXPERIENCE PERIOD DATA	For Physical Damage, paid losses underlying the statewide loss cost level indications are on an accident year basis and were evaluated as of September 30, 2017. In other words, accident year ended June 30, 2017 includes all losses paid through September 30, 2017 on accidents occurring from July 1, 2016 to June 30, 2017. Similarly, the paid losses for accident year ended June 30, 2016 include all losses paid through September 30, 2017 on accidents occurring from July 1, 2015 to June 30, 2016. The immature paid loss experience reported as of 15 or as of 27 months must be adjusted to a mature or ultimate settlement basis through the use of a loss development factor.
DESCRIPTION OF LOSS DEVELOPMENT METHODOLOGY	For Collision and Other Than Collision coverages, one multistate group is used. Losses are developed to an ultimate settlement basis. Three-year averages are calculated for each age-to-age link ratio. These link ratios are accumulated to develop losses to 123 months. Development beyond 123 months is assumed to be 1.000.

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## Insurance Services Office

Physical Damage Loss Development  
Trucks, Tractors and Trailers - Other Than Collision  
Multistate #  
Paid Losses

Accident Year Ended	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
06/30/2006	115,868,879	117,537,450	117,417,860	117,499,074	117,368,312
06/30/2007	106,060,474	108,310,209	108,237,892	108,016,793	107,950,289
06/30/2008	132,354,829	136,019,713	135,872,617	135,740,246	135,717,406
06/30/2009	129,545,019	131,557,295	131,346,003	131,488,687	131,535,333
06/30/2010	133,435,723	136,691,601	137,048,525	137,054,316	136,931,054
06/30/2011	146,046,383	150,723,075	150,845,279	150,823,038	150,902,048
06/30/2012	157,626,723	162,208,875	161,963,070	162,075,208	162,117,883
06/30/2013	181,213,600	185,687,553	185,896,091	186,040,016	186,229,494
06/30/2014	153,100,011	158,118,583	158,540,896	158,494,013	
06/30/2015	149,850,053	154,114,037	154,090,929		
06/30/2016	169,372,705	174,477,073			
06/30/2017	215,253,465				

## Ratios

Accident Year Ended	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
06/30/2006	1.014	0.999	1.001	0.999
06/30/2007	1.021	0.999	0.998	0.999
06/30/2008	1.028	0.999	0.999	1.000
06/30/2009	1.016	0.998	1.001	1.000
06/30/2010	1.024	1.003	1.000	0.999
06/30/2011	1.032	1.001	1.000	1.001
06/30/2012	1.029	0.998	1.001	1.000
06/30/2013	1.025	1.001	1.001	1.001
06/30/2014	1.033	1.003	1.000	
06/30/2015	1.028	1.000		
06/30/2016	1.030			

Average Factor : 1.029 1.001 1.000 1.000  
( Best 3 of 5 )

## Summary of factors

63 to Ult:	(75:63) (75:Ult) =	1.000
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.000
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.000
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.001
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.030

# Include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

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Insurance Services Office  
Physical Damage Loss Development  
Trucks, Tractors and Trailers - Other Than Collision  
Multistate #  
Paid Losses

Accident Year Ended	75 Months	87 Months	99 Months	111 Months	123 Months
06/30/2006	117,407,039	117,391,379	117,374,502	117,360,003	117,355,467
06/30/2007	107,916,197	107,951,785	107,913,161	107,905,484	107,908,747
06/30/2008	135,709,069	135,677,823	135,598,197	135,592,126	135,594,517
06/30/2009	131,487,958	131,457,810	131,526,907	131,540,603	
06/30/2010	137,057,099	137,020,213	137,024,910		
06/30/2011	150,949,591	150,956,940			
06/30/2012	161,960,526				

Accident Year Ended	Ratios				
	75:63	87:75	99:87	111:99	123:111
06/30/2006	1.000	1.000	1.000	1.000	1.000
06/30/2007	1.000	1.000	1.000	1.000	1.000
06/30/2008	1.000	1.000	0.999	1.000	1.000
06/30/2009	1.000	1.000	1.001	1.000	
06/30/2010	1.001	1.000	1.000		
06/30/2011	1.000	1.000			
06/30/2012	0.999				
Average Factor :	1.000	1.000	1.000	1.000	1.000
( Best 3 of 5 )					

Summary of factors		
123 to Ult:	(123:Ult)	= 1.000
111 to Ult:	(111:123) (123:Ult)	= 1.000
99 to Ult:	(111:99) (111:123) (123:Ult)	= 1.000
87 to Ult:	(99:87) (111:99) (111:123) (123:Ult)	= 1.000
75 to Ult:	(87:75) (99:87) (111:99) (111:123) (123:Ult)	= 1.000

# Include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico  
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## Insurance Services Office

Physical Damage Loss Development  
Trucks, Tractors and Trailers - Collision  
Multistate #  
Paid Losses

Accident Year Ended	15 Months	27 Months	39 Months	51 Months	63 Months
06/30/2006	319,108,163	311,919,211	310,257,826	309,709,961	309,657,041
06/30/2007	335,162,168	328,051,123	325,875,815	325,592,315	325,664,408
06/30/2008	366,293,088	360,041,740	358,426,743	357,912,602	357,612,332
06/30/2009	325,561,471	320,649,896	319,515,812	319,032,628	318,968,130
06/30/2010	304,106,534	300,221,619	299,387,269	299,158,806	299,001,629
06/30/2011	340,464,457	336,749,730	335,396,005	334,871,126	334,820,260
06/30/2012	357,384,422	352,510,196	350,983,697	350,637,829	350,620,968
06/30/2013	367,242,557	359,892,634	358,243,507	357,665,942	357,990,499
06/30/2014	400,738,906	392,684,917	391,228,722	390,905,724	
06/30/2015	425,611,300	414,215,591	411,855,342		
06/30/2016	452,682,946	442,172,563			
06/30/2017	492,432,168				

## Ratios

Accident Year Ended	27:15	39:27	51:39	63:51
06/30/2006	0.977	0.995	0.998	1.000
06/30/2007	0.979	0.993	0.999	1.000
06/30/2008	0.983	0.996	0.999	0.999
06/30/2009	0.985	0.996	0.998	1.000
06/30/2010	0.987	0.997	0.999	0.999
06/30/2011	0.989	0.996	0.998	1.000
06/30/2012	0.986	0.996	0.999	1.000
06/30/2013	0.980	0.995	0.998	1.001
06/30/2014	0.980	0.996	0.999	
06/30/2015	0.973	0.994		
06/30/2016	0.977			

Average Factor : 0.979 0.996 0.999 1.000  
( Best 3 of 5 )

## Summary of factors

63 to Ult:	(75:63) (75:Ult) =	1.000
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.000
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	0.999
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	0.995
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	0.974

# Include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

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## Insurance Services Office

Physical Damage Loss Development  
Trucks, Tractors and Trailers - Collision  
Multistate #  
Paid Losses

Accident Year Ended	<u>75 Months</u>	<u>87 Months</u>	<u>99 Months</u>	<u>111 Months</u>	<u>123 Months</u>
06/30/2006	309,688,588	309,761,415	309,746,334	309,739,842	309,703,609
06/30/2007	325,563,135	326,070,410	325,487,380	325,472,430	325,452,043
06/30/2008	357,522,861	357,444,572	357,427,226	357,395,019	357,412,683
06/30/2009	318,946,538	318,824,008	318,771,017	318,756,358	
06/30/2010	299,022,187	298,975,775	298,971,210		
06/30/2011	334,743,886	334,622,582			
06/30/2012	350,551,245				

Accident Year Ended	Ratios				
	<u>75:63</u>	<u>87:75</u>	<u>99:87</u>	<u>111:99</u>	<u>123:111</u>
06/30/2006	1.000	1.000	1.000	1.000	1.000
06/30/2007	1.000	1.002	0.998	1.000	1.000
06/30/2008	1.000	1.000	1.000	1.000	1.000
06/30/2009	1.000	1.000	1.000	1.000	
06/30/2010	1.000	1.000	1.000		
06/30/2011	1.000	1.000			
06/30/2012	1.000				
Average Factor :	1.000	1.000	1.000	1.000	1.000
( Best 3 of 5 )					

Summary of factors		
123 to Ult:	(123:Ult) =	1.000
111 to Ult:	(111:123) (123:Ult) =	1.000
99 to Ult:	(111:99) (111:123) (123:Ult) =	1.000
87 to Ult:	(99:87) (111:99) (111:123) (123:Ult) =	1.000
75 to Ult:	(87:75) (99:87) (111:99) (111:123) (123:Ult) =	1.000

# Include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico  
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## Insurance Services Office

Physical Damage Loss Development  
Private Passenger Types - Other Than Collision  
Multistate #  
Paid Losses

Accident Year Ended	15 Months	27 Months	39 Months	51 Months	63 Months
06/30/2006	54,890,106	55,651,782	55,612,183	55,522,159	55,509,154
06/30/2007	45,613,394	46,218,676	46,256,156	46,280,284	46,230,615
06/30/2008	48,478,015	49,089,698	49,007,909	48,946,321	48,942,767
06/30/2009	48,187,677	48,511,377	48,467,654	48,407,434	48,372,567
06/30/2010	51,040,956	51,828,301	51,858,480	51,891,304	51,891,727
06/30/2011	60,915,751	62,527,771	62,527,392	62,522,157	62,541,293
06/30/2012	65,387,718	65,988,836	66,106,815	66,095,497	66,083,639
06/30/2013	75,615,309	76,147,864	76,185,090	76,255,471	76,266,089
06/30/2014	57,132,080	58,766,058	59,055,165	59,062,414	
06/30/2015	51,770,272	52,705,510	52,794,315		
06/30/2016	57,614,750	58,692,303			
06/30/2017	63,634,043				

## Ratios

Accident Year Ended	27:15	39:27	51:39	63:51
06/30/2006	1.014	0.999	0.998	1.000
06/30/2007	1.013	1.001	1.001	0.999
06/30/2008	1.013	0.998	0.999	1.000
06/30/2009	1.007	0.999	0.999	0.999
06/30/2010	1.015	1.001	1.001	1.000
06/30/2011	1.026	1.000	1.000	1.000
06/30/2012	1.009	1.002	1.000	1.000
06/30/2013	1.007	1.000	1.001	1.000
06/30/2014	1.029	1.005	1.000	
06/30/2015	1.018	1.002		
06/30/2016	1.019			

Average Factor : 1.015 1.001 1.000 1.000  
( Best 3 of 5 )

## Summary of factors

63 to Ult:	(75:63) (75:Ult) =	1.000
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.000
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.000
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.001
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.016

# Include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

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## Insurance Services Office

## Physical Damage Loss Development

## Private Passenger Types - Other Than Collision

## Multistate #

## Paid Losses

Accident Year Ended	75 Months	87 Months	99 Months	111 Months	123 Months
06/30/2006	55,522,562	55,526,315	55,532,554	55,533,236	55,533,096
06/30/2007	46,286,071	46,287,291	46,279,314	46,277,976	46,280,692
06/30/2008	48,944,835	48,937,480	48,938,103	48,938,125	48,950,665
06/30/2009	48,382,964	48,382,175	48,379,938	48,379,078	
06/30/2010	51,873,942	51,871,109	51,903,022		
06/30/2011	62,542,944	62,536,742			
06/30/2012	66,103,488				

## Ratios

Accident Year Ended	75:63	87:75	99:87	111:99	123:111
06/30/2006	1.000	1.000	1.000	1.000	1.000
06/30/2007	1.001	1.000	1.000	1.000	1.000
06/30/2008	1.000	1.000	1.000	1.000	1.000
06/30/2009	1.000	1.000	1.000	1.000	
06/30/2010	1.000	1.000	1.001		
06/30/2011	1.000	1.000			
06/30/2012	1.000				

Average Factor : 1.000 1.000 1.000 1.000 1.000  
( Best 3 of 5 )

## Summary of factors

123 to Ult: (123:Ult) = 1.000  
 111 to Ult: (111:123) (123:Ult) = 1.000  
 99 to Ult: (111:99) (111:123) (123:Ult) = 1.000  
 87 to Ult: (99:87) (111:99) (111:123) (123:Ult) = 1.000  
 75 to Ult: (87:75) (99:87) (111:99) (111:123) (123:Ult) = 1.000

# Include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

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## Insurance Services Office

Physical Damage Loss Development  
Private Passenger Types - Collision  
Multistate #  
Paid Losses

Accident Year Ended	15 Months	27 Months	39 Months	51 Months	63 Months
06/30/2006	146,227,184	141,398,179	140,711,333	140,460,118	140,379,319
06/30/2007	142,394,682	137,339,070	136,556,013	136,469,785	136,385,035
06/30/2008	147,858,279	142,708,067	141,862,419	141,665,393	141,592,334
06/30/2009	144,911,397	140,252,488	139,807,269	139,500,585	139,443,412
06/30/2010	136,534,494	131,986,715	131,650,899	131,490,479	131,410,081
06/30/2011	143,622,057	138,595,095	138,076,818	137,846,339	137,860,021
06/30/2012	154,450,463	149,422,982	148,709,221	148,649,883	148,561,020
06/30/2013	154,321,109	147,804,999	146,947,605	146,860,843	146,903,281
06/30/2014	159,265,580	152,436,627	151,743,873	151,565,825	
06/30/2015	168,169,232	160,306,530	158,872,101		
06/30/2016	175,716,107	167,508,421			
06/30/2017	165,972,443				

## Ratios

Accident Year Ended	27:15	39:27	51:39	63:51
06/30/2006	0.967	0.995	0.998	0.999
06/30/2007	0.964	0.994	0.999	0.999
06/30/2008	0.965	0.994	0.999	0.999
06/30/2009	0.968	0.997	0.998	1.000
06/30/2010	0.967	0.997	0.999	0.999
06/30/2011	0.965	0.996	0.998	1.000
06/30/2012	0.967	0.995	1.000	0.999
06/30/2013	0.958	0.994	0.999	1.000
06/30/2014	0.957	0.995	0.999	
06/30/2015	0.953	0.991		
06/30/2016	0.953			

Average Factor : 0.956 0.995 0.999 1.000  
( Best 3 of 5 )

## Summary of factors

63 to Ult:	(75:63) (75:Ult) =	1.000
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.000
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	0.999
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	0.994
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	0.950

# Include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico

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Insurance Services Office  
Physical Damage Loss Development  
Private Passenger Types - Collision  
Multistate #  
Paid Losses

Accident Year Ended	75 Months	87 Months	99 Months	111 Months	123 Months
06/30/2006	140,435,053	140,466,906	140,451,303	140,442,677	140,417,706
06/30/2007	136,323,634	136,298,762	136,285,390	136,272,033	136,258,920
06/30/2008	141,568,993	141,551,880	141,541,883	141,538,018	141,540,016
06/30/2009	139,409,041	139,384,117	139,368,830	139,355,644	
06/30/2010	131,371,269	131,334,429	131,331,779		
06/30/2011	137,788,766	137,785,953			
06/30/2012	148,532,527				

Accident Year Ended	Ratios				
	75:63	87:75	99:87	111:99	123:111
06/30/2006	1.000	1.000	1.000	1.000	1.000
06/30/2007	1.000	1.000	1.000	1.000	1.000
06/30/2008	1.000	1.000	1.000	1.000	1.000
06/30/2009	1.000	1.000	1.000	1.000	
06/30/2010	1.000	1.000	1.000		
06/30/2011	0.999	1.000			
06/30/2012	1.000				
Average Factor :	1.000	1.000	1.000	1.000	1.000
( Best 3 of 5 )					

Summary of factors		
123 to Ult:	(123:Ult)	= 1.000
111 to Ult:	(111:123) (123:Ult)	= 1.000
99 to Ult:	(111:99) (111:123) (123:Ult)	= 1.000
87 to Ult:	(99:87) (111:99) (111:123) (123:Ult)	= 1.000
75 to Ult:	(87:75) (99:87) (111:99) (111:123) (123:Ult)	= 1.000

# Include Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Dist. of Col., Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, Hawaii, Alaska, and Puerto Rico  
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## CREDIBILITY PROCEDURE FOR EXPERIENCE LOSS RATIO

OBJECTIVE	<p>The extent to which the state experience is reflected in the development of the prospective loss costs is determined by the credibility of the data for that state. Specifically, ISO credibility procedures are based upon the volume of claims for each coverage separately.</p>
METHODOLOGY	<p>The standards for full credibility were determined from a credibility study using various size of loss distributions for liability, PIP, other than collision and collision respectively. Separate standards by coverage/major class for full credibility were calculated using the Mayerson, Jones and Bowers expansion formula.</p>
CREDIBILITY FOR EXPERIENCE LOSS RATIO	<p>The assignment of credibility to the experience loss ratio is based on the total number of claims for the years used. For liability, the claims are based on BI and PD claims combined. For physical damage, credibility is determined separately for OTC and Collision. Partial credibility (Z), as used for the experience loss ratio, is determined using the square root rule as follows:</p> $Z = \sqrt{\frac{\text{Claims}}{X}}$ <p>Where X equals the full credibility standard, by line and coverage, as shown on the following pages of this section.</p>
YEAR WEIGHTS	<p>The weights assigned to the loss ratio by year are based on the credibility of the average number of claims for the years of experience used. A maximum of five years of experience may be used. This procedure is described in detail in the flow chart on the following page. The claim standard used to determine the year weights is based on the credibility standard for each coverage. The schedules of the number of claims required for the year weight assignments are shown on the following pages.</p>

COMMERCIAL AUTOMOBILE LIABILITY  
FLOWCHART TO DETERMINE  
YEAR WEIGHTS AND  
EXPERIENCE PERIOD CREDIBILITY

Step 1: Determine Number of Years to be used and Year Weights

1. Add latest 2 years of claims and divide by 2 to determine the 2 year average.
2. If 2 year Avg. claims  $\geq$  11,500,  
Then use 2 years of experience and assign 70/30 weights.
3. Add latest 3 years of claims and divide by 3 to determine the 3 year average.
4. If 3 year Avg. claims  $\geq$  1,380,  
Then use 3 years of experience and assign 50/30/20 weights.
5. If 3 year Avg. claims  $<$  1,380,  
Then use 5 years of experience and assign 30/25/20/15/10 weights.

Step 2: Determine the Experience Period Credibility

Calculate partial credibility based on the total number of claims for the number of years used in the review as determined from Step 1.

COMMERCIAL AUTOMOBILE PIP  
FLOWCHART TO DETERMINE  
YEAR WEIGHTS AND  
EXPERIENCE PERIOD CREDIBILITY

TRUCKS, TRACTORS, & TRAILERS AND PRIVATE PASSENGER TYPES

Step 1: Determine Number of Years to be used and Year Weights

1. Add latest 2 years of claims and divide by 2 to determine the 2 year average.
2. If 2 year Avg. claims  $\geq$  1,400,  
Then use 2 years of experience and assign 70/30 weights.
3. Add latest 3 years of claims and divide by 3 to determine the 3 year average.
4. If 3 year Avg. claims  $\geq$  150,  
Then use 3 years of experience and assign 50/30/20 weights.
5. If 3 year Avg. claims  $<$  150,  
Then use 5 years of experience and assign 30/25/20/15/10 weights.

Step 2: Determine the Experience Period Credibility

Calculate partial credibility based on the total number of claims for the number of years used in the review as determined from Step 1.

COMMERCIAL AUTOMOBILE PHYSICAL DAMAGE  
FLOWCHART TO DETERMINE  
YEAR WEIGHTS AND  
EXPERIENCE PERIOD CREDIBILITY

Step 1: Determine Number of Years to be used and Year Weights

1. Add latest 2 years of claims and divide by 2 to determine the 2 year average.
2. If 2 year Avg. claims  $\geq$  Full Standard,  
Then use 2 years of experience and assign 70/30 weights.
3. Add latest 3 years of claims and divide by 3 to determine the 3 year average.
4. If 3 year Avg. claims  $\geq$  Intermediate Threshold,  
Then use 3 years of experience and assign 50/30/20 weights.
5. If 3 year Avg. claims  $<$  Intermediate Threshold,  
Then use 5 years of experience and assign 30/25/20/15/10 weights.

Step 2: Determine the Experience Period Credibility

Calculate partial credibility based on the total number of claims for the number of years used in the review as determined from Step 1.

<u>Coverage</u>	<u>Intermediate Threshold</u>	<u>Full Standard</u>
Trucks, Tractors & Trailers OTC	1,350	11,000
Trucks, Tractors & Trailers Collision	550	4,500
Private Passenger Types OTC	1,050	8,500
Private Passenger Types Collision	450	3,500

Tables For Use With Trend Data

Bodily Injury				Property Damage			
Number of Claims			Cred.	Number of Claims			Cred.
0	-	641	0.00	0	-	256	0.00
642	-	2027	0.05	257	-	810	0.05
2028	-	3571	0.10	811	-	1428	0.10
3572	-	5303	0.15	1429	-	2121	0.15
5304	-	7258	0.20	2122	-	2903	0.20
7259	-	9482	0.25	2904	-	3793	0.25
9483	-	12037	0.30	3794	-	4814	0.30
12038	-	14999	0.35	4815	-	5999	0.35
15000	-	18478	0.40	6000	-	7391	0.40
18479	-	22619	0.45	7392	-	9047	0.45
22620	-	27631	0.50	9048	-	11052	0.50
27632	-	33823	0.55	11053	-	13529	0.55
33824	-	41666	0.60	13530	-	16666	0.60
41667	-	51923	0.65	16667	-	20769	0.65
51924	-	65909	0.70	20770	-	26363	0.70
65910	-	86111	0.75	26364	-	34444	0.75
86112	-	117857	0.80	34445	-	47142	0.80
117858	-	174999	0.85	47143	-	69999	0.85
175000	-	308333	0.90	70000	-	123333	0.90
308334	-	974999	0.95	123334	-	389999	0.95
975000	-	and over	1.00	390000	-	and over	1.00

K = 25,000

K = 10,000

CREDIBILITY FORMULA = ( # CLAIMS)/( # CLAIMS + K)

ALL LIABILITY COVERAGES  
CREDIBILITY TABLE  
NUMBER OF CLAIMS

<u>Credibility</u>			
0.00*	0	-	28
0.05	29	-	114
0.10	115	-	258
0.15	259	-	459
0.20	460	-	718
0.25	719	-	1,034
0.30	1035	-	1,408
0.35	1,409	-	1,839
0.40	1,840	-	2,328
0.45	2,329	-	2,874
0.50	2,875	-	3,478
0.55	3,479	-	4,139
0.60	4,140	-	4,858
0.65	4,859	-	5,634
0.70	5,635	-	6,468
0.75	6,469	-	7,359
0.80	7,360	-	8,308
0.85	8,309	-	9,314
0.90	9,315	-	10,378
0.95	10,379	-	11,499
1.00		>	11,499

The credibility for the loss cost level ratio is determined by the total number of claims for the total number of years of experience used in the review.

\*The credibility underlying the calculation of the statewide indication is subject to a minimum of 5% given that there is at least one claim in the experience period.

PERSONAL INJURY PROTECTION  
CREDIBILITY TABLES  
NUMBER OF CLAIMS

<u>Credibility</u>	<u>Trucks, Tractors &amp; Trailers and Private Pass Types</u>		
*0.00	0	-	3
0.05	4	-	13
0.10	14	-	31
0.15	32	-	55
0.20	56	-	87
0.25	88	-	125
0.30	126	-	171
0.35	172	-	223
0.40	224	-	283
0.45	284	-	349
0.50	350	-	423
0.55	424	-	503
0.60	504	-	591
0.65	592	-	685
0.70	686	-	787
0.75	788	-	895
0.80	896	-	1,011
0.85	1,012	-	1,133
0.90	1,134	-	1,263
0.95	1,264	-	1,399
1.00		>	1,399

The credibility for the loss cost level ratio is determined by the total number of claims for the total number of years of experience used in the review.

\*The credibility underlying the calculation of the statewide indication is subject to a minimum of 5% given that there is at least one claim in the experience period

PHYSICAL DAMAGE  
CREDIBILITY TABLES  
NUMBER OF CLAIMS

OTHER THAN COLLISION

<u>Cred</u>	<u>Trucks, Tractors &amp; Trailers</u>			<u>Private Passenger Types</u>		
0.00*	0	-	27	0	-	21
0.05	28	-	109	22	-	84
0.10	110	-	247	85	-	191
0.15	248	-	439	192	-	339
0.20	440	-	687	340	-	531
0.25	688	-	989	532	-	764
0.30	990	-	1,347	765	-	1,041
0.35	1,348	-	1,759	1,042	-	1,359
0.40	1,760	-	2,227	1,360	-	1,721
0.45	2,228	-	2,749	1,722	-	2,124
0.50	2,750	-	3,327	2,125	-	2,571
0.55	3,328	-	3,959	2,572	-	3,059
0.60	3,960	-	4,647	3,060	-	3,591
0.65	4,648	-	5,389	3,592	-	4,164
0.70	5,390	-	6,187	4,165	-	4,781
0.75	6,188	-	7,039	4,782	-	5,439
0.80	7,040	-	7,947	5,440	-	6,141
0.85	7,948	-	8,909	6,142	-	6,884
0.90	8,910	-	9,927	6,885	-	7,671
0.95	9,928	-	10,999	7,672	-	8,499
1.00		>	10,999		>	8,499

COLLISION

<u>Cred</u>	<u>Trucks, Tractors &amp; Trailers</u>			<u>Private Passenger Types</u>		
0.00*	0	-	11	0	-	8
0.05	12	-	44	9	-	34
0.10	45	-	101	35	-	78
0.15	102	-	179	79	-	139
0.20	180	-	281	140	-	218
0.25	282	-	404	219	-	314
0.30	405	-	551	315	-	428
0.35	552	-	719	429	-	559
0.40	720	-	911	560	-	708
0.45	912	-	1,124	709	-	874
0.50	1,125	-	1,361	875	-	1,058
0.55	1,362	-	1,619	1,059	-	1,259
0.60	1,620	-	1,901	1,260	-	1,478
0.65	1,902	-	2,204	1,479	-	1,714
0.70	2,205	-	2,531	1,715	-	1,968
0.75	2,532	-	2,879	1,969	-	2,239
0.80	2,880	-	3,251	2,240	-	2,528
0.85	3,252	-	3,644	2,529	-	2,834
0.90	3,645	-	4,061	2,835	-	3,158
0.95	4,062	-	4,499	3,159	-	3,499
1.00		>	4,499		>	3,499

The credibility for loss cost level ratio is determined by the total number of claims for the total number of years of experience used in the review.

\*The credibility underlying the calculation of the statewide indication is subject to a minimum of 5% given that there is at least one claim in the experience period.

MARYLAND  
CLAIMS PER TERRITORY  
LIABILITY AND PIP

Territory	Trucks, Tractors & Trailers Incurred Claims 5 Years Ending 06/30/2017		Private Passenger Types Incurred Claims 5 Years Ending 06/30/2017	
	Combined BI and PD	PIP	Combined BI and PD	PIP
101	2,213	222	505	40
102	3,796	336	1,139	197
108	734	65	268	33
109	1,689	83	302	38
110	1,014	69	207	37
111	1,205	89	515	45
112	1,703	134	202	41
113	2,332	182	360	79
114	15,191	885	2,857	429
SW Total	29,877	2,065	6,355	939

Claims for Trend

BI	PD
<u>2,230</u>	<u>6,366</u>

MARYLAND  
CLAIMS PER TERRITORY  
PHYSICAL DAMAGE

Territory	Trucks, Tractors & Trailers Paid Claims 5 Years Ending 06/30/2017		Private Passenger Types Paid Claims 5 Years Ending 06/30/2017	
	OTC	Coll	OTC	Coll
101	192	542	191	329
102	479	997	439	753
108	97	234	102	262
109	172	402	126	181
110	140	257	98	136
111	93	288	184	356
112	170	421	78	123
113	629	645	305	281
114	2,160	4,005	1,637	2,049
SW Total	4,132	7,791	3,160	4,470

## RELATIVITIES USED TO DEVELOP MINOR CLASS AND COVERAGE LOSS COSTS

### (1) Public Automobiles Liability

Loss Costs for the Public Automobiles section have been calculated as factor derivatives off the Trucks, Tractors & Trailers liability and PIP base loss costs. The relativities used are listed below.

	Differentials to Base Loss Cost	
	CSL Liab	PIP
Taxis and Limousines	6.20	5.07
School and Church Buses	0.55	0.62
Other Buses	3.80	5.91
Van Pools	1.50	0.68

### (2) Public Automobiles Physical Damage

The relativities applied to Trucks, Tractors & Trailers physical damage revised base loss costs to develop the Public Automobile physical damage revised base loss costs are as follows:

Taxis, Limousines and Van Pools		
	Other Than Collision:	1.02
	Collision:	1.27
School, Church and Other Buses		
	Other Than Collision:	0.70
	Collision:	0.65

### (3) Personal Injury Protection

The latest PIP factors used to develop loss costs for risks that are subject to coverage under respective programs in this state.

<u>Class of Business</u>	<u>Program</u>	<u>PIP Factors</u>
Private Passenger Types	Not Principally Operated by Employees	1.000
	Principally Operated by Employees	0.650

### (4) Specified Causes of Loss Relativity

The relativity applied to the Trucks, Tractors & Trailers \$500 Deductible Comprehensive loss cost to develop the Trucks, Tractors & Trailers Specified Causes of Loss loss cost is: 0.720

(5) The loss cost for hired autos is set forth in Section F. It applies in all territories and is calculated as 0.15% of the statewide \$100,000 Combined Single Limit average loss cost for all Trucks, Tractors & Trailers.

## WIND AND WATER PROCEDURE OTHER THAN COLLISION

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### OBJECTIVE

Other Than Collision losses which result from the perils of Wind and Water are relatively infrequent and do not affect each year similarly. While catastrophic incidents are rare, their impact on loss cost indications can be significant. The occurrence of a weather related catastrophe can result in a large positive indication, followed by an indicated decrease when the catastrophe leaves the experience period in subsequent reviews. This ultimately leads to loss cost instability.

In order to address this ratemaking problem, the Wind and Water procedure removes the Wind and Water losses that actually occur in a given year and replaces them with an expected Wind and Water provision, based on the state's long term history of Wind and Water losses. Due to the lower credibility of catastrophic loss experience, a longer experience period or a larger body of data is necessary to compensate.

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### DESCRIPTION OF WIND AND WATER ADJUSTMENT PROCEDURE

The Wind and Water procedure begins by comparing Wind and Water losses to non-Wind and Water losses for each year in the long term review period. Wind and Water losses have been separately identified as losses reported under the Commercial Statistical Plan (CSP) using Type of Loss (TOL) codes 06 and 07. A ratio of Wind and Water to non-Wind and Water losses is calculated for each year.

The long term 'normal' Wind and Water to non-Wind and Water ratio is determined by calculating the average of the Wind and Water to non-Wind and Water ratios for all years for which data is currently available.

The variation from the long term normal Wind and Water to non-Wind and Water ratio is then determined by calculating the difference between the normal ratio and the Wind and Water ratio for each year.

The loss adjustment required in order to bring each year of experience to a normal Wind and Water level is determined by applying the variation factor (column (5)) to the reported non-Wind and Water losses (column (3)).

The major steps of the procedure are shown in the Exhibits on the following pages.

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WIND AND WATER PROCEDURE  
OTHER THAN COLLISION  
MARYLAND

TRUCKS, TRACTORS, AND TRAILERS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			(2) - (1)	(1) / (3)	AVG (4) - (4)	(3) x (5)	(2) + (6)
YEAR ENDING	OTC WIND & WATER LOSSES	OTC TOTAL LOSSES	TOTAL - WIND&WATER LOSSES	WIND & WATER / NON (W&W)	VARIATION FROM AVG. WIND RATIO	WIND & WATER ADJUSTMENT	ADJ OTC TOTAL LOSSES
1987	12,934	2,469,353	2,456,419	0.005	0.051	125,277	2,594,630
1988	39,858	2,943,089	2,903,231	0.014	0.042	121,936	3,065,025
1989	59,603	2,980,674	2,921,071	0.020	0.036	105,159	3,085,833
1990	60,231	3,279,680	3,219,449	0.019	0.037	119,120	3,398,800
1991	45,574	2,792,694	2,747,120	0.017	0.039	107,138	2,899,832
1992	57,036	2,522,070	2,465,034	0.023	0.033	81,346	2,603,416
1993	100,117	2,401,847	2,301,730	0.043	0.013	29,922	2,431,769
1994	59,014	2,804,752	2,745,738	0.021	0.035	96,101	2,900,853
1995	46,542	3,016,875	2,970,333	0.016	0.040	118,813	3,135,688
1996	127,614	3,576,858	3,449,244	0.037	0.019	65,536	3,642,394
1997	132,316	3,581,787	3,449,471	0.038	0.018	62,090	3,643,877
1998	131,526	3,728,994	3,597,468	0.037	0.019	68,352	3,797,346
1999	54,237	3,786,837	3,732,600	0.015	0.041	153,037	3,939,874
2000	317,067	4,214,601	3,897,534	0.081	-0.025	-97,438	4,117,163
2001	75,735	4,101,501	4,025,766	0.019	0.037	148,953	4,250,454
2002	477,059	3,918,942	3,441,883	0.139	-0.083	-285,676	3,633,266
2003	77,310	3,780,254	3,702,944	0.021	0.035	129,603	3,909,857
2004	835,371	3,561,238	2,725,867	0.306	-0.250	-681,467	2,879,771
2005	64,424	2,527,579	2,463,155	0.026	0.030	73,895	2,601,474
2006	85,384	2,422,355	2,336,971	0.037	0.019	44,402	2,466,757
2007	93,257	2,559,851	2,466,594	0.038	0.018	44,399	2,604,250
2008	136,203	2,685,750	2,549,547	0.053	0.003	7,649	2,693,399
2009	35,373	3,220,856	3,185,483	0.011	0.045	143,347	3,364,203
2010	378,568	3,155,438	2,776,870	0.136	-0.080	-222,150	2,933,288
2011	103,530	2,633,930	2,530,400	0.041	0.015	37,956	2,671,886
2012	500,974	3,440,385	2,939,411	0.170	-0.114	-335,093	3,105,292
2013	208,391	2,466,558	2,258,167	0.092	-0.036	-81,294	2,385,264
2014	71,421	2,510,619	2,439,198	0.029	0.027	65,858	2,576,477
2015	129,254	2,320,360	2,191,106	0.059	-0.003	-6,573	2,313,787
2016	84,669	2,690,203	2,605,534	0.032	0.024	62,533	2,752,736
2017	310,449	2,608,403	2,297,954	0.135	-0.079	-181,538	2,426,865

(8) NORMAL WIND TO NON W&W RATIO= AVG. (4) 0.056

## INSURANCE SERVICES OFFICE, INC.

WIND AND WATER PROCEDURE  
OTHER THAN COLLISION  
MARYLAND

## PRIVATE PASSENGER TYPES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
			(2) - (1)	(1) / (3)	AVG (4) - (4)	(3) x (5)	(2) + (6)
YEAR ENDING	OTC WIND & WATER LOSSES	OTC TOTAL LOSSES	TOTAL - WIND&WATER LOSSES	WIND & WATER / NON (W&W)	VARIATION FROM AVG. WIND RATIO	WIND & WATER ADJUSTMENT	ADJ OTC TOTAL LOSSES
1987	24,729	1,606,972	1,582,243	0.016	0.075	118,668	1,725,640
1988	12,404	1,740,736	1,728,332	0.007	0.084	145,180	1,885,916
1989	39,779	1,780,167	1,740,388	0.023	0.068	118,346	1,898,513
1990	65,842	1,907,606	1,841,764	0.036	0.055	101,297	2,008,903
1991	20,221	1,764,568	1,744,347	0.012	0.079	137,803	1,902,371
1992	51,424	1,997,661	1,946,237	0.026	0.065	126,505	2,124,166
1993	68,221	1,713,195	1,644,974	0.041	0.050	82,249	1,795,444
1994	37,787	2,363,649	2,325,862	0.016	0.075	174,440	2,538,089
1995	66,530	2,081,253	2,014,723	0.033	0.058	116,854	2,198,107
1996	92,274	2,292,802	2,200,528	0.042	0.049	107,826	2,400,628
1997	123,473	2,074,502	1,951,029	0.063	0.028	54,629	2,129,131
1998	154,679	2,373,322	2,218,643	0.070	0.021	46,592	2,419,914
1999	71,636	2,129,958	2,058,322	0.035	0.056	115,266	2,245,224
2000	122,335	2,012,544	1,890,209	0.065	0.026	49,145	2,061,689
2001	52,861	1,935,713	1,882,852	0.028	0.063	118,620	2,054,333
2002	235,317	1,982,243	1,746,926	0.135	-0.044	-76,865	1,905,378
2003	156,598	1,716,070	1,559,472	0.100	-0.009	-14,035	1,702,035
2004	482,136	1,821,105	1,338,969	0.360	-0.269	-360,183	1,460,922
2005	85,607	1,291,332	1,205,725	0.071	0.020	24,115	1,315,447
2006	127,234	1,319,787	1,192,553	0.107	-0.016	-19,081	1,300,706
2007	111,582	1,141,468	1,029,886	0.108	-0.017	-17,508	1,123,960
2008	67,938	1,170,255	1,102,317	0.062	0.029	31,967	1,202,222
2009	70,196	1,219,372	1,149,176	0.061	0.030	34,475	1,253,847
2010	310,893	1,639,728	1,328,835	0.234	-0.143	-190,023	1,449,705
2011	157,705	1,174,133	1,016,428	0.155	-0.064	-65,051	1,109,082
2012	284,237	1,475,114	1,190,877	0.239	-0.148	-176,250	1,298,864
2013	213,986	1,219,126	1,005,140	0.213	-0.122	-122,627	1,096,499
2014	103,757	1,190,906	1,087,149	0.095	-0.004	-4,349	1,186,557
2015	143,414	1,298,775	1,155,361	0.124	-0.033	-38,127	1,260,648
2016	154,609	1,311,603	1,156,994	0.134	-0.043	-49,751	1,261,852
2017	111,464	1,167,418	1,055,954	0.106	-0.015	-15,839	1,151,579

(8) NORMAL WIND TO NON W&amp;W RATIO= AVG. (4) 0.091

## EXPLANATORY MEMORANDUM FOR WIND AND WATER PROCEDURE

---

COLUMN (1) OTC WIND AND WATER LOSSES	Dollar amount of Other Than Collision losses resulting from the perils of Wind and Water (Type of Loss Codes 06 & 07).
COLUMN (2) OTC TOTAL LOSSES	Dollar amount of Other Than Collision losses resulting from all perils.
COLUMN (3) OTC LOSSES OTHER THAN WIND AND WATER	Dollar amount of Other Than Collision losses resulting from all perils other than Wind and Water. $\text{Column (2)} - \text{Column (1)}$ .
COLUMN (4) WIND AND WATER TO NON-WIND AND WATER RATIO	Ratio of Wind and Water losses to Non-Wind and Water losses. $\text{Column (1)} \div \text{Column (3)}$
COLUMN (5) VARIATION FROM AVERAGE WIND RATIO	Variation from the long term average Wind and Water to non-Wind and Water ratio. $\text{Avg (4)} - \text{Column (4)}$ .
COLUMN (6) WIND AND WATER ADJUSTMENT	Wind and Water loss adjustment to bring experience to average Wind and Water level. $\text{Column (3)} * \text{Column (5)}$ .
COLUMN (7) ADJUSTED OTC TOTAL LOSSES	$\text{Column (2)} + \text{Column (6)}$ .

---

## TERRITORIAL WIND AND WATER PROCEDURE OTHER THAN COLLISION

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### OBJECTIVE

The statewide Wind and Water procedure removes the actual Wind and Water losses that occur in a given year and replaces them with an expected Wind and Water provision. The territorial excess Wind and Water procedure distributes the statewide expected Wind and Water loss provision to the individual territories in proportion to each territory's long-term Wind and Water loss experience.

---

### DESCRIPTION OF TERRITORIAL WIND AND WATER PROCEDURE

The first step is to calculate long term Wind and Water to non-Wind and Water ratios by territory. The earliest year of historical Wind and Water experience available for Commercial Auto is 1987. As a new year becomes available, it is added to the procedure. For each year, the territorial ratios are calculated as Wind and Water losses divided by non-Wind and Water losses. An average is then taken of all the ratios for each territory to get the long term Wind and Water to non-Wind and Water ratio.

One potential problem with the average ratios is that a high Wind and Water ratio for one year can distort the average ratio for that territory. To mitigate the effect of unusually large ratios, the ratios are capped at 10 times the statewide median of the Wind and Water ratios before calculating the average. (The statewide median ratio is subject to a minimum value of 0.05.)

The territorial capped average Wind and Water ratios are multiplied by the latest 5 years non-Wind and Water losses for each territory to get the territorial expected Wind and Water losses. The territorial expected Wind and Water losses are divided by the statewide total expected Wind and Water losses to get the territorial expected Wind and Water distribution.

The statewide wind provision is calculated for each year from the statewide procedure by subtracting the non-Wind and Water losses from the total adjusted losses. The individual territorial Wind and Water provisions are then calculated by distributing the statewide wind provision to the territories based on the expected Wind and Water distribution.

Territorial adjusted total losses = territorial Wind and Water provision + territorial non-Wind and Water losses

Because the actual Wind and Water losses are replaced with an expected Wind and Water provision, the number of Wind and Water claims must be adjusted. The territorial Wind and Water provision is divided by the territory's average Wind and Water claim cost to produce the adjusted number of Wind and Water claims. The adjusted Wind and Water claims are added to the non-Wind and Water claims, resulting in the total adjusted claims.

A sample of the territory Wind and Water procedure is shown on the following page.

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## METHODOLOGY FOR CALCULATING 'WIND &amp; WATER PROVISIONS' BY TERRITORY

In order to develop 'Wind and Water Provisions' by territory, the statewide provision is distributed using each territory's 'expected' wind and water losses. This procedure is illustrated in the following example:

Territory	(1) Long-Term Capped* Ratio of Wind & Water to Non-Wind & Water Losses	(2) Non-Wind & Water Losses for Latest Five Years	(3) 'Expected' Wind & Water Losses for Latest Five Years (1) x (2)	(4) 'Expected' Wind & Water Distribution (3) / Total (3)
A	.250	500,000	125,000	.500
B	.750	100,000	75,000	.300
C	.200	250,000	50,000	.200

Territory	(5) Statewide Wind Provision for Year 20XX **	(6) Territory Wind Provision for Year 20XX (4) x (5)	(7) Non-Wind & Water Losses for Year 20XX	(8) Adjusted Total Losses for Year 20XX (6) + (7)
A		50,000	150,000	200,000
B		30,000	50,000	80,000
C		20,000	80,000	100,000
	100,000			

Territory	(9) Non-Wind & Water Claims for Year 20XX	(10) Five-Year Average Wind & Water Claim Cost	(11) Adjusted Wind & Water Claims for Year 20XX (6) / (10)	(12) Total Adjusted Claims for Year 20XX (9) + (11)
A	200	500	100	300
B	100	400	75	175
C	150	400	50	200

\* Average of yearly capped ratios of wind & water to non-wind & water losses, based on territory experience capped at 10 times the statewide median wind & water to non-wind & water ratio. The statewide median ratio is subject to a minimum value of 0.05.

\*\* The Statewide Wind Provision for year 20XX = Total Adjusted Losses for Year 20XX - Non-Wind & Water Losses for Year 20XX

MARYLAND  
COMMERCIAL AUTOMOBILE

SECTION D - NON-OWNERSHIP LIABILITY

Non-Ownership Liability Loss Cost Revision Overview .....	D2
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Loss Development for Non-Ownership Liability .....	D15-D18

## NON-OWNERSHIP LIABILITY LOSS COST REVIEW

A review of the Rule 89 Non-Ownership Liability loss costs was performed. Non-ownership liability insurance covers an employer from liability stemming from an employee using his or her car for employer business.

This review involved the following steps:

- 1) Class 6601 (0-25 employees) was segmented into smaller employee count ranges of 0-9, 10-19 and 20-25 employees. Classes 6602 (26-100), 6603 (101-500), 6604 (501-1000) and 6605 (over 1000) employee count ranges remain unchanged.
- 2) Predictive modeling was used to determine new class relativities for these employee count ranges and to reflect differences by state. These results were combined to produce an intermediate set of loss costs that maintain revenue neutrality on a multistate basis while better matching the relative experience differences between classes and states.
- 3) A multistate experience review was performed to calculate an overall indicated percentage change to these intermediate revenue neutral modeled loss costs based upon historical loss experience.
- 4) The overall percentage change was then applied to the intermediate loss costs to produce the final indicated prospective loss costs.

Details on the predictive modeling and the experience review follow.

### Predictive Modeling

State and Class differences for Non-Ownership Liability were developed using predictive models. Loss occurrence frequency and loss occurrence severity were modeled separately. In both cases we used a Generalized Linear Model.

Our dataset contained country-wide exposures and loss experience reported to ISO for five accident years through 12/31/2016. Losses were capped at the \$100,000 Basic Limit. Losses were not trended, developed, or adjusted for any expense loading.

Models were trained on Accident Years 2012-2014 and the fit was evaluated on 2015-2016. Once the final form of each model was established, a model with the same specification was rerun using all five years of data to yield the best possible prediction in the final result. The models are summarized in the table below, followed by discussion of particular aspects.

	<u>Frequency Model</u>	<u>Severity Model</u>
Loss Distribution	Negative Binomial	Gamma
Link Function	Log	Log
Offset	None	None
Weight	Count of Policy-Years	Count of Loss Occurrences
Target Variable	Occurrences per Policy-Year	Losses per Occurrence
Control Variables	Accident Year	Accident Year
Explanatory Variables	Employee Count	State Average PPT Liability Loss Cost

### Modeling Discussion

For frequency, the a priori distribution for random occurrences is the Poisson Distribution. However, insurance frequency data often exhibits over-dispersion, meaning the variance is higher than the mean, in contrast to the Poisson distribution's characteristic that the variance is equal to the mean. We verified that this was the case here and selected a negative binomial distribution. The negative binomial distribution results when the mean of the Poisson distribution is itself drawn from an unobservable gamma distribution.

For severity, we selected a gamma distribution to represent the dollars of Basic Limits Bodily Injury and Property Damage losses on a per-occurrence basis.

We used a log link function in both models to ensure that the results would take the form of a multiplicative expression.

The frequency model weight was a policy-year count. Note here that we are not using employee-months as the exposure basis. Instead, the number of employees will be used as a predictive variable in the model.

In lieu of loss trend and loss development, we included Accident Year as a variable in both models.

Both employee count and State Average PPT Liability Loss Cost were tested as variables for both Frequency and Severity. We found that employee count was predictive for frequency and the Average Loss Cost was predictive for severity. Discussion of both variables follows.

### Employee Count

The count of employees is the primary explanatory variable for Non-Ownership Liability and has an intuitive connection to accident frequency: Each employee of the insured company could potentially be using his or her personal vehicle for business purposes. Because the model uses a log link function, we actually used the log of employee count as our rating variable. When converting model indications to a calculation of predicted losses, this yields a multiplicative term of the form

$$(\text{Employee Count})^K$$

where K is estimated by the model. K was estimated to be 0.69. This result means that a 10% increase in the number of employees results in a prediction of about 6.8% more accidents.

We also included two binary flags as predictors, (discrete variables equal to either zero or one) which allow the model to apply a multiplicative factor to specific sets of records, if the loss experience supports that. The flags identified records with employee counts of 0 and 1, whose frequency experience did not match the general pattern. Policies with either 0 or 1 employee exhibited frequencies higher than the general pattern would otherwise indicate. Specifically, the prediction for frequencies on policies with one employee receives a factor of 1.87 and policies with zero employees received a factor of 4.04. Relatively speaking, the lowest frequency prediction was for a policy with two employees. Relative frequency predictions for select employee counts are summarized below to give an idea of the model's results.

<u>Employees</u>	<u>Relative Predicted Frequency</u>
0	2.51
1	1.16
2	1.00
3	1.32
4	1.61
5	1.88
10	3.03
50	9.18

100	14.79
500	44.79
1000	72.20

#### State Average Private Passenger Types (PPT) Loss Cost

Our experience dataset does not contain location information for the non-owned vehicles, (for the obvious reason that this information is not readily obtainable,) but we do know the state the policy was written in. Cognizant that some states present more or less auto risk than others, we used the state average ISO Private Passenger Types (PPT) Liability Loss Cost as a proxy for general risk on the road, and treated this number as a continuous variable. Because the model uses a log link function, we used the log of the average loss cost as our rating variable. When converting model indications to a calculation of predicted losses, this yields a multiplicative term of the form

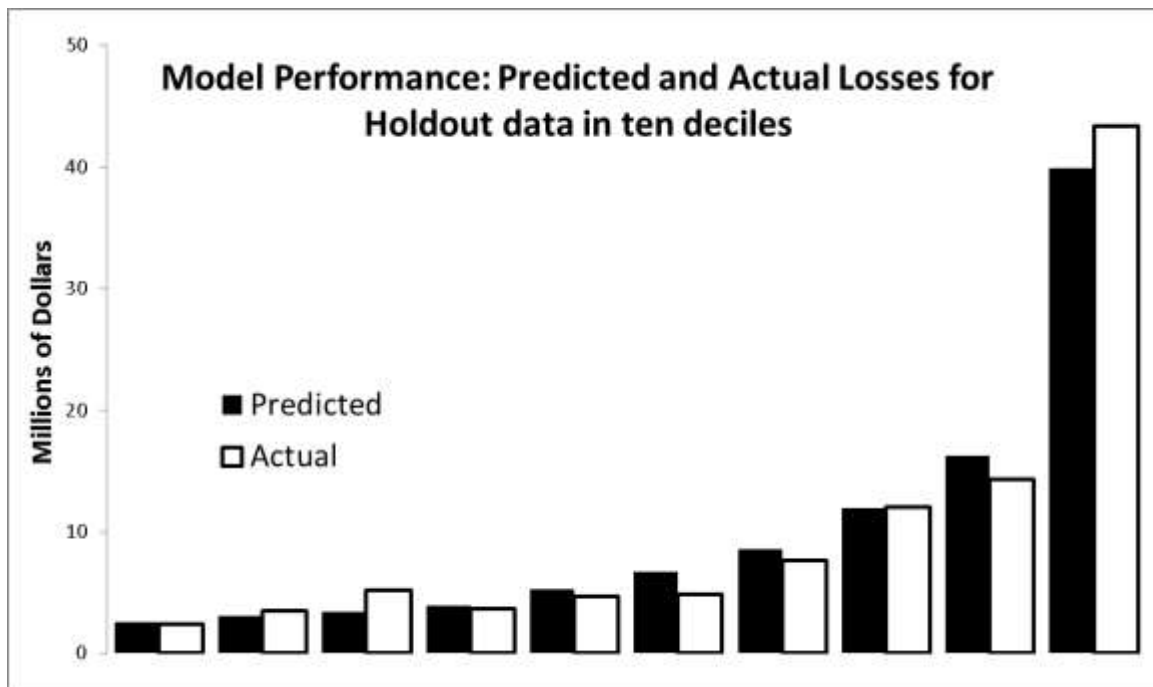
$$(\text{State Average Loss Cost})^K$$

where K is estimated by the model. K was estimated to be 0.39. This means that if one state has a 10% higher PPT Liability loss cost than a second state, the model predicts that the first state would have an average accident severity about 3.8% higher.

The somewhat low estimate of K for this variable shows that Non-Ownership Liability Losses do not vary as widely as Private Passenger Type Liability losses by state. The most expensive state is 5.80 times higher than the least expensive state when looking at the PPT Liability Average Loss Cost. In contrast, the Non-Ownership Liability loss prediction for the most expensive state is only 2.00 times the least expensive state. Nevertheless this is a significant difference in loss severity.

#### Performance of the Predictive Models:

The two models predicted occurrence per policy-year and loss per occurrence. We can multiply the predictions to yield loss per policy-year. The following chart shows the performance of this prediction after rebalancing, on ten equally sized deciles of hold-out data. The data has been sorted by the predicted loss per policy-year and then separated into deciles.



#### Calculation of Indicated Loss Costs

Additional work, described here, was necessary to calculate the loss costs for filing.

We first selected new employee count ranges as follows:

<u>Old Range</u>	<u>New Range</u>	<u>Policy Distribution</u>
	0 – 9	68%
0 – 25	10 – 19	9%
	20 – 25	15%
26 – 100	26 – 100	6%
101 – 500	101 – 500	2%
501 – 1000	501 – 1000	<1%
1001 +	1001 +	<1%

Next we computed the average predicted loss per policy-year within each range on a country-wide basis to yield a set of class relativities representing the modeled relationship between the ranges or classes (“New Relationship”). Similar relationships can be calculated from the current ISO loss costs (“Current Relationship”).

<u>Range</u>	<u>Current Relationship</u>	<u>New Relationship</u>
0 – 9	1.00	1.00
10 – 19	1.00	2.13

20 – 25	1.00	3.43
26 – 100	2.33	5.79
101 – 500	5.10	15.14
501 – 1000	8.04	34.81
1001 +	18.02	73.37

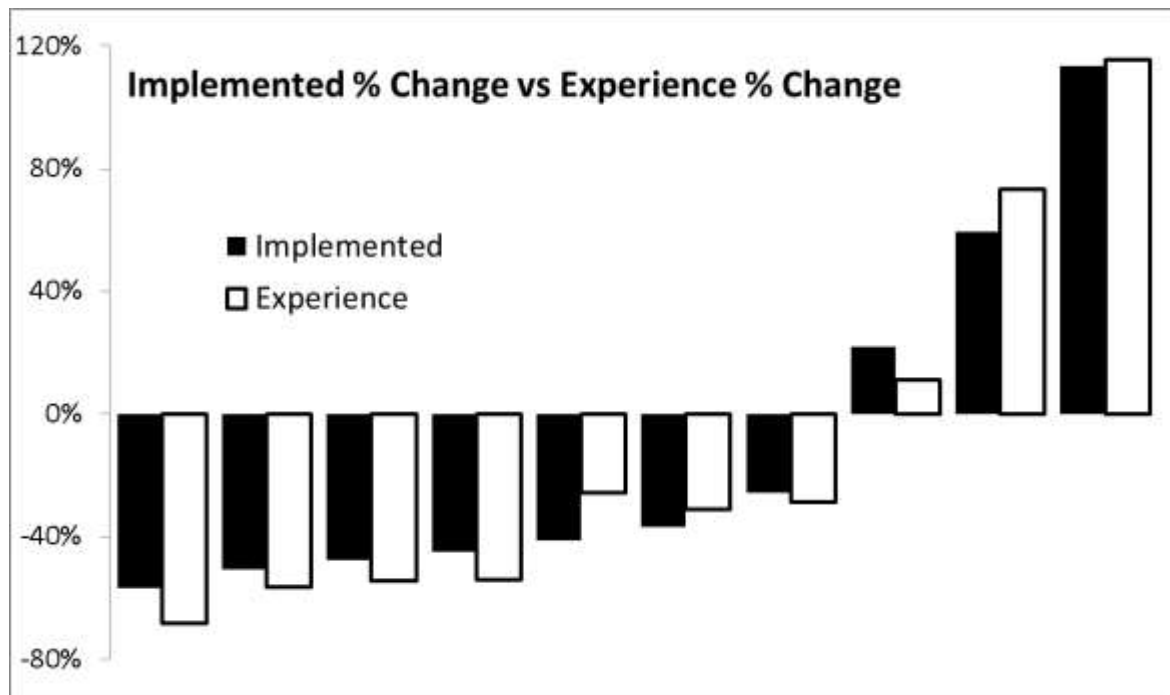
These new class relativities must be combined with a representation of the difference by state, which comes from our severity model. We returned to our predicted loss amounts and removed the effect of the employee count from that prediction, leaving a single per-policy prediction for each state. This was then multiplied by the new class relativities as developed above, and the result was off-balanced to revenue neutrality on a country-wide basis, so that the new loss costs developed from our model meet the following three constraints (before rounding):

- Relative differences from one class to another are the same in every state.
- The difference from one state and another for the same class is the same for all classes.
- The Aggregate Loss Cost for all policies in all states comes to the same grand total.

The reason for the last constraint is that we performed a separate country-wide experience review using standard actuarial methods to determine what percentage change we wanted to implement overall. The output from the calculation just described was used as an intermediate set of rates, subject to that experience review.

<u>Employee Range</u>	<u>Current Loss Costs</u>	<u>Maryland Intermediate Loss Costs</u>	<u>Intermediate Percentage Change</u>	<u>Final Indicated Loss Costs</u>	<u>Overall Percentage Change</u>
0 – 9	48	27.82	-42%	56	17%
10 – 19	48	59.3	24%	119	148%
20 – 25	48	95.34	99%	191	298%
26 – 100	112	161.12	44%	323	188%
101 – 500	245	421.12	72%	844	245%
501 – 1000	386	968.56	151%	1,940	403%
1001 +	865	2041.24	136%	4,089	373%

The methodology just described removes some resolution from the predicted losses as modeled. We can compare the Intermediate Loss Costs developed in this section to the Current Loss Costs and the experience losses to measure the predictive power of the final result, rather than the predictive power of the model (which is necessarily higher). We will compare the results for our Intermediate Loss Costs to the predictive power of the ISO Loss Costs currently in effect. Since we are comparing two different predictions to the loss experience, we will divide the Intermediate Loss Costs and the actual losses by the current ISO manual rates and express each of those as a percentage change. We sort by the percentage change of the Intermediate Loss Costs, and then summing the data in ten equal deciles.



The wide range on the vertical axis shows that we are making large changes, and there is a close general correspondence between the changes we are implementing and the experience loss data.

## RULE 89- NON-OWNERSHIP LIABILITY EXPERIENCE REVIEW

### DETERMINATION OF ADVISORY LOSS COST LEVEL CHANGE

---

OBJECTIVE	The objective of this procedure is to determine the indicated overall advisory loss cost level change. This procedure answers the question: what percentage changes must be made on average to the Non-Ownership Liability 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?
DESCRIPTION	This procedure compares the developed and trended incurred losses and loss adjustment expenses with the aggregate loss costs at intermediate loss cost level, which is the aggregate amount that would have been collected if the revenue neutral intermediate modeled loss costs were used during the experience period. This experience ratio (losses and all loss adjustment expenses divided by aggregate loss costs) is calculated for several years and a weighted average is calculated. This weighted experience ratio is the indicated overall advisory loss cost level change in decimal form.
EXPERIENCE BASE	The experience used in this review are 5 calendar/accident years of data ending December 31, 2016, evaluated as of March 31, 2017. Data for classes 6601, 6602, 6603, 6604 and 6605 is included. The review is being conducted on a \$100,000 Combined Single Limits basis - indemnity losses are limited to \$100,000 per occurrence. Allocated Loss Adjustment Expenses are not limited.
AGGREGATE LOSS COSTS (Item 1)	The aggregate loss costs are the loss-related revenue that would have been collected if the revenue neutral intermediate modeled loss costs were used during the experience period. It is calculated by multiplying the number of policy years by the intermediate modeled loss costs.

---

INCURRED  
LOSSES & LAE  
(Item 2)

The incurred losses and loss adjustment expenses are our best estimate of the ultimate payment for indemnity losses and loss adjustment expenses using the claim frequency and severity levels ISO expects to occur during the prospective period for which the revised loss costs will be used.

The reported incurred losses and allocated loss adjustment expenses are subject to the following adjustments:

- Incurred indemnity losses are capped at the basic limit;
- Developed to an ultimate settlement basis by the application of loss development factors;
- Loaded for unallocated loss adjustment expenses;
- Placed on the prospective cost/frequency levels by the application of trend factors.

Support for these loss related adjustments follows.

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EXPERIENCE  
RATIO  
(Item 3)

The experience ratio is the ratio of the incurred losses and loss adjustment expenses to the aggregate loss costs at intermediate loss cost level. It measures the adequacy of the intermediate loss costs for the prospective period.

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YEAR WEIGHTS  
(Item 4)

Year weights give more weight to recent years and were assigned as follows: accident year ending 12/31/2016: 30%; accident year ending 12/31/2015: 25%, accident year ending 12/31/2014: 20%, accident year ending 12/31/2013: 15%, and accident year ending 12/31/2012: 10%.

---

AVERAGE  
EXPERIENCE  
RATIO  
(Item 6)

The average experience ratio, is the sum of the products of each year's experience ratio and assigned weight. This average experience ratio, converted to a percentage, is the indicated change to the revenue neutral intermediate modeled loss costs.

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INSURANCE SERVICES OFFICE, INC.

MULTISTATE  
AUTOMOBILE LIABILITY INSURANCE  
DETERMINATION OF ADVISORY LOSS COST LEVEL CHANGES  
NON-OWNERSHIP LIABILITY

	(1)	(2)	(3)	(4)	(5)
ACCIDENT YEAR ENDING	AGGREGATE LOSS COST (B)	\$100,000 INCURRED LOSSES (C)	EXPERIENCE RATIO (2) / (1)	ACCIDENT YEAR WEIGHTS	NUMBER OF INCURRED CLAIMS
12/31/12	\$40,075,132	\$87,923,302	2.194	10%	6,092
12/31/13	\$40,559,893	\$86,943,677	2.144	15%	6,003
12/31/14	\$41,120,603	\$92,744,249	2.255	20%	6,816
12/31/15	\$42,293,302	\$76,318,488	1.805	25%	5,316
12/31/16	\$42,734,785	\$79,828,810	1.868	30%	4,730
(6)	AVERAGE EXPERIENCE RATIO (SUM OF (3) * (4) ).				2.003
(7)	INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ( (6) - 1.000 ).				100.3%
(8)	FILED CHANGE.				100.3%
(A)	NONOWNED LIABILITY EXPERIENCE INCLUDES CLASSES 6601, 6602, 6603, 6604 AND 6605.				
(B)	THE AGGREGATE LOSS COST IS CALCULATED BY MULTIPLYING THE NUMBER OF POLICY YEARS BY THE INTERMEDIATE MODELED LOSS COSTS.				
(C)	LOSSES INCLUDE ALL LOSS ADJUSTMENT EXPENSES FOR BODILY INJURY AND PROPERTY DAMAGE LIABILITY. SEE FOLLOWING PAGE.				

## INSURANCE SERVICES OFFICE, INC.

MULTISTATE  
AUTOMOBILE LIABILITY INSURANCE  
DETERMINATION OF SINGLE LIMIT LOSSES

	ACC. YEAR ENDING	BODILY INJURY	PROPERTY DAMAGE	COMBINED
(1) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES	12/31/12 12/31/13 12/31/14 12/31/15 12/31/16	\$45,854,511 \$46,692,601 \$45,074,613 \$32,308,374 \$25,268,516	\$15,572,022 \$15,347,718 \$18,929,596 \$14,885,703 \$13,472,207	
(2) DEVELOPED LOSSES AND ALL LOSS ADJUSTMENT EXPENSES (A)	12/31/12 12/31/13 12/31/14 12/31/15 12/31/16	\$50,548,179 \$52,535,947 \$55,214,823 \$48,550,601 \$55,243,925	\$17,284,944 \$17,070,039 \$21,242,982 \$16,837,070 \$15,791,582	
(3) SELECTED ANNUAL LOSS TREND		2.7%	5.7%	3.4%
(4) TRENDED LOSSES AND ALL LOSS ADJUSTMENT EXPENSES (B)	12/31/12 12/31/13 12/31/14 12/31/15 12/31/16	\$61,719,327 \$62,465,241 \$63,938,765 \$54,716,527 \$60,657,830	\$26,203,975 \$24,478,436 \$28,805,484 \$21,601,961 \$19,170,981	\$87,923,302 \$86,943,677 \$92,744,249 \$76,318,488 \$79,828,810

(A) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES ARE ADJUSTED  
BY THE FOLLOWING FACTORS:

1 - UNALLOCATED LOSS ADJUSTMENT FACTORS: B.I. 1.085 P.D. 1.110  
2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	B.I.	P.D.
12/31/12	1.016	1.000
12/31/13	1.037	1.002
12/31/14	1.129	1.011
12/31/15	1.385	1.019
12/31/16	2.015	1.056

(B) TRENDED LOSSES ARE EQUAL TO (2) \* ( (1.0 + (3)) \*\* N), WHERE N IS EQUAL TO  
THE NUMBER OF YEARS PROJECTION FROM THE AVERAGE DATE OF ACCIDENT TO ONE  
YEAR BEYOND THE ANTICIPATED IMPLEMENTATION DATE OF 1/1/2019  
WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
12/31/12	7/1/12	7.500
12/31/13	7/1/13	6.500
12/31/14	7/1/14	5.500
12/31/15	7/1/15	4.500
12/31/16	7/1/16	3.500

COMMERCIAL AUTOMOBILE LIABILITY INSURANCE  
MULTISTATE LOSS ADJUSTMENT EXPENSE EXPERIENCE

Calendar Year

Development of Unallocated Loss Adjustment Expense Factor

Bodily Injury  
(000's)

<u>ITEM</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>3 YR AVG</u>	<u>5 YR AVG</u>
(1) Direct Losses Incurred	3,382,082	4,091,432	4,241,671	4,816,654	5,408,567		
(2) Allocated Loss Adjustment Expenses Incurred	290,174	463,736	481,558	518,587	611,974		
(3) Unallocated Loss Adjustment Expenses Incurred	368,213	392,749	440,405	473,498	481,607		
(4) Unallocated LAE as a Ratio to Losses + Allocated LAE (3) / [(1) + (2)]	10.0%	8.6%	9.3%	8.9%	8.0%	8.7%	9.0%
(5) Selected Factor							8.5%

Property Damage  
(000's)

<u>ITEM</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>3 YR AVG</u>	<u>5 YR AVG</u>
(1) Direct Losses Incurred	834,325	892,691	1,005,713	1,066,493	1,164,414		
(2) Allocated Loss Adjustment Expenses Incurred	50,208	64,825	79,678	75,866	93,908		
(3) Unallocated Loss Adjustment Expenses Incurred	108,058	110,707	115,006	129,452	129,263		
(4) Unallocated LAE as a Ratio to Losses + Allocated LAE (3) / [(1) + (2)]	12.2%	11.6%	10.6%	11.3%	10.3%	10.7%	11.2%
(5) Selected Factor							11.0%

All items are from Special Call Submission for available writers.

## INSURANCE SERVICES OFFICE

COMMERCIAL AUTO LIABILITY  
DETERMINATION OF FACTORS TO ADJUST ACCIDENT YEAR  
LOSS RATIOS FOR SUBSEQUENT CHANGES

## AVERAGE PAID CLAIM COST DATA

MULTISTATE*					
BODILY INJURY			PROPERTY DAMAGE		
(\$100000 LIMITS)			(\$100000 LIMITS)		
	(1)	(2)	(3)	(4)	
YEAR	EXPONEN-		EXPONEN-		
ENDED	ACTUAL	TIAL FIT	ACTUAL	TIAL FIT	
3/31/2014	20088.87	20321.23	3676.14	3655.72	
6/30/2014	20380.29	20456.67	3712.11	3707.17	
9/30/2014	20732.93	20593.01	3752.08	3759.33	
12/31/2014	20933.35	20730.27	3799.50	3812.23	
3/31/2015	21106.46	20868.43	3860.83	3865.87	
6/30/2015	21156.78	21007.52	3905.50	3920.27	
9/30/2015	21179.18	21147.53	3962.46	3975.44	
12/31/2015	21029.30	21288.48	4020.15	4031.38	
3/31/2016	21143.66	21430.37	4106.33	4088.10	
6/30/2016	21391.10	21573.20	4177.05	4145.63	
9/30/2016	21760.24	21716.98	4205.66	4203.97	
12/31/2016	22103.74	21861.73	4250.83	4263.12	

	<u>BODILY INJURY</u>	<u>PROPERTY DAMAGE</u>
(5) AVERAGE ANNUAL PERCENT CHANGE IN PAID CLAIM COST (12TH POINT / 8TH POINT)	2.7%	5.7%
(6) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM FREQUENCY	0.0%	0.0%
(7) AVERAGE ANNUAL PERCENT CHANGE IN LIABILITY LOSS RATIO {1.0 + (5)} * {1.0 + (6)}	2.7%	5.7%

\* EXCLUDES MASSACHUSETTS

## Insurance Services Office

Basic Limits Loss Development  
Non-Ownership Liability - Bodily Injury  
Multistate#  
Incurred Losses and Expenses

Accident Year <u>Ending</u>	\$100,000 Basic Limit				
	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
12/31/2005	13,061,559	16,771,374	19,293,772	20,540,602	21,289,481
12/31/2006	11,632,975	15,042,589	17,418,810	18,669,149	19,454,171
12/31/2007	12,541,246	17,730,759	21,211,025	21,984,928	22,760,782
12/31/2008	13,949,225	19,629,717	23,573,736	25,073,532	25,340,297
12/31/2009	16,372,385	22,525,858	27,723,558	30,251,911	31,419,348
12/31/2010	17,708,864	24,527,385	30,713,069	33,988,107	34,923,951
12/31/2011	19,381,982	26,712,735	32,690,838	34,706,063	34,758,343
12/31/2012	25,407,377	35,584,544	43,413,230	46,774,764	47,900,415
12/31/2013	22,859,557	36,024,239	44,390,935	48,655,404	
12/31/2014	27,018,254	37,925,429	46,402,473		
12/31/2015	21,333,387	33,266,631			
12/31/2016	27,109,749				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
12/31/2005	1.284	1.150	1.065	1.036
12/31/2006	1.293	1.158	1.072	1.042
12/31/2007	1.414	1.196	1.036	1.035
12/31/2008	1.407	1.201	1.064	1.011
12/31/2009	1.376	1.231	1.091	1.039
12/31/2010	1.385	1.252	1.107	1.028
12/31/2011	1.378	1.224	1.062	1.002
12/31/2012	1.401	1.220	1.077	1.024
12/31/2013	1.576	1.232	1.096	
12/31/2014	1.404	1.224		
12/31/2015	1.559			
Average Factor: ( Best 3 of 5 )	1.455	1.227	1.088	1.021

## Summary of Factors

63 to Ult:	(75:63) (75:Ult) =	1.016
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.037
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.129
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.385
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	2.015

# Excludes Massachusetts

## Insurance Services Office

Basic Limits Loss Development  
 Non-Ownership Liability - Bodily Injury  
 Multistate#  
 Incurred Losses and Expenses

Accident Year <u>Ending</u>	\$100,000 Basic Limit				
	<u>75 Months</u>	<u>87 Months</u>	<u>99 Months</u>	<u>111 Months</u>	<u>123 Months</u>
12/31/2005	22,114,181	22,284,973	22,257,134	22,218,802	22,242,952
12/31/2006	19,680,252	19,644,591	19,677,589	19,569,159	19,571,955
12/31/2007	22,743,887	22,955,753	22,948,788	22,880,069	22,939,254
12/31/2008	26,048,487	26,113,744	25,994,674	26,257,950	
12/31/2009	31,633,170	32,022,297	32,099,114		
12/31/2010	34,934,140	35,372,233			
12/31/2011	35,273,238				

## Ratios

Accident Year <u>Ending</u>	<u>75:63</u>	<u>87:75</u>	<u>99:87</u>	<u>111:99</u>	<u>123:111</u>
12/31/2005	1.039	1.008	0.999	0.998	1.001
12/31/2006	1.012	0.998	1.002	0.994	1.000
12/31/2007	0.999	1.009	1.000	0.997	1.003
12/31/2008	1.028	1.003	0.995	1.010	
12/31/2009	1.007	1.012	1.002		
12/31/2010	1.000	1.013			
12/31/2011	1.015				
Average Factor: ( Best 3 of 5 )	1.007	1.008	1.000	1.000	1.001

## Summary of Factors

123 to Ult:	(1.000)	=	1.000
111 to Ult:	(123:111) (123:Ult)	=	1.001
99 to Ult:	(111:99) (123:111) (123:Ult)	=	1.001
87 to Ult:	(99:87) (111:99) (123:111) (123:Ult)	=	1.001
75 to Ult:	(87:75) (99:87) (111:99) (123:111) (123:Ult)	=	1.009

# Excludes Massachusetts

## Insurance Services Office

Basic Limits Loss Development  
Non-Ownership Liability - Property Damage  
Multistate#  
Incurred Losses and Expenses

Accident Year <u>Ending</u>	\$100,000 Basic Limit				
	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
12/31/2005	7,580,188	7,706,856	8,123,141	8,136,510	8,105,876
12/31/2006	8,752,260	8,994,768	9,073,616	9,205,953	9,199,007
12/31/2007	9,160,631	9,179,682	9,343,945	9,404,828	9,427,085
12/31/2008	11,590,724	11,982,414	12,072,273	11,859,140	11,929,264
12/31/2009	13,524,488	13,692,176	13,566,398	13,592,318	13,595,982
12/31/2010	12,876,315	13,421,073	13,546,664	13,742,695	13,811,326
12/31/2011	15,010,705	15,389,065	15,339,625	15,517,737	15,501,161
12/31/2012	14,967,525	15,606,103	15,767,314	15,969,855	15,978,896
12/31/2013	15,248,746	15,575,235	15,660,042	15,604,260	
12/31/2014	17,884,629	18,942,530	19,356,686		
12/31/2015	14,582,613	15,181,001			
12/31/2016	13,676,167				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
12/31/2005	1.017	1.054	1.002	0.996
12/31/2006	1.028	1.009	1.015	0.999
12/31/2007	1.002	1.018	1.007	1.002
12/31/2008	1.034	1.007	0.982	1.006
12/31/2009	1.012	0.991	1.002	1.000
12/31/2010	1.042	1.009	1.014	1.005
12/31/2011	1.025	0.997	1.012	0.999
12/31/2012	1.043	1.010	1.013	1.001
12/31/2013	1.021	1.005	0.996	
12/31/2014	1.059	1.022		
12/31/2015	1.041			
Average Factor: ( Best 3 of 5 )	1.036	1.008	1.009	1.002

## Summary of Factors

63 to Ult:	(75:63) (75:Ult) =	1.000
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.002
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.011
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.019
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.056

# Excludes Massachusetts

## Insurance Services Office

Basic Limits Loss Development  
 Non-Ownership Liability - Property Damage  
 Multistate#  
 Incurred Losses and Expenses

Accident Year <u>Ending</u>	<u>75 Months</u>	<u>87 Months</u>	<u>99 Months</u>	<u>111 Months</u>	<u>123 Months</u>
12/31/2005	8,110,269	8,119,387	8,150,477	8,150,670	8,150,670
12/31/2006	9,218,124	9,227,870	9,226,319	9,225,969	9,225,722
12/31/2007	9,407,717	9,411,181	9,424,461	9,410,060	9,410,144
12/31/2008	11,958,779	11,974,390	11,974,390	11,974,390	
12/31/2009	13,557,184	13,557,184	13,557,214		
12/31/2010	13,717,952	13,728,308			
12/31/2011	15,518,299				

## Ratios

Accident Year <u>Ending</u>	<u>75:63</u>	<u>87:75</u>	<u>99:87</u>	<u>111:99</u>	<u>123:111</u>
12/31/2005	1.001	1.001	1.004	1.000	1.000
12/31/2006	1.002	1.001	1.000	1.000	1.000
12/31/2007	0.998	1.000	1.001	0.998	1.000
12/31/2008	1.002	1.001	1.000	1.000	
12/31/2009	0.997	1.000	1.000		
12/31/2010	0.993	1.001			
12/31/2011	1.001				
Average Factor: ( Best 3 of 5 )	0.999	1.001	1.000	1.000	1.000

## Summary of Factors

123 to Ult:	(1.000)	=	1.000
111 to Ult:	(123:111) (123:Ult)	=	1.000
99 to Ult:	(111:99) (123:111) (123:Ult)	=	1.000
87 to Ult:	(99:87) (111:99) (123:111) (123:Ult)	=	1.000
75 to Ult:	(87:75) (99:87) (111:99) (123:111) (123:Ult)	=	1.001

# Excludes Massachusetts

MARYLAND  
COMMERCIAL AUTOMOBILE

SECTION E - UNINSURED AND UNDERINSURED MOTORISTS

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UNINSURED AND UNDERINSURED MOTORISTS  
EXPLANATORY MEMORANDUM

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INTRODUCTION

In the prior review, Uninsured Motorists(UM) loss costs were determined based on statewide experience data as well as a model that considered the relationship between UM and BI experience, the distribution of vehicles, liability loss costs, and increased limits factors. To date, loss costs for Underinsured Motorists (UIM) coverage (or the component of Uninsured Motorists loss costs attributable to UIM coverage) have been determined using a model that accounts for the expected distribution of vehicles, policy limits, and loss potential for accidents that will involve an insured.

This section uses UM and UIM experience data to evaluate the adequacy of current ISO loss costs and makes adjustments to reflect the results. The revised UM and UIM loss costs are included in rule 97 in Section G of this filing.

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OBJECTIVE

The objective of this procedure is to determine the indicated statewide advisory loss cost level change for UM and UIM. This procedure answers the question: what percentage changes must be made on average 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?

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DESCRIPTION

This procedure compares the developed and trended incurred losses and loss adjustment expenses with the aggregate loss costs at current ISO loss cost level, which is the aggregate amount that would have been collected if the current ISO loss costs were used during the experience period. This experience ratio (losses and all loss adjustment expenses divided by aggregate loss costs) is calculated for five combined years of experience. This experience ratio is the indicated statewide advisory loss cost level change in decimal form.

For robustness, a single UIM loss cost level change is calculated for Private Passenger Types and Other Than Private Passenger Types. To reflect that UIM property damage (if applicable at all) comprises a small portion of UIM losses, the loss cost level change is applied only to UIM bodily injury loss costs.

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EXPERIENCE  
BASE

The experience used in this review is the latest available UM and UIM data as reported under the ISO Commercial Statistical Plan. Five fiscal accident years are used with the most recent spanning July 1, 2016 through June 30, 2017 and reported losses evaluated as of September 30, 2017 for UM. The most recent accident year for UIM spans April 1, 2016 through March 31, 2017 and reported losses are evaluated as of June 30, 2017.

The UM analysis is on a basic limits basis, capping the losses at the basic split limit for the state.

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**EXPERIENCE  
BASE (CONT'D)**

The UIM analysis is on a total limits basis, combining all valid combined single limit and split-limit-bodily injury UIM experience. Other analyses in this filing use capped losses to determine a loss cost for a basic limit. Such a procedure is less appropriate for UIM experience data. The UIM experience is qualitatively different than standard liability coverage, in that each incurred loss exists in an excess layer above the tortfeasor's liability limit. That lower limit is unreported on the loss record and varies for each incurred loss. Considering these limitations, it is impossible to ascertain the portion of losses within some ground up layer of liability. Considering this limitation, this review aims to ensure prospective adequacy of UIM loss costs for all limits combined, while maintaining the current UIM limit relationships.

The indications for Other Than Private Passenger Types are based on experience for Trucks and Truck-Tractors. Items corresponding to Trucks and Truck-Tractors experience are labeled as Trucks, Tractors, and Trailers for familiarity's sake, though do not include Trailers experience, for which UM and UIM are not always applicable.

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**AGGREGATE LOSS  
COSTS AT CURRENT  
LEVEL**

The aggregate loss costs at current ISO loss cost level are the loss-related revenue that would have been collected if the current ISO basic split limit loss cost was used during the experience period. It is calculated by extending the exposures by the current ISO loss cost. For states where a combined loss cost is used for Uninsured and Underinsured Motorists coverages, the ALCCCL reflects only the appropriate UM or UIM component that was determined when current loss costs were implemented.

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**LOSSES AND LOSS  
ADJUSTMENT  
EXPENSES**

The incurred losses and loss adjustment expenses are our best estimate of the ultimate payment for indemnity losses and loss adjustment expenses using the severity levels ISO expects to occur during the prospective period for which the revised loss costs will be used.

The reported incurred losses and allocated loss adjustment expenses are subject to the following adjustments:

- Placed on the prospective cost levels by the application of severity trend factors;
- Developed to an ultimate settlement basis by the application of the chain ladder method of loss development for UM and by the application of the Stanard-Buhlmann method of loss development (also known as the Cape Cod method) for UIM;
- Loaded for unallocated loss adjustment expenses.

These adjustments are discussed in further depth in this section.

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EXPERIENCE RATIO	The experience ratio is the ratio of the incurred losses and loss adjustment expenses to the aggregate loss costs at current ISO loss cost level. It measures the adequacy of the current ISO loss costs for the prospective period.
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AVERAGE ANNUAL CHANGE IN LOSSES (TREND)	The application of the average annual change in losses to historical data recognizes that advisory loss costs are being made for use in a future period based on historical experience. Due to economic and social factors, claim cost levels continue to change from those underlying the historical data.
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To determine the historical average claim cost trend, ISO makes use of the Least Squares Method fitted to the reported time series data; specifically, an exponential curve represented by the equation  $Y=A(B^X)$  is fitted to the paid claim cost data. The parameters A and B are calculated by regressing Y, which is the applicable claim cost on X, which is the unit of time. The resulting fitted curve allows the determination of a historical average trend for the data under review.

Due to the lack of UM and UIM volume and the nature of the coverages, it is unlikely that UM and UIM data would yield any useful trend information. Instead, this review uses standard Bodily Injury claim cost trend information as a proxy for changes in UM and UIM claim costs over time.

Prospective average annual changes for claim cost have been selected based on the historical multistate Bodily Injury Liability data. These changes are used to adjust the losses to a prospective level. The trend factors are shown in Exhibit 3 of this section.

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UM LOSS DEVELOPMENT FACTORS
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The UM loss development factors are based on multistate data capped at this state's basic split limit, separately for Private Passenger Types and Trucks, Tractors & Trailers. Three-year averages are calculated for each link ratio based on a "best three of five" approach. Specifically, for the latest five years, the highest and lowest ratios were removed from the calculation and the three year average was calculated using the three remaining factors. Losses are developed up to 75 months and beyond 75 months the loss development is assumed to be unity. The loss development factors are shown in Exhibit 2 of this section.
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OVERVIEW OF  
STANARD-  
BUHLMANN  
LOSS  
DEVELOPMENT  
METHODOLOGY  
FOR UIM

The application of loss development recognizes the important concept that some of the losses for a particular accident year have not been finally determined at the time the experience is compiled.

For standard Commercial Auto liability coverages, ISO typically uses a chain ladder approach to loss development. The UIM experience is qualitatively different than standard liability coverage:

- each incurred loss exists in an excess layer above the tortfeasor's liability limit;
- the lower limit is unreported on the loss record and varies for each incurred loss;
- losses occur less frequently but tend to be more severe (as they must eclipse the tortfeasor's limit), which can result in highly leveraged losses at immature evaluations.

In light of these characteristics, this analysis uses the Stanard-Buhlmann method (also known as the Cape Cod method) to determine the ultimate level of losses in the experience period. The Stanard-Buhlmann method was conceived with an eye toward reinsurance data, which shares the described traits. The procedure is as follows:

1. First, the method uses the losses reported to date to determine a common, ultimate expected level of losses relative to ALCCL.
2. In order to do this, typical loss development factors are determined. Using these factors, an implied portion of ultimate losses that are reported to date is determined. For instance, a loss development factor of 3.000 implies that 1/3 of ultimate losses are expected to be reported to date.
3. Using this calculation, the ALCCL for each year is apportioned into two pieces: the portion corresponding to losses that have been incurred and reported (the apportioned ALCCL), and the portion corresponding to losses that have been incurred but not reported.
4. The sum of the reported losses to date from each year is compared to the sum of the apportioned ALCCL, and this ratio is the ultimate expected level of losses relative to ALCCL for the historic period.
5. This expected experience ratio is applied to the ALCCL that has yet to be apportioned. The result is the expected unreported loss that is added to the loss reported to date to determine the total (developed) incurred loss and allocated loss adjustment expense.

The benefit of using this method is that for each accident year, the unreported loss reflects a common, overall expected level of adequacy (or inadequacy) rather than leveraging a single immature accident year's results; but each year's results to date still play a role in the computation of the historical expected experience ratio for the ALCCL not yet apportioned.

To calculate this ratio in this filing, ALCCL is apportioned separately for Trucks, Tractors and Trailers and Private Passenger Types, but then combined to determine the overall level.

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**DETERMINATION  
OF UIM LOSS  
DEVELOPMENT  
FACTORS TO  
APPORTION THE  
ALCCL**

To calculate the ALCCL apportioned to losses reported to date, a typical chain ladder approach is taken to determine loss development factors to ultimate (LDFs). In turn, the LDFs are used to determine the portion of ultimate losses expected to be reported to date.

Separately for Trucks, Tractors, and Trailers and Private Passenger Types, UIM LDFs are calculated by accumulating the statewide credibility-weighted 15-to-27-month factor and 27-to-39-month factor, and the multistate average to-ultimate factors at subsequent maturities. Losses are developed up to 123 months and are on an all limits combined basis. Three-year averages are calculated for each link ratio based on a "best three of five" approach. Specifically, for the latest five years, the highest and lowest ratios were removed from the calculation and the three-year average was calculated using the three remaining factors. Beyond 123 months the loss development is assumed to be unity.

In light of countrywide variations in financial responsibility limits and UIM coverage triggers, the 15-to-27-month and 27-to-39-month link ratios are based on a credibility weighting of state specific data with multistate data. For these link ratios, statewide credibility is determined by the formula  $Z = L/(L+K)$ , where Z is the credibility, and L is the 3-year total losses for the particular state (at the earliest of the two evaluations). The complement of credibility is assigned to multistate link ratio. K is a constant, for which 20,000,000 is selected for all UIM calculations. A state must have losses in all three years at the earlier evaluation to receive credibility for a given link ratio.

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**UNALLOCATED  
LOSS ADJUSTMENT  
EXPENSES**

Reported losses include loss adjustment expenses that can be allocated to individual claims (ALAE), but do not include unallocated loss adjustment expenses (ULAE). To account for the expected ULAE costs, a load of 8% is selected, consistent with the selection for bodily injury loss costs throughout this filing.

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MARYLAND  
UNINSURED MOTORISTS

Trucks, Tractors & Trailers

Accident Year Ending	(1) Aggregate Loss Cost at Current Level (A)	(2) 30/60 Incurred Losses (B)	(3) Experience Ratio (2) / (1)	(4) Number of Incurred Claims
6/30/2013	661,633	538,113	0.813	29
6/30/2014	650,462	363,603	0.559	20
6/30/2015	654,611	489,654	0.748	20
6/30/2016	671,441	449,660	0.670	31
6/30/2017	682,386	865,837	1.269	30
Total	3,320,533	2,706,867	0.815	

(5) Indicated change based on experience data [Column (3) Total]	-18.5%
(6) Selected change	-18.5%

(A) The Aggregate Loss Cost at Current Level (ALCCL) is calculated by extending earned exposures by the current ISO loss costs.

(B) Losses reflect trend and development and include all Loss Adjustment Expenses (LAE) for Uninsured Motorists. See following exhibits.

MARYLAND  
UNINSURED MOTORISTS  
Derivation of Experience Ratio

Trucks, Tractors & Trailers

Accident Year Ending	(1a) Reported Incurred Loss And ALAE*	(2a) Loss Development Factor	(3a) Developed Losses And All LAE
6/30/2013	489,924	1.017	538,113
6/30/2014	327,181	1.029	363,603
6/30/2015	400,870	1.131	489,654
6/30/2016	307,725	1.353	449,660
6/30/2017	398,262	2.013	865,837
Total	1,923,962		2,706,867

(4a) Unallocated loss adjustment factor	1.080
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Accident Year Ending	(5a) Average Accident Date	(6a) Trend Period (A)	(7a) Trended Loss And ALAE (B)
6/30/2013	01/01/13	7.083	538,113
6/30/2014	01/01/14	6.083	363,603
6/30/2015	01/01/15	5.083	489,654
6/30/2016	01/01/16	4.083	449,660
6/30/2017	01/01/17	3.083	865,837
Total			2,706,867

(8a) Selected annual loss trend	+0.0%**
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(A) Trend period is equal to the number of years from the average accident date to one year beyond the anticipated implementation date of 02/01/19.

(B) Trended losses are equal to the developed loss in column (3a) multiplied by a trend factor of  $[1.0 + (8a)]^{(6a)}$ .

\* To arrive at the incurred losses presented in (1a), ISO applied a +3.0% claim cost trend factor and then capped the trended losses on a per claim/per occurrence basis at MARYLAND's minimum split limit of 30/60.

\*\* The loss trend shown in (8a) represents only the frequency trend component and has been applied after the losses were trended and capped at 30/60.

MARYLAND  
UNINSURED MOTORISTS

Private Passenger Types

Accident Year Ending	(1) Aggregate Loss Cost at Current Level (A)	(2) 30/60 Incurred Losses (B)	(3) Experience Ratio (2) / (1)	(4) Number of Incurred Claims
6/30/2013	191,477	295,330	1.542	17
6/30/2014	181,800	203,051	1.117	10
6/30/2015	175,501	303,237	1.728	7
6/30/2016	173,300	272,493	1.572	13
6/30/2017	170,116	295,325	1.736	8
Total	892,195	1,369,436	1.535	

(5) Indicated change based on experience data [Column (3) Total]	53.5%
(6) Selected change	35.0%

(A) The Aggregate Loss Cost at Current Level (ALCCL) is calculated by extending earned exposures by the current ISO loss costs.

(B) Losses reflect trend and development and include all Loss Adjustment Expenses (LAE) for Uninsured Motorists. See following exhibits.

MARYLAND  
UNINSURED MOTORISTS  
Derivation of Experience Ratio

Private Passenger Types

Accident Year Ending	(1a) Reported Incurred Loss And ALAE*	(2a) Loss Development Factor	(3a) Developed Losses And All LAE
6/30/2013	273,453	1.000	295,330
6/30/2014	179,399	1.048	203,051
6/30/2015	248,034	1.132	303,237
6/30/2016	186,205	1.355	272,493
6/30/2017	135,371	2.020	295,325
Total	1,022,463		1,369,436

(4a) Unallocated loss adjustment factor	1.080
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Accident Year Ending	(5a) Average Accident Date	(6a) Trend Period (A)	(7a) Trended Loss And ALAE (B)
6/30/2013	01/01/13	7.083	295,330
6/30/2014	01/01/14	6.083	203,051
6/30/2015	01/01/15	5.083	303,237
6/30/2016	01/01/16	4.083	272,493
6/30/2017	01/01/17	3.083	295,325
Total			1,369,436

(8a) Selected annual loss trend	+0.0%**
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(A) Trend period is equal to the number of years from the average accident date to one year beyond the anticipated implementation date of 02/01/19.

(B) Trended losses are equal to the developed loss in column (3a) multiplied by a trend factor of  $[1.0 + (8a)]^{(6a)}$ .

\* To arrive at the incurred losses presented in (1a), ISO applied a +3.0% claim cost trend factor and then capped the trended losses on a per claim/per occurrence basis at MARYLAND's minimum split limit of 30/60.

\*\* The loss trend shown in (8a) represents only the frequency trend component and has been applied after the losses were trended and capped at 30/60.

MARYLAND  
UNDERINSURED MOTORISTS  
Summary

Trucks, Tractors, and Trailers and Private Passenger Types Combined

Accident Year Ending	(1) Aggregate Loss Cost at Current Level (A)	(2) Total Limits Incurred Losses (B)	(3) Experience Ratio (2) / (1)	(4) Number of Incurred Claims
3/31/2013	4,395,159	4,350,819	0.990	27
3/31/2014	4,333,284	2,633,520	0.608	31
3/31/2015	4,417,261	4,061,755	0.920	28
3/31/2016	4,649,846	3,245,540	0.698	21
3/31/2017	4,697,359	3,543,446	0.754	14
Total	22,492,909	17,835,080	0.793	

(5) Indicated change based on experience data [Column (3) Total]	- 20.7%
(6) Selected change	- 20.7%

(A) The Aggregate Loss Cost at Current Level (ALCCL) is calculated by extending earned exposures by the current ISO loss costs.

(B) Losses reflect trend and development and include all Loss Adjustment Expenses (LAE) for Underinsured Motorists. See following exhibits.

**MARYLAND  
UNDERINSURED MOTORISTS  
Derivation of Experience Ratio**

**Trucks, Tractors, and Trailers**

Accident Year Ending	(1a) Aggregate Loss Cost at Current Level	(2a) Reported Incurred Loss And ALAE	(3a) Number of Incurred Claims
3/31/2013	2,980,056	1,295,282	19
3/31/2014	2,967,133	1,595,844	29
3/31/2015	3,068,473	936,706	17
3/31/2016	3,280,056	1,007,560	17
3/31/2017	3,353,866	765,922	13
Total	15,649,583	5,601,314	

(4a) Selected annual loss trend (see Exhibit 3)	+ 4.0%
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Accident Year Ending	(5a) Average Accident Date	(6a) Trend Period (A)	(7a) Trended Loss And ALAE (B)
3/31/2013	10/01/2012	7.333	1,726,933
3/31/2014	10/01/2013	6.333	2,045,824
3/31/2015	10/01/2014	5.333	1,154,643
3/31/2016	10/01/2015	4.333	1,194,214
3/31/2017	10/01/2016	3.333	872,896
Total			6,994,509

(A) Trend period is equal to the number of years from the average accident date to one year beyond the anticipated implementation date of 02/01/2019.

(B) Trended losses are equal to the reported loss in column (2a) multiplied by a trend factor of  $[1.0 + (4a)]^{(6a)}$ .

MARYLAND  
UNDERINSURED MOTORISTS  
Derivation of Experience Ratio

Private Passenger Types

Accident Year Ending	(1b) Aggregate Loss Cost at Current Level	(2b) Reported Incurred Loss And ALAE	(3b) Number of Incurred Claims
3/31/2013	1,415,103	1,595,829	8
3/31/2014	1,366,151	30,507	2
3/31/2015	1,348,788	1,472,489	11
3/31/2016	1,369,790	228,552	4
3/31/2017	1,343,493	5,000	1
Total	6,843,326	3,332,377	

(4b) Selected annual loss trend (see Exhibit 3)	+ 4.0%
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Accident Year Ending	(5b) Average Accident Date	(6b) Trend Period (C)	(7b) Trended Loss And ALAE (D)
3/31/2013	10/01/2012	7.333	2,127,637
3/31/2014	10/01/2013	6.333	39,109
3/31/2015	10/01/2014	5.333	1,815,083
3/31/2016	10/01/2015	4.333	270,892
3/31/2017	10/01/2016	3.333	5,698
Total			4,258,419

(C) Trend period is equal to the number of years from the average accident date to one year beyond the anticipated implementation date of 02/01/2019.

(D) Trended losses are equal to the reported loss in column (2b) multiplied by a trend factor of  $[1.0 + (4b)]^{(6b)}$ .

MARYLAND  
UNDERINSURED MOTORISTS  
Derivation of Experience Ratio

Trucks, Tractors, and Trailers

Accident Year Ending	(8a)  Loss Development Factor (E)	(9a)  Implied Portion of Loss Reported 1.0 / (8a)	(10a)  Apportioned ALCCL (1a) * (9a)
3/31/2013	1.050	0.952	2,838,148
3/31/2014	1.113	0.898	2,665,887
3/31/2015	1.311	0.763	2,340,559
3/31/2016	1.806	0.554	1,816,199
3/31/2017	3.279	0.305	1,022,832
Total			10,683,626

Private Passenger Types

Accident Year Ending	(8b)  Loss Development Factor (E)	(9b)  Implied Portion of Loss Reported 1.0 / (8b)	(10b)  Apportioned ALCCL (1b) * (9b)
3/31/2013	1.072	0.933	1,320,059
3/31/2014	1.152	0.868	1,185,895
3/31/2015	1.350	0.741	999,102
3/31/2016	1.861	0.537	736,051
3/31/2017	3.339	0.299	402,364
Total			4,643,471

(E) See Exhibit 2 for Loss Development.

MARYLAND  
UNDERINSURED MOTORISTS  
Derivation of Experience Ratio

Trucks, Tractors, and Trails and Private Passenger Types Combined

(11) Historical expected experience ratio, equal to the trended reported losses divided by the apportioned ALCCL [Total (7a) + (7b)] / [Total (10a) + (10b)]	0.734
(12) Unallocated Loss Adjustment Expense (ULAE) Factor	1.08

Accident Year Ending	(13) Ultimate Loss And ALAE (F)	(14) Ultimate Loss And All LAE (13) * (12)
3/31/2013	4,028,536	4,350,819
3/31/2014	2,438,444	2,633,520
3/31/2015	3,760,884	4,061,755
3/31/2016	3,005,130	3,245,540
3/31/2017	3,280,968	3,543,446
Total	16,513,963	17,835,080

(F) Ultimate Loss and ALAE equals the reported incurred loss and ALAE plus the historical expected losses on ALCCL not yet apportioned, which is defined as the total ALCCL less the apportioned ALCCL.

$$(2a) + (2b) + [(1a) + (1b) - (10a) - (10b)] * (11)$$

## UNINSURED MOTORISTS Loss Development

### Trucks, Tractors & Trailers

#### Multistate 30/60 Incurred Losses and ALAE

(includes District of Columbia and all states except Massachusetts)

Year Ending	15 months	27 months	39 months	51 months	63 months	75 months
2008Q2	6,272,895	9,119,541	10,699,719	11,759,323	11,978,886	11,931,303
2009Q2	10,408,829	15,785,339	19,082,652	21,169,494	21,133,101	21,584,410
2010Q2	10,392,904	14,400,577	17,010,903	18,262,549	19,373,326	19,744,951
2011Q2	9,360,415	15,008,999	18,784,327	20,221,139	20,152,419	20,593,844
2012Q2	10,693,661	17,034,198	19,430,878	21,631,037	21,721,142	21,946,362
2013Q2	10,869,083	15,995,845	19,453,267	21,545,043	22,258,716	
2014Q2	11,380,075	15,009,336	17,731,185	19,911,993		
2015Q2	11,399,358	15,936,793	19,004,342			
2016Q2	11,130,690	18,252,444				
2017Q2	12,017,199					

#### Multistate 30/60 Link Ratios

Year Ending		27:15	39:27	51:39	63:51	75:63
2008Q2		1.454	1.173	1.099	1.019	0.996
2009Q2		1.517	1.209	1.109	0.998	1.021
2010Q2		1.386	1.181	1.074	1.061	1.019
2011Q2		1.603	1.252	1.076	0.997	1.022
2012Q2		1.593	1.141	1.113	1.004	1.010
2013Q2		1.472	1.216	1.108	1.033	
2014Q2		1.319	1.181	1.123		
2015Q2		1.398	1.192			
2016Q2		1.640				
Average Factor	(Best 3 of 5)	1.488	1.197	1.099	1.012	1.017
Average Factor	(Latest 3)	1.452	1.197	1.115	1.011	1.017
Average Factor	(Latest 5)	1.484	1.196	1.099	1.019	1.014
Selected Factor		1.488	1.197	1.099	1.012	1.017

\*Losses are assumed to reach their ultimate settlement level at 75 months.

#### Multistate Loss Development Factors to Ultimate

Age	15 months	27 months	39 months	51 months	63 months
LDF to Ultimate	2.013	1.353	1.131	1.029	1.017

**UNINSURED MOTORISTS  
Loss Development**

**Private Passenger Types**

**Multistate 30/60 Incurred Losses and ALAE**

(includes District of Columbia and all states except Massachusetts)

<b>Year Ending</b>	<b>15 months</b>	<b>27 months</b>	<b>39 months</b>	<b>51 months</b>	<b>63 months</b>	<b>75 months</b>
2008Q2	1,777,774	3,414,291	3,933,826	4,367,023	4,898,613	4,891,519
2009Q2	4,383,554	6,152,760	7,136,067	7,864,468	8,255,927	8,510,073
2010Q2	4,597,661	6,618,572	7,849,533	8,726,616	9,164,413	9,228,169
2011Q2	4,025,299	6,724,298	7,136,627	7,727,570	8,310,297	8,096,380
2012Q2	4,578,717	6,747,849	8,209,640	8,852,237	8,987,711	8,928,299
2013Q2	5,398,922	7,952,995	9,763,348	10,359,207	10,827,813	
2014Q2	5,340,462	7,599,765	9,068,181	9,792,314		
2015Q2	4,802,733	7,328,774	8,652,924			
2016Q2	5,426,930	8,487,123				
2017Q2	5,467,020					

**Multistate 30/60 Link Ratios**

<b>Year Ending</b>		<b>27:15</b>	<b>39:27</b>	<b>51:39</b>	<b>63:51</b>	<b>75:63</b>
2008Q2		1.921	1.152	1.110	1.122	0.999
2009Q2		1.404	1.160	1.102	1.050	1.031
2010Q2		1.440	1.186	1.112	1.050	1.007
2011Q2		1.671	1.061	1.083	1.075	0.974
2012Q2		1.474	1.217	1.078	1.015	0.993
2013Q2		1.473	1.228	1.061	1.045	
2014Q2		1.423	1.193	1.080		
2015Q2		1.526	1.181			
2016Q2		1.564				
Average Factor	(Best 3 of 5)	1.491	1.197	1.080	1.048	1.000
Average Factor	(Latest 3)	1.504	1.201	1.073	1.045	0.992
Average Factor	(Latest 5)	1.492	1.176	1.083	1.047	1.001
Selected Factor		1.491	1.197	1.080	1.048	1.000

\*Losses are assumed to reach their ultimate settlement level at 75 months.

**Multistate Loss Development Factors to Ultimate**

<b>Age</b>	<b>15 months</b>	<b>27 months</b>	<b>39 months</b>	<b>51 months</b>	<b>63 months</b>
LDF to Ultimate	2.020	1.355	1.132	1.048	1.000

MARYLAND  
UNDERINSURED MOTORISTS  
Loss Development

Trucks, Tractors, and Trailers

Multistate Total Limits Incurred Losses and ALAE  
(includes District of Columbia and all states except Massachusetts)

Year Ending	15 months	27 months	39 months	51 months	63 months	75 months	87 months	99 months	111 months	123 months
2004Q1	14,692,605	29,873,598	38,675,634	46,809,037	51,798,300	53,409,018	54,155,313	54,999,355	55,015,919	54,594,917
2005Q1	21,960,735	39,040,048	54,082,811	64,880,367	74,022,921	76,066,562	77,816,194	79,127,068	79,118,801	78,726,408
2006Q1	18,345,213	36,314,724	55,095,451	61,818,391	67,201,240	71,039,083	72,203,114	73,120,723	73,299,244	73,406,992
2007Q1	35,068,853	55,276,151	67,275,124	76,404,731	81,824,014	83,997,862	83,724,012	85,972,768	84,569,059	84,329,210
2008Q1	30,586,436	52,288,597	71,825,032	90,420,737	97,355,804	100,809,443	101,004,611	101,087,483	102,426,612	101,929,349
2009Q1	36,927,236	56,646,472	78,692,014	93,377,279	98,782,195	103,363,873	104,671,803	104,263,622	105,571,956	
2010Q1	38,587,149	66,553,230	86,997,197	97,003,184	99,703,591	102,801,852	104,116,292	104,281,843		
2011Q1	33,224,095	65,303,737	81,746,713	97,988,812	106,103,352	108,811,804	109,371,366			
2012Q1	35,733,623	60,378,952	79,181,624	91,501,970	97,849,200	104,992,177				
2013Q1	38,114,873	62,121,587	82,805,301	97,667,682	102,632,448					
2014Q1	29,645,644	55,823,793	76,513,381	94,078,933						
2015Q1	46,573,523	71,839,097	106,271,843							
2016Q1	33,933,414	71,734,008								
2017Q1	51,814,159									

**MARYLAND  
UNDERINSURED MOTORISTS  
Loss Development**

Trucks, Tractors, and Trailers

**Multistate Link Ratios**

<b>Year Ending</b>	<b>27:15</b>	<b>39:27</b>	<b>51:39</b>	<b>63:51</b>	<b>75:63</b>	<b>87:75</b>	<b>99:87</b>	<b>111:99</b>	<b>123*:111</b>
2004Q1	2.033	1.295	1.210	1.107	1.031	1.014	1.016	1.000	0.992
2005Q1	1.778	1.385	1.200	1.141	1.028	1.023	1.017	1.000	0.995
2006Q1	1.980	1.517	1.122	1.087	1.057	1.016	1.013	1.002	1.001
2007Q1	1.576	1.217	1.136	1.071	1.027	0.997	1.027	0.984	0.997
2008Q1	1.710	1.374	1.259	1.077	1.035	1.002	1.001	1.013	0.995
2009Q1	1.534	1.389	1.187	1.058	1.046	1.013	0.996	1.013	
2010Q1	1.725	1.307	1.115	1.028	1.031	1.013	1.002		
2011Q1	1.966	1.252	1.199	1.083	1.026	1.005			
2012Q1	1.690	1.311	1.156	1.069	1.073				
2013Q1	1.630	1.333	1.179	1.051					
2014Q1	1.883	1.371	1.230						
2015Q1	1.542	1.479							
2016Q1	2.114								
Average Factor (Best 3 of 5)	1.734	1.338	1.178	1.059	1.038	1.007	1.005	1.005	0.996

\*Losses are assumed to reach their ultimate settlement level at 123 months.

**Multistate Loss Development Factors to Ultimate**

<b>Age</b>	<b>15 months</b>	<b>27 months</b>	<b>39 months</b>	<b>51 months</b>	<b>63 months</b>	<b>75 months</b>	<b>87 months</b>	<b>99 months</b>	<b>111 months</b>
LDF to Ultimate	3.042	1.754	1.311	1.113	1.050	1.012	1.006	1.001	0.996

MARYLAND  
UNDERINSURED MOTORISTS  
Loss Development

Trucks, Tractors, and Trailers

MARYLAND Loss Development

Total Limits Incurred Losses and ALAE				Link Ratios		
Year Ending	15 months	27 months	39 months	Year Ending	27:15	39:27
2011Q1	392,541	932,374	1,804,630	2011Q1	2.375	1.936
2012Q1	341,209	625,949	657,452	2012Q1	1.835	1.050
2013Q1	404,699	433,858	962,991	2013Q1	1.072	2.220
2014Q1	326,028	912,236	974,647	2014Q1	2.798	1.068
2015Q1	38,212	238,582	662,995	2015Q1	6.244	2.779
2016Q1	94,408	1,021,247		2016Q1	10.817	
2017Q1	765,922			2017Q1		
3-Yr Volume (A)	898,542	2,172,065		Average Factor:	3.625	1.741
State Credibility (B)	0.043	0.098		(Best 3 of 5)		

Credibility Weighted Loss Development Factors to Ultimate

Age	15 months	27 months	39 months	51 months	63 months
Credibility Weighted Link (C)	1.816	1.378			
Multistate LDF to Ultimate			1.311	1.113	1.050
Credibility Wtd. LDF to Ult.	3.279	1.806	1.311	1.113	1.050

(B) Credibility is calculated as  $(A) / [(A) + 20,000,000]$  where the credibility constant of 20,000,000 was selected judgmentally. State must have losses in all years at the earlier evaluation to receive credibility for a given link ratio.

(C) Credibility weighted link ratio is calculated as (B) times the state link ratio +  $[1 - (B)]$  times the multistate link ratio for that evaluation month.

MARYLAND  
UNDERINSURED MOTORISTS  
Loss Development

Private Passenger Types

Multistate Total Limits Incurred Losses and ALAE  
(includes District of Columbia and all states except Massachusetts)

Year Ending	15 months	27 months	39 months	51 months	63 months	75 months	87 months	99 months	111 months	123 months
2004Q1	10,970,311	13,817,949	18,533,680	21,250,335	21,977,103	21,601,106	22,686,898	21,948,213	22,297,892	22,408,747
2005Q1	7,148,706	12,524,892	16,195,654	18,708,633	20,668,258	21,026,013	21,099,889	21,222,914	21,216,865	22,217,640
2006Q1	5,095,573	9,872,228	14,057,881	17,003,360	17,421,354	18,214,405	18,703,548	19,835,765	19,954,918	19,934,919
2007Q1	7,681,596	15,793,237	19,325,066	21,552,123	22,256,156	23,646,455	24,152,084	23,657,322	23,750,030	23,760,834
2008Q1	8,548,823	16,046,334	19,984,667	25,994,964	26,700,846	26,883,414	27,476,186	27,997,453	28,153,917	28,371,904
2009Q1	13,207,570	24,051,085	33,983,383	37,826,866	40,331,461	41,236,989	42,059,292	41,613,473	41,983,354	
2010Q1	8,665,556	19,655,195	24,744,075	27,654,108	29,796,076	31,107,036	31,498,849	32,632,532		
2011Q1	9,137,346	19,638,240	23,571,625	30,067,303	33,802,918	33,537,309	35,231,879			
2012Q1	11,104,575	17,986,824	22,927,405	27,044,814	29,269,666	33,424,074				
2013Q1	10,690,037	19,158,740	27,823,951	31,182,883	32,679,464					
2014Q1	13,756,403	20,436,698	29,832,372	36,242,670						
2015Q1	10,439,673	22,409,173	31,303,446							
2016Q1	14,431,498	27,454,599								
2017Q1	14,577,074									

MARYLAND  
UNDERINSURED MOTORISTS  
Loss Development

Private Passenger Types

Multistate Link Ratios

Year Ending	27:15	39:27	51:39	63:51	75:63	87:75	99:87	111:99	123*:111
2004Q1	1.260	1.341	1.147	1.034	0.983	1.050	0.967	1.016	1.005
2005Q1	1.752	1.293	1.155	1.105	1.017	1.004	1.006	1.000	1.047
2006Q1	1.937	1.424	1.210	1.025	1.046	1.027	1.061	1.006	0.999
2007Q1	2.056	1.224	1.115	1.033	1.062	1.021	0.980	1.004	1.000
2008Q1	1.877	1.245	1.301	1.027	1.007	1.022	1.019	1.006	1.008
2009Q1	1.821	1.413	1.113	1.066	1.022	1.020	0.989	1.009	
2010Q1	2.268	1.259	1.118	1.077	1.044	1.013	1.036		
2011Q1	2.149	1.200	1.276	1.124	0.992	1.051			
2012Q1	1.620	1.275	1.180	1.082	1.142				
2013Q1	1.792	1.452	1.121	1.048					
2014Q1	1.486	1.460	1.215						
2015Q1	2.147	1.397							
2016Q1	1.902								
Average Factor (Best 3 of 5)	1.771	1.375	1.172	1.075	1.024	1.021	1.015	1.005	1.004

\*Losses are assumed to reach their ultimate settlement level at 123 months.

Multistate Loss Development Factors to Ultimate

Age	15 months	27 months	39 months	51 months	63 months	75 months	87 months	99 months	111 months
LDF to Ultimate	3.288	1.856	1.350	1.152	1.072	1.046	1.025	1.010	1.004

MARYLAND  
UNDERINSURED MOTORISTS  
Loss Development

Private Passenger Types

MARYLAND Loss Development

	Total Limits Incurred Losses and ALAE				Link Ratios		
Year Ending	15 months	27 months	39 months		Year Ending	27:15	39:27
2011Q1	501,302	501,001	490,000		2011Q1	0.999	0.978
2012Q1	200,000	200,001	345,002		2012Q1	1.000	1.725
2013Q1	922,243	945,486	1,345,487		2013Q1	1.025	1.423
2014Q1	2,500	15,000	18,250		2014Q1	6.000	1.217
2015Q1	365,225	741,025	1,500,831		2015Q1	2.029	2.025
2016Q1	250	210,250			2016Q1	841.000	
2017Q1	5,000				2017Q1		
3-Yr Volume (A)	370,475	966,275			Average Factor:	3.018	1.455
State Credibility (B)	0.018	0.046			(Best 3 of 5)		

Credibility Weighted Loss Development Factors to Ultimate

Age	15 months	27 months	39 months	51 months	63 months
Credibility Weighted Link (C)	1.794	1.378			
Multistate LDF to Ultimate			1.350	1.152	1.072
Credibility Wtd. LDF to Ult.	3.339	1.861	1.350	1.152	1.072

(B) Credibility is calculated as  $(A) / [(A) + 20,000,000]$  where the credibility constant of 20,000,000 was selected judgmentally. State must have losses in all years at the earlier evaluation to receive credibility for a given link ratio.

(C) Credibility weighted link ratio is calculated as (B) times the state link ratio +  $[1.0 - (B)]$  times the multistate link ratio for that evaluation month.

UNINSURED MOTORISTS  
Trend Selection

Multistate Average Claim Cost\*

Calendar Year Paid

<b>Year Ended</b>	<b>\$50,000 Bodily Injury</b>
9/30/2011	14,087.29
12/31/2011	14,139.61
3/31/2012	14,127.40
6/30/2012	14,208.75
9/30/2012	14,158.46
12/31/2012	14,151.99
3/31/2013	14,175.88
6/30/2013	14,166.06
9/30/2013	14,126.37
12/31/2013	14,391.54
3/31/2014	14,618.77
6/30/2014	14,863.57
9/30/2014	15,154.80
12/31/2014	15,218.71
3/31/2015	15,289.54
6/30/2015	15,296.65
9/30/2015	15,326.50
12/31/2015	15,327.08
3/31/2016	15,344.19
6/30/2016	15,585.46
9/30/2016	15,851.55
12/31/2016	16,098.39
3/31/2017	16,331.24
6/30/2017	16,404.76
Average Annual 24 PT: Change 12 PT:	2.8% 3.0%
Coefficient of 24 PT: Determination R <sup>2</sup> 12 PT:	0.9237 0.8532

**Trend Selection: + 3.0%**

\*Data excludes Massachusetts and is based on standard bodily injury coverage (and not UM/UIM) for Commercial Auto Trucks, Tractors, and Trailers; Private Passenger Types; Buses; Publics; and Zone-Rated.

**UNDERINSURED MOTORISTS**  
Trend Selection

Multistate Average Claim Cost\*

Calendar Year Paid

<b>Year Ended</b>		<b>\$1,000,000 Bodily Injury</b>	<b>Total Limits Bodily Injury</b>
9/30/2011		34,524.26	34,619.83
12/31/2011		34,896.55	35,050.43
3/31/2012		34,698.67	34,854.20
6/30/2012		35,505.61	35,634.61
9/30/2012		35,461.16	35,605.91
12/31/2012		35,460.55	35,516.59
3/31/2013		35,512.30	35,588.72
6/30/2013		34,807.78	34,897.79
9/30/2013		35,013.89	35,090.25
12/31/2013		36,004.06	36,108.15
3/31/2014		37,029.92	37,113.74
6/30/2014		38,701.85	38,886.89
9/30/2014		39,513.22	39,691.10
12/31/2014		40,147.77	40,314.47
3/31/2015		40,807.93	40,988.95
6/30/2015		40,801.58	40,964.30
9/30/2015		40,924.44	41,146.74
12/31/2015		41,003.16	41,260.26
3/31/2016		41,050.85	41,305.50
6/30/2016		41,877.78	42,041.96
9/30/2016		42,922.41	43,045.27
12/31/2016		43,327.18	43,400.08
3/31/2017		43,997.60	44,104.33
6/30/2017		44,116.04	44,204.07
Average Annual	24 PT:	4.9%	4.9%
Change	12 PT:	4.0%	3.9%
Coefficient of	24 PT:	0.9324	0.9298
Determination R <sup>2</sup>	12 PT:	0.9293	0.9393

**Trend Selection: + 4.0%**

\*Data excludes Massachusetts and is based on standard bodily injury coverage (and not UM/UIM) for Commercial Auto Trucks, Tractors, and Trailers; Private Passenger Types; Buses; Publics; and Zone-Rated.

MARYLAND  
COMMERCIAL AUTOMOBILE

SECTION F - REVISED PROSPECTIVE LOSS COSTS

Liability, Medical Payments, and PIP .....	F2-F10
Physical Damage - All Coverages Except Garages .....	F11-F19
Non-Ownership Liability (Rule 89) .....	F20
Hired Autos (Rule 90) .....	F21
Uninsured Motorists Insurance (Rule 97) .....	F22-F23

COMMERCIAL LINES MANUAL  
DIVISION ONE  
AUTOMOBILE  
LOSS COST PAGES

MARYLAND (19)  
TERRITORY 101

LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person					
	500	1000	2000	5000	Basic Limits		
RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS							
					All Autos		
\$ 680	\$3.00	\$4.00	\$5.00	\$8.00	\$ 29		
RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS							
					Not Principally Operated By Employees	Principally Operated By Employees	
\$ 563	\$1.00	\$3.00	\$6.00	\$9.00	\$ 35	\$ 23	
RULE 40. PUBLIC AUTO CLASSIFICATIONS –							
– TAXICABS AND LIMOUSINES							
					All Autos		
\$ 4216	\$116.00	\$136.00	\$156.00	\$214.00	\$ 147		
– SCHOOL AND CHURCH BUSES							
					All Autos		
\$ 374	\$21.00	\$25.00	\$29.00	\$35.00	\$ 18		
– OTHER BUSES							
					All Autos		
\$ 2584	\$105.00	\$122.00	\$138.00	\$190.00	\$ 171		
– VAN POOLS							
					All Autos		
\$ 1020	\$4.00	\$5.00	\$6.00	\$8.00	\$ 20		
RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT							
					All Autos		
\$ 450	Refer to Rule 49.				\$ 20		
<ul style="list-style-type: none"><li>• For liability increased limits factors, refer to Rule 100.</li><li>• For liability fleet factors, refer to Rules 22. and 39.</li><li>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</li></ul>							

COMMERCIAL LINES MANUAL  
DIVISION ONE  
AUTOMOBILE  
LOSS COST PAGES

LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person					
	500	1000	2000	5000	Basic Limits		
RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS							
					All Autos		
\$ 653	\$2.00	\$3.00	\$4.00	\$6.00	\$ 20		
RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS							
					Not Principally Operated By Employees	Principally Operated By Employees	
\$ 486	\$1.00	\$3.00	\$6.00	\$9.00	\$ 42	\$ 27	
RULE 40. PUBLIC AUTO CLASSIFICATIONS –							
– TAXICABS AND LIMOUSINES							
					All Autos		
\$ 4049	\$86.00	\$101.00	\$116.00	\$159.00	\$ 101		
– SCHOOL AND CHURCH BUSES							
					All Autos		
\$ 359	\$17.00	\$21.00	\$24.00	\$28.00	\$ 12		
– OTHER BUSES							
					All Autos		
\$ 2481	\$112.00	\$130.00	\$147.00	\$203.00	\$ 118		
– VAN POOLS							
					All Autos		
\$ 980	\$3.00	\$3.00	\$4.00	\$5.00	\$ 14		
RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT							
					All Autos		
\$ 468	Refer to Rule 49.				\$ 14		
<ul style="list-style-type: none"><li>• For liability increased limits factors, refer to Rule 100.</li><li>• For liability fleet factors, refer to Rules 22. and 39.</li><li>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</li></ul>							

COMMERCIAL LINES MANUAL  
DIVISION ONE  
AUTOMOBILE  
LOSS COST PAGES

MARYLAND (19)  
TERRITORY 108

LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person				Basic Limits	
	500	1000	2000	5000			
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>							
						<b>All Autos</b>	
\$ 695	\$2.00	\$3.00	\$4.00	\$6.00		\$ 16	
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>							
						<b>Not Principally Operated By Employees</b>	<b>Principally Operated By Employees</b>
\$ 506	\$1.00	\$3.00	\$6.00	\$9.00		\$ 31	\$ 20
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>							
<b>– TAXICABS AND LIMOUSINES</b>							
\$ 4309	\$79.00	\$92.00	\$105.00	\$144.00		<b>All Autos</b>	
						\$ 81	
<b>– SCHOOL AND CHURCH BUSES</b>							
\$ 382	\$13.00	\$15.00	\$17.00	\$20.00		<b>All Autos</b>	
						\$ 10	
<b>– OTHER BUSES</b>							
\$ 2641	\$89.00	\$104.00	\$117.00	\$162.00		<b>All Autos</b>	
						\$ 95	
<b>– VAN POOLS</b>							
\$ 1043	\$1.00	\$2.00	\$3.00	\$4.00		<b>All Autos</b>	
						\$ 11	
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>							
\$ 470	Refer to Rule 49.					<b>All Autos</b>	
						\$ 11	
<ul style="list-style-type: none"> <li>• For liability increased limits factors, refer to Rule 100.</li> <li>• For liability fleet factors, refer to Rules 22. and 39.</li> <li>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</li> </ul>							

COMMERCIAL LINES MANUAL  
DIVISION ONE  
AUTOMOBILE  
LOSS COST PAGES

LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person					
	500	1000	2000	5000	Basic Limits		
RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS							
					All Autos		
\$ 725	\$2.00	\$3.00	\$4.00	\$6.00	\$ 15		
RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS							
					Not Principally Operated By Employees	Principally Operated By Employees	
\$ 474	\$1.00	\$3.00	\$6.00	\$9.00	\$ 36	\$ 23	
RULE 40. PUBLIC AUTO CLASSIFICATIONS –							
– TAXICABS AND LIMOUSINES							
\$ 4495	\$78.00	\$91.00	\$105.00	\$144.00	All Autos \$ 76		
– SCHOOL AND CHURCH BUSES							
\$ 399	\$14.00	\$17.00	\$20.00	\$23.00	All Autos \$ 9		
– OTHER BUSES							
\$ 2755	\$105.00	\$123.00	\$139.00	\$192.00	All Autos \$ 89		
– VAN POOLS							
\$ 1088	\$2.00	\$3.00	\$3.00	\$4.00	All Autos \$ 10		
RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT							
\$ 523	Refer to Rule 49.				All Autos \$ 12		
<ul style="list-style-type: none"><li>• For liability increased limits factors, refer to Rule 100.</li><li>• For liability fleet factors, refer to Rules 22. and 39.</li><li>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</li></ul>							

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DIVISION ONE  
AUTOMOBILE  
LOSS COST PAGES

MARYLAND (19)  
TERRITORY 110

LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person					
	500	1000	2000	5000	Basic Limits		
RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS							
					All Autos		
\$ 586	\$1.00	\$2.00	\$3.00	\$4.00	\$ 15		
RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS							
					Not Principally Operated By Employees	Principally Operated By Employees	
\$ 460	\$1.00	\$3.00	\$6.00	\$9.00	\$ 34	\$ 22	
RULE 40. PUBLIC AUTO CLASSIFICATIONS –							
– TAXICABS AND LIMOUSINES							
\$ 3633	\$54.00	\$62.00	\$71.00	\$98.00	All Autos \$ 76		
– SCHOOL AND CHURCH BUSES							
\$ 322	\$9.00	\$11.00	\$13.00	\$16.00	All Autos \$ 9		
– OTHER BUSES							
\$ 2227	\$59.00	\$68.00	\$77.00	\$106.00	All Autos \$ 89		
– VAN POOLS							
\$ 879	\$1.00	\$1.00	\$2.00	\$3.00	All Autos \$ 10		
RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT							
\$ 395	Refer to Rule 49.				All Autos \$ 11		
<ul style="list-style-type: none"><li>• For liability increased limits factors, refer to Rule 100.</li><li>• For liability fleet factors, refer to Rules 22. and 39.</li><li>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</li></ul>							

COMMERCIAL LINES MANUAL  
DIVISION ONE  
AUTOMOBILE  
LOSS COST PAGES

LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person				Basic Limits	
	500	1000	2000	5000			
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>							
						<b>All Autos</b>	
\$ 700	\$2.00	\$3.00	\$4.00	\$6.00		\$ 22	
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>							
						<b>Not Principally Operated By Employees</b>	<b>Principally Operated By Employees</b>
\$ 507	\$1.00	\$3.00	\$6.00	\$9.00		\$ 25	\$ 16
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>							
<b>– TAXICABS AND LIMOUSINES</b>							
\$ 4340	\$88.00	\$103.00	\$118.00	\$163.00		<b>All Autos</b>	
						\$ 112	
<b>– SCHOOL AND CHURCH BUSES</b>							
\$ 385	\$12.00	\$14.00	\$17.00	\$20.00		<b>All Autos</b>	
						\$ 14	
<b>– OTHER BUSES</b>							
\$ 2660	\$90.00	\$105.00	\$119.00	\$164.00		<b>All Autos</b>	
						\$ 130	
<b>– VAN POOLS</b>							
\$ 1050	\$3.00	\$4.00	\$4.00	\$6.00		<b>All Autos</b>	
						\$ 15	
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>							
\$ 505	Refer to Rule 49.					<b>All Autos</b>	
						\$ 16	
<ul style="list-style-type: none"> <li>• For liability increased limits factors, refer to Rule 100.</li> <li>• For liability fleet factors, refer to Rules 22. and 39.</li> <li>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</li> </ul>							

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MARYLAND (19)  
TERRITORY 112

LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person					
	500	1000	2000	5000	Basic Limits		
RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS							
					All Autos		
\$ 708	\$2.00	\$3.00	\$4.00	\$6.00	\$ 20		
RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS							
					Not Principally Operated By Employees	Principally Operated By Employees	
\$ 536	\$1.00	\$3.00	\$6.00	\$9.00	\$ 43	\$ 28	
RULE 40. PUBLIC AUTO CLASSIFICATIONS –							
– TAXICABS AND LIMOUSINES							
					All Autos		
\$ 4390	\$80.00	\$94.00	\$108.00	\$147.00	\$ 101		
– SCHOOL AND CHURCH BUSES							
					All Autos		
\$ 389	\$12.00	\$14.00	\$16.00	\$20.00	\$ 12		
– OTHER BUSES							
					All Autos		
\$ 2690	\$86.00	\$101.00	\$113.00	\$157.00	\$ 118		
– VAN POOLS							
					All Autos		
\$ 1062	\$3.00	\$3.00	\$4.00	\$5.00	\$ 14		
RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT							
					All Autos		
\$ 501	Refer to Rule 49.				\$ 14		
<ul style="list-style-type: none"><li>• For liability increased limits factors, refer to Rule 100.</li><li>• For liability fleet factors, refer to Rules 22. and 39.</li><li>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</li></ul>							

COMMERCIAL LINES MANUAL  
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LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person					
	500	1000	2000	5000	Basic Limits		
RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS							
					All Autos		
\$ 295	\$1.00	\$1.00	\$2.00	\$3.00	\$ 6		
RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS							
					Not Principally Operated By Employees	Principally Operated By Employees	
\$ 253	\$1.00	\$3.00	\$6.00	\$9.00	\$ 18	\$ 12	
RULE 40. PUBLIC AUTO CLASSIFICATIONS –							
– TAXICABS AND LIMOUSINES							
					All Autos		
\$ 1829	\$28.00	\$33.00	\$38.00	\$52.00	\$ 30		
– SCHOOL AND CHURCH BUSES							
					All Autos		
\$ 162	\$7.00	\$9.00	\$10.00	\$12.00	\$ 4		
– OTHER BUSES							
					All Autos		
\$ 1121	\$50.00	\$59.00	\$67.00	\$92.00	\$ 35		
– VAN POOLS							
					All Autos		
\$ 443	\$1.00	\$1.00	\$2.00	\$3.00	\$ 4		
RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT							
					All Autos		
\$ 201	Refer to Rule 49.				\$ 4		
<ul style="list-style-type: none"><li>• For liability increased limits factors, refer to Rule 100.</li><li>• For liability fleet factors, refer to Rules 22. and 39.</li><li>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</li></ul>							

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MARYLAND (19)  
TERRITORY 114

LIABILITY		MEDICAL PAYMENTS				PERSONAL INJURY PROTECTION	
Limit Of Liab. \$100,000		Limit Per Person					
	500	1000	2000	5000	Basic Limits		
RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS							
					All Autos		
\$ 488	\$1.00	\$2.00	\$3.00	\$4.00	\$ 10		
RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS							
					Not Principally Operated By Employees	Principally Operated By Employees	
\$ 373	\$1.00	\$3.00	\$6.00	\$9.00	\$ 24	\$ 16	
RULE 40. PUBLIC AUTO CLASSIFICATIONS –							
– TAXICABS AND LIMOUSINES							
					All Autos		
\$ 3026	\$28.00	\$33.00	\$38.00	\$52.00	\$ 51		
– SCHOOL AND CHURCH BUSES							
					All Autos		
\$ 268	\$10.00	\$12.00	\$14.00	\$16.00	\$ 6		
– OTHER BUSES							
					All Autos		
\$ 1854	\$53.00	\$62.00	\$70.00	\$97.00	\$ 59		
– VAN POOLS							
					All Autos		
\$ 732	\$1.00	\$1.00	\$2.00	\$3.00	\$ 7		
RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT							
					All Autos		
\$ 340	Refer to Rule 49.				\$ 7		
<div>• For liability increased limits factors, refer to Rule 100.</div> <div>• For liability fleet factors, refer to Rules 22. and 39.</div> <div>• Other Than Auto losses for Auto Dealers risks are subject to an aggregate limit equal to three times the liability limit. For additional limits, refer to Rule 49.</div>							

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DIVISION ONE  
AUTOMOBILE  
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<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 82	\$ 114	\$ 306
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 109	\$ 483
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 84	\$ 116	\$ 389
– SCHOOL AND CHURCH BUSES			
	\$ 57	\$ 80	\$ 199
– OTHER BUSES			
	\$ 57	\$ 80	\$ 199
– VAN POOLS			
	\$ 84	\$ 116	\$ 389
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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AUTOMOBILE  
LOSS COST PAGES

MARYLAND (19)  
TERRITORY 102

<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 72	\$ 100	\$ 288
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 74	\$ 382
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 73	\$ 102	\$ 366
– SCHOOL AND CHURCH BUSES			
	\$ 50	\$ 70	\$ 187
– OTHER BUSES			
	\$ 50	\$ 70	\$ 187
– VAN POOLS			
	\$ 73	\$ 102	\$ 366
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 80	\$ 111	\$ 269
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 73	\$ 427
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 82	\$ 113	\$ 342
– SCHOOL AND CHURCH BUSES			
	\$ 56	\$ 78	\$ 175
– OTHER BUSES			
	\$ 56	\$ 78	\$ 175
– VAN POOLS			
	\$ 82	\$ 113	\$ 342
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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MARYLAND (19)  
TERRITORY 109

<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 91	\$ 126	\$ 255
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 90	\$ 445
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 93	\$ 129	\$ 324
– SCHOOL AND CHURCH BUSES			
	\$ 64	\$ 88	\$ 166
– OTHER BUSES			
	\$ 64	\$ 88	\$ 166
– VAN POOLS			
	\$ 93	\$ 129	\$ 324
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 108	\$ 150	\$ 259
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 87	\$ 353
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 110	\$ 153	\$ 329
– SCHOOL AND CHURCH BUSES			
	\$ 76	\$ 105	\$ 168
– OTHER BUSES			
	\$ 76	\$ 105	\$ 168
– VAN POOLS			
	\$ 110	\$ 153	\$ 329
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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MARYLAND (19)  
TERRITORY 111

<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 60	\$ 84	\$ 292
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 67	\$ 419
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 61	\$ 86	\$ 371
– SCHOOL AND CHURCH BUSES			
	\$ 42	\$ 59	\$ 190
– OTHER BUSES			
	\$ 42	\$ 59	\$ 190
– VAN POOLS			
	\$ 61	\$ 86	\$ 371
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 81	\$ 112	\$ 283
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 101	\$ 383
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 83	\$ 114	\$ 359
– SCHOOL AND CHURCH BUSES			
	\$ 57	\$ 78	\$ 184
– OTHER BUSES			
	\$ 57	\$ 78	\$ 184
– VAN POOLS			
	\$ 83	\$ 114	\$ 359
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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MARYLAND (19)  
TERRITORY 113

<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 78	\$ 108	\$ 232
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 96	\$ 263
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 80	\$ 110	\$ 295
– SCHOOL AND CHURCH BUSES			
	\$ 55	\$ 76	\$ 151
– OTHER BUSES			
	\$ 55	\$ 76	\$ 151
– VAN POOLS			
	\$ 80	\$ 110	\$ 295
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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<b>PHYSICAL DAMAGE</b> <b>Original Cost New Range</b> <b>\$15,001 – 20,000</b>			
	<b>Specified Causes Of Loss</b>	<b>\$500 Ded. Comp.</b>	<b>\$500 Ded. Coll.</b>
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 66	\$ 92	\$ 256
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 82	\$ 342
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 67	\$ 94	\$ 325
– SCHOOL AND CHURCH BUSES			
	\$ 46	\$ 64	\$ 166
– OTHER BUSES			
	\$ 46	\$ 64	\$ 166
– VAN POOLS			
	\$ 67	\$ 94	\$ 325
<ul style="list-style-type: none"> <li>• For physical damage fleet factors, refer to Rules <b>22.</b> and <b>39.</b></li> <li>• For additional coverages, refer to the Additional Coverages Table in Rules <b>23.</b> and <b>40.</b></li> <li>• For Deductible factors, refer to Rule <b>98.</b></li> <li>• For Original Cost New and Age Group factors, refer to Rule <b>101.</b></li> <li>• For Stated Amount factors, refer to Rule <b>101.</b></li> <li>• For Towing and Labor Costs Coverage rating, refer to Rule <b>34.</b></li> </ul>			

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**89. NON-OWNERSHIP LIABILITY**

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Table **89.C.1.a.(1)(LC)** is replaced by the following:

<u>Class Code</u>	<u>Total Number Of Employees</u>	<u>Liability Base Loss Cost</u>
6638	0 = 9	\$ 56
6639	10 = 19	119
6640	20 = 25	191
6602	26 = 100	323
6603	101 = 500	844
6604	501 = 1,000	1,940
6605	Over 1,000	4,089

**Table 89.C.1.a.(1)(LC) Other Than Garage Service Operations Loss Costs**

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**90. HIRED AUTOS**

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<b>Cost Of Hire Basis – All Territories Liability Base Loss Cost</b>
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\$ 0.7680
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**Table 90.B.3.b.(LC) Cost Of Hire Basis Liability Loss Cost**

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**97. UNINSURED MOTORISTS INSURANCE**


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Uninsured Motorists Bodily Injury And Property Damage		
Limits	Private Passenger Types Per Exposure	Other Than Private Passenger Types Per Exposure
\$ 75,000	\$ <u>26.82</u> 25.14	\$ <u>18.13</u> 21.60
100,000	<u>30.08</u> 28.52	<u>20.17</u> 24.44
125,000	<u>43.26</u> 44.57	<u>28.69</u> 34.86
150,000	<u>46.84</u> 48.62	<u>30.96</u> 37.71
200,000	<u>52.92</u> 55.49	<u>34.84</u> 42.57
250,000	<u>57.48</u> 60.66	<u>37.73</u> 46.19
300,000	<u>63.74</u> 68.10	<u>41.76</u> 51.26
350,000	<u>68.83</u> 74.17	<u>45.02</u> 55.36
400,000	<u>71.88</u> 77.67	<u>46.98</u> 57.81
500,000	<u>76.79</u> 83.42	<u>50.13</u> 61.77
600,000	<u>82.02</u> 89.66	<u>53.49</u> 65.99
750,000	<u>87.19</u> 95.67	<u>56.80</u> 70.15
1,000,000	<u>93.36</u> 102.99	<u>60.77</u> 75.13
1,500,000	<u>104.59</u> 116.45	<u>67.99</u> 84.21
2,000,000	<u>109.95</u> 122.87	<u>71.43</u> 88.54
2,500,000	<u>114.76</u> 128.59	<u>74.53</u> 92.43
3,000,000	<u>118.21</u> 132.72	<u>76.76</u> 95.23
5,000,000	<u>126.72</u> 142.93	<u>82.22</u> 102.14
7,500,000	<u>133.18</u> 150.68	<u>86.39</u> 107.34
10,000,000	<u>136.24</u> 154.32	<u>88.36</u> 109.82

**Table 97.B.1.a.(LC) Single Limits Uninsured (Includes Underinsured) Motorists Bodily Injury And Property Damage Coverage Loss Costs**

Uninsured Motorists Bodily Injury		
Bodily Injury Limits	Private Passenger Types Per Exposure	Other Than Private Passenger Types Per Exposure
\$ 30,000/60,000	\$ <u>11.79</u> 8.73	\$ <u>7.03</u> 8.63
50,000/100,000	<u>18.50</u> 16.05	<u>11.28</u> 13.95
100,000/300,000	<u>29.18</u> 27.80	<u>18.05</u> 22.41
250,000/500,000	<u>55.87</u> 59.28	<u>35.18</u> 43.93
500,000/1,000,000	<u>75.92</u> 83.08	<u>48.06</u> 60.11
1,000,000/2,000,000	<u>93.77</u> 104.32	<u>59.53</u> 74.53

2,500,000/5,000,000	<del>112.65426</del> 74	<del>71.6689.77</del>
5,000,000/10,000,000	<del>123.97440</del> 22	<del>78.9498.92</del>

**Table 97.B.1.b.(LC) Split Limits Uninsured (Includes Underinsured) Motorists Bodily Injury Coverage Loss Costs**

<b>Uninsured Motorists Property Damage</b>		
<b>Property Damage Limits</b>	<b>Private Passenger Types Per Exposure</b>	<b>Other Than Private Passenger Types Per Exposure</b>
\$ 15,000	\$ 2.42	\$ 3.58
25,000	4.77	5.22
50,000	7.48	7.12
100,000	15.19	12.25

**Table 97.B.1.c.(LC) Split Limits Uninsured (Includes Underinsured) Motorists Property Damage Coverage Loss Costs**

<b>Loss Cost</b>
\$ 1.25

**Table 97.B.2.a.(4)(LC) Individual Named Insured Loss Cost**

## Supplementary Information – Maryland

### Introduction

This document provides additional information on the attached loss cost level experience review, including:

- A summary of recent trends in Liability claim costs
- A summary of significant factors used in the development of loss cost indications and a comparison to the factors used in the prior filing that underlie the loss costs currently in effect
- A discussion of the experience underlying the loss cost level evaluation, and how it compares to the prior review
- Issues related to Commercial Auto in Maryland

Statistical plan data reported to ISO is first processed through a system of rigorous automated data verification processes so that only data that would be valid is used for ratemaking. Subsequent to this initial data submission review, additional analyses involving an even more customized data review for this line was performed by staff. During these processes, various data records were excluded from the review, corrected or adjusted. Specifically, various reported exposure amounts 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.

### Trends in Liability Claim Costs

The table below shows the latest sixteen evaluations of 12-pt. paid claim cost trends.

#### Multistate Paid Claim Cost Trends

<u>Data Through</u>	<u>\$100,000 Bodily Injury</u>	<u>\$100,000 Property Damage</u>
09/30/2013	+0.9%	+5.5%
12/31/2013	+1.1%	+5.4%
03/31/2014	+1.4%	+4.8%
06/30/2014	+1.5%	+4.2%
09/30/2014	+1.8%	+3.7%
12/31/2014	+1.8%	+3.3%
03/31/2015	+1.5%	+3.3%
06/30/2015	+2.2%	+3.5%
09/30/2015	+1.9%	+3.7%
12/31/2015	+2.3%	+4.6%
03/31/2016	+2.9%	+4.8%
06/30/2016	+2.9%	+5.2%
09/30/2016	+2.6%	+5.5%
12/31/2016	+2.7%	+5.7%
03/31/2017	+2.7%	+5.7%
06/30/2017	+2.8%	+5.6%

ISO believes that bodily injury claim cost trends will primarily be driven by changes in the costs of providing medical care. At times, other factors serve to reduce (or exacerbate) the claim cost trends.

## Supplementary Information – Maryland

### Trends in Medical Care Costs

The table below shows the last twelve annual rates of change, based upon the CPI, for Medical Care and Hospital & Other Related Services, separately.

<u>Period</u>	<u>CPI – Medical Care Annual Rate of Change<sup>1</sup></u>	<u>CPI – Hospital &amp; Other Related Services Annual Rate of Change</u>
October 2005 - September 2006	4.2%	7.3%
October 2006 - September 2007	4.6%	6.8%
October 2007 - September 2008	3.2%	6.6%
October 2008 - September 2009	3.5%	6.6%
October 2009 - September 2010	3.4%	7.3%
October 2010 - September 2011	2.8%	4.9%
October 2011 - September 2012	4.1%	4.7%
October 2012 - September 2013	2.4%	5.4%
October 2013 - September 2014	2.0%	3.5%
October 2014 - September 2015	2.5%	3.3%
October 2015 - September 2016	4.9%	5.6%
October 2016 - September 2017	1.6%	4.3%

### Claim Frequencies

Historically, frequency trend for commercial auto liability has been quite variable, often cyclic in nature. As a result, an exponential curve of the form  $Y=A(B^X)$  does not fit the data well over the long term. Based on earlier analyses, there had been differences in historical frequency trends between Trucks, Tractors, and Trailers (TTT) and Private Passenger Types (PPT) liability classes. In general, Commercial Auto classes had experienced an abnormally long period of negative frequency trends prior to 2010. For the most recent 6 years, however, the frequency trends have been slightly increasing (TTT BI) or somewhat cyclical and/or flat (TTT PD and PPT BI and PD) over the experience period. To reflect these recent patterns and the difficulty in predicting turning points and rates of change, frequency trend is being selected to be 0% for TTT and PPT for both the Bodily Injury and Property Damage coverages.

### Claim Counts

Claim counts are now being estimated from information on the individual loss records reported to ISO, rather than the claim counts that have been reported to ISO via the statistical plans. This is being done to address company inconsistencies in interpreting ISO's claim count reporting rules.

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<sup>1</sup> Annual Rate of Change for a particular year is calculated as the CPI index for September of that year divided by the same index for September for the previous year, minus one.

## Supplementary Information – Maryland

### Maryland Trends

#### **Trucks, Tractors & Trailers and Private Passenger Types Liability**

	Current Trends <u>Data through 6/30/2017</u>	Previous Trends <u>Data through 6/30/2016</u>
Maryland Claim Cost Trends		
Bodily Injury (\$100,000 Limit)	-1.0%	2.5%
Property Damage (\$100,000 Limit)	5.7%	4.4%
Credibility-Weighted Claim Cost Trends		
Bodily Injury (\$100,000 Limit)	2.4%	2.9%
Property Damage (\$100,000 Limit)	5.6%	4.9%
Selected Claim Frequency Trends		
Trucks, Tractors & Trailers		
Bodily Injury	0.0%	0.0%
Property Damage	0.0%	0.0%
Private Passenger Types		
Bodily Injury	0.0%	0.0%
Property Damage	0.0%	0.0%
Selected Pure Premium Trends		
Trucks, Tractors & Trailers		
Bodily Injury (\$100,000 Limit)	2.4%	2.9%
Property Damage (\$100,000 Limit)	5.6%	4.9%
Private Passenger Types		
Bodily Injury (\$100,000 Limit)	2.4%	2.9%
Property Damage (\$100,000 Limit)	5.6%	4.9%

Maryland bodily injury severity trend receives 10% weight when combined with multistate trend in the filing, property damage trend receives 40% weight.

If the prior trends were used to calculate the indicated changes in this document, the Truck, Tractors & Trailers Liability indication would have remained the same (6.2%). For the Private Passenger Types coverage, the indication would have been 7.6% instead of 7.8%.

#### **No-Fault Coverage (PIP)**

	Current Trends <u>Data through 12/31/2017</u>	Previous Trends <u>Data through 12/31/2016</u>
Maryland Claim Cost Trends		
Trucks, Tractors & Trailers	3.5%	3.3%
Private Passenger Types	3.6%	3.4%
Selected Claim Frequency Trends		
Trucks, Tractors & Trailers	0.0%	0.0%
Private Passenger Types	0.0%	0.0%
Selected Pure Premium Trends		
Trucks, Tractors & Trailers	3.5%	3.3%
Private Passenger Types	3.6%	3.4%

If the prior trends were used to calculate the indicated change in this document, the Truck, Tractors & Trailers PIP indication would have been -8.3% instead of -8.1%. For the Private Passenger Types PIP coverage, the indication would have remained the same (4.2%).

## Supplementary Information – Maryland

### Physical Damage Loss Trend

	<u>Coverage</u>	<u>Current Trends</u>	<u>Previous Trends</u>
		<u>Data through 6/30/2017</u>	<u>Data through 6/30/2016</u>
Trucks, Tractors & Trailers	OTC	+7.0%	+6.0%
	Collision	+5.0%	+6.0%
Private Passenger Types	OTC	+6.0%	+5.0%
	Collision	+5.0%	+5.5%

### Physical Damage OCN Trend

	<u>Coverage</u>	<u>Current Trends</u>	<u>Previous Trends</u>
		<u>Data through 6/30/2017</u>	<u>Data through 6/30/2016</u>
Trucks, Tractors & Trailers	OTC	+0.9%	+0.9%
	Collision	+1.3%	+1.1%
Private Passenger Types	OTC	+1.0%	+0.9%
	Collision	+0.6%	+0.5%

The loss trend has increased by 1.0 points for Trucks, Tractors & Trailers OTC and Private Passenger Types OTC. The OCN trend has remained the same for Trucks, Tractors and Trailers OTC and has increased by 0.1 points for Private Passenger Types OTC. If the prior loss and OCN trends were used, the Trucks, Tractors and Trailers and Private Passenger Types OTC indications in this document would have 1.9%, instead of 4.9%, and 3.9%, instead of 6.7%, respectively.

The loss trend has decreased by 1.0 points for Trucks, Tractors & Trailers collision and has decreased by 0.5 points for Private Passenger Types collision. The collision OCN trend has increased by 0.2 points for Trucks, Tractors, & Trailers collision and has increased by 0.1 points for Private Passenger Types collision. If the prior loss and OCN trends were used, the Trucks, Tractors and Trailers and Private Passenger Types collision indications in this document would have been 6.4%, instead of 1.8%, and 3.9%, instead of 1.9%, respectively.

## Supplementary Information – Maryland

### Loss Development

#### Methodology

For the Trucks, Tractors & Trailers and Private Passenger Types Liability coverages, we continue to employ a credibility-weighted combination of Maryland and multistate factors for the 15 to 27 month link ratios for BI and PD, and the 27 to 39 month link ratios for BI only. For all coverages, the "best three of five" link ratios have been used. Specifically, the highest and lowest link ratios from the latest five years of the experience have been removed from the calculation and the remaining three ratios are used to calculate the three-year average.

#### Factors

	<u>Current (100K)</u>	<u>Previous (100K)</u>
Trucks, Tractors and Trailers BI		
39 to Ultimate	1.076	1.069
27 to Ultimate	1.172	1.152
15 to Ultimate	1.386	1.335
Trucks, Tractors and Trailers PD		
39 to Ultimate	1.005	1.004
27 to Ultimate	1.014	1.011
15 to Ultimate	1.063	1.048
Private Passenger Types BI		
39 to Ultimate	1.065	1.050
27 to Ultimate	1.144	1.117
15 to Ultimate	1.230	1.218
Private Passenger Types PD		
39 to Ultimate	1.006	1.004
27 to Ultimate	1.015	1.011
15 to Ultimate	1.051	1.039

## Supplementary Information – Maryland

### **Other Factors**

Unallocated Loss Adjustment Expense factors:

	<u>Data through 12/31/2016</u>	<u>Data through 12/31/2015</u>
Bodily Injury	1.080	1.085
Property Damage	1.105	1.110
Physical Damage	1.140	1.150

### **Indicated vs. Filed Changes**

An overall change of 5.0% is indicated when each of the coverage indications is weighted by its respective loss cost volume. Staff will file the indications, which reflect a 02/01/2019 proposed effective date, with the following exceptions:

<u>Coverage</u>	<u>Indicated Change</u>	<u>Filed Change</u>
Trucks, Tractors & Trailers Collision	1.8%	N.C.
Private Passenger Types Collision	1.9%	N.C.
Private Passenger Types UM	53.5%	35.0%

The overall filed change is 4.7%.

### **Notes**

- The Auto Dealers Liability and PIP coverages are not being reviewed this year.
- The Auto Dealers and Garagekeepers physical damage coverages are not being reviewed this year.
- A revision of the Non-ownership Liability loss costs contained in Rule 89.C.1.a.(1) is included in this document. The overall change for this coverage is reflected in the overall change quoted in this filing. The documentation for this revision can be found in Section D.
- A revision of the Uninsured and Underinsured Motorists loss costs contained in Rule 97 is included in this document. The overall change for the Private Passenger Types and Other than Private Passenger Types UM and UIM revision is reflected in the overall change quoted in this filing. The documentation for this revision can be found in Section E.