

LOSS COSTS – IMPLEMENTATION

APRIL 29, 2019

COMMERCIAL AUTOMOBILE

LI-CA-2019-068

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## MINNESOTA REVISED COMMERCIAL AUTO ADVISORY PROSPECTIVE LOSS COSTS, INCLUDING REVISED NON-OWNERSHIP LIABILITY AND UNINSURED AND UNDERINSURED MOTORISTS LOSS COSTS, TO BE IMPLEMENTED; NEW FILING FORMAT

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### KEY MESSAGE

Loss costs representing a **+4.8%** statewide change to be implemented.

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### BACKGROUND

In circular [LI-CA-2019-055](#), we provided you with information about the Commercial Auto loss cost level experience review.

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### ISO ACTION

We filed CA-2019-BRLA1, which presents a review of Commercial Auto loss cost experience.

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

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### IMPORTANT NOTE

#### Change in Format

The filing has been restructured. All explanatory text, for all sections of the filing, appears first; all exhibits are grouped together and appear thereafter; followed by the manual pages. We invite customers to share feedback on this revised format and suggestions for further enhancements by contacting the individuals listed in the Contact Information block.

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### SUPPLEMENTARY INFORMATION

We are including supplementary information for Minnesota, which provides additional information on the attached loss cost level experience review.

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

We do not establish an effective date for Commercial Auto loss costs revisions in this state. Each insurer that elects to utilize this revision is responsible for determining its own effective date.

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## IMPACT ON THE STATISTICAL REPORTING OF LOSS COST MULTIPLIER

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

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## COMPANY ACTION

You must independently determine the final rates you will use and the effective date of any rate change. If you decide to use our prospective loss costs to revise your rates, you are NOT required to file anything with the Insurance Department.

You must document your files in case the Insurance Department wishes to review the information at a later date. In all internal correspondence on this revision, you should refer to ISO Revision Designation Number CA-2019-BRLA1, NOT this circular number.

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## RATING SOFTWARE IMPACT

No new attributes are being introduced with this revision.

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## POLICYHOLDER NOTIFICATION

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

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## 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 10-19 (or the earliest possible subsequent date), along with any new and/or revised manual pages.

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## REFERENCE(S)

- [LI-CA-2019-055](#) (03/06/2019) Commercial Auto Experience Level Indications Reviewed By Staff
- [LI-CL-2018-044](#) (11/27/2018) Revised Lead Time Requirements Listing

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## ATTACHMENT(S)

- Filing CA-2019-BRLA1
- Supplementary Information

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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 Strategic 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

If you have any questions concerning:

- The actuarial content of this circular, please contact:

Rebecca Gordon  
Actuarial Operations  
201-469-2623  
[Rebecca.Gordon@verisk.com](mailto:Rebecca.Gordon@verisk.com)  
[autoactuarial@verisk.com](mailto:autoactuarial@verisk.com)

- The non-actuarial content of this circular, please contact:  
Vincent Barila  
Production Operations, Compliance and Product Services  
201-469-2751  
[productionoperations@verisk.com](mailto:productionoperations@verisk.com)
- Other issues for this circular, please contact Customer Support:  
E-mail: [info@verisk.com](mailto:info@verisk.com)  
Phone: 800-888-4476

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

MINNESOTA

BASIC LIMITS PROSPECTIVE LOSS COST LEVEL – COMMERCIAL AUTOMOBILE

FILING CA-2019-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 +4.8% 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-2019-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-2019-BRLB1.

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CHANGE IN FORMAT

In this document, all explanatory material appears first, followed by all exhibits, and then the revised prospective loss costs. Explanatory pages are numbered B-1 through E-24, the exhibits are labeled EXHIBIT A1 through EXHIBIT C16, and the revised prospective loss cost pages are numbered F-1 through F-41.

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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

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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	+0.4%	N.C.
Personal Injury Protection	+1.9%	N.C.
Uninsured/Underinsured Motorists	+42.5%	+41.0%
Physical Damage		
Other than Collision	+9.2%	+9.2%
Collision	+3.7%	+3.7%
Total Trucks, Tractors & Trailers	+3.8%	+3.5%
<u>Private Passenger Types</u>		
Liability		
Single Limit Liability	+3.6%	+3.6%
Personal Injury Protection	+4.5%	+4.5%
Uninsured/Underinsured Motorists	+22.6%	+24.4%
Physical Damage		
Other than Collision	+6.7%	+6.7%
Collision	-0.8%	N.C.
Total Private Passenger Types	+4.4%	+4.7%
<u>Non-ownership Liability</u>	+70.4%	+70.4%
<u>Grand Total</u>	+5.0%	+4.8%

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 10/01/2019 trend effective date. The filed loss cost level changes are the same as the indicated with the following exceptions: For Trucks, Tractors & Trailers Liability, Trucks, Tractors & Trailers PIP, and Private Passenger Types Collision, No Change (N.C.) was selected due to the modest indications. The Trucks, Tractors & Trailers and Private Passenger Types UM indications were capped for stability.

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PRIOR ISO REVISIONS

The latest selected revisions in this state are:

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<u>Filing</u>	CA-2018-BRLA1	CA-2017-BRLA1	CA-2016-BRLA1
Rate Level/ Loss Costs	Loss Costs	Loss Costs	Loss Costs
Effective Date	10/01/2018	10/01/2017	10/01/2016
<u>Changes</u>			
Indicated	+6.3%	+4.3%	-2.6%
Filed	+6.0%	+3.6%	-2.8%
Approved	+6.0%	+3.6%	-2.8%

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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 03/31/2018 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. Historically, frequency trends for Commercial Auto liability have been quite variable, have differed between Trucks, Tractors, and Trailers (TTT) and Private Passenger Types (PPT) liability classes, and have often displayed cyclical patterns. As a result, an exponential curve of the form  $Y=A(B^X)$  does not fit the data well over the long term. To reflect these characteristics 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 fourth quarter 2017 and claim frequency trend data through third 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	+3.8%
	Property Damage	+5.1%
	Private Passenger Types Liability:	
	Bodily Injury	+3.8%
	Property Damage	+5.1%
	Trucks, Tractors & Trailers PIP	+3.4%
	Private Passenger Types PIP	+3.6%
	Trucks, Tractors & Trailers OTC	+7.0%
	Trucks, Tractors & Trailers Collision	+5.0%
	Private Passenger Types OTC	+6.5%
	Private Passenger Types Collision	+4.5%

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 +1.0% and +1.6% for OTC and Collision respectively. For Private Passenger Types, the OCN Trend factors are +1.1% 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

LIABILITY (ASLOB 19.3 & 19.4)

1. Travelers Indemnity Company
2. Employers Mutual Casualty Company
3. Federated Mutual Insurance Company
4. Cincinnati Insurance Company
5. Selective Insurance Co. of America
6. Liberty Mutual Insurance Company
7. AMCO (Allied Group)
8. American International Group
9. Westfield Insurance Company
10. Hartford Accident & Indemnity Co.

PHYSICAL DAMAGE (ASLOB 21.2)

1. Travelers Indemnity Company
2. Employers Mutual Casualty Company
3. Zurich American Insurance Company
4. Cincinnati Insurance Company
5. Great American Insurance Company
6. Federated Mutual Insurance Company
7. Motors Insurance Corporation
8. Liberty Mutual Insurance Company
9. Westfield Insurance Company
10. Hartford Accident & Indemnity 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 12/31/2017 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 12/31/2017 is:

Liability (ASLOB 19.3 & 19.4)  
28.9%

Physical Damage (ASLOB 21.2)  
23.4%

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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.

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

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COMMERCIAL AUTOMOBILE  
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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.

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**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."

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**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.

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**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 F.

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## OVERVIEW OF ISO ACTUARIAL PROCEDURES – COMMERCIAL AUTOMOBILE

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

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**OBJECTIVE** 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?

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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 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.

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**EXPERIENCE BASE** 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.

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**AGGREGATE LOSS COSTS (Item 1)** 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.

Trucks, Tractors & 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.

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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.

---

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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## 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.

EXPLANATORY MEMORANDUM FOR TRUCKS, TRACTORS & TRAILERS AND PRIVATE PASSENGER TYPES LIABILITY AND PIP 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)  
\$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.

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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)]

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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

The formula experience ratio is a credibility weighted average of the territory group experience ratio and statewide experience ratio. The formula is as follows:

$$\begin{aligned} & [\text{Terr. Group Col. (4) x Terr. Group Col. (5)}] \\ & + [\text{SW Total Col.(4) x (1.0 - Terr. Group Col. (5))}] \end{aligned}$$

---

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

[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.

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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.

---

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

The formula experience ratio is a credibility weighted average of the territory group experience ratio and statewide experience ratio. The formula is as follows:

$$\begin{aligned} & [\text{Terr. Group Col. (4)} \times \text{Terr. Group Col. (5)}] \\ & + [\text{SW Total Col. (4)} \times (1.0 - \text{Terr. Group Col. (5)})] \end{aligned}$$

---

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:  
[Col. (10) / Col. (8)]

---

## 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.

---

## AVERAGE ANNUAL CHANGE IN LOSSES (LOSS TREND)

---

**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** 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:

$$A = C/(C+K)$$

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.

---

LIABILITY:  
FREQUENCY  
TREND

---

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.

Historically, frequency trends for Commercial Auto liability have been quite variable, have differed between Trucks, Tractors, and Trailers (TTT) and Private Passenger Types (PPT) liability classes, and have often displayed cyclical patterns. As a result, an exponential curve of the form  $Y=A(B^X)$  does not fit the data well over the long term. To reflect these characteristics 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.

---

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:  
LOSS TREND  
(CONT'D)

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 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:

Type of Loss	Year 1		Year 2	
	Glass	Fire	Glass	Fire
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 =  $(\$316.25/\$269) - 1 = 17.6\%$

PHYSICAL  
DAMAGE:  
LOSS TREND  
(CONT'D)

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

	Year 1		Year 2	
	Glass	Fire	Glass	Fire
Type of Loss				
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	
	Glass	Fire	Glass	Fire
Type of Loss				
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 <u>Pure Premium</u>	Private Passenger Types <u>Pure Premium</u>
OTC:	+7.0%	+6.5%
COLL:	+5.0%	+4.5%

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.

COMMERCIAL AUTOMOBILE PHYSICAL DAMAGE  
SUPPLEMENTARY EXHIBIT

Quarterly Values <u>Ending</u>	Consumer Price Index for Bodywork	
	<u>Actual</u>	<u>Exponential Fit</u>
12/31/2014	2.785	2.769
03/31/2015	2.792	2.786
06/30/2015	2.804	2.803
09/30/2015	2.805	2.819
12/31/2015	2.831	2.836
03/31/2016	2.847	2.853
06/30/2016	2.866	2.870
09/30/2016	2.877	2.887
12/31/2016	2.913	2.904
03/31/2017	2.925	2.922
06/30/2017	2.942	2.939
09/30/2017	2.945	2.956
12/31/2017	2.966	2.974
03/31/2018	2.999	2.992
06/30/2018	3.016	3.010
09/30/2018	3.033	3.028
	<u>R-Squared</u>	<u>Average Annual Change</u>
16 Point Fit	0.9891	2.4%
12 Point Fit	0.9901	2.5%

## PHYSICAL DAMAGE OCN TREND

---

### 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.

---

### 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 1.0% and 1.6% 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 1.1% and 0.6% were selected for the OTC and Collision coverages respectively.

---

## LOSS DEVELOPMENT FOR LIABILITY

---

**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 Trucks, Tractors & 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 June 30, 2018. In other words, accident year ended March 31, 2018 includes all losses and allocated loss adjustment expenses paid through June 30, 2018 on accidents occurring from April 1, 2017 to March 31, 2018 and all losses and allocated loss adjustment expenses outstanding on these accidents as of June 30, 2018, 15 months after the inception of the accident year. Similarly, the incurred losses and allocated loss adjustment expenses for accident year ended March 31, 2017 include all loss and loss adjustment expenses paid through June 30, 2018 on accidents occurring from April 1, 2016 to March 31, 2017 and all losses and allocated loss adjustment expenses outstanding on these accidents as of June 30, 2018, 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.

---

**DESCRIPTION OF LOSS DEVELOPMENT METHODOLOGY** 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 & 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.

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 & 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.

---

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.

## LOSS DEVELOPMENT FOR PHYSICAL DAMAGE

---

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 June 30, 2018. In other words, accident year ended March 31, 2018 includes all losses paid through June 30, 2018 on accidents occurring from April 1, 2017 to March 31, 2018. Similarly, the paid losses for accident year ended March 31, 2017 include all losses paid through June 30, 2018 on accidents occurring from April 1, 2016 to March 31, 2017. 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.

---

## CREDIBILITY PROCEDURE FOR EXPERIENCE LOSS RATIO

---

**OBJECTIVE** 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.

---

**METHODOLOGY** The standards for full credibility were determined from a credibility study using various size of loss distributions for liability, 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.

---

**CREDIBILITY FOR EXPERIENCE LOSS RATIO** 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:

$$Z = \sqrt{\frac{\text{Claims}}{X}}$$

Where  $X$  equals the full credibility standard, by line and coverage, as shown on the following pages of this section.

---

**YEAR WEIGHTS** 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.

---

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  $\geq$  3,000,  
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  $\geq$  350,  
Then use 3 years of experience and assign 50/30/20 weights.
5. If 3 year Avg. claims  $<$  350,  
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			
<u>Number of Claims</u>			<u>Cred.</u>	<u>Number of Claims</u>			<u>Cred.</u>
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

$$\text{CREDIBILITY FORMULA} = (\# \text{ CLAIMS}) / (\# \text{ CLAIMS} + K)$$

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	-	7
0.05	8	-	29
0.10	30	-	67
0.15	68	-	119
0.20	120	-	187
0.25	188	-	269
0.30	270	-	367
0.35	368	-	479
0.40	480	-	607
0.45	608	-	749
0.50	750	-	907
0.55	908	-	1,079
0.60	1,080	-	1,267
0.65	1,268	-	1,469
0.70	1,470	-	1,687
0.75	1,688	-	1,919
0.80	1,920	-	2,167
0.85	2,168	-	2,429
0.90	2,430	-	2,707
0.95	2,708	-	2,999
1.00		>	2,999

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

Cred	Trucks, Tractors & Trailers			Private Passenger Types		
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

Cred	Trucks, Tractors & Trailers			Private Passenger Types		
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.

MINNESOTA  
CLAIMS PER TERRITORY  
LIABILITY AND PIP

Territory	Trucks, Tractors & Trailers Incurred Claims 5 Years Ending 03/31/2018		Private Passenger Types Incurred Claims 5 Years Ending 03/31/2018	
	Combined BI and PD	PIP	Combined BI and PD	PIP
101	1,484	52	501	65
103	158	13	46	5
104	84	5	11	2
105	1,074	45	301	35
108	587	24	207	24
109	792	33	144	26
112	689	42	183	37
113	947	51	170	30
114	173	3	20	1
115	212	5	47	10
116	680	27	123	14
117	879	38	155	30
118	31	0	5	0
119	45	1	2	2
120	75	2	16	4
121	59	2	8	2
122	163	9	33	3
123	227	14	60	5
124	41	0	5	0
SW Total	8,400	366	2,037	295

Claims for Trend

BI	PD
<u>451</u>	<u>2,778</u>

MINNESOTA  
CLAIMS PER TERRITORY  
PHYSICAL DAMAGE

Territory	Trucks, Tractors & Trailers Paid Claims 5 Years Ending 03/31/2018		Private Passenger Types Paid Claims 5 Years Ending 03/31/2018	
	OTC	Coll	OTC	Coll
101	635	569	439	493
103	159	98	113	64
104	127	52	33	16
105	599	427	469	357
108	311	275	181	186
109	441	309	264	174
112	1,034	570	339	207
113	886	465	341	173
114	202	87	58	29
115	340	145	146	49
116	726	405	266	106
117	597	395	230	167
118	23	23	7	2
119	22	22	3	5
120	81	33	33	26
121	35	26	14	11
122	104	94	48	40
123	194	155	162	93
124	31	27	14	4
SW Total	6,547	4,177	3,160	2,202

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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INSURANCE SERVICES OFFICE, INC.

WIND AND WATER PROCEDURE  
OTHER THAN COLLISION  
MINNESOTA

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	183,023	1,260,909	1,077,886	0.170	0.020	21,558	1,282,467
1988	176,330	1,592,777	1,416,447	0.124	0.066	93,486	1,686,263
1989	93,069	1,848,860	1,755,791	0.053	0.137	240,543	2,089,403
1990	176,463	2,151,999	1,975,536	0.089	0.101	199,529	2,351,528
1991	123,491	2,326,401	2,202,910	0.056	0.134	295,190	2,621,591
1992	187,123	2,545,170	2,358,047	0.079	0.111	261,743	2,806,913
1993	129,062	2,238,477	2,109,415	0.061	0.129	272,115	2,510,592
1994	235,980	2,543,650	2,307,670	0.102	0.088	203,075	2,746,725
1995	194,447	2,877,279	2,682,832	0.072	0.118	316,574	3,193,853
1996	218,741	3,653,144	3,434,403	0.064	0.126	432,735	4,085,879
1997	299,141	4,391,527	4,092,386	0.073	0.117	478,809	4,870,336
1998	768,648	6,257,879	5,489,231	0.140	0.050	274,462	6,532,341
1999	5,495,832	12,096,994	6,601,162	0.833	-0.643	-4,244,547	7,852,447
2000	716,461	7,264,283	6,547,822	0.109	0.081	530,374	7,794,657
2001	1,229,036	8,172,173	6,943,137	0.177	0.013	90,261	8,262,434
2002	1,800,764	7,465,822	5,665,058	0.318	-0.128	-725,127	6,740,695
2003	279,523	4,255,318	3,975,795	0.070	0.120	477,095	4,732,413
2004	142,065	2,262,877	2,120,812	0.067	0.123	260,860	2,523,737
2005	157,374	2,162,989	2,005,615	0.078	0.112	224,629	2,387,618
2006	474,974	3,065,722	2,590,748	0.183	0.007	18,135	3,083,857
2007	897,024	3,361,530	2,464,506	0.364	-0.174	-428,824	2,932,706
2008	969,811	3,620,098	2,650,287	0.366	-0.176	-466,451	3,153,647
2009	1,506,039	4,233,499	2,727,460	0.552	-0.362	-987,341	3,246,158
2010	210,938	3,033,280	2,822,342	0.075	0.115	324,569	3,357,849
2011	1,048,363	4,775,530	3,727,167	0.281	-0.091	-339,172	4,436,358
2012	614,206	3,685,705	3,071,499	0.200	-0.010	-30,715	3,654,990
2013	668,795	3,493,114	2,824,319	0.237	-0.047	-132,743	3,360,371
2014	586,694	2,998,419	2,411,725	0.243	-0.053	-127,821	2,870,598
2015	252,375	2,493,316	2,240,941	0.113	0.077	172,552	2,665,868
2016	406,678	3,377,175	2,970,497	0.137	0.053	157,436	3,534,611
2017	565,524	3,409,347	2,843,823	0.199	-0.009	-25,594	3,383,753
2018	1,292,387	4,476,621	3,184,234	0.406	-0.216	-687,795	3,788,826

(8) NORMAL WIND TO NON W&W RATIO= AVG. (4) 0.190

INSURANCE SERVICES OFFICE, INC.

WIND AND WATER PROCEDURE  
OTHER THAN COLLISION  
MINNESOTA

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	179,311	1,125,077	945,766	0.190	0.121	114,438	1,239,515
1988	272,279	1,515,364	1,243,085	0.219	0.092	114,364	1,629,728
1989	145,569	1,335,523	1,189,954	0.122	0.189	224,901	1,560,424
1990	215,783	1,548,085	1,332,302	0.162	0.149	198,513	1,746,598
1991	115,081	1,614,521	1,499,440	0.077	0.234	350,869	1,965,390
1992	161,364	1,527,603	1,366,239	0.118	0.193	263,684	1,791,287
1993	82,016	1,443,331	1,361,315	0.060	0.251	341,690	1,785,021
1994	105,933	1,608,374	1,502,441	0.071	0.240	360,586	1,968,960
1995	213,907	1,663,557	1,449,650	0.148	0.163	236,293	1,899,850
1996	191,634	1,655,739	1,464,105	0.131	0.180	263,539	1,919,278
1997	223,512	1,877,412	1,653,900	0.135	0.176	291,086	2,168,498
1998	463,481	2,315,585	1,852,104	0.250	0.061	112,978	2,428,563
1999	4,575,751	7,177,869	2,602,118	1.758	-1.447	-3,765,265	3,412,604
2000	354,974	2,813,501	2,458,527	0.144	0.167	410,574	3,224,075
2001	772,406	3,131,354	2,358,948	0.327	-0.016	-37,743	3,093,611
2002	844,108	3,099,333	2,255,225	0.374	-0.063	-142,079	2,957,254
2003	184,998	1,653,713	1,468,715	0.126	0.185	271,712	1,925,425
2004	58,147	827,502	769,355	0.076	0.235	180,798	1,008,300
2005	67,649	809,984	742,335	0.091	0.220	163,314	973,298
2006	329,813	1,283,008	953,195	0.346	-0.035	-33,362	1,249,646
2007	475,916	1,290,522	814,606	0.584	-0.273	-222,387	1,068,135
2008	375,583	1,097,658	722,075	0.520	-0.209	-150,914	946,744
2009	848,446	1,726,614	878,168	0.966	-0.655	-575,200	1,151,414
2010	68,467	945,429	876,962	0.078	0.233	204,332	1,149,761
2011	464,471	1,481,462	1,016,991	0.457	-0.146	-148,481	1,332,981
2012	241,892	1,119,644	877,752	0.276	0.035	30,721	1,150,365
2013	335,600	1,399,286	1,063,686	0.316	-0.005	-5,318	1,393,968
2014	552,114	1,424,018	871,904	0.633	-0.322	-280,753	1,143,265
2015	211,654	1,063,256	851,602	0.249	0.062	52,799	1,116,055
2016	252,146	1,147,168	895,022	0.282	0.029	25,956	1,173,124
2017	143,317	1,069,233	925,916	0.155	0.156	144,443	1,213,676
2018	403,103	1,210,572	807,469	0.499	-0.188	-151,804	1,058,768

(8) NORMAL WIND TO NON W&W RATIO= AVG. (4) 0.311

EXPLANATORY MEMORANDUM FOR WIND AND WATER PROCEDURE

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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).

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COLUMN (2)  
OTC TOTAL  
LOSSES

Dollar amount of Other Than Collision losses resulting from all perils.

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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. Column (2) - Column (1).

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COLUMN (4)  
WIND AND WATER  
TO NON-WIND AND  
WATER RATIO

Ratio of Wind and Water losses to Non-Wind and Water losses.  
Column (1) ÷ Column (3)

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COLUMN (5)  
VARIATION FROM  
AVERAGE WIND  
RATIO

Variation from the long term average Wind and Water to non-Wind and Water ratio.  
Avg (4) - Column (4).

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COLUMN (6)  
WIND AND WATER  
ADJUSTMENT

Wind and Water loss adjustment to bring experience to average Wind and Water level.  
Column (3) \* Column (5).

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COLUMN (7)  
ADJUSTED OTC  
TOTAL LOSSES

Column (2) + Column (6).

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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.

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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 & 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	100,000	50,000	150,000	200,000
B		30,000	50,000	80,000
C		20,000	80,000	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

## 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

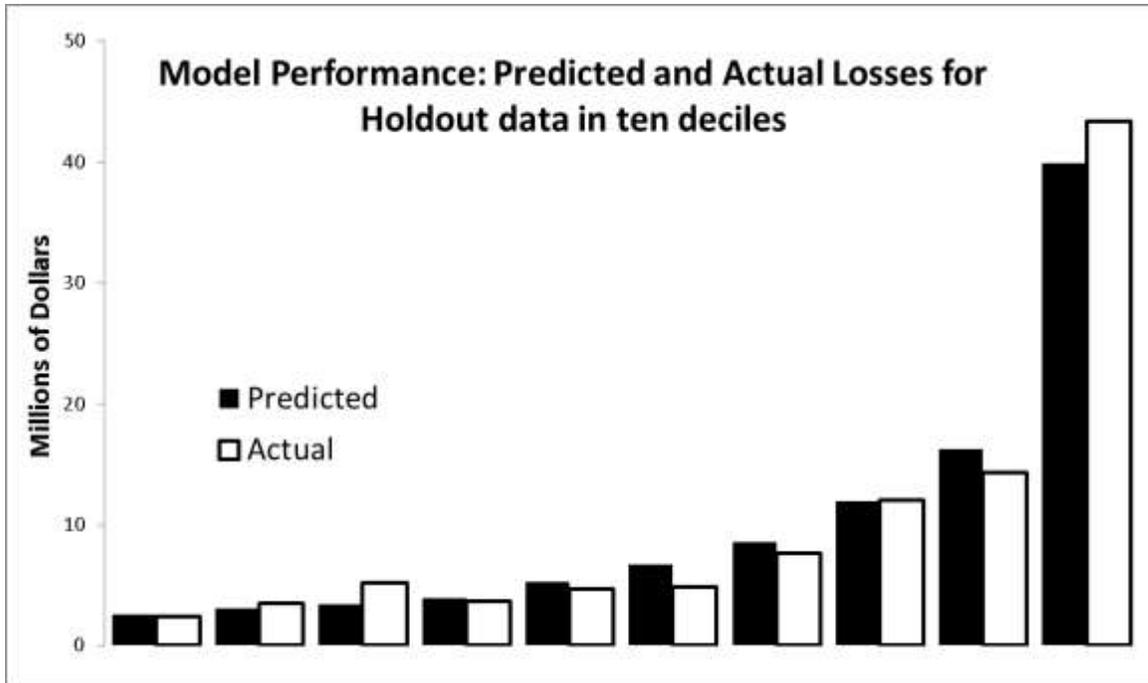
$$(\text{State Average Loss Cost})^K$$

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

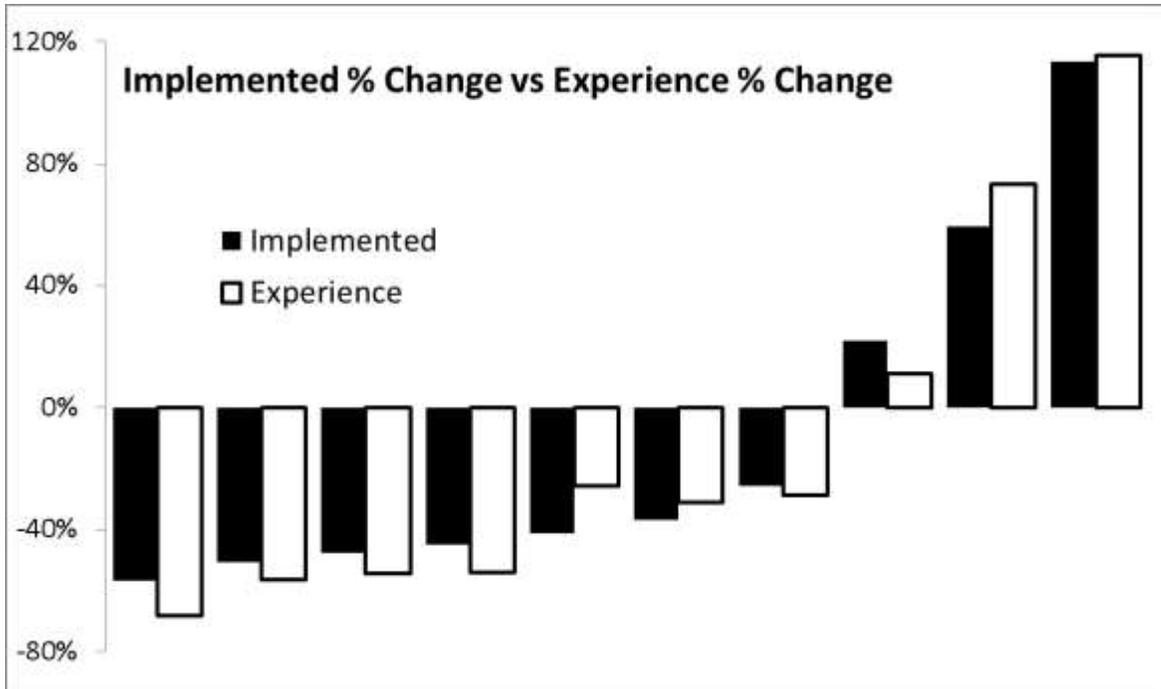
These new class relativities must be combined with a representation of the difference by state, which comes from our severity model. We returned to our predicted loss amounts and removed the effect of the employee count from that prediction, leaving a single per-policy prediction for each state. This 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>Minnesota Intermediate Loss Costs</u>	<u>Intermediate Percentage Change</u>	<u>Final Indicated Loss Costs</u>	<u>Overall Percentage Change</u>
0 – 9	48	21.75	-54.7%	44	-8.3%
10 – 19	48	46.36	-3.4%	93	93.8%
20 – 25	48	74.53	55.3%	149	210.4%
26 – 100	112	125.95	12.5%	252	125.0%
101 – 500	245	329.20	34.4%	659	169.0%
501 – 1000	386	757.15	96.2%	1517	293.0%
1001 +	865	1595.69	84.5%	3196	269.5%

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

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**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?

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**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.

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**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.

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**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.

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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.

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%.

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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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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.



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.

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

AVERAGE PAID CLAIM COST DATA

YEAR ENDED	MULTISTATE*			
	BODILY INJURY (\$100000 LIMITS)		PROPERTY DAMAGE (\$100000 LIMITS)	
	(1)	(2)	(3)	(4)
	EXPONEN- ACTUAL	TIAL FIT	EXPONEN- 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>	Ratios			
	<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

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 F 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 April 1, 2017 through March 31, 2018 and reported losses evaluated as of June 30, 2018 for UM. The most recent accident year for UIM spans January 1, 2017 through December 30, 2017 and reported losses are evaluated as of March 31, 2018.

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.

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**

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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MINNESOTA  
UNINSURED MOTORISTS

Trucks, Tractors & Trailers

Accident Year Ending	(1) Aggregate Loss Cost at Current Level (A)	(2) 25/50 Incurred Losses (B)	(3) Experience Ratio (2) / (1)	(4) Number of Incurred Claims
3/31/2014	121,562	104,963	0.863	4
3/31/2015	121,357	122,458	1.009	4
3/31/2016	121,081	61,599	0.509	1
3/31/2017	124,710	144,742	1.161	3
3/31/2018	124,876	361,501	2.895	8
Total	613,586	795,263	1.296	

(5) Indicated change based on experience data [Column (3) Total]	29.6%
(6) Selected change	25.0%

(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.

MINNESOTA  
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
3/31/2014	96,008	1.017	104,963
3/31/2015	107,365	1.061	122,458
3/31/2016	49,483	1.158	61,599
3/31/2017	98,424	1.368	144,742
3/31/2018	174,058	1.932	361,501
Total	525,338		795,263

(4a) Unallocated loss adjustment factor	1.075
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Accident Year Ending	(5a) Average Accident Date	(6a) Trend Period (A)	(7a) Trended Loss And ALAE (B)
3/31/2014	10/01/13	7.000	104,963
3/31/2015	10/01/14	6.000	122,458
3/31/2016	10/01/15	5.000	61,599
3/31/2017	10/01/16	4.000	144,742
3/31/2018	10/01/17	3.000	361,501
Total			795,263

(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 10/01/19.

(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 +3.6% claim cost trend factor and then capped the trended losses on a per claim/per occurrence basis at MINNESOTA's minimum split limit of 25/50.

\*\* The loss trend shown in (8a) represents only the frequency trend component and has been applied after the losses were trended and capped at 25/50.

MINNESOTA  
UNINSURED MOTORISTS

Private Passenger Types

Accident Year Ending	(1) Aggregate Loss Cost at Current Level (A)	(2) 25/50 Incurred Losses (B)	(3) Experience Ratio (2) / (1)	(4) Number of Incurred Claims
3/31/2014	82,316	15,242	0.185	1
3/31/2015	78,128	56,362	0.721	2
3/31/2016	76,199	362	0.005	1
3/31/2017	76,311	94,230	1.235	4
3/31/2018	74,295	102,480	1.379	3
Total	387,249	268,676	0.694	

(5) Indicated change based on experience data [Column (3) Total]	-30.6%
(6) Selected change	-25.0%

(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.

MINNESOTA  
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
3/31/2014	14,094	1.006	15,242
3/31/2015	49,838	1.052	56,362
3/31/2016	298	1.128	362
3/31/2017	65,366	1.341	94,230
3/31/2018	49,574	1.923	102,480
Total	179,170		268,676

(4a) Unallocated loss adjustment factor	1.075
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Accident Year Ending	(5a) Average Accident Date	(6a) Trend Period (A)	(7a) Trended Loss And ALAE (B)
3/31/2014	10/01/13	7.000	15,242
3/31/2015	10/01/14	6.000	56,362
3/31/2016	10/01/15	5.000	362
3/31/2017	10/01/16	4.000	94,230
3/31/2018	10/01/17	3.000	102,480
Total			268,676

(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 10/01/19.

(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 +3.6% claim cost trend factor and then capped the trended losses on a per claim/per occurrence basis at MINNESOTA's minimum split limit of 25/50.

\*\* The loss trend shown in (8a) represents only the frequency trend component and has been applied after the losses were trended and capped at 25/50.

MINNESOTA  
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
12/31/2013	1,448,776	2,725,011	1.881	9
12/31/2014	1,441,446	2,387,236	1.656	15
12/31/2015	1,447,685	1,560,079	1.078	6
12/31/2016	1,475,266	2,614,640	1.772	7
12/31/2017	1,473,304	1,543,994	1.048	2
Total	7,286,476	10,830,959	1.486	

(5) Indicated change based on experience data [Column (3) Total]	+ 48.6%
(6) Selected change	+ 48.6%

(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.

MINNESOTA  
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
12/31/2013	999,152	1,712,346	6
12/31/2014	994,084	616,326	9
12/31/2015	997,923	36,584	2
12/31/2016	1,023,217	101,620	4
12/31/2017	1,038,220	2,500	1
Total	5,052,596	2,469,376	

(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)
12/31/2013	6/30/2013	7.25	2,275,534
12/31/2014	6/30/2014	6.25	787,533
12/31/2015	6/30/2015	5.25	44,949
12/31/2016	6/30/2016	4.25	120,052
12/31/2017	6/30/2017	3.25	2,840
Total			3,230,908

(A) Trend period is equal to the number of years from the average accident date to one year beyond the anticipated implementation date of 10/01/2019.

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

MINNESOTA  
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
12/31/2013	449,624	104,758	3
12/31/2014	447,362	928,697	6
12/31/2015	449,762	720,269	4
12/31/2016	452,049	1,178,238	3
12/31/2017	435,084	30,000	1
Total	2,233,881	2,961,962	

(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)
12/31/2013	6/30/2013	7.25	139,213
12/31/2014	6/30/2014	6.25	1,186,677
12/31/2015	6/30/2015	5.25	884,952
12/31/2016	6/30/2016	4.25	1,391,953
12/31/2017	6/30/2017	3.25	34,078
Total			3,636,873

(C) Trend period is equal to the number of years from the average accident date to one year beyond the anticipated implementation date of 10/01/2019.

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

MINNESOTA  
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)
12/31/2013	1.052	0.951	949,764
12/31/2014	1.122	0.891	885,993
12/31/2015	1.328	0.753	751,448
12/31/2016	1.803	0.555	567,508
12/31/2017	3.193	0.313	325,155
Total			3,479,868

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)
12/31/2013	1.091	0.917	412,121
12/31/2014	1.186	0.843	377,202
12/31/2015	1.409	0.710	319,207
12/31/2016	1.866	0.536	242,256
12/31/2017	3.196	0.313	136,134
Total			1,486,919

(E) See Exhibit 2 for Loss Development.

MINNESOTA  
 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 $\frac{[\text{Total (7a) + (7b)}]}{[\text{Total (10a) + (10b)}]}$	1.383
(12) Unallocated Loss Adjustment Expense (ULAE) Factor	1.075

Accident Year Ending	(13) Ultimate Loss And ALAE (F)	(14) Ultimate Loss And All LAE (13) * (12)
12/31/2013	2,534,894	2,725,011
12/31/2014	2,220,684	2,387,236
12/31/2015	1,451,236	1,560,079
12/31/2016	2,432,223	2,614,640
12/31/2017	1,436,273	1,543,994
Total	10,075,311	10,830,959

(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 25/50 Incurred Losses and ALAE**

(includes District of Columbia and excludes Massachusetts and Puerto Rico)

<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>
2009Q1	9,025,547	12,369,189	15,102,598	16,536,806	17,826,264	17,856,308
2010Q1	9,308,047	12,638,094	14,802,135	15,559,151	16,353,350	16,713,969
2011Q1	8,574,856	11,741,874	14,541,144	15,707,864	16,616,607	16,886,898
2012Q1	9,122,142	14,304,657	16,534,754	18,183,506	18,336,199	18,542,512
2013Q1	10,005,821	12,952,413	15,749,955	17,015,075	17,991,357	18,416,963
2014Q1	8,867,105	12,142,548	13,801,692	15,103,201	15,400,089	
2015Q1	8,829,703	12,261,788	15,014,176	16,714,455		
2016Q1	8,207,351	13,511,797	15,827,683			
2017Q1	9,663,544	14,276,968				
2018Q1	9,885,240					

**Multistate 25/50 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>
2009Q1		1.370	1.221	1.095	1.078	1.002
2010Q1		1.358	1.171	1.051	1.051	1.022
2011Q1		1.369	1.238	1.080	1.058	1.016
2012Q1		1.568	1.156	1.100	1.008	1.011
2013Q1		1.294	1.216	1.080	1.057	1.024
2014Q1		1.369	1.137	1.094	1.020	
2015Q1		1.389	1.224	1.113		
2016Q1		1.646	1.171			
2017Q1		1.477				
Average Factor	(Best 3 of 5)	1.412	1.181	1.091	1.043	1.017
Average Factor	(Latest 3)	1.504	1.178	1.096	1.028	1.017
Average Factor	(Latest 5)	1.435	1.181	1.094	1.039	1.015
Selected Factor		1.412	1.181	1.091	1.043	1.017

\*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	1.932	1.368	1.158	1.061	1.017

**UNINSURED MOTORISTS  
Loss Development**

**Private Passenger Types**

**Multistate 25/50 Incurred Losses and ALAE**

(includes District of Columbia and excludes Massachusetts and Puerto Rico)

<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>
2009Q1	3,505,176	5,352,975	6,258,067	6,594,743	7,339,680	7,551,920
2010Q1	4,036,424	5,827,877	6,451,759	7,169,153	7,588,956	7,542,780
2011Q1	3,292,424	5,489,957	6,394,166	6,714,951	7,024,637	7,026,043
2012Q1	4,186,679	5,744,494	6,684,975	7,399,815	7,111,606	7,122,183
2013Q1	4,076,499	5,751,087	7,406,171	8,091,911	8,372,492	8,497,898
2014Q1	4,520,784	5,984,903	7,316,342	7,850,103	8,391,288	
2015Q1	3,798,515	6,368,818	7,248,523	7,401,059		
2016Q1	3,794,258	5,776,948	6,823,046			
2017Q1	4,309,194	5,904,068				
2018Q1	3,715,668					

**Multistate 25/50 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>
2009Q1		1.527	1.169	1.054	1.113	1.029
2010Q1		1.444	1.107	1.111	1.059	0.994
2011Q1		1.667	1.165	1.050	1.046	1.000
2012Q1		1.372	1.164	1.107	0.961	1.001
2013Q1		1.411	1.288	1.093	1.035	1.015
2014Q1		1.324	1.222	1.073	1.069	
2015Q1		1.677	1.138	1.021		
2016Q1		1.523	1.181			
2017Q1		1.370				
Average Factor	(Best 3 of 5)	1.434	1.189	1.072	1.046	1.006
Average Factor	(Latest 3)	1.523	1.181	1.062	1.022	1.006
Average Factor	(Latest 5)	1.461	1.199	1.069	1.034	1.008
Selected Factor		1.434	1.189	1.072	1.046	1.006

\*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	1.923	1.341	1.128	1.052	1.006

MINNESOTA  
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
2004Q4	22,530,422	36,845,163	51,331,955	63,901,556	69,862,877	72,987,705	73,378,533	74,613,140	74,390,857	74,400,459
2005Q4	18,392,464	38,016,265	54,404,477	65,918,944	70,554,385	74,515,698	75,392,784	76,468,105	76,811,085	75,786,169
2006Q4	31,575,992	51,426,470	62,255,134	74,142,843	80,492,340	84,941,203	85,153,205	86,264,799	85,219,739	84,960,433
2007Q4	27,961,501	44,738,402	65,103,523	81,178,272	85,582,687	88,571,709	89,729,861	91,121,250	90,400,099	90,282,533
2008Q4	37,061,338	61,124,059	79,106,093	91,571,102	99,034,064	102,066,482	103,712,289	104,697,829	105,018,374	105,560,742
2009Q4	36,299,276	64,443,015	84,147,098	94,902,202	100,872,729	102,314,373	102,821,451	104,102,566	103,950,572	
2010Q4	32,625,217	66,090,096	83,440,880	98,653,306	104,753,382	111,636,156	111,428,680	112,436,729		
2011Q4	34,437,921	55,833,889	74,553,318	88,350,227	94,597,239	98,924,755	101,294,368			
2012Q4	41,722,554	65,598,209	84,128,510	99,599,399	106,217,478	108,128,454				
2013Q4	29,417,448	54,265,070	76,575,561	88,122,930	99,140,766					
2014Q4	37,798,661	68,988,239	100,260,719	118,715,537						
2015Q4	34,913,745	67,715,405	91,520,273							
2016Q4	48,669,389	81,928,155								
2017Q4	51,022,086									

MINNESOTA  
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>
2004Q4	1.635	1.393	1.245	1.093	1.045	1.005	1.017	0.997	1.000
2005Q4	2.067	1.431	1.212	1.070	1.056	1.012	1.014	1.004	0.987
2006Q4	1.629	1.211	1.191	1.086	1.055	1.002	1.013	0.988	0.997
2007Q4	1.600	1.455	1.247	1.054	1.035	1.013	1.016	0.992	0.999
2008Q4	1.649	1.294	1.158	1.081	1.031	1.016	1.010	1.003	1.005
2009Q4	1.775	1.306	1.128	1.063	1.014	1.005	1.012	0.999	
2010Q4	2.026	1.263	1.182	1.062	1.066	0.998	1.009		
2011Q4	1.621	1.335	1.185	1.071	1.046	1.024			
2012Q4	1.572	1.282	1.184	1.066	1.018				
2013Q4	1.845	1.411	1.151	1.125					
2014Q4	1.825	1.453	1.184						
2015Q4	1.940	1.352							
2016Q4	1.683								
Average Factor (Best 3 of 5)	1.784	1.366	1.183	1.067	1.031	1.011	1.012	0.998	0.999

\*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	3.236	1.813	1.328	1.122	1.052	1.020	1.008	0.996	0.999

MINNESOTA  
UNDERINSURED MOTORISTS  
Loss Development

Trucks, Tractors, and Trailers

MINNESOTA Loss Development

Year Ending	Total Limits Incurred Losses and ALAE			Link Ratios		
	15 months	27 months	39 months	Year Ending	27:15	39:27
2011Q4	1,280,145	1,672,111	2,041,592	2011Q4	1.306	1.221
2012Q4	414,522	371,449	1,015,024	2012Q4	0.896	2.733
2013Q4	1,640,656	1,999,808	1,854,960	2013Q4	1.219	0.928
2014Q4	678,891	1,063,755	1,670,258	2014Q4	1.567	1.570
2015Q4	328,468	112,999	71,684	2015Q4	0.344	0.634
2016Q4	70,331	101,620		2016Q4	1.445	
2017Q4	77,951			2017Q4		
3-Yr Volume (A)	476,750	1,278,374		Average Factor:	1.187	1.240
State Credibility (B)	0.023	0.060		(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)	1.770	1.358			
Multistate LDF to Ultimate			1.328	1.122	1.052
Credibility Wtd. LDF to Ult.	3.193	1.803	1.328	1.122	1.052

(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.

MINNESOTA  
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
2004Q4	6,300,905	12,925,560	15,977,199	18,946,522	20,078,631	19,338,812	20,057,181	20,020,213	20,129,499	21,129,973
2005Q4	5,474,241	10,012,046	14,871,677	17,697,510	19,364,571	20,040,019	19,969,643	21,382,211	21,371,122	21,314,199
2006Q4	6,994,468	13,963,329	15,882,288	18,930,215	19,539,103	20,306,960	20,930,711	21,555,723	20,419,273	20,508,588
2007Q4	10,722,380	16,513,849	19,198,870	25,639,815	26,147,648	26,601,682	27,717,959	28,432,823	28,588,166	28,801,689
2008Q4	13,865,094	21,109,243	29,106,626	32,391,347	34,520,288	35,434,776	35,404,725	35,120,123	35,366,863	35,391,282
2009Q4	11,179,688	23,495,203	30,267,935	33,813,800	35,111,646	37,139,969	37,716,498	38,501,790	38,467,033	
2010Q4	8,467,272	15,948,569	20,471,881	26,598,632	28,460,555	28,863,695	29,993,414	30,709,918		
2011Q4	12,188,852	19,529,785	25,569,555	30,023,469	32,649,876	35,013,858	35,912,848			
2012Q4	11,128,118	19,466,122	28,406,593	31,482,205	35,857,330	36,173,972				
2013Q4	12,623,739	20,828,361	28,156,040	33,955,969	37,429,197					
2014Q4	10,544,502	20,111,450	26,853,668	31,796,672						
2015Q4	14,340,780	27,418,840	38,762,386							
2016Q4	15,340,507	27,064,601								
2017Q4	15,027,822									

MINNESOTA  
UNDERINSURED MOTORISTS  
Loss Development

Private Passenger Types

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>
2004Q4	2.051	1.236	1.186	1.060	0.963	1.037	0.998	1.005	1.050
2005Q4	1.829	1.485	1.190	1.094	1.035	0.996	1.071	0.999	0.997
2006Q4	1.996	1.137	1.192	1.032	1.039	1.031	1.030	0.947	1.004
2007Q4	1.540	1.163	1.335	1.020	1.017	1.042	1.026	1.005	1.007
2008Q4	1.522	1.379	1.113	1.066	1.026	0.999	0.992	1.007	1.001
2009Q4	2.102	1.288	1.117	1.038	1.058	1.016	1.021	0.999	
2010Q4	1.884	1.284	1.299	1.070	1.014	1.039	1.024		
2011Q4	1.602	1.309	1.174	1.087	1.072	1.026			
2012Q4	1.749	1.459	1.108	1.139	1.009				
2013Q4	1.650	1.352	1.206	1.102					
2014Q4	1.907	1.335	1.184						
2015Q4	1.912	1.414							
2016Q4	1.764								
Average Factor (Best 3 of 5)	1.807	1.367	1.188	1.087	1.033	1.027	1.024	1.001	1.004

\*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	3.480	1.926	1.409	1.186	1.091	1.057	1.029	1.006	1.004

MINNESOTA  
UNDERINSURED MOTORISTS  
Loss Development

Private Passenger Types

MINNESOTA Loss Development

Year Ending	Total Limits Incurred Losses and ALAE			Link Ratios		
	15 months	27 months	39 months	Year Ending	27:15	39:27
2011Q4	8	550,000	953,101	2011Q4	68750.000	1.733
2012Q4	20,150	15,002	15,000	2012Q4	0.745	1.000
2013Q4	4,520	93,258	78,258	2013Q4	20.632	0.839
2014Q4	650,000	650,000	817,754	2014Q4	1.000	1.258
2015Q4	1,357,777	1,086,335	745,779	2015Q4	0.800	0.687
2016Q4	1,099,912	1,178,238		2016Q4	1.071	
2017Q4	31,100			2017Q4		
3-Yr Volume (A)	2,488,789	2,914,573		Average Factor:	0.957	1.032
State Credibility (B)	0.111	0.127		(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)	1.713	1.324			
Multistate LDF to Ultimate			1.409	1.186	1.091
Credibility Wtd. LDF to Ult.	3.196	1.866	1.409	1.186	1.091

(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

Year Ended	<b>\$50,000 Bodily Injury</b>
3/31/2012	14,266.49
6/30/2012	14,379.37
9/30/2012	14,329.95
12/31/2012	14,367.18
3/31/2013	14,480.14
6/30/2013	14,539.23
9/30/2013	14,607.25
12/31/2013	14,914.28
3/31/2014	15,087.30
6/30/2014	15,206.72
9/30/2014	15,401.84
12/31/2014	15,365.95
3/31/2015	15,426.99
6/30/2015	15,454.26
9/30/2015	15,526.28
12/31/2015	15,590.49
3/31/2016	15,630.14
6/30/2016	15,881.85
9/30/2016	16,108.47
12/31/2016	16,331.73
3/31/2017	16,496.08
6/30/2017	16,563.59
9/30/2017	16,580.02
12/31/2017	16,891.81
Average Annual Change	24 PT: 3.0% 12 PT: 3.6%
Coefficient of Determination R <sup>2</sup>	24 PT: 0.9761 12 PT: 0.9614

**Trend Selection: + 3.6%**

\*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\*

Year Ended	\$1,000,000 Bodily Injury	Total Limits Bodily Injury
3/31/2012	35,403.51	35,519.54
6/30/2012	36,259.99	36,355.94
9/30/2012	36,209.01	36,322.54
12/31/2012	36,315.43	36,352.31
3/31/2013	36,575.76	36,635.95
6/30/2013	36,080.17	36,181.88
9/30/2013	36,622.76	36,707.62
12/31/2013	37,771.04	37,887.46
3/31/2014	38,701.25	38,793.45
6/30/2014	40,037.28	40,217.06
9/30/2014	40,628.65	40,800.80
12/31/2014	41,116.94	41,274.51
3/31/2015	41,688.10	41,862.16
6/30/2015	41,862.26	42,035.65
9/30/2015	41,992.90	42,233.00
12/31/2015	42,006.96	42,287.48
3/31/2016	42,067.14	42,337.78
6/30/2016	42,904.13	43,080.62
9/30/2016	44,040.49	44,169.77
12/31/2016	44,463.57	44,536.68
3/31/2017	44,820.41	44,925.63
6/30/2017	44,615.83	44,699.92
9/30/2017	44,801.04	44,952.67
12/31/2017	45,674.80	45,874.49
Average Annual Change	24 PT: 12 PT:	4.8% 3.6%
Coefficient of Determination R <sup>2</sup>	24 PT: 12 PT:	0.9593 0.9213
		4.8% 3.5%
		0.9579 0.9330

**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.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

SUMMARY OF PROSPECTIVE LOSS COST LEVEL CHANGES  
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	\$ 23,673,860	N.C.
Personal Injury Protection	890,114	N.C.
Uninsured (Includes Underinsured) Motorists	1,528,983	41.0%
Combined	26,092,957	2.4%
Physical Damage		
Other Than Collision	4,769,725	9.2%
Collision	8,021,685	3.7%
Combined	12,791,410	5.8%
Total Trucks, Tractors & Trailers	38,884,367	3.5%
<b>PRIVATE PASSENGER TYPES</b>		
Liability		
Single Limit Liability	4,238,434	3.6%
Personal Injury Protection	573,651	4.5%
Uninsured (Includes Underinsured) Motorists	647,569	24.4%
Combined	5,459,654	6.2%
Physical Damage		
Other Than Collision	1,467,318	6.7%
Collision	2,228,764	N.C.
Combined	3,696,082	2.7%
Total Private Passenger Types	9,155,736	4.7%
NON-OWNERSHIP LIABILITY	777,604	70.4%
GRAND TOTAL ALL COVERAGES	48,817,707	4.8%
TOTAL LIABILITY	32,330,215	4.7%
TOTAL PHYSICAL DAMAGE	16,487,492	5.1%

(A) An implementation date of 10/01/2019 is assumed for purposes of trending.

(B) Accident Year ending 03/31/2018 Aggregate Loss Cost at Current Level for Liability, Personal Injury Protection, Uninsured Motorists, and Physical Damage coverages. Accident Year ending 12/31/2017 Aggregate Loss Cost at Current Level for Underinsured Motorists. Accident Year ending 12/31/2016 Aggregate Loss Cost at Current Level for Non-ownership Liability coverages. 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.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR TRUCKS, TRACTORS, AND TRAILERS POLICY COVERAGES

Territory Code	\$100,000 CSL Liability (a)	PIP (b)
101		
103		
104		
105		
108		
109		
112		
113		
114		
115		
116		
117		
118		
119		
120		
121		
122		
123		
124		

(a) For Trucks, Tractors, and Trailers Liability, No Change (N.C.) was selected due to the modest indication.

(b) For Trucks, Tractors, and Trailers PIP, No Change (N.C.) was selected due to the modest indication.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR TRUCKS, TRACTORS, AND TRAILERS POLICY COVERAGES

Territory Code	Physical Damage		Specified Causes of Loss
	Comprehensive	Collision	
101	9.9%	8.9%	9.4%
103	8.1%	3.7%	8.1%
104	8.0%	2.2%	7.4%
105	13.2%	-1.6%	12.1%
108	6.1%	6.1%	6.1%
109	12.4%	7.4%	11.4%
112	6.7%	-2.9%	7.4%
113	8.7%	4.9%	8.6%
114	13.5%	2.5%	12.6%
115	12.8%	6.6%	12.5%
116	9.8%	8.2%	10.5%
117	4.4%	7.6%	3.8%
118	9.9%	2.6%	9.4%
119	9.2%	3.0%	9.3%
120	7.8%	2.1%	6.8%
121	6.5%	1.9%	7.0%
122	10.0%	0.0%	11.1%
123	13.4%	1.0%	13.0%
124	13.0%	2.9%	12.1%

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
REVISED BASE LOSS COSTS BY TERRITORY

FOR TRUCKS, TRACTORS, AND TRAILERS POLICY COVERAGES

Territory Code	Liability \$100,000 CSL	PIP	Physical Damage		Specified Causes of Loss (c)
			Comprehensive (a)	Collision (b)	
101	297	38	122	172	70
103	176	29	161	197	93
104	135	32	176	186	101
105	319	31	129	180	74
108	270	36	121	175	70
109	283	39	136	188	78
112	110	17	175	199	101
113	180	29	175	171	101
114	137	19	202	204	116
115	101	15	141	161	81
116	142	18	145	184	84
117	267	31	141	170	81
118	157	19	122	159	70
119	182	19	143	170	82
120	140	19	138	148	79
121	141	19	132	162	76
122	133	20	121	178	70
123	191	23	135	198	78
124	154	19	113	144	65

(a) Comprehensive base loss cost is the \$15,001-20,000 OCN, age 1, \$500 deductible loss cost.

(b) Collision base loss cost is the \$15,001-20,000 OCN, age 1, \$500 deductible loss cost.

(c) The loss costs for Specified Causes of Loss have been calculated by a relativity of 0.576 to the Trucks, Tractors, and Trailers Comprehensive base loss costs.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR PRIVATE PASSENGER TYPES POLICY COVERAGES

Territory Code	\$100,000 CSL Liability	PIP
101	7.8%	6.0%
103	5.0%	3.8%
104	2.5%	4.1%
105	3.2%	5.6%
108	6.7%	5.7%
109	-1.3%	6.2%
112	2.6%	2.1%
113	1.7%	1.7%
114	2.6%	3.4%
115	2.4%	0.0%
116	-0.6%	1.8%
117	4.1%	5.7%
118	3.0%	4.3%
119	3.0%	4.3%
120	2.8%	4.3%
121	2.6%	4.3%
122	6.5%	4.1%
123	1.0%	4.9%
124	2.9%	3.3%

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR PRIVATE PASSENGER TYPES POLICY COVERAGES

Territory Code	Physical Damage	
	Comprehensive	Collision (a)
101	1.9%	
103	7.3%	
104	9.2%	
105	6.8%	
108	7.6%	
109	8.3%	
112	7.1%	
113	9.3%	
114	6.4%	
115	13.7%	
116	7.8%	
117	3.8%	
118	6.8%	
119	6.6%	
120	6.2%	
121	6.6%	
122	7.0%	
123	9.5%	
124	6.6%	

(a) For Private Passenger Types Collision, No Change (N.C.) was selected due to the modest indication.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
REVISED BASE LOSS COSTS BY TERRITORY

FOR PRIVATE PASSENGER TYPES POLICY COVERAGES

Territory Code	Liability		Physical Damage	
	\$100,000 CSL	PIP	Comprehensive (a)	Collision (b)
101	250	89	109	339
103	211	54	162	348
104	161	76	178	303
105	224	57	110	263
108	270	92	113	353
109	226	69	117	261
112	160	48	182	237
113	175	59	165	258
114	155	60	200	262
115	171	62	191	212
116	161	57	139	206
117	203	92	135	231
118	209	49	110	216
119	209	49	97	231
120	181	49	120	212
121	201	49	129	214
122	214	51	152	303
123	208	64	138	282
124	213	62	97	249

(a) Comprehensive base loss cost is the \$15,001-20,000 OCN, age 1, \$500 deductible loss cost.

(b) Collision base loss cost is the \$15,001-20,000 OCN, age 1, \$500 deductible loss cost.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR VAN POOLS POLICY COVERAGES

Territory Code	\$100,000 CSL Liability (a)	PIP (b)
101		
103		
104		
105		
108		
109		
112		
113		
114		
115		
116		
117		
118		
119		
120		
121		
122		
123		
124		

(a) For Trucks, Tractors, and Trailers Liability, No Change (N.C.) was selected due to the modest indication.

(b) For Trucks, Tractors, and Trailers PIP, No Change (N.C.) was selected due to the modest indication.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR VAN POOLS POLICY COVERAGES

Territory Code	Physical Damage		Specified Causes of Loss
	Comprehensive	Collision	
101	9.7%	8.5%	9.2%
103	7.9%	3.7%	8.0%
104	8.4%	2.2%	7.3%
105	13.8%	-1.3%	11.9%
108	6.0%	5.7%	6.0%
109	13.0%	7.7%	12.7%
112	7.2%	-2.7%	7.3%
113	9.1%	4.8%	8.4%
114	13.2%	2.4%	12.4%
115	12.5%	6.3%	13.7%
116	9.6%	8.3%	10.3%
117	4.3%	7.5%	3.8%
118	9.7%	2.5%	9.2%
119	9.0%	2.9%	9.1%
120	7.6%	2.2%	8.0%
121	7.1%	2.0%	8.3%
122	9.8%	0.0%	10.9%
123	14.0%	0.8%	14.3%
124	12.7%	2.8%	11.9%

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
REVISED BASE LOSS COSTS BY TERRITORY

FOR VAN POOLS POLICY COVERAGES

Territory Code	Liability \$100,000 CSL (a)	PIP (b)	Physical Damage		Specified Causes of Loss (e)
			Comprehensive (c)	Collision (d)	
101	446	24	124	218	71
103	264	18	164	250	95
104	203	20	180	236	103
105	479	19	132	229	75
108	405	22	123	222	71
109	425	24	139	239	80
112	165	11	179	253	103
113	270	18	179	217	103
114	206	12	206	259	118
115	152	9	144	204	83
116	213	11	148	234	86
117	401	19	144	216	83
118	236	12	124	202	71
119	273	12	146	216	84
120	210	12	141	188	81
121	212	12	135	206	78
122	200	12	123	226	71
123	287	14	138	251	80
124	231	12	115	183	66

- (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 0.62 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 1.02 to the Trucks, Tractors, and Trailers loss cost.
- (d) Collision base loss cost is the \$15,001-20,000 OCN, age 1, \$500 deductible loss cost, and has been calculated by a relativity of 1.27 to the Trucks, Tractors, and Trailers loss cost.
- (e) The loss costs for Specified Causes of Loss have been calculated by a relativity of 1.02 to the Trucks, Tractors, and Trailers Comprehensive base loss costs.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR TAXIS AND LIMOUSINES POLICY COVERAGES

Territory Code	\$100,000 CSL Liability (a)	PIP (b)
101		
103		
104		
105		
108		
109		
112		
113		
114		
115		
116		
117		
118		
119		
120		
121		
122		
123		
124		

(a) For Trucks, Tractors, and Trailers Liability, No Change (N.C.) was selected due to the modest indication.

(b) For Trucks, Tractors, and Trailers PIP, No Change (N.C.) was selected due to the modest indication.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR TAXIS AND LIMOUSINES POLICY COVERAGES

Territory Code	Physical Damage		Specified Causes of Loss
	Comprehensive	Collision	
101	9.7%	8.5%	9.2%
103	7.9%	3.7%	8.0%
104	8.4%	2.2%	7.3%
105	13.8%	-1.3%	11.9%
108	6.0%	5.7%	6.0%
109	13.0%	7.7%	12.7%
112	7.2%	-2.7%	7.3%
113	9.1%	4.8%	8.4%
114	13.2%	2.4%	12.4%
115	12.5%	6.3%	13.7%
116	9.6%	8.3%	10.3%
117	4.3%	7.5%	3.8%
118	9.7%	2.5%	9.2%
119	9.0%	2.9%	9.1%
120	7.6%	2.2%	8.0%
121	7.1%	2.0%	8.3%
122	9.8%	0.0%	10.9%
123	14.0%	0.8%	14.3%
124	12.7%	2.8%	11.9%

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
REVISED BASE LOSS COSTS BY TERRITORY

FOR TAXIS AND LIMOUSINES POLICY COVERAGES

Territory Code	Liability		Physical Damage		Specified Causes of Loss (e)
	\$100,000 CSL (a)	PIP (b)	Comprehensive (c)	Collision (d)	
101	1841	178	124	218	71
103	1091	136	164	250	95
104	837	150	180	236	103
105	1978	145	132	229	75
108	1674	169	123	222	71
109	1755	183	139	239	80
112	682	80	179	253	103
113	1116	136	179	217	103
114	849	89	206	259	118
115	626	70	144	204	83
116	880	84	148	234	86
117	1655	145	144	216	83
118	973	89	124	202	71
119	1128	89	146	216	84
120	868	89	141	188	81
121	874	89	135	206	78
122	825	94	123	226	71
123	1184	108	138	251	80
124	955	89	115	183	66

- (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 4.69 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, and Trailers loss cost.
- (d) Collision base loss cost is the \$15,001-20,000 OCN, age 1, \$500 deductible loss cost, and has been calculated by a relativity of 1.27 to the Trucks, Tractors, and Trailers loss cost.
- (e) The loss costs for Specified Causes of Loss have been calculated by a relativity of 1.02 to the Trucks, Tractors, and Trailers Comprehensive base loss costs.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR SCHOOL AND CHURCH BUSES POLICY COVERAGES

Territory Code	\$100,000 CSL Liability (a)	PIP (b)
101		
103		
104		
105		
108		
109		
112		
113		
114		
115		
116		
117		
118		
119		
120		
121		
122		
123		
124		

(a) For Trucks, Tractors, and Trailers Liability, No Change (N.C.) was selected due to the modest indication.

(b) For Trucks, Tractors, and Trailers PIP, No Change (N.C.) was selected due to the modest indication.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR SCHOOL AND CHURCH BUSES POLICY COVERAGES

Territory Code	Physical Damage		Specified Causes of Loss
	Comprehensive	Collision	
101	9.0%	8.7%	8.9%
103	8.7%	3.2%	8.3%
104	7.9%	2.5%	7.6%
105	12.5%	-1.7%	13.0%
108	6.3%	6.5%	6.5%
109	11.8%	7.0%	12.2%
112	7.0%	-3.0%	7.6%
113	8.8%	4.7%	9.2%
114	12.8%	3.1%	12.5%
115	12.5%	7.1%	14.0%
116	10.9%	8.1%	11.3%
117	4.2%	7.8%	3.6%
118	9.0%	2.0%	8.9%
119	8.7%	3.7%	7.5%
120	7.8%	2.1%	5.8%
121	5.7%	1.9%	6.0%
122	10.4%	0.0%	11.4%
123	14.5%	1.6%	14.6%
124	12.9%	3.3%	12.2%

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
REVISED BASE LOSS COSTS BY TERRITORY

FOR SCHOOL AND CHURCH BUSES POLICY COVERAGES

Territory Code	Liability		Physical Damage		Specified Causes of Loss (e)
	\$100,000 CSL (a)	PIP (b)	Comprehensive (c)	Collision (d)	
101	163	22	85	112	49
103	97	17	113	128	65
104	74	18	123	121	71
105	175	18	90	117	52
108	149	21	85	114	49
109	156	22	95	122	55
112	61	10	123	129	71
113	99	17	123	111	71
114	75	11	141	133	81
115	56	9	99	105	57
116	78	10	102	120	59
117	147	18	99	111	57
118	86	11	85	103	49
119	100	11	100	111	57
120	77	11	97	96	55
121	78	11	92	105	53
122	73	11	85	116	49
123	105	13	95	129	55
124	85	11	79	94	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 0.57 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, and Trailers loss cost.
- (d) Collision base loss cost is the \$15,001-20,000 OCN, age 1, \$500 deductible loss cost, and has been calculated by a relativity of 0.65 to the Trucks, Tractors, and Trailers loss cost.
- (e) The loss costs for Specified Causes of Loss have been calculated by a relativity of 0.70 to the Trucks, Tractors, and Trailers Comprehensive base loss costs.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR ALL OTHER BUSES POLICY COVERAGES

Territory Code	\$100,000 CSL Liability (a)	PIP (b)
101		
103		
104		
105		
108		
109		
112		
113		
114		
115		
116		
117		
118		
119		
120		
121		
122		
123		
124		

(a) For Trucks, Tractors, and Trailers Liability, No Change (N.C.) was selected due to the modest indication.

(b) For Trucks, Tractors, and Trailers PIP, No Change (N.C.) was selected due to the modest indication.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
TERRITORY LOSS COST LEVEL CHANGES

FOR ALL OTHER BUSES POLICY COVERAGES

Territory Code	Physical Damage		Specified Causes of Loss
	Comprehensive	Collision	
101	9.0%	8.7%	8.9%
103	8.7%	3.2%	8.3%
104	7.9%	2.5%	7.6%
105	12.5%	-1.7%	13.0%
108	6.3%	6.5%	6.5%
109	11.8%	7.0%	12.2%
112	7.0%	-3.0%	7.6%
113	8.8%	4.7%	9.2%
114	12.8%	3.1%	12.5%
115	12.5%	7.1%	14.0%
116	10.9%	8.1%	11.3%
117	4.2%	7.8%	3.6%
118	9.0%	2.0%	8.9%
119	8.7%	3.7%	7.5%
120	7.8%	2.1%	5.8%
121	5.7%	1.9%	6.0%
122	10.4%	0.0%	11.4%
123	14.5%	1.6%	14.6%
124	12.9%	3.3%	12.2%

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE

REVISED PROSPECTIVE LOSS COSTS AND PERCENTAGE CHANGES  
REVISED BASE LOSS COSTS BY TERRITORY

FOR ALL OTHER BUSES POLICY COVERAGES

Territory Code	Liability		Physical Damage		Specified Causes of Loss (e)
	\$100,000 CSL (a)	PIP (b)	Comprehensive (c)	Collision (d)	
101	1129	207	85	112	49
103	669	158	113	128	65
104	513	175	123	121	71
105	1212	169	90	117	52
108	1026	197	85	114	49
109	1075	213	95	122	55
112	418	93	123	129	71
113	684	158	123	111	71
114	521	104	141	133	81
115	384	82	99	105	57
116	540	98	102	120	59
117	1015	169	99	111	57
118	597	104	85	103	49
119	692	104	100	111	57
120	532	104	97	96	55
121	536	104	92	105	53
122	505	109	85	116	49
123	726	126	95	129	55
124	585	104	79	94	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 5.46 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, and Trailers loss cost.
- (d) Collision base loss cost is the \$15,001-20,000 OCN, age 1, \$500 deductible loss cost, and has been calculated by a relativity of 0.65 to the Trucks, Tractors, and Trailers loss cost.
- (e) The loss costs for Specified Causes of Loss have been calculated by a relativity of 0.70 to the Trucks, Tractors, and Trailers Comprehensive base loss costs.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 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 YEAR ENDING	AGGREGATE LOSS COST AT CURRENT LEVEL (B)	\$100,000 INCURRED LOSSES (C)	EXPERIENCE RATIO (2) / (1)	ACCIDENT YEAR WEIGHTS	NUMBER OF INCURRED CLAIMS
03/31/16	\$14,764,866	\$15,639,146	1.059	20%	1,653
03/31/17	\$14,928,471	\$15,388,686	1.031	30%	1,749
03/31/18	\$14,870,515	\$13,710,694	0.922	50%	1,588

(6) AVERAGE EXPERIENCE RATIO (SUM OF (3)\*(4)). 0.982

(7) EXPECTED EXPERIENCE RATIO (D). 1.045

(8) CREDIBILITY (E). 0.65

(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO:  
 ( (6) \* (8) ) + ( (7) \* (1.000 - (8)) ). 1.004

(10) INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ( (9) - 1.000 ). 0.4%

(11) FILED CHANGE. 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 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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSES 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.

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

	ACC. YEAR ENDING	BODILY INJURY	PROPERTY DAMAGE	COMBINED
(1) INCURRED LOSSES AND ALLOCATED LOSS ADJUSTMENT EXPENSES	03/31/16 03/31/17 03/31/18	\$4,802,459 \$4,323,585 \$3,583,984	\$6,245,190 \$6,589,422 \$5,877,645	
(2) DEVELOPED LOSSES AND ALL LOSS ADJUSTMENT EXPENSES (A)	03/31/16 03/31/17 03/31/18	\$5,647,932 \$5,554,185 \$5,220,521	\$6,890,318 \$7,328,096 \$6,782,215	
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C)		3.8%	5.1%	4.5%
(4) TRENDED LOSSES AND ALL LOSS ADJUSTMENT EXPENSES (B)	03/31/16 03/31/17 03/31/18	\$6,805,758 \$6,448,409 \$5,836,542	\$8,833,388 \$8,940,277 \$7,874,152	\$15,639,146 \$15,388,686 \$13,710,694

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

1 - UNALLOCATED LOSS ADJUSTMENT FACTORS:                      B.I. 1.075                      P.D. 1.100  
2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	B.I.	P.D.
03/31/16	1.094	1.003
03/31/17	1.195	1.011
03/31/18	1.355	1.049

(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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
03/31/16	10/1/15	5.000
03/31/17	10/1/16	4.000
03/31/18	10/1/17	3.000

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 AUTOMOBILE LIABILITY INSURANCE - TRUCKS, TRACTORS, AND TRAILERS (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
03/31/14	\$841,481	\$1,024,531	1.218	10%	94
03/31/15	\$815,796	\$701,055	0.859	15%	62
03/31/16	\$832,279	\$1,156,880	1.390	20%	82
03/31/17	\$861,821	\$857,926	0.995	25%	68
03/31/18	\$890,114	\$607,989	0.683	30%	60
(6)	AVERAGE EXPERIENCE RATIO (SUM OF (3) * (4)).				0.983
(7)	EXPECTED EXPERIENCE RATIO (D).				1.034
(8)	CREDIBILITY (E).				0.30
(9)	CREDIBILITY WEIGHTED EXPERIENCE RATIO: ( (6) * (8) ) + ( (7) * (1.000- (8)) ).				1.019
(10)	INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ( (9) - 1.000 ).				1.9%
(11)	FILED CHANGE.				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, 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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSES 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 5 YEAR TOTAL OF CLAIMS FOR PIP SHOWN IN COLUMN (5). THE STANDARD FOR FULL CREDIBILITY IS 3,000 CLAIMS (SEE CREDIBILITY TABLES IN SECTION C).				

INSURANCE SERVICES OFFICE, INC.

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

	ACC. YEAR ENDING	PIP
(1) INCURRED LOSSES AND	03/31/14	\$753,997
ALLOCATED LOSS	03/31/15	\$527,342
ADJUSTMENT EXPENSES	03/31/16	\$890,864
	03/31/17	\$683,194
	03/31/18	\$465,725
 (2) DEVELOPED LOSSES AND	03/31/14	\$810,547
ALL LOSS ADJUSTMENT	03/31/15	\$573,695
EXPENSES (A)	03/31/16	\$978,748
	03/31/17	\$750,591
	03/31/18	\$549,719
 (3) SELECTED ANNUAL LOSS		
TREND (SEE TREND		3.4%
EXHIBIT IN SECTION C)		
 (4) TRENDED LOSSES AND	03/31/14	\$1,024,531
ALL LOSS ADJUSTMENT	03/31/15	\$701,055
EXPENSES (B)	03/31/16	\$1,156,880
	03/31/17	\$857,926
	03/31/18	\$607,989

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

- 1 - UNALLOCATED LOSS ADJUSTMENT FACTORS: 1.075  
2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	PIP
03/31/14	1.000
03/31/15	1.012
03/31/16	1.022
03/31/17	1.022
03/31/18	1.098

(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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
03/31/14	10/1/13	7.000
03/31/15	10/1/14	6.000
03/31/16	10/1/15	5.000
03/31/17	10/1/16	4.000
03/31/18	10/1/17	3.000

INSURANCE SERVICES OFFICE, INC.

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

COVERAGE O.T.C	ACCIDENT YEAR ENDING	(1)	(2)	(3)	(4)	(5)
		AGGREGATE LOSS COST AT CURRENT LEVEL (B)	INCURRED LOSSES (C)	EXPERIENCE RATIO (2) / (1)	ACCIDENT YEAR WEIGHTS	NUMBER OF PAID CLAIMS
	03/31/16	\$4,800,045	\$5,603,735	1.167	20%	1,355
	03/31/17	\$4,749,517	\$5,017,799	1.056	30%	1,343
	03/31/18	\$4,769,725	\$5,375,799	1.127	50%	1,411
COLL.	03/31/16	\$7,940,554	\$7,450,694	0.938	20%	849
	03/31/17	\$7,764,359	\$7,855,370	1.012	30%	823
	03/31/18	\$8,021,685	\$8,753,551	1.091	50%	847

	O.T.C.	COLLISION
(6) AVERAGE EXPERIENCE RATIO (SUM OF (3)*(4)).	1.114	1.038
(7) EXPECTED EXPERIENCE RATIO (D).	1.059	1.033
(8) CREDIBILITY (E).	0.60	0.70
(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO: ( (6) * (8) ) + ( (7) * (1.000- (8)) ).	1.092	1.037
(10) INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ( (9) - 1.000 ).	9.2%	3.7%
(11) FILED CHANGE.	9.2%	3.7%

- (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 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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSES 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 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.

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

	ACC. YEAR ENDING	O.T.C	COLLISION
(1) PAID LOSSES	03/31/16	\$3,534,610	\$5,172,519
	03/31/17	\$3,383,748	\$5,757,121
	03/31/18	\$3,788,826	\$6,882,259
(2) DEVELOPED LOSSES AND	03/31/16	\$3,994,109	\$5,839,102
ALL LOSS ADJUSTMENT	03/31/17	\$3,827,459	\$6,460,008
EXPENSES (A)	03/31/18	\$4,388,408	\$7,559,198
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C)		7.0%	5.0%
(4) TRENDED LOSSES AND	03/31/16	\$5,603,735	\$7,450,694
ALL LOSS ADJUSTMENT	03/31/17	\$5,017,799	\$7,855,370
EXPENSES (B)	03/31/18	\$5,375,799	\$8,753,551

(A) PAID LOSSES ARE ADJUSTED BY THE FOLLOWING:

1 - LOSS ADJUSTMENT EXPENSE FACTORS:

O.T.C	COLL.
1.130	1.130

2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	O.T.C.	COLL.
03/31/16	1.000	0.999
03/31/17	1.001	0.993
03/31/18	1.025	0.972

(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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING BOTH OTC AND COLLISION.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD OTC	PROJECTION PERIOD COLL
03/31/16	10/1/15	5.000	5.000
03/31/17	10/1/16	4.000	4.000
03/31/18	10/1/17	3.000	3.000

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
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	03/31/16	\$4,567,122	\$7,331,998
AT CURRENT LEVEL	03/31/17	\$4,562,456	\$7,283,639
	03/31/18	\$4,630,801	\$7,646,983
 (2) SELECTED ANNUAL OCN TREND (SEE TREND EXHIBIT IN SECTION C)		1.0%	1.6%
 (3) TRENDED AGGREGATE LOSS COSTS AT CURRENT LEVEL (A)	03/31/16	\$4,800,045	\$7,940,554
	03/31/17	\$4,749,517	\$7,764,359
	03/31/18	\$4,769,725	\$8,021,685

(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 DATE OF 10/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDED BOTH OTC AND COLLISION.

YEAR ENDING	AVERAGE DATE OF WRITING	PROJECTION PERIOD OTC	PROJECTION PERIOD COLL
03/31/16	4/1/15	5.000	5.000
03/31/17	4/1/16	4.000	4.000
03/31/18	4/1/17	3.000	3.000

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 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 YEAR ENDING	AGGREGATE LOSS COST AT CURRENT LEVEL (B)	\$100,000 INCURRED LOSSES (C)	EXPERIENCE RATIO (2) / (1)	ACCIDENT YEAR WEIGHTS	NUMBER OF INCURRED CLAIMS
03/31/14	\$3,208,508	\$3,696,793	1.152	10%	512
03/31/15	\$3,024,309	\$3,117,706	1.031	15%	451
03/31/16	\$2,925,333	\$2,760,841	0.944	20%	361
03/31/17	\$2,833,343	\$3,136,468	1.107	25%	352
03/31/18	\$2,792,117	\$2,674,798	0.958	30%	361
(6)	AVERAGE EXPERIENCE RATIO (SUM OF (3) * (4)).				1.023
(7)	EXPECTED EXPERIENCE RATIO (D).				1.044
(8)	CREDIBILITY (E).				0.40
(9)	CREDIBILITY WEIGHTED EXPERIENCE RATIO: ( (6) * (8) ) + ( (7) * (1.000 - (8)) ).				1.036
(10)	INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ( (9) - 1.000 ).				3.6%
(11)	FILED CHANGE.				3.6%
(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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSES 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 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.

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

	ACC. YEAR ENDING	BODILY INJURY	PROPERTY DAMAGE	COMBINED
(1) INCURRED LOSSES AND	03/31/14	\$1,158,080	\$1,328,489	
ALLOCATED LOSS	03/31/15	\$944,780	\$1,223,923	
ADJUSTMENT EXPENSES	03/31/16	\$842,670	\$1,109,606	
	03/31/17	\$1,110,584	\$1,044,912	
	03/31/18	\$774,937	\$998,607	
(2) DEVELOPED LOSSES AND	03/31/14	\$1,251,161	\$1,462,799	
ALL LOSS ADJUSTMENT	03/31/15	\$1,040,014	\$1,347,662	
EXPENSES (A)	03/31/16	\$987,399	\$1,225,449	
	03/31/17	\$1,479,215	\$1,163,196	
	03/31/18	\$1,200,436	\$1,147,899	
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C)		3.8%	5.1%	4.4%
(4) TRENDED LOSSES AND	03/31/14	\$1,624,007	\$2,072,786	\$3,696,793
ALL LOSS ADJUSTMENT	03/31/15	\$1,301,058	\$1,816,648	\$3,117,706
EXPENSES (B)	03/31/16	\$1,189,816	\$1,571,026	\$2,760,841
	03/31/17	\$1,717,369	\$1,419,099	\$3,136,468
	03/31/18	\$1,342,087	\$1,332,711	\$2,674,798

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

1 - UNALLOCATED LOSS ADJUSTMENT FACTORS: B.I. 1.075 P.D. 1.100  
2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	B.I.	P.D.
03/31/14	1.005	1.001
03/31/15	1.024	1.001
03/31/16	1.090	1.004
03/31/17	1.239	1.012
03/31/18	1.441	1.045

(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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
03/31/14	10/1/13	7.000
03/31/15	10/1/14	6.000
03/31/16	10/1/15	5.000
03/31/17	10/1/16	4.000
03/31/18	10/1/17	3.000

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 AUTOMOBILE LIABILITY INSURANCE - PRIVATE PASSENGER TYPES (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
03/31/14	\$632,327	\$534,598	0.845	10%	55
03/31/15	\$599,578	\$503,488	0.840	15%	56
03/31/16	\$592,251	\$823,625	1.391	20%	72
03/31/17	\$575,616	\$536,685	0.932	25%	58
03/31/18	\$573,651	\$658,207	1.147	30%	54
(6)	AVERAGE EXPERIENCE RATIO (SUM OF (3) * (4)).				1.066
(7)	EXPECTED EXPERIENCE RATIO (D).				1.036
(8)	CREDIBILITY (E).				0.30
(9)	CREDIBILITY WEIGHTED EXPERIENCE RATIO: ( (6) * (8) ) + ( (7) * (1.000 - (8)) ).				1.045
(10)	INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ( (9) - 1.000 ).				4.5%
(11)	FILED CHANGE.				4.5%
(A)	PRIVATE PASSENGER TYPE EXPERIENCE IS FOR VEHICLES 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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSES 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 5 YEAR TOTAL OF CLAIMS FOR PIP SHOWN IN COLUMN (5). THE STANDARD FOR FULL CREDIBILITY IS 3,000 CLAIMS (SEE CREDIBILITY TABLES IN SECTION C).				

INSURANCE SERVICES OFFICE, INC.

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

	ACC. YEAR ENDING	PIP
(1) INCURRED LOSSES AND	03/31/14	\$388,213
ALLOCATED LOSS	03/31/15	\$378,933
ADJUSTMENT EXPENSES	03/31/16	\$635,856
	03/31/17	\$437,305
	03/31/18	\$537,187
(2) DEVELOPED LOSSES AND	03/31/14	\$417,329
ALL LOSS ADJUSTMENT	03/31/15	\$407,353
EXPENSES (A)	03/31/16	\$690,381
	03/31/17	\$465,872
	03/31/18	\$591,913
(3) SELECTED ANNUAL LOSS		
TREND (SEE TREND		3.6%
EXHIBIT IN SECTION C)		
(4) TRENDED LOSSES AND	03/31/14	\$534,598
ALL LOSS ADJUSTMENT	03/31/15	\$503,488
EXPENSES (B)	03/31/16	\$823,625
	03/31/17	\$536,685
	03/31/18	\$658,207

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

- 1 - UNALLOCATED LOSS ADJUSTMENT FACTORS: 1.075
- 2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	PIP
03/31/14	1.000
03/31/15	1.000
03/31/16	1.010
03/31/17	0.991
03/31/18	1.025

(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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD
03/31/14	10/1/13	7.000
03/31/15	10/1/14	6.000
03/31/16	10/1/15	5.000
03/31/17	10/1/16	4.000
03/31/18	10/1/17	3.000

INSURANCE SERVICES OFFICE, INC.

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

COVERAGE O.T.C	ACCIDENT YEAR ENDING	(1)	(2)	(3)	(4)	(5)
		AGGREGATE LOSS COST AT CURRENT LEVEL (B)	INCURRED LOSSES (C)	EXPERIENCE RATIO (2) / (1)	ACCIDENT YEAR WEIGHTS	NUMBER OF PAID CLAIMS
	03/31/14	\$1,796,469	\$2,007,598	1.118	10%	729
	03/31/15	\$1,702,895	\$1,840,005	1.081	15%	676
	03/31/16	\$1,669,116	\$1,816,115	1.088	20%	643
	03/31/17	\$1,548,975	\$1,763,690	1.139	25%	602
	03/31/18	\$1,467,318	\$1,459,713	0.995	30%	510
COLL.	03/31/14	\$2,695,522	\$3,006,762	1.115	10%	541
	03/31/15	\$2,560,645	\$2,998,185	1.171	15%	471
	03/31/16	\$2,410,580	\$2,656,325	1.102	20%	444
	03/31/17	\$2,340,495	\$2,047,215	0.875	25%	386
	03/31/18	\$2,228,764	\$1,849,040	0.830	30%	360

	O.T.C.	COLLISION
(6) AVERAGE EXPERIENCE RATIO (SUM OF (3)*(4)).	1.076	0.976
(7) EXPECTED EXPERIENCE RATIO (D).	1.053	1.039
(8) CREDIBILITY (E).	0.60	0.75
(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO: ( (6) * (8) ) + ( (7) * (1.000- (8)) ).	1.067	0.992
(10) INDICATED PERCENTAGE CHANGE IN ADVISORY LOSS COST LEVEL ( (9) - 1.000 ).	6.7%	-0.8%
(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 10/01/19 WHICH IS ASSUMED FOR THE PURPOSES 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 5 YEAR TOTAL OF CLAIMS FOR O.T.C. AND A 5 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.

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

	ACC. YEAR ENDING	O.T.C	COLLISION
(1) PAID LOSSES	03/31/14	\$1,143,266	\$1,955,071
	03/31/15	\$1,116,054	\$2,037,835
	03/31/16	\$1,173,125	\$1,888,510
	03/31/17	\$1,213,676	\$1,527,771
	03/31/18	\$1,058,768	\$1,509,589
(2) DEVELOPED LOSSES AND ALL LOSS ADJUSTMENT EXPENSES (A)	03/31/14	\$1,291,891	\$2,209,230
	03/31/15	\$1,261,141	\$2,302,754
	03/31/16	\$1,325,631	\$2,131,882
	03/31/17	\$1,371,454	\$1,716,023
	03/31/18	\$1,208,372	\$1,620,544
(3) SELECTED ANNUAL LOSS TREND (SEE TREND EXHIBIT IN SECTION C)		6.5%	4.5%
(4) TRENDED LOSSES AND ALL LOSS ADJUSTMENT EXPENSES (B)	03/31/14	\$2,007,598	\$3,006,762
	03/31/15	\$1,840,005	\$2,998,185
	03/31/16	\$1,816,115	\$2,656,325
	03/31/17	\$1,763,690	\$2,047,215
	03/31/18	\$1,459,713	\$1,849,040

(A) PAID LOSSES ARE ADJUSTED BY THE FOLLOWING:

1 - LOSS ADJUSTMENT EXPENSE FACTORS:

	O.T.C	COLL.
	1.130	1.130

2 - LOSS DEVELOPMENT FACTORS:

YEAR ENDING	O.T.C.	COLL.
03/31/14	1.000	1.000
03/31/15	1.000	1.000
03/31/16	1.000	0.999
03/31/17	1.000	0.994
03/31/18	1.010	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 DATE OF 10/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDING BOTH OTC AND COLLISION.

YEAR ENDING	AVERAGE DATE OF ACCIDENT	PROJECTION PERIOD OTC	PROJECTION PERIOD COLL
03/31/14	10/1/13	7.000	7.000
03/31/15	10/1/14	6.000	6.000
03/31/16	10/1/15	5.000	5.000
03/31/17	10/1/16	4.000	4.000
03/31/18	10/1/17	3.000	3.000

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
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	03/31/14	\$1,663,397	\$2,584,393
AT CURRENT LEVEL	03/31/15	\$1,594,471	\$2,469,282
	03/31/16	\$1,580,602	\$2,340,369
	03/31/17	\$1,482,273	\$2,285,640
	03/31/18	\$1,420,443	\$2,189,356
(2) SELECTED ANNUAL OCN TREND (SEE TREND EXHIBIT IN SECTION C)		1.1%	0.6%
(3) TRENDED AGGREGATE LOSS COSTS AT CURRENT LEVEL (A)	03/31/14	\$1,796,469	\$2,695,522
	03/31/15	\$1,702,895	\$2,560,645
	03/31/16	\$1,669,116	\$2,410,580
	03/31/17	\$1,548,975	\$2,340,495
	03/31/18	\$1,467,318	\$2,228,764

(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 DATE OF  
10/01/19 WHICH IS ASSUMED FOR THE PURPOSE OF TRENDED BOTH OTC  
AND COLLISION.

YEAR ENDING	AVERAGE DATE OF WRITING	PROJECTION PERIOD OTC	PROJECTION PERIOD COLL
03/31/14	4/1/13	7.000	7.000
03/31/15	4/1/14	6.000	6.000
03/31/16	4/1/15	5.000	5.000
03/31/17	4/1/16	4.000	4.000
03/31/18	4/1/17	3.000	3.000

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
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)
T	EARNED CAR	\$100000	EXPER LOSS					BASE	BASE
E	YRS YR	UND	COST 5 YRS				INDEX	CLASS	CLASS
R	ENDED	LOSS	END	EXPER		FORM	(6) TO	LOSS	LOSS
R	03/31/2018	COST	03/31/2018	RATIO	CRED	RATIO	STATE	COST	COST
								PRES	IND*
101	6310	338.30	391.91	1.158	0.35	1.072	1.042	297	311
103	1320	181.55	188.59	1.039	0.10	1.027	0.998	176	176
104	855	146.64	163.99	1.118	0.05	1.031	1.002	135	136
105	5697	328.42	318.35	0.969	0.30	1.009	0.981	319	314
108	3569	301.91	262.64	0.870	0.20	0.995	0.967	270	262
109	4043	294.02	403.48	1.372	0.25	1.113	1.082	283	307
112	13424	111.48	106.85	0.958	0.20	1.012	0.983	110	109
113	10091	187.38	182.04	0.972	0.25	1.013	0.984	180	178
114	2467	159.20	158.65	0.997	0.10	1.023	0.994	137	137
115	4405	104.99	113.50	1.081	0.10	1.032	1.003	101	102
116	8668	144.94	144.11	0.994	0.20	1.020	0.991	142	141
117	6744	254.83	237.32	0.931	0.25	1.002	0.974	267	261
118	311	155.09	164.23	1.059	0.05	1.028	0.999	157	157
119	307	192.61	118.45	0.615	0.05	1.005	0.977	182	179
120	826	141.54	210.16	1.485	0.05	1.049	1.019	140	143
121	712	133.52	112.44	0.842	0.05	1.017	0.988	141	140
122	1482	141.05	144.92	1.027	0.10	1.026	0.997	133	133
123	2221	184.15	157.11	0.853	0.10	1.009	0.981	191	188
124	464	169.72	210.20	1.239	0.05	1.037	1.008	154	156
SW	73916	201.18	206.44	1.026		1.029			

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 0.4 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, INC.

MINNESOTA  
 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)
T E R R	EARNED CAR YRS YR ENDED 03/31/2018	P.I.P. UND LOSS COST	EXPER LOSS COST 5 YRS END 03/31/2018	EXPER RATIO	CRED	FORM RATIO	INDEX (6) TO STATE	BASE CLASS LOSS COST PRES	BASE CLASS LOSS COST IND*
101	5983	20.89	17.73	0.849	0.10	0.920	0.988	38	38
103	1103	15.38	27.12	1.763	0.05	0.970	1.042	29	31
104	833	16.90	15.03	0.889	0.00	0.928	0.997	32	33
105	5222	16.47	16.96	1.030	0.10	0.938	1.008	31	32
108	3886	18.79	16.22	0.863	0.05	0.925	0.994	36	36
109	3309	21.80	23.72	1.088	0.10	0.944	1.014	39	40
112	11681	8.96	8.15	0.910	0.10	0.926	0.995	17	17
113	8625	15.14	13.72	0.906	0.10	0.926	0.995	29	29
114	1798	10.11	2.01	0.199	0.00	0.928	0.997	19	19
115	3659	8.30	4.61	0.555	0.00	0.928	0.997	15	15
116	7025	9.87	8.70	0.881	0.05	0.926	0.995	18	18
117	5464	16.26	17.66	1.086	0.10	0.944	1.014	31	32
118	280	8.79	0.00	0.000	0.00	0.928	0.997	19	19
119	231	11.17	18.00	1.611	0.00	0.928	0.997	19	19
120	757	10.72	14.02	1.308	0.00	0.928	0.997	19	19
121	691	8.61	0.64	0.074	0.00	0.928	0.997	19	19
122	1183	11.13	14.38	1.292	0.05	0.946	1.016	20	21
123	2177	11.34	10.64	0.938	0.05	0.929	0.998	23	23
124	393	10.08	0.00	0.000	0.00	0.928	0.997	19	19
SW	64300	13.84	12.84	0.928		0.931			

\* 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.

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 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 CAR	\$100000	EXPER LOSS					BASE	BASE	BASE	
E	YRS YR	UND	COST 5 YRS				INDEX	CLASS	CLASS	CLASS	ADV
R	ENDED	LOSS	END	EXPER		FORM	(6) TO	LOSS	LOSS	LOSS	LOSS
R	03/31/2018	COST	03/31/2018	RATIO	CRED	RATIO	STATE	COST	COST	COST	COST
								PRES	IND*	REV	CHG**
101	2101	236.06	305.31	1.293	0.20	1.087	1.041	232	250	250	7.8%
103	304	201.42	304.02	1.509	0.05	1.060	1.015	201	211	211	5.0%
104	114	162.05	78.08	0.482	0.00	1.036	0.992	157	161	161	2.5%
105	1861	219.62	236.70	1.078	0.15	1.042	0.998	217	224	224	3.2%
108	1063	253.21	363.19	1.434	0.10	1.076	1.031	253	270	270	6.7%
109	941	230.59	140.81	0.611	0.10	0.994	0.952	229	226	226	-1.3%
112	1942	157.32	159.65	1.015	0.10	1.034	0.990	156	160	160	2.6%
113	1345	173.00	157.87	0.913	0.10	1.024	0.981	172	175	175	1.7%
114	271	153.59	67.34	0.438	0.00	1.036	0.992	151	155	155	2.6%
115	576	165.49	152.22	0.920	0.05	1.030	0.987	167	171	171	2.4%
116	1223	162.39	109.00	0.671	0.10	1.000	0.958	162	161	161	-0.6%
117	1064	197.67	226.36	1.145	0.10	1.047	1.003	195	203	203	4.1%
118	52	210.54	30.18	0.143	0.00	1.036	0.992	203	209	209	3.0%
119	67	196.85	11.19	0.057	0.00	1.036	0.992	203	209	209	3.0%
120	144	176.54	47.78	0.271	0.00	1.036	0.992	176	181	181	2.8%
121	74	208.19	76.73	0.369	0.00	1.036	0.992	196	201	201	2.6%
122	249	201.06	351.18	1.747	0.05	1.072	1.027	201	214	214	6.5%
123	516	210.47	138.56	0.658	0.05	1.017	0.974	206	208	208	1.0%
124	69	201.23	193.35	0.961	0.00	1.036	0.992	207	213	213	2.9%
SW	13976	199.78	206.89	1.036		1.044					

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 3.6 PERCENT.

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

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 COMMERCIAL AUTOMOBILE INSURANCE  
 PERSONAL INJURY PROTECTION

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
 PRIVATE PASSENGER TYPES (PPT)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T	EARNED CAR	P.I.P.	EXPER LOSS					BASE	BASE	BASE	
E	YRS YR	UND	COST 5 YRS				INDEX	CLASS	CLASS	CLASS	ADV
R	ENDED	LOSS	END	EXPER		FORM	(6) TO	LOSS	LOSS	LOSS	LOSS
R	03/31/2018	COST	03/31/2018	RATIO	CRED	RATIO	STATE	COST	COST	COST	COST
								PRES	IND*	REV	CHG**
101	2129	55.30	67.96	1.229	0.10	1.028	1.018	84	89	89	6.0%
103	321	34.54	33.31	0.964	0.00	1.006	0.996	52	54	54	3.8%
104	104	46.45	23.00	0.495	0.00	1.006	0.996	73	76	76	4.1%
105	1866	35.44	39.36	1.111	0.10	1.017	1.007	54	57	57	5.6%
108	871	59.98	80.81	1.347	0.05	1.023	1.013	87	92	92	5.7%
109	934	43.00	54.80	1.274	0.05	1.019	1.009	65	69	69	6.2%
112	1656	33.56	27.97	0.833	0.10	0.989	0.979	47	48	48	2.1%
113	1316	39.94	34.28	0.858	0.10	0.991	0.981	58	59	59	1.7%
114	284	37.19	19.18	0.516	0.00	1.006	0.996	58	60	60	3.4%
115	508	44.24	15.36	0.347	0.05	0.973	0.963	62	62	62	0.0%
116	1086	38.56	22.69	0.588	0.05	0.985	0.975	56	57	57	1.8%
117	1015	57.83	68.77	1.189	0.10	1.024	1.014	87	92	92	5.7%
118	53	31.40	0.00	0.000	0.00	1.006	0.996	47	49	49	4.3%
119	59	34.88	52.26	1.498	0.00	1.006	0.996	47	49	49	4.3%
120	139	30.47	34.03	1.117	0.00	1.006	0.996	47	49	49	4.3%
121	56	31.68	64.29	2.029	0.00	1.006	0.996	47	49	49	4.3%
122	228	32.09	14.22	0.443	0.00	1.006	0.996	49	51	51	4.1%
123	518	38.88	20.59	0.530	0.00	1.006	0.996	61	64	64	4.9%
124	63	40.02	0.00	0.000	0.00	1.006	0.996	60	62	62	3.3%
SW	13206	43.44	43.71	1.006		1.010					

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 4.5 PERCENT.

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

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 COMMERCIAL AUTOMOBILE INSURANCE  
 PHYSICAL DAMAGE - COMPREHENSIVE

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 CAR		EXPER LOSS					BASE	BASE	BASE	ADV
E	YRS YR	UND	COST 5 YRS				INDEX	CLASS	CLASS	CLASS	LOSS
R	ENDED	LOSS	END	EXPER		FORM	(6) TO	LOSS	LOSS	LOSS	LOSS
R	03/31/2018	COST	03/31/2018	RATIO	CRED	RATIO	STATE	COST	COST	COST	COST
								PRES	IND*	REV	CHG**
101	4862	83.48	90.86	1.088	0.20	1.083	1.004	111	122	122	9.9%
103	1013	92.96	88.79	0.955	0.10	1.069	0.991	149	161	161	8.1%
104	680	110.44	104.05	0.942	0.10	1.068	0.990	163	176	176	8.0%
105	4792	82.57	103.66	1.255	0.20	1.117	1.035	114	129	129	13.2%
108	2851	80.44	69.75	0.867	0.15	1.050	0.973	114	121	121	6.1%
109	2941	90.28	109.43	1.212	0.20	1.108	1.027	121	136	136	12.4%
112	8126	101.08	100.95	0.999	0.30	1.057	0.980	164	175	175	6.7%
113	7110	106.07	112.36	1.059	0.25	1.076	0.997	161	175	175	8.7%
114	1500	119.23	177.91	1.492	0.10	1.123	1.041	178	202	202	13.5%
115	2879	73.87	96.69	1.309	0.15	1.116	1.034	125	141	141	12.8%
116	6170	83.28	92.09	1.106	0.25	1.088	1.008	132	145	145	9.8%
117	5012	90.78	76.85	0.847	0.20	1.035	0.959	135	141	141	4.4%
118	270	71.34	98.75	1.384	0.00	1.082	1.003	111	122	122	9.9%
119	246	76.76	27.98	0.365	0.00	1.082	1.003	131	143	143	9.2%
120	556	81.97	65.85	0.803	0.05	1.068	0.990	128	138	138	7.8%
121	547	73.02	32.40	0.444	0.05	1.050	0.973	124	132	132	6.5%
122	1244	71.68	83.92	1.171	0.05	1.086	1.006	110	121	121	10.0%
123	1766	73.39	105.68	1.440	0.10	1.118	1.036	119	135	135	13.4%
124	399	64.62	113.62	1.758	0.05	1.116	1.034	100	113	113	13.0%
SW	52964	90.06	97.46	1.082		1.079					

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 9.2 PERCENT.

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

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 COMMERCIAL AUTOMOBILE INSURANCE  
 PHYSICAL DAMAGE - COLLISION

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 CAR		EXPER LOSS					BASE	BASE	BASE	
E	YRS YR	UND	COST 5 YRS				INDEX	CLASS	CLASS	CLASS	ADV
R	ENDED	LOSS	END	EXPER		FORM	(6) TO	LOSS	LOSS	LOSS	LOSS
R	03/31/2018	COST	03/31/2018	RATIO	CRED	RATIO	STATE	COST	COST	COST	COST
								PRES	IND*	REV	CHG**
101	4810	151.78	175.55	1.157	0.35	1.067	1.047	158	172	172	8.9%
103	955	147.08	152.95	1.040	0.10	1.020	1.001	190	197	197	3.7%
104	660	164.26	144.87	0.882	0.10	1.004	0.985	182	186	186	2.2%
105	4775	173.56	145.29	0.837	0.30	0.964	0.946	183	180	180	-1.6%
108	2818	156.53	179.12	1.144	0.20	1.043	1.024	165	175	175	6.1%
109	2912	165.52	194.07	1.172	0.25	1.057	1.037	175	188	188	7.4%
112	7968	169.48	141.01	0.832	0.35	0.953	0.935	205	199	199	-2.9%
113	6937	147.05	157.10	1.068	0.30	1.033	1.014	163	171	171	4.9%
114	1402	187.22	174.27	0.931	0.10	1.009	0.990	199	204	204	2.5%
115	2891	129.51	157.59	1.217	0.15	1.048	1.028	151	161	161	6.6%
116	5886	150.96	176.77	1.171	0.30	1.064	1.044	170	184	184	8.2%
117	4927	135.73	159.13	1.172	0.25	1.057	1.037	158	170	170	7.6%
118	266	157.26	139.00	0.884	0.05	1.011	0.992	155	159	159	2.6%
119	212	135.28	128.68	0.951	0.05	1.015	0.996	165	170	170	3.0%
120	540	130.12	101.65	0.781	0.05	1.006	0.987	145	148	148	2.1%
121	520	130.55	98.52	0.755	0.05	1.005	0.986	159	162	162	1.9%
122	1228	151.20	101.40	0.671	0.10	0.983	0.965	178	178	178	0.0%
123	1720	166.92	144.12	0.863	0.15	0.995	0.976	196	198	198	1.0%
124	374	119.51	94.20	0.788	0.05	1.007	0.988	140	144	144	2.9%
SW	51801	154.85	157.63	1.018		1.019					

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF 3.7 PERCENT.

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

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 COMMERCIAL AUTOMOBILE INSURANCE  
 PHYSICAL DAMAGE - COMPREHENSIVE

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
 PRIVATE PASSENGER TYPES (PPT)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
T	EARNED CAR		EXPER LOSS					BASE	BASE	BASE	
E	YRS YR	UND	COST 5 YRS				INDEX	CLASS	CLASS	CLASS	ADV
R	ENDED	LOSS	END	EXPER		FORM	(6) TO	LOSS	LOSS	LOSS	LOSS
R	03/31/2018	COST	03/31/2018	RATIO	CRED	RATIO	STATE	COST	COST	COST	COST
								PRES	IND*	REV	CHG**
101	1727	128.23	105.08	0.819	0.20	1.045	0.952	107	109	109	1.9%
103	258	165.00	184.39	1.118	0.10	1.103	1.005	151	162	162	7.3%
104	84	183.73	286.04	1.557	0.05	1.124	1.024	163	178	178	9.2%
105	1563	136.00	147.17	1.082	0.20	1.097	0.999	103	110	110	6.8%
108	677	117.36	132.66	1.130	0.10	1.104	1.005	105	113	113	7.6%
109	767	130.04	151.63	1.166	0.15	1.111	1.012	108	117	117	8.3%
112	922	191.93	213.18	1.111	0.15	1.103	1.005	170	182	182	7.1%
113	951	163.92	202.34	1.234	0.20	1.128	1.027	151	165	165	9.3%
114	247	172.82	172.91	1.001	0.05	1.096	0.998	188	200	200	6.4%
115	315	175.48	309.86	1.766	0.10	1.168	1.064	168	191	191	13.7%
116	738	142.31	165.19	1.161	0.15	1.110	1.011	129	139	139	7.8%
117	812	150.84	134.25	0.890	0.15	1.069	0.974	130	135	135	3.8%
118	49	125.69	96.00	0.764	0.00	1.101	1.003	103	110	110	6.8%
119	26	106.20	51.24	0.482	0.00	1.101	1.003	91	97	97	6.6%
120	114	139.13	124.81	0.897	0.05	1.091	0.994	113	120	120	6.2%
121	52	147.80	102.66	0.695	0.00	1.101	1.003	121	129	129	6.6%
122	175	171.15	177.10	1.035	0.05	1.098	1.000	142	152	152	7.0%
123	479	146.34	203.06	1.388	0.10	1.130	1.029	126	138	138	9.5%
124	63	83.56	194.64	2.329	0.00	1.101	1.003	91	97	97	6.6%
SW	10019	146.45	161.25	1.101		1.098					

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

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

INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
COMMERCIAL AUTOMOBILE INSURANCE  
PHYSICAL DAMAGE - COLLISION

DETERMINATION OF LOSS COST LEVEL CHANGES BY TERRITORY  
PRIVATE PASSENGER TYPES (PPT)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
T	EARNED CAR		EXPER LOSS					BASE	BASE
E	YRS YR	UND	COST 5 YRS				INDEX	CLASS	CLASS
R	ENDED	LOSS	END	EXPER		FORM	(6) TO	LOSS	LOSS
R	03/31/2018	COST	03/31/2018	RATIO	CRED	RATIO	STATE	COST	COST
								PRES	IND*
101	1677	294.05	338.10	1.150	0.35	1.074	1.033	339	347
103	247	278.88	230.11	0.825	0.10	1.012	0.973	348	336
104	88	234.72	211.16	0.900	0.05	1.026	0.987	303	297
105	1543	243.06	252.32	1.038	0.30	1.035	0.995	263	260
108	652	282.97	344.93	1.219	0.20	1.070	1.029	353	360
109	725	225.38	197.79	0.878	0.20	1.002	0.963	261	249
112	866	193.05	177.59	0.920	0.20	1.010	0.971	237	228
113	932	202.50	226.24	1.117	0.20	1.050	1.010	258	259
114	235	187.30	145.79	0.778	0.05	1.020	0.981	262	255
115	313	164.35	199.60	1.214	0.10	1.051	1.011	212	213
116	710	164.19	159.69	0.973	0.15	1.024	0.985	206	201
117	751	199.47	203.09	1.018	0.20	1.030	0.990	231	227
118	38	173.01	45.16	0.261	0.00	1.033	0.993	216	213
119	28	191.75	170.88	0.891	0.00	1.033	0.993	231	228
120	111	193.92	217.93	1.124	0.05	1.038	0.998	212	210
121	49	193.90	116.81	0.602	0.05	1.011	0.972	214	206
122	171	263.43	271.85	1.032	0.10	1.033	0.993	303	298
123	456	236.79	198.32	0.838	0.15	1.004	0.965	282	270
124	52	181.15	28.30	0.156	0.00	1.033	0.993	249	245
SW	9644	231.10	238.71	1.033		1.040			

\* KEYED TO A STATEWIDE LOSS COST CHANGE OF **-0.8** 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, INC.

COMMERCIAL AUTOMOBILE LIABILITY INSURANCE  
MULTISTATE LOSS ADJUSTMENT EXPENSE EXPERIENCE

Calendar Year

Development of Unallocated Loss Adjustment Expense Factor

ITEM	<u>Bodily Injury</u> (000's)					3 YR.	5 YR.
	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>AVG</u>	<u>AVG</u>
(1) Direct Losses Incurred	4,201,981	4,808,966	5,392,813	5,762,768	6,343,079		
(2) Allocated Loss Adjustment Expenses Incurred	480,882	516,366	609,253	669,634	692,813		
(3) Unallocated Loss Adjustment Expense Incurred	431,513	471,206	478,672	478,481	509,596		
(4) Unallocated LAE as a Ratio to Losses + Allocated LAE (3)/[(1)+(2)]	9.2%	8.8%	8.0%	7.4%	7.2%	7.6%	8.1%
(5) Selected Factor							7.5%

ITEM	<u>Property Damage</u> (000's)					3 YR.	5 YR.
	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>AVG</u>	<u>AVG</u>
(1) Direct Losses Incurred	965,963	1,036,103	1,144,361	1,240,811	1,278,538		
(2) Allocated Loss Adjustment Expenses Incurred	70,743	69,240	85,269	72,162	83,354		
(3) Unallocated Loss Adjustment Expense Incurred	113,312	129,347	129,840	127,728	134,901		
(4) Unallocated LAE as a Ratio to Losses + Allocated LAE (3)/[(1)+(2)]	10.9%	11.7%	10.6%	9.7%	9.9%	10.1%	10.6%
(5) Selected Factor							10.0%

All items are from Special Call Submission for available writers.

INSURANCE SERVICES OFFICE, INC.

COMMERCIAL AUTOMOBILE PHYSICAL DAMAGE INSURANCE  
MULTISTATE LOSS ADJUSTMENT EXPENSE EXPERIENCE

Calendar Year

Development of Factor to Include all Loss Adjustment Expenses

		(000's)					3 YR.	5 YR.
<u>ITEM</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>AVG</u>	<u>AVG</u>	
(1) Direct Losses Incurred	3,615,666	4,009,807	4,293,030	4,806,080	5,434,351			
(2) Loss Adjustment Expenses Incurred	581,191	657,537	578,445	622,951	702,920			
(3) Losses + LAE Incurred as Ratio to Losses Incurred [(1)+(2)]/(1)	1.161	1.164	1.135	1.130	1.129	1.131	1.144	
(4) Selected							1.130	

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

INSURANCE SERVICES OFFICE, INC.

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

AVERAGE PAID CLAIM COST DATA

YEAR ENDED	MINNESOTA				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)
	ACTUAL	EXPONENTIAL FIT	ACTUAL	EXPONENTIAL FIT	ACTUAL	EXPONENTIAL FIT	ACTUAL	EXPONENTIAL FIT
3/31/2015	24277.36	22820.08	3642.55	3687.84	20982.98	20758.42	3869.85	3892.57
6/30/2015	23344.66	22773.07	3632.63	3746.15	21083.55	20952.41	3913.02	3938.60
9/30/2015	24042.65	22726.17	3778.09	3805.38	21151.16	21148.21	3969.44	3985.17
12/31/2015	22987.62	22679.36	3865.60	3865.55	21157.58	21345.84	4034.82	4032.29
3/31/2016	20556.71	22632.65	3959.04	3926.67	21288.08	21545.32	4110.84	4079.97
6/30/2016	21624.07	22586.03	4076.79	3988.76	21536.65	21746.66	4172.07	4128.22
9/30/2016	19986.84	22539.51	4120.93	4051.83	21916.91	21949.88	4201.21	4177.03
12/31/2016	21399.47	22493.08	4303.82	4115.89	22237.05	22155.00	4242.98	4226.43
3/31/2017	23017.20	22446.75	4259.40	4180.97	22488.61	22362.04	4292.85	4276.40
6/30/2017	22995.30	22400.52	4250.70	4247.07	22690.73	22571.02	4310.18	4326.97
9/30/2017	23821.95	22354.38	4311.14	4314.23	22699.79	22781.94	4359.46	4378.14
12/31/2017	23181.06	22308.34	4127.20	4382.44	23085.19	22994.84	4395.65	4429.91

	BODILY INJURY	PROPERTY DAMAGE
(9) AVERAGE ANNUAL PERCENT CHANGE IN PAID CLAIM COST (12TH POINT / 8TH POINT)		
(A) MINNESOTA	-0.8%	6.5%
(B) MULTISTATE	3.8%	4.8%
(10) CREDIBILITY	0.00	0.20
(11) WEIGHTED AVERAGE ANNUAL PERCENT CHANGE IN PAID CLAIM COSTS {(10) * (9A)} + {(1.0 - (10)) * (9B)}	3.8%	5.1%
(12) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM FREQUENCY	0.0%	0.0%
(13) AVERAGE ANNUAL PERCENT CHANGE IN LIABILITY LOSS RATIO (11) * (12)	3.8%	5.1%

\* EXCLUDES MASSACHUSETTS

INSURANCE SERVICES OFFICE, INC.

CLAIM COST TREND DATA FOR PIP  
TRUCKS, TRACTORS, & TRAILERS  
MINNESOTA

QUARTER ENDING	MEDICAL INDEX*		HOSPITAL AND RELATED SERVICES*		INCOME LOSSES**	
	ACTUAL	EXPONENTIAL FIT	ACTUAL	EXPONENTIAL FIT	ACTUAL	EXPONENTIAL FIT
9/30/2015	446.9	450.3	759.0	763.0	710.14	708.92
12/31/2015	450.9	453.6	773.3	771.9	718.06	713.33
3/31/2016	457.0	456.8	785.6	780.9	713.89	717.76
6/30/2016	461.1	460.1	790.3	790.0	722.00	722.22
9/30/2016	467.3	463.3	799.1	799.2	724.62	726.70
12/31/2016	469.3	466.6	805.5	808.5	732.42	731.21
3/31/2017	473.6	470.0	818.6	817.9	732.29	735.76
6/30/2017	473.8	473.3	829.6	827.4	739.21	740.33
9/30/2017	476.5	476.7	835.6	837.0	745.96	744.92
12/31/2017	477.4	480.1	843.0	846.8	752.46	749.55
3/31/2018	482.7	483.5	860.1	856.6	749.64	754.21
6/30/2018	485.0	487.0	866.1	866.6	763.18	758.89

	(A) MEDICAL	(B) HOSPITAL	(C) COMBINED+	(D) INCOME
(1) AVERAGE ANNUAL PERCENT CHANGE IN INDICES (12TH POINT/8TH POINT)	2.9%	4.7%	3.8%	2.5%
(2) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM COST 0.68*(1C) + 0.32*(1D). BASED ON RESPECTIVE WEIGHT OF MEDICAL AND INCOME FROM PRICING.				3.4%
(3) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM FREQUENCY				0.0%
(4) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM RATIOS (1.0 + (2)) * (1.0 + (3))				3.4%

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

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

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

INSURANCE SERVICES OFFICE, INC.

CLAIM COST TREND DATA FOR PIP  
PRIVATE PASSENGER TYPES  
MINNESOTA

QUARTER ENDING	MEDICAL INDEX*		HOSPITAL AND RELATED SERVICES*		INCOME LOSSES**	
	ACTUAL	EXPONENTIAL FIT	ACTUAL	EXPONENTIAL FIT	ACTUAL	EXPONENTIAL FIT
9/30/2015	446.9	450.3	759.0	763.0	710.14	708.92
12/31/2015	450.9	453.6	773.3	771.9	718.06	713.33
3/31/2016	457.0	456.8	785.6	780.9	713.89	717.76
6/30/2016	461.1	460.1	790.3	790.0	722.00	722.22
9/30/2016	467.3	463.3	799.1	799.2	724.62	726.70
12/31/2016	469.3	466.6	805.5	808.5	732.42	731.21
3/31/2017	473.6	470.0	818.6	817.9	732.29	735.76
6/30/2017	473.8	473.3	829.6	827.4	739.21	740.33
9/30/2017	476.5	476.7	835.6	837.0	745.96	744.92
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3/31/2018	482.7	483.5	860.1	856.6	749.64	754.21
6/30/2018	485.0	487.0	866.1	866.6	763.18	758.89

	(A) MEDICAL	(B) HOSPITAL	(C) COMBINED+	(D) INCOME
(1) AVERAGE ANNUAL PERCENT CHANGE IN INDICES (12TH POINT/8TH POINT)	2.9%	4.7%	3.8%	2.5%
(2) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM COST $0.84*(1C) + 0.16*(1D)$ . BASED ON RESPECTIVE WEIGHT OF MEDICAL AND INCOME FROM PRICING.				3.6%
(3) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM FREQUENCY				0.0%
(4) AVERAGE ANNUAL PERCENT CHANGE IN CLAIM RATIOS $(1.0 + (2)) * (1.0 + (3))$				3.6%

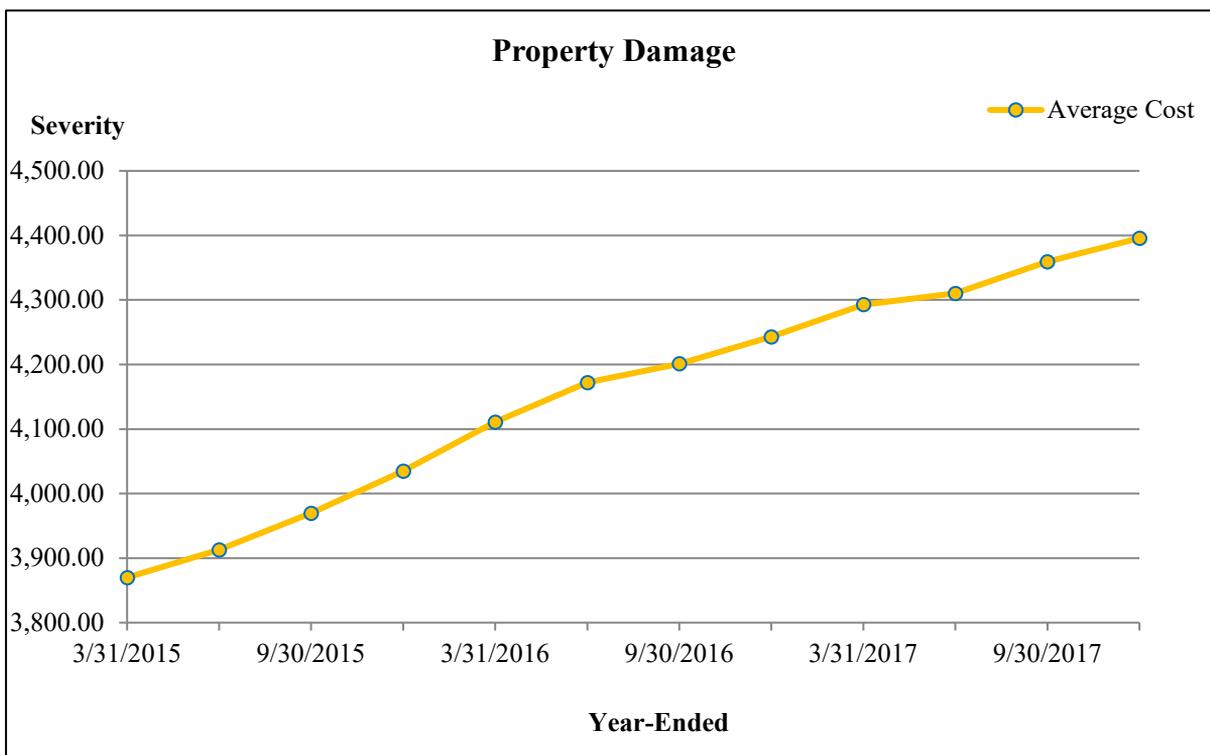
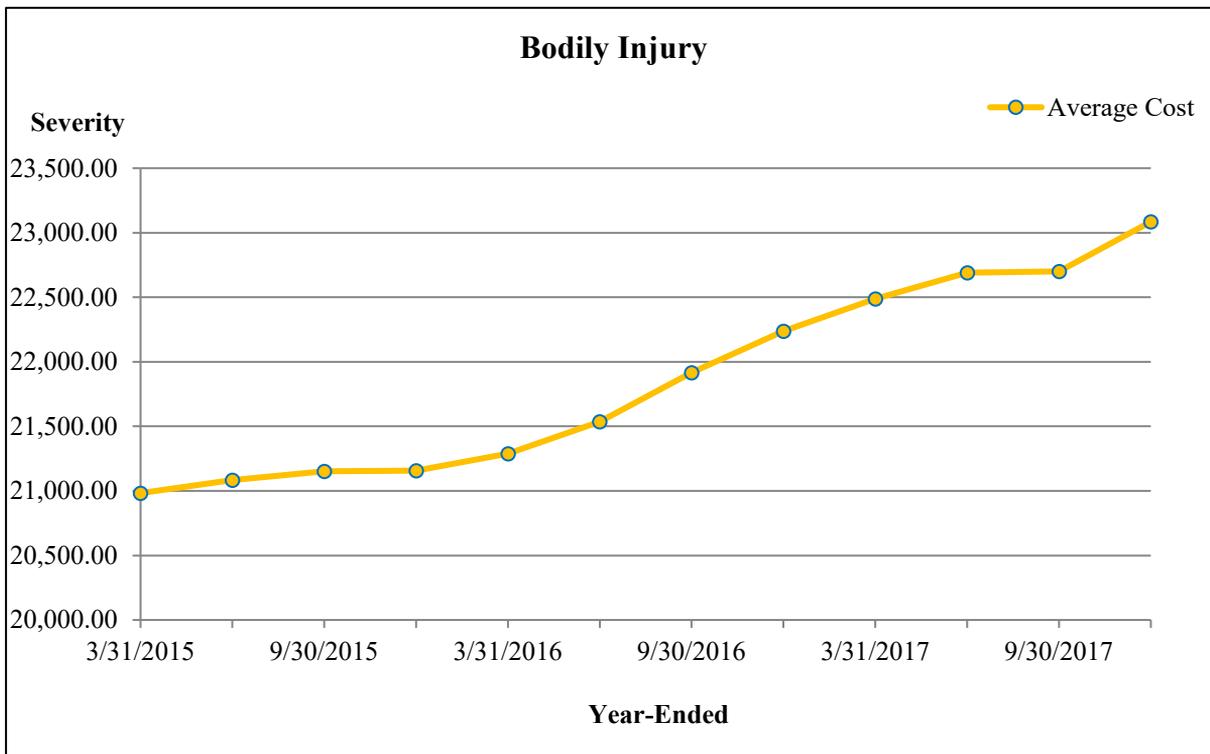
\* MEDICAL INDEX AND HOSPITAL AND RELATED SERVICES INDEX  
BASED ON CONSUMER PRICE INDEX.

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

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

INSURANCE SERVICES OFFICE, INC.

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</u> <u>ENDING</u>	<u>BODILY INJURY</u> <u>ACTUAL</u>	<u>BODILY INJURY</u> <u>ACTUAL CHANGE@</u>	<u>PROPERTY DAMAGE</u> <u>ACTUAL</u>	<u>PROPERTY DAMAGE</u> <u>ACTUAL CHANGE@</u>
12/31/2011	0.7566		2.8239	
3/31/2012	0.7569		2.7273	
6/30/2012	0.7581		2.7208	
9/30/2012	0.7489		2.6835	
12/31/2012	0.7522	-0.6% &	2.6652	-5.6% &
3/31/2013	0.7498		2.7000	
6/30/2013	0.7617		2.7359	
9/30/2013	0.7732	3.2%	2.7756	3.4%
12/31/2013	0.7743		2.7955	
3/31/2014	0.7883		2.8776	
6/30/2014	0.7791		2.8728	
9/30/2014	0.7733	0.0%	2.8730	3.5%
12/31/2014	0.7760		2.8711	
3/31/2015	0.7647		2.8347	
6/30/2015	0.7663		2.8327	
9/30/2015	0.7727	-0.1%	2.8460	-0.9%
12/31/2015	0.7838		2.8531	
3/31/2016	0.7926		2.8185	
6/30/2016	0.7979		2.8157	
9/30/2016	0.8019	3.8%	2.8134	-1.1%
12/31/2016	0.7964		2.8001	
3/31/2017	0.7959		2.7872	
6/30/2017	0.7980		2.7762	
9/30/2017	0.7936	-1.0%	2.7202	-3.3%

\* EXCLUDES MASSACHUSETTS

@ CHANGE BASED ON YEARS ENDING 9/30/XXXX

&amp; CHANGE BASED ON YEAR ENDING 12/31/2012 divided by 12/31/2011

INSURANCE SERVICES OFFICE, INC.

COMMERCIAL AUTO LIABILITY  
INCURRED CLAIM FREQUENCY

MULTISTATE\*

PRIVATE PASSENGER TYPES

<u>YEAR</u> <u>ENDING</u>	<u>BODILY INJURY</u> <u>ACTUAL</u>	<u>BODILY INJURY</u> <u>ACTUAL CHANGE@</u>	<u>PROPERTY DAMAGE</u> <u>ACTUAL</u>	<u>PROPERTY DAMAGE</u> <u>ACTUAL CHANGE@</u>
12/31/2011	0.9093		3.2801	
3/31/2012	0.9276		3.2644	
6/30/2012	0.9200		3.2804	
9/30/2012	0.9015		3.2598	
12/31/2012	0.8771	-3.5% &	3.2192	-1.9% &
3/31/2013	0.8634		3.1904	
6/30/2013	0.8584		3.1458	
9/30/2013	0.8722	-3.3%	3.1541	-3.2%
12/31/2013	0.8779		3.1812	
3/31/2014	0.8798		3.2183	
6/30/2014	0.8797		3.2164	
9/30/2014	0.8738	0.2%	3.1875	1.1%
12/31/2014	0.8689		3.1599	
3/31/2015	0.8457		3.1288	
6/30/2015	0.8300		3.0990	
9/30/2015	0.8162	-6.6%	3.1118	-2.4%
12/31/2015	0.8141		3.1202	
3/31/2016	0.8290		3.1054	
6/30/2016	0.8320		3.1162	
9/30/2016	0.8529	4.5%	3.1150	0.1%
12/31/2016	0.8396		3.0864	
3/31/2017	0.8328		3.0297	
6/30/2017	0.8287		2.9899	
9/30/2017	0.8031	-5.8%	2.8859	-7.4%

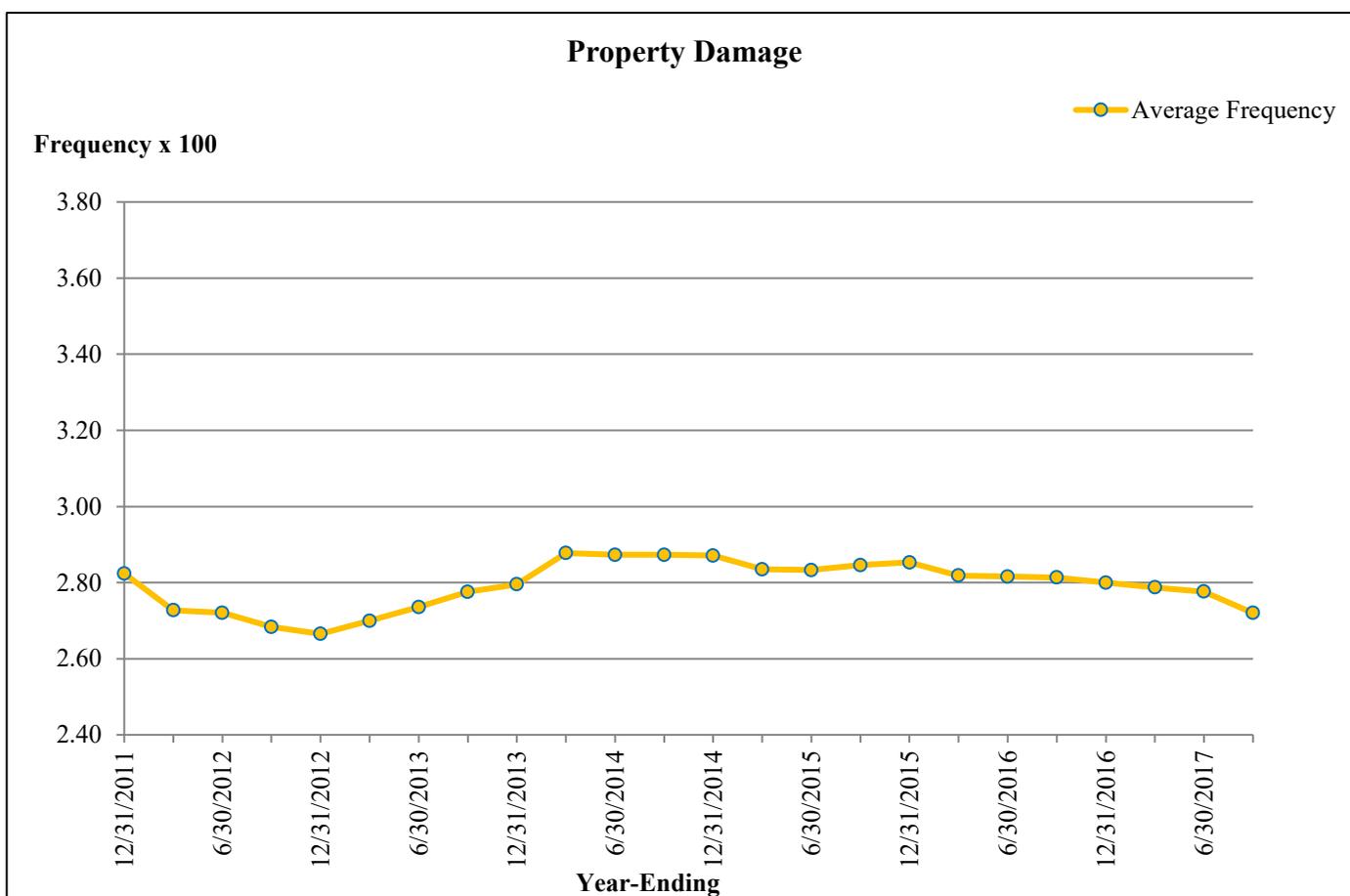
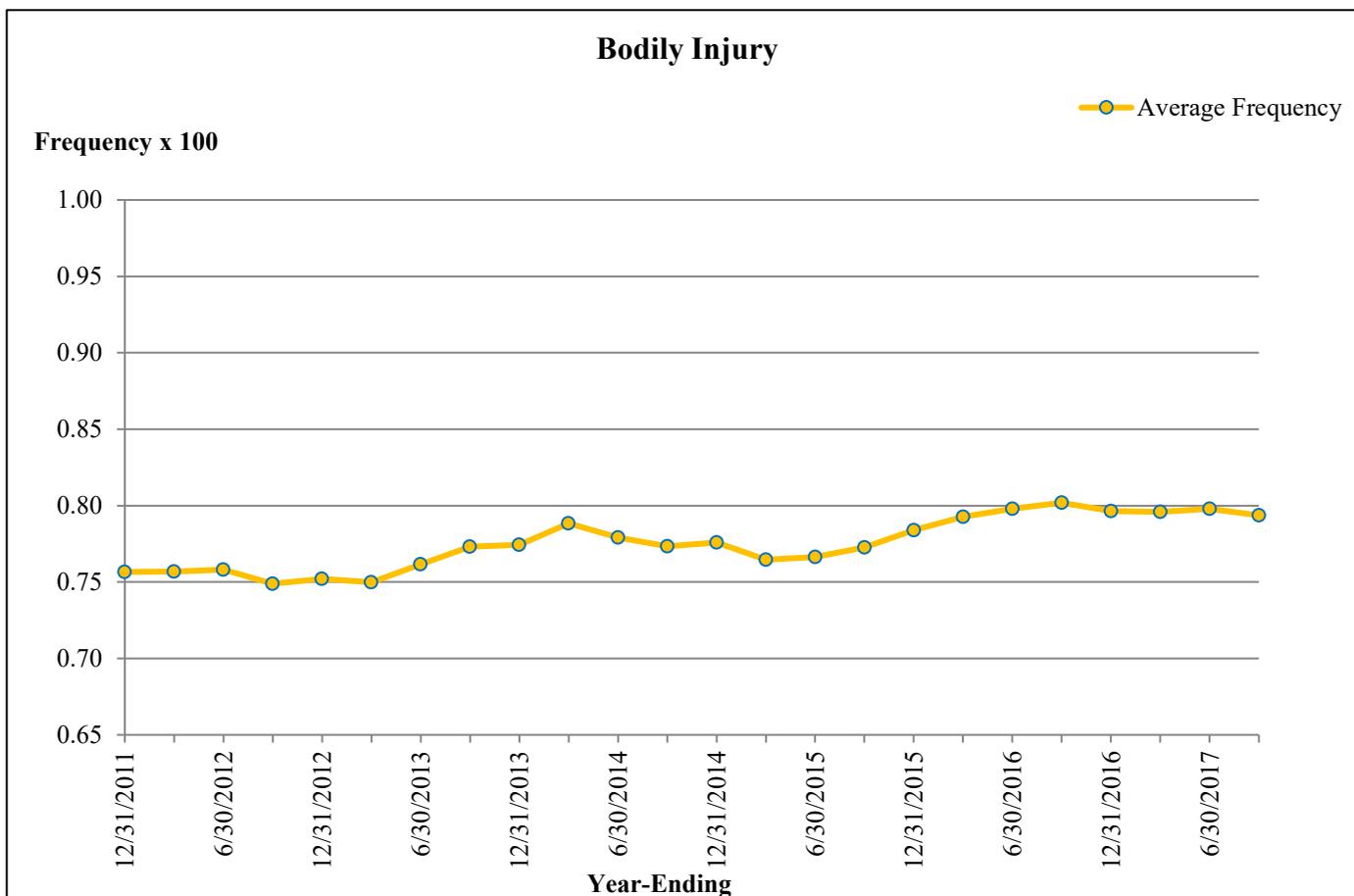
\* EXCLUDES MASSACHUSETTS

@ CHANGE BASED ON YEARS ENDING 9/30/XXXX

&amp; CHANGE BASED ON YEAR ENDING 12/31/2012 divided by 12/31/2011

INSURANCE SERVICES OFFICE, INC.

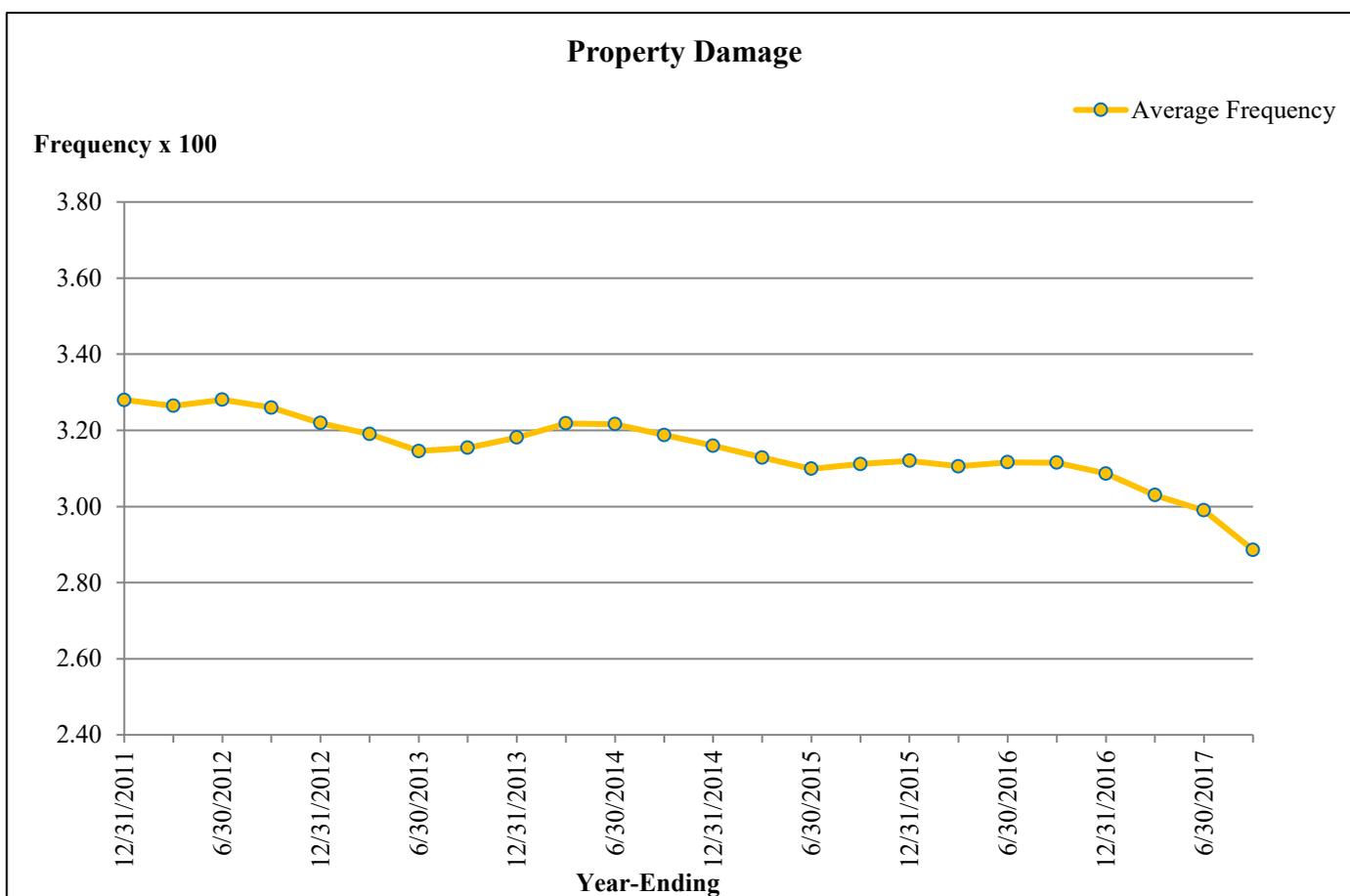
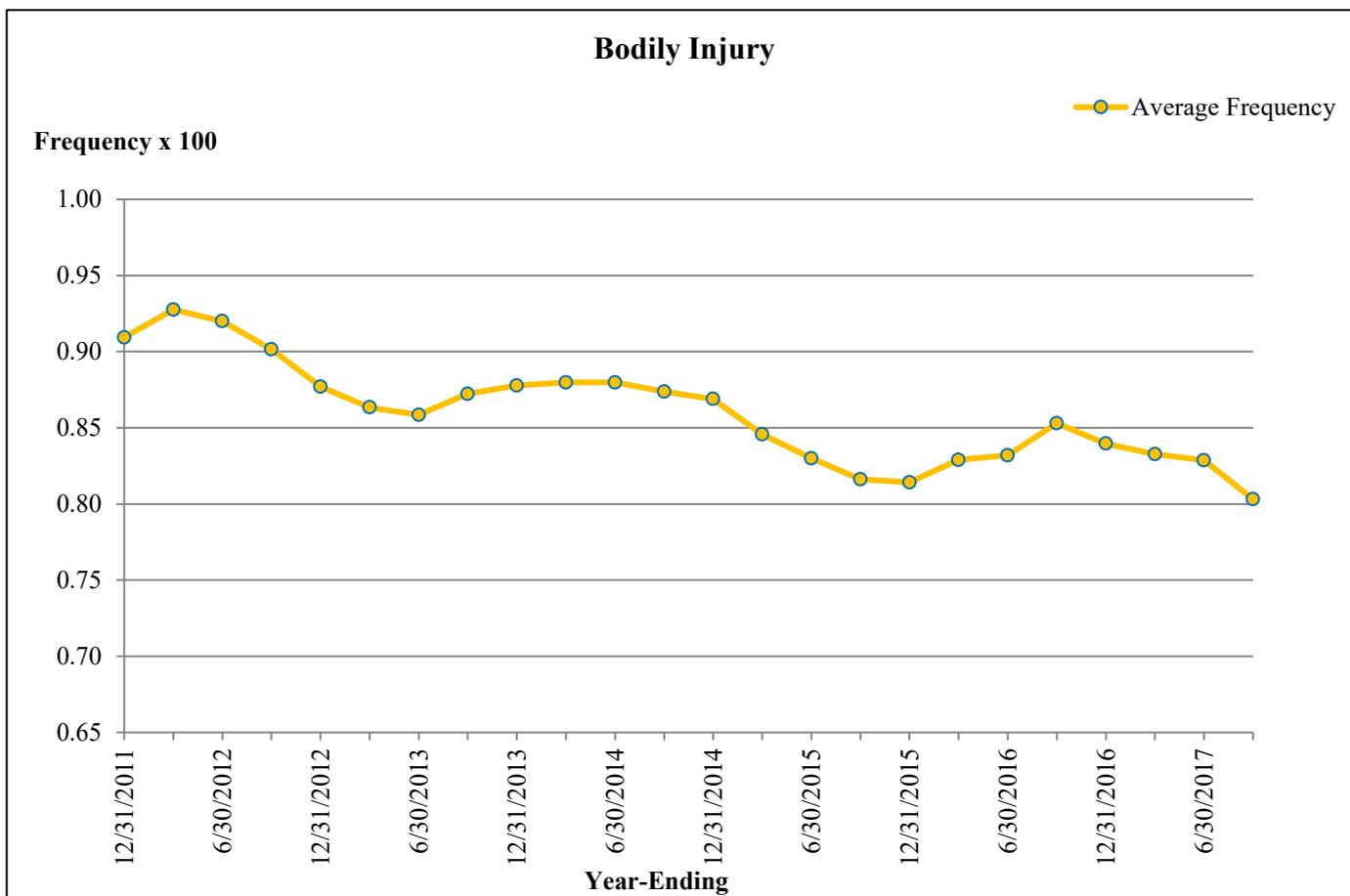
Commercial Automobile Liability  
 Incurred Claim Frequency Experience  
 Trucks, Tractors, and Trailers  
 Multistate\*



\*Excludes Massachusetts

INSURANCE SERVICES OFFICE, INC.

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



\*Excludes Massachusetts

## INSURANCE SERVICES OFFICE, INC.

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

Frequency (expressed as claims per 100 exposures)

Year Ending:	\$250 Deductible		\$500 Deductible		\$1,000 Deductible	
	Actual	Change**	Actual	Change**	Actual	Change**
6/30/2013	2.44		1.44		0.95	
12/31/2013	2.37		1.42		0.93	
6/30/2014	2.44		1.41		0.92	
12/31/2014	2.39	0.8%	1.37	-3.5%	0.90	-3.2%
6/30/2015	2.28		1.35		0.89	
12/31/2015	2.19	-8.4%	1.35	-1.5%	0.91	1.1%
6/30/2016	2.13		1.35		0.92	
12/31/2016	2.15	-1.8%	1.35	0.0%	0.91	0.0%
6/30/2017	2.15		1.35		0.89	
12/31/2017	2.13	-0.9%	1.38	2.2%	0.90	-1.1%

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

Deductible:	Percent of Losses
Full	0.2%
\$50	0.8%
\$100	2.3%
\$200	0.2%
\$250	10.0%
\$500	37.0%
\$1,000	43.0%
\$2,000	3.4%
\$3,000	0.5%
\$5,000	2.4%

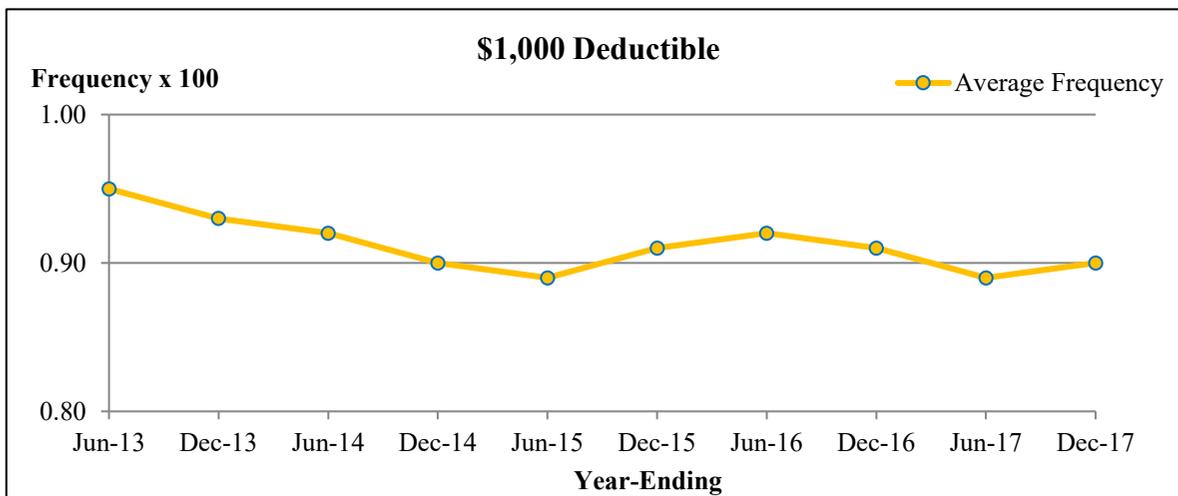
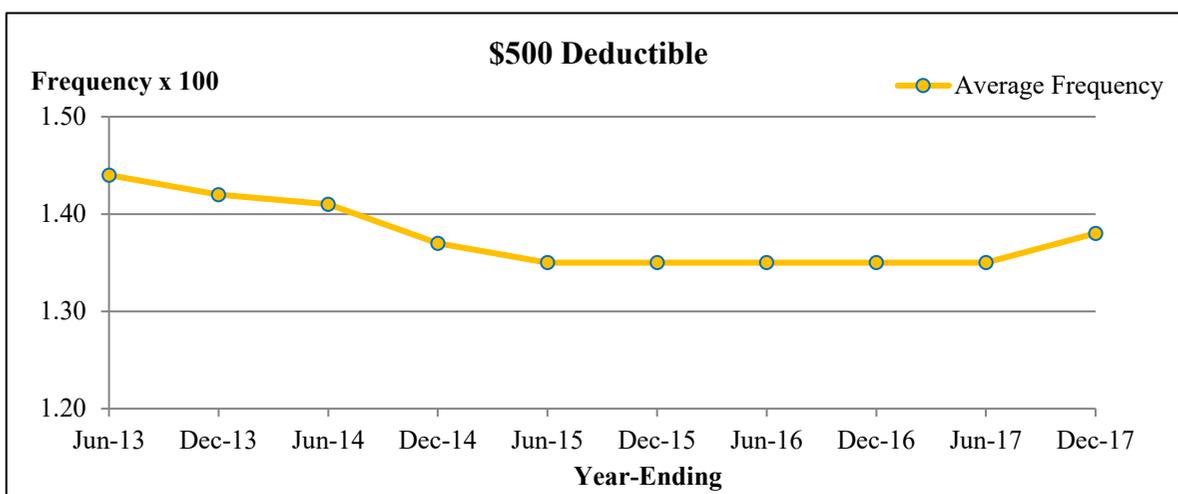
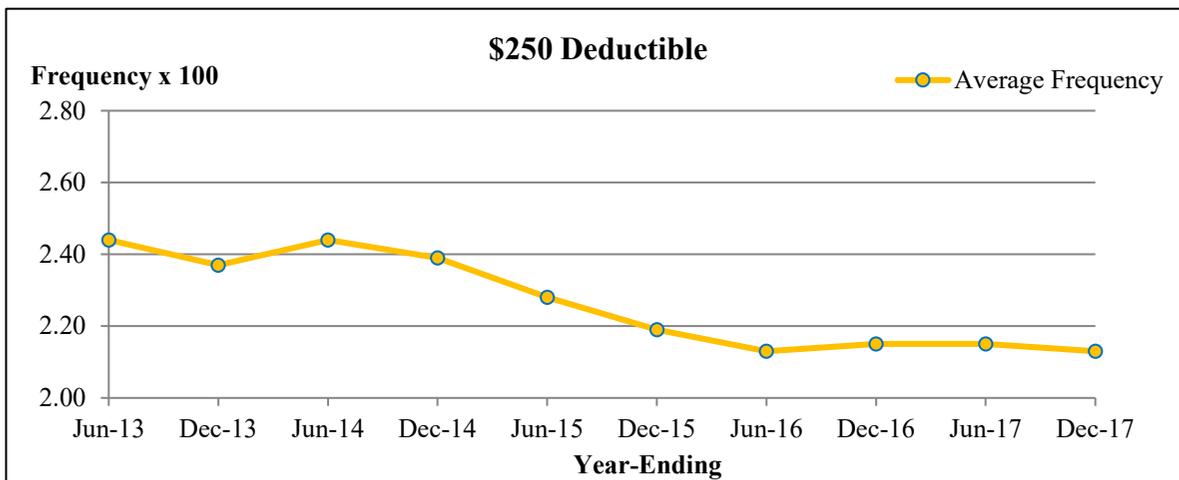
\* Multistate data excludes Massachusetts

\*\* Change based on years ending 12/31/xxxx

\*\*\* Deductibles above \$1,000, totaling 6.3% of losses, are excluded from the trend calculations.

INSURANCE SERVICES OFFICE, INC.

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



\*Excludes Massachusetts

Selected Other Than Collision Frequency Trend Factor: 0.0%

## INSURANCE SERVICES OFFICE, INC.

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

Severity Trend

Year Ending:	\$250 Deductible	\$500 Deductible	\$1,000 Deductible
6/30/2013	2,844.12	4,851.33	7,115.38
12/31/2013	2,905.68	4,839.25	7,148.95
6/30/2014	2,979.30	5,034.75	7,440.11
12/31/2014	3,109.20	5,247.75	7,623.44
6/30/2015	3,226.45	5,392.36	7,698.60
12/31/2015	3,352.74	5,666.25	7,975.68
6/30/2016	3,601.45	5,807.85	8,258.97
12/31/2016	3,688.31	5,852.68	8,647.65
6/30/2017	3,819.42	6,214.98	9,103.87
12/31/2017	4,096.01	6,551.62	9,551.12

Average Annual Change Using Exponential Fits:

10 point fit:	8.5%	7.0%	6.7%
8 point fit:	9.3%	7.3%	7.5%
6 point fit:	9.6%	7.5%	9.1%

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

\* Multistate data excludes Massachusetts

## INSURANCE SERVICES OFFICE, INC.

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

Frequency (expressed as claims per 100 exposures)

Year Ending:	\$500 Deductible		\$1,000 Deductible		\$2,000 Deductible	
	Actual	Change**	Actual	Change**	Actual	Change**
6/30/2013	2.24		1.90		1.50	
12/31/2013	2.24		1.91		1.52	
6/30/2014	2.30		1.96		1.56	
12/31/2014	2.28	1.8%	1.96	2.6%	1.57	3.3%
6/30/2015	2.25		1.94		1.57	
12/31/2015	2.27	-0.4%	1.97	0.5%	1.60	1.9%
6/30/2016	2.26		1.97		1.61	
12/31/2016	2.35	3.5%	2.05	4.1%	1.67	4.4%
6/30/2017	2.37		2.04		1.67	
12/31/2017	2.30	-2.1%	1.98	-3.4%	1.65	-1.2%

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

Deductible:	Percent of Losses
\$100	0.1%
\$200	0.0%
\$250	1.9%
\$500	35.8%
\$1,000	51.6%
\$2,000	5.7%
\$3,000	1.6%
\$5,000	3.2%

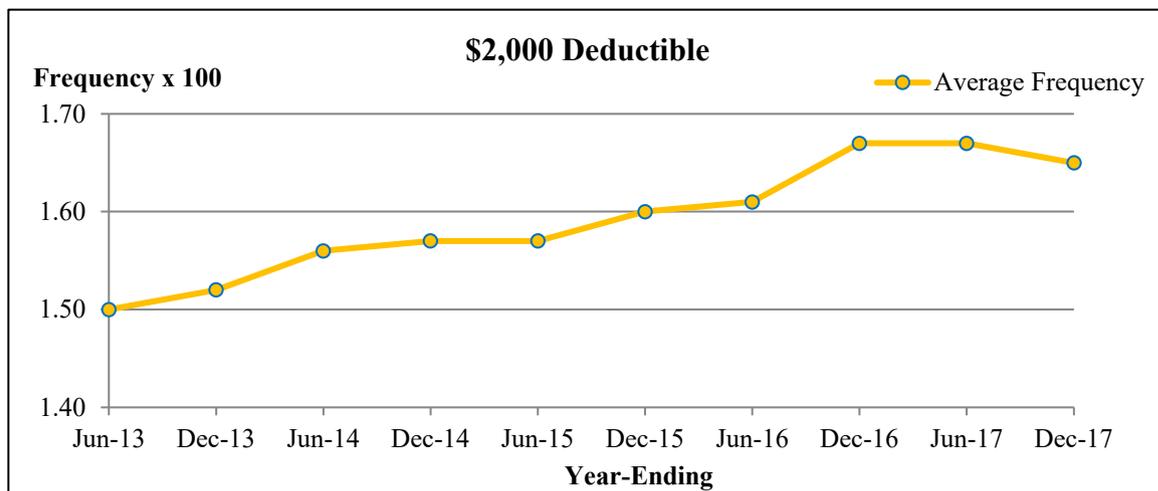
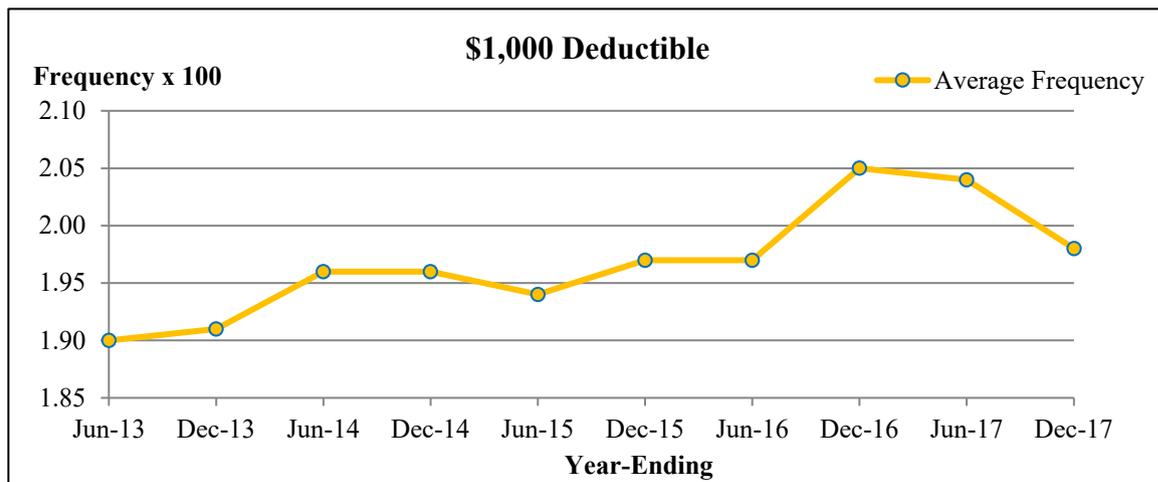
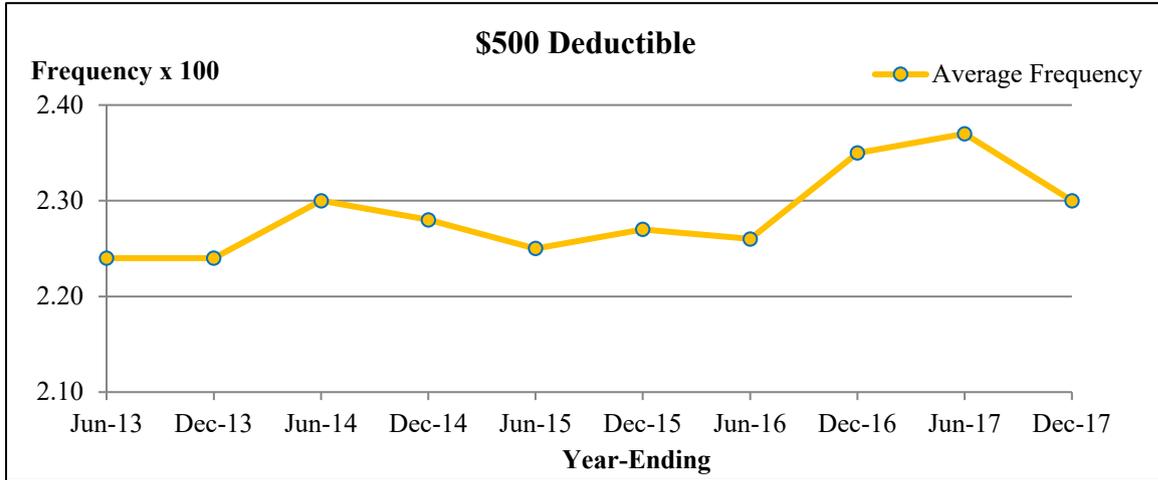
\* Multistate data excludes Massachusetts

\*\* Change based on years ending 12/31/xxxx

\*\*\* Deductibles above \$2,000, totaling 4.8% of losses, are excluded from the trend calculations.

INSURANCE SERVICES OFFICE, INC.

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



\*Excludes Massachusetts

Selected Collision Frequency Trend Factor: 0.0%

## INSURANCE SERVICES OFFICE, INC.

Multistate\*  
Trucks, Tractors & Trailers Physical Damage  
Collision

Severity Trend

Year Ending:	\$500 Deductible	\$1,000 Deductible	\$2,000 Deductible
6/30/2013	7,665.05	9,351.17	10,145.59
12/31/2013	7,856.13	9,502.58	10,293.38
6/30/2014	8,039.53	9,820.66	10,730.61
12/31/2014	8,346.04	10,180.04	11,160.55
6/30/2015	8,627.97	10,370.96	11,274.52
12/31/2015	8,756.51	10,524.74	11,426.52
6/30/2016	9,123.83	10,833.89	11,764.37
12/31/2016	9,325.85	11,094.48	12,039.59
6/30/2017	9,380.35	11,186.20	12,090.00
12/31/2017	9,888.11	11,621.24	12,501.51

Average Annual Change Using Exponential Fits:

10 point fit:	5.7%	4.9%	4.7%
8 point fit:	5.6%	4.6%	4.1%
6 point fit:	5.3%	4.5%	4.1%

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

\* Multistate data excludes Massachusetts

## INSURANCE SERVICES OFFICE, INC.

Multistate\*  
Private Passenger Types Physical Damage  
Other Than Collision

Frequency (expressed as claims per 100 exposures)

Year Ending:	\$250 Deductible		\$500 Deductible		\$1,000 Deductible	
	Actual	Change**	Actual	Change**	Actual	Change**
6/30/2013	5.05		3.10		1.89	
12/31/2013	5.10		3.10		1.87	
6/30/2014	5.39		3.23		1.92	
12/31/2014	5.26	3.1%	3.20	3.2%	1.92	2.7%
6/30/2015	4.90		3.08		1.90	
12/31/2015	4.95	-5.9%	3.15	-1.6%	1.95	1.6%
6/30/2016	4.97		3.20		1.98	
12/31/2016	4.96	0.2%	3.10	-1.6%	1.92	-1.5%
6/30/2017	4.81		3.01		1.88	
12/31/2017	4.69	-5.4%	2.99	-3.5%	1.90	-1.0%

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

Deductible:	Percent of Losses
Full	0.5%
\$50	0.4%
\$100	3.3%
\$200	0.4%
\$250	12.3%
\$500	43.3%
\$1,000	37.3%
\$2,000	2.0%
\$3,000	0.2%
\$5,000	0.3%

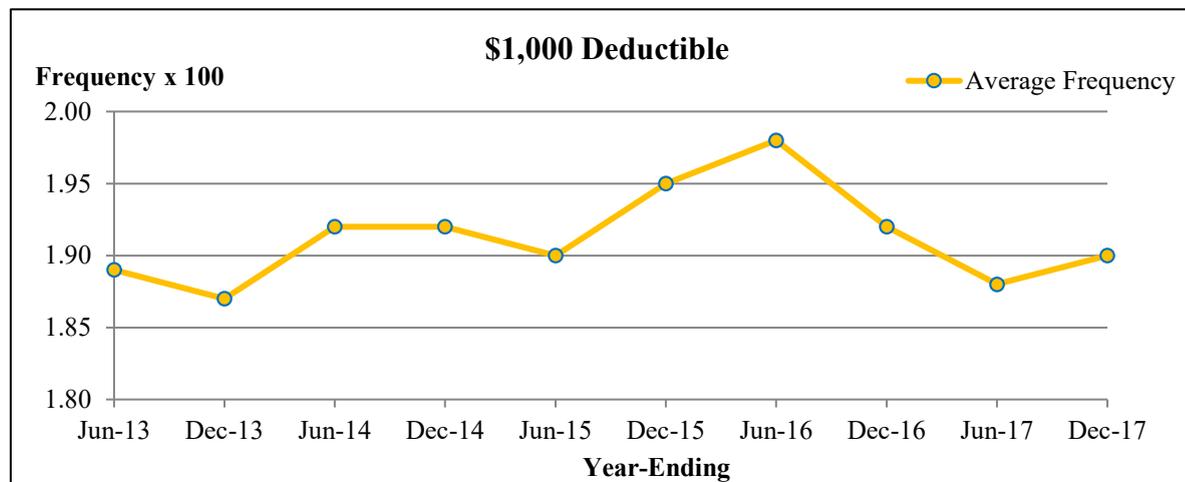
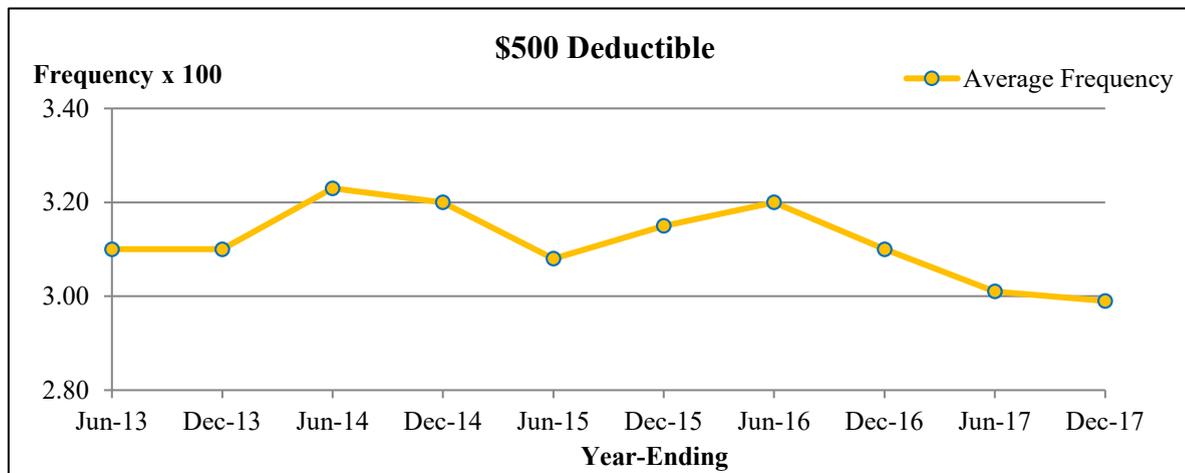
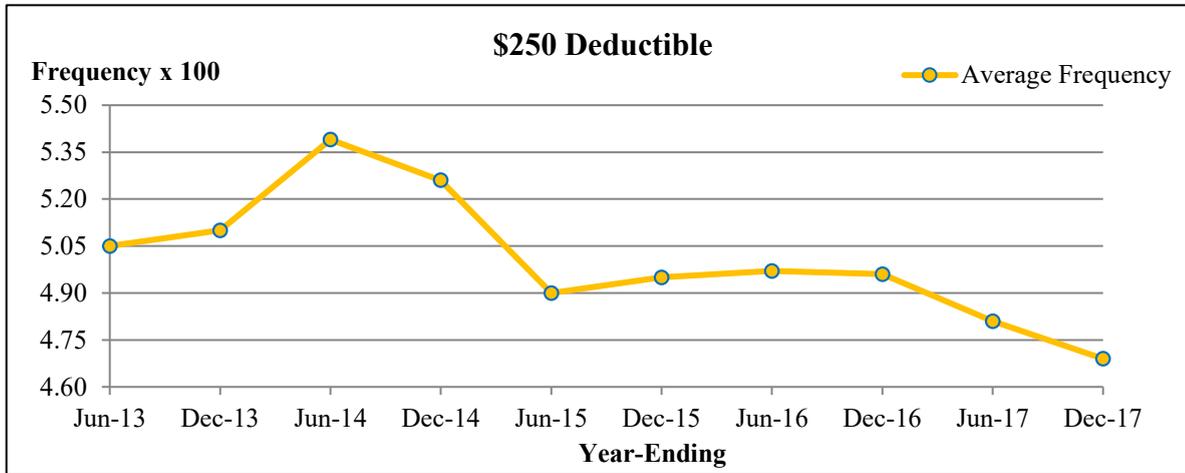
\* Multistate data excludes Massachusetts

\*\* Change based on years ending 12/31/xxxx

\*\*\* Deductibles above \$1,000, totaling 2.5% of losses, are excluded from the trend calculations.

INSURANCE SERVICES OFFICE, INC.

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



\*Excludes Massachusetts

Selected Other Than Collision Frequency Trend Factor: 0.0%

## INSURANCE SERVICES OFFICE, INC.

Multistate\*  
Private Passenger Types Physical Damage  
Other Than Collision

Severity Trend

Year Ending:	\$250 Deductible	\$500 Deductible	\$1,000 Deductible
6/30/2013	1,407.86	1,902.22	2,552.17
12/31/2013	1,390.80	1,914.04	2,592.50
6/30/2014	1,365.35	1,965.25	2,676.48
12/31/2014	1,474.68	2,056.42	2,807.17
6/30/2015	1,596.66	2,123.44	2,847.42
12/31/2015	1,694.77	2,244.03	2,934.74
6/30/2016	1,773.75	2,347.14	3,048.42
12/31/2016	1,784.50	2,354.08	3,060.45
6/30/2017	1,830.08	2,399.63	3,111.16
12/31/2017	1,936.01	2,575.17	3,401.89

Average Annual Change Using Exponential Fits:

10 point fit:	8.5%	7.1%	6.0%
8 point fit:	9.7%	7.5%	6.0%
6 point fit:	7.1%	6.9%	6.3%

Selected severity trend:	6.5%
Selected frequency trend:	0.0%
Selected pure premium trend:	6.5%

\* Multistate data excludes Massachusetts

## INSURANCE SERVICES OFFICE, INC.

Multistate\*  
Private Passenger Types Physical Damage  
Collision

Frequency (expressed as claims per 100 exposures)

Year Ending:	\$500 Deductible		\$1,000 Deductible		\$2,000 Deductible	
	Actual	Change**	Actual	Change**	Actual	Change**
6/30/2013	5.09		4.16		2.98	
12/31/2013	5.09		4.18		2.99	
6/30/2014	5.25		4.34		3.13	
12/31/2014	5.28	3.7%	4.41	5.5%	3.21	7.4%
6/30/2015	5.25		4.36		3.20	
12/31/2015	5.26	-0.4%	4.41	0.0%	3.25	1.2%
6/30/2016	5.15		4.36		3.23	
12/31/2016	5.21	-1.0%	4.42	0.2%	3.30	1.5%
6/30/2017	5.21		4.41		3.32	
12/31/2017	5.16	-1.0%	4.35	-1.6%	3.33	0.9%

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

Deductible:	Percent of Losses
\$100	0.4%
\$200	0.2%
\$250	2.4%
\$500	46.1%
\$1,000	48.7%
\$2,000	1.4%
\$3,000	0.3%
\$5,000	0.4%

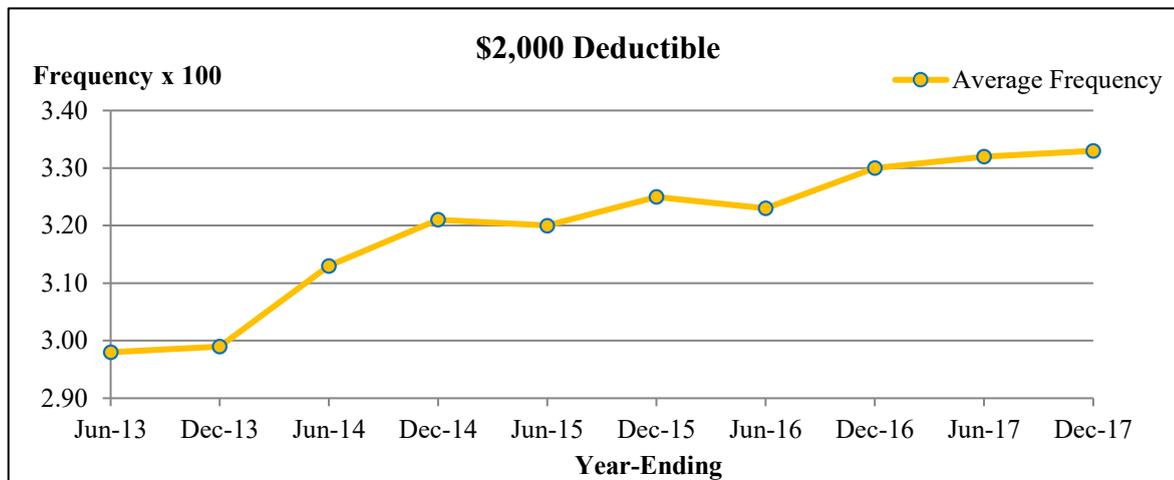
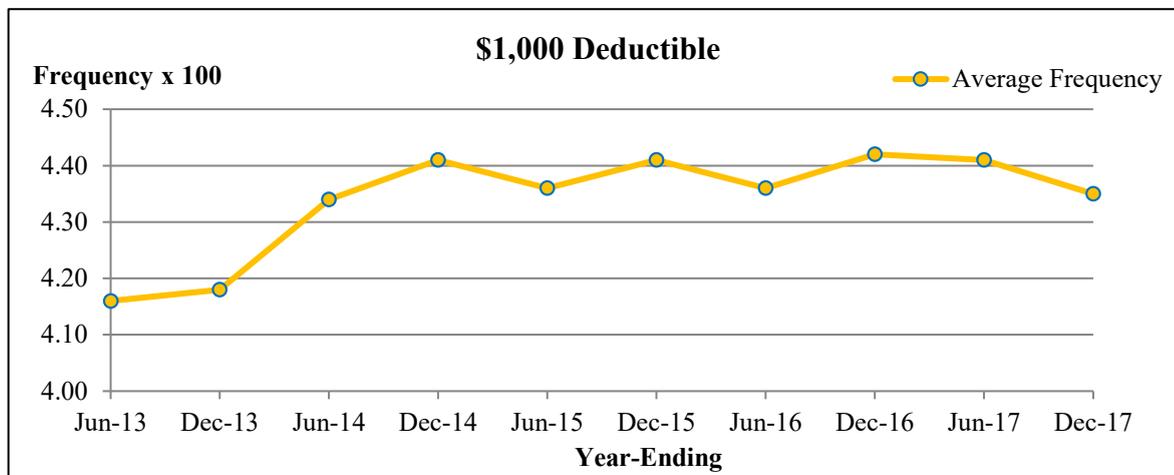
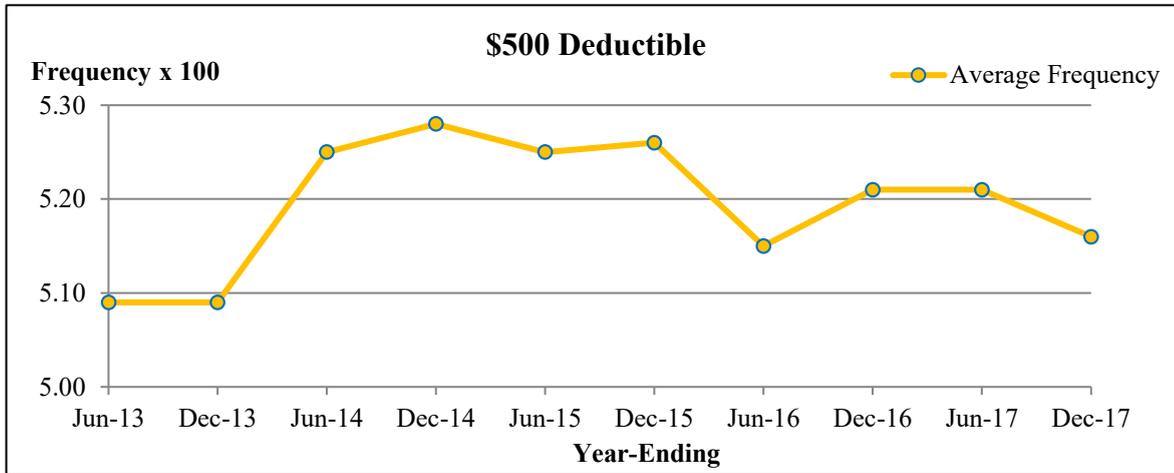
\* Multistate data excludes Massachusetts

\*\* Change based on years ending 12/31/xxxx

\*\*\* Deductibles above \$2,000, totaling 0.7% of losses, are excluded from the trend calculations.

INSURANCE SERVICES OFFICE, INC.

Commercial Automobile  
Private Passenger Types Physical Damage  
Collision Frequency Trend  
Multistate\*



\*Excludes Massachusetts

Selected Collision Frequency Trend Factor: 0.0%

## INSURANCE SERVICES OFFICE, INC.

Multistate\*  
Private Passenger Types Physical Damage  
Collision

Severity Trend

Year Ending:	\$500 Deductible	\$1,000 Deductible	\$2,000 Deductible
6/30/2013	4,986.00	5,440.45	6,008.58
12/31/2013	5,038.04	5,483.74	6,065.42
6/30/2014	5,157.20	5,584.49	6,149.04
12/31/2014	5,375.95	5,738.26	6,322.13
6/30/2015	5,510.30	5,898.47	6,467.83
12/31/2015	5,619.47	6,052.85	6,600.82
6/30/2016	5,767.11	6,169.07	6,740.12
12/31/2016	5,949.38	6,247.28	6,818.68
6/30/2017	5,978.49	6,290.73	6,810.32
12/31/2017	6,229.69	6,606.29	7,072.99

Average Annual Change Using Exponential Fits:

10 point fit:	5.2%	4.3%	3.7%
8 point fit:	5.2%	4.4%	3.7%
6 point fit:	4.9%	4.1%	3.2%
Selected severity trend:	4.5%		
Selected frequency trend:	0.0%		
Selected pure premium trend:	4.5%		

\* Multistate data excludes Massachusetts

## INSURANCE SERVICES OFFICE, INC.

MULTISTATE  
TRUCKS, TRACTORS & TRAILERS  
PHYSICAL DAMAGE  
OCN TREND CALCULATION

AVERAGE OCN RELATIVITIES

YEAR ENDING	OTHER THAN COLLISION	COLLISION
6/30/2013	1.224	1.359
12/31/2013	1.230	1.368
6/30/2014	1.237	1.377
12/31/2014	1.242	1.385
6/30/2015	1.248	1.394
12/31/2015	1.254	1.402
6/30/2016	1.260	1.413
12/31/2016	1.266	1.424
6/30/2017	1.272	1.435
12/31/2017	1.278	1.447

EXPONENTIAL TREND (AVERAGE ANNUAL CHANGE)

9 POINTS	0.9%	1.4%
7 POINTS	1.0%	1.5%
5 POINTS	1.0%	1.6%
Selected Other Than Collision Physical Damage Annual OCN Trend:		1.0%
Selected Collision Physical Damage Annual OCN Trend:		1.6%

Data excludes the following state: Massachusetts

## INSURANCE SERVICES OFFICE, INC.

MULTISTATE  
PRIVATE PASSENGER TYPES  
PHYSICAL DAMAGE  
OCN TREND CALCULATION

AVERAGE OCN RELATIVITIES

YEAR ENDING	OTHER THAN COLLISION	COLLISION
6/30/2013	1.304	1.150
12/31/2013	1.309	1.153
6/30/2014	1.314	1.155
12/31/2014	1.320	1.158
6/30/2015	1.325	1.161
12/31/2015	1.332	1.165
6/30/2016	1.340	1.170
12/31/2016	1.347	1.173
6/30/2017	1.355	1.177
12/31/2017	1.361	1.180

EXPONENTIAL TREND (AVERAGE ANNUAL CHANGE)

9 POINTS	1.0%	0.6%
7 POINTS	1.1%	0.7%
5 POINTS	1.1%	0.6%
Selected Other Than Collision Physical Damage Annual OCN Trend:		1.1%
Selected Collision Physical Damage Annual OCN Trend:		0.6%

Data excludes the following state: Massachusetts

INSURANCE SERVICES OFFICE, INC.

MINNESOTA
Automobile Liability Insurance - Trucks, Tractors and Trailers
Loss Development
Incurred Losses and Expenses
Bodily Injury

Table with columns: Accident Year Ending, \$100,000 Basic Limit (15 Months, 27 Months, 39 Months), Loss Development Factors (15 to 27 Months, 27 to 39 Months). Rows for years 2006-2017.

Summary statistics for Bodily Injury: (1) Average Factor (Best 3 of 5) for State and Multistate; (2) Credibility; (3) Credibility Weighted Factors.

Property Damage

Table with columns: Accident Year Ending, \$100,000 Basic Limit (15 Months, 27 Months, 39 Months), Loss Development Factors (15 to 27 Months, 27 to 39 Months). Rows for years 2006-2017.

Summary statistics for Property Damage: (1) Average Factor (Best 3 of 5) for State and Multistate; (2) Credibility; (3) Credibility Weighted Factors.

Summary of Factors

Summary of Factors table with columns: Factor Type (39 to Ultimate, 27 to Ultimate, 15 to Ultimate), Bodily Injury, Property Damage.

\*\* Multistate factors

## INSURANCE SERVICES OFFICE, INC.

Basic Limits Loss Development  
Trucks, Tractors and Trailers - Bodily Injury  
No Fault States  
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>
12/31/2006	113,050,490	162,978,488	188,604,932	197,913,966	201,402,887
12/31/2007	129,945,730	177,620,129	199,068,823	209,405,550	212,088,625
12/31/2008	115,641,560	157,588,423	178,823,765	188,836,311	191,599,201
12/31/2009	108,806,816	148,080,668	167,100,605	176,347,819	179,942,812
12/31/2010	118,975,448	163,598,450	186,307,834	197,584,760	200,768,338
12/31/2011	130,012,888	175,543,285	200,889,718	214,710,462	217,785,309
12/31/2012	127,375,827	178,675,463	206,851,433	217,565,568	220,545,796
12/31/2013	139,204,051	192,506,136	221,097,629	238,430,173	244,422,180
12/31/2014	147,564,647	204,560,184	240,833,362	256,273,507	
12/31/2015	156,474,157	231,362,747	267,307,073		
12/31/2016	177,069,029	249,940,599			
12/31/2017	175,479,133				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
	12/31/2006	1.442	1.157	1.049
12/31/2007	1.367	1.121	1.052	1.013
12/31/2008	1.363	1.135	1.056	1.015
12/31/2009	1.361	1.128	1.055	1.020
12/31/2010	1.375	1.139	1.061	1.016
12/31/2011	1.350	1.144	1.069	1.014
12/31/2012	1.403	1.158	1.052	1.014
12/31/2013	1.383	1.149	1.078	1.025
12/31/2014	1.386	1.177	1.064	
12/31/2015	1.479	1.155		
12/31/2016	1.412			
Average Factor: ( Best 3 of 5 )	1.400	1.154	1.065	1.017

## Summary of Factors

63 to Ult:	(75:63) (75:Ult) =	1.010
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.027
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.094
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.262
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.767

INSURANCE SERVICES OFFICE, INC.

Basic Limits Loss Development  
 Trucks, Tractors and Trailers - Bodily Injury  
 No Fault States  
 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>
12/31/2006	202,763,140	203,164,441	203,148,360	203,516,753	203,773,434
12/31/2007	213,771,268	214,540,449	214,821,861	214,864,427	214,923,812
12/31/2008	193,354,111	194,298,761	194,544,243	194,618,723	194,520,627
12/31/2009	180,922,640	180,787,385	180,917,287	180,923,711	
12/31/2010	200,820,475	201,698,434	201,992,290		
12/31/2011	219,341,508	219,636,863			
12/31/2012	222,045,119				

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>
12/31/2006	1.007	1.002	1.000	1.002	1.001
12/31/2007	1.008	1.004	1.001	1.000	1.000
12/31/2008	1.009	1.005	1.001	1.000	0.999
12/31/2009	1.005	0.999	1.001	1.000	
12/31/2010	1.000	1.004	1.001		
12/31/2011	1.007	1.001			
12/31/2012	1.007				
Average Factor: ( Best 3 of 5 )	1.006	1.003	1.001	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)	=	1.001
75 to Ult:	(87:75) (99:87) (111:99) (123:111) (123:Ult)	=	1.004

INSURANCE SERVICES OFFICE, INC.

Basic Limits Loss Development  
 Trucks, Tractors and Trailers - 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>
12/31/2006	426,685,903	442,508,886	446,352,170	446,901,301	446,946,208
12/31/2007	445,289,641	463,368,134	467,006,304	467,142,586	467,577,558
12/31/2008	408,253,583	420,588,294	423,441,605	423,974,144	424,615,591
12/31/2009	350,188,776	360,034,935	362,397,748	362,951,296	362,659,837
12/31/2010	365,494,039	378,293,032	380,657,119	381,717,371	381,696,803
12/31/2011	401,475,726	414,910,343	417,945,898	418,894,494	419,566,297
12/31/2012	398,788,654	413,387,116	416,702,156	417,648,901	418,351,369
12/31/2013	421,156,332	437,289,076	441,783,902	442,212,153	442,101,148
12/31/2014	447,664,663	467,955,962	470,969,784	472,182,557	
12/31/2015	481,815,312	504,031,511	508,743,785		
12/31/2016	508,219,343	531,003,018			
12/31/2017	516,293,566				

Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
	12/31/2006	1.037	1.009	1.001
12/31/2007	1.041	1.008	1.000	1.001
12/31/2008	1.030	1.007	1.001	1.002
12/31/2009	1.028	1.007	1.002	0.999
12/31/2010	1.035	1.006	1.003	1.000
12/31/2011	1.033	1.007	1.002	1.002
12/31/2012	1.037	1.008	1.002	1.002
12/31/2013	1.038	1.010	1.001	1.000
12/31/2014	1.045	1.006	1.003	
12/31/2015	1.046	1.009		
12/31/2016	1.045			
Average Factor: ( Best 3 of 5 )	1.043	1.008	1.002	1.001

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) =	1.003
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.011
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.055

## INSURANCE SERVICES OFFICE, INC.

Basic Limits Loss Development  
Trucks, Tractors and Trailers - Property Damage  
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>
12/31/2006	447,036,334	446,902,077	446,872,092	446,880,176
12/31/2007	468,131,651	467,920,604	467,934,653	467,945,287
12/31/2008	424,525,358	424,530,085	424,480,801	424,439,981
12/31/2009	362,717,859	362,756,062	362,876,892	362,967,835
12/31/2010	382,004,219	382,140,727	382,104,416	
12/31/2011	419,760,436	419,750,841		
12/31/2012	418,629,721			

## Ratios

Accident Year <u>Ending</u>	<u>75:63</u>	<u>87:75</u>	<u>99:87</u>	<u>111:99</u>
12/31/2006	1.000	1.000	1.000	1.000
12/31/2007	1.001	1.000	1.000	1.000
12/31/2008	1.000	1.000	1.000	1.000
12/31/2009	1.000	1.000	1.000	1.000
12/31/2010	1.001	1.000	1.000	
12/31/2011	1.000	1.000		
12/31/2012	1.001			
Average Factor: ( Best 3 of 5 )	1.000	1.000	1.000	1.000

## 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

## INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 No-Fault Insurance - Trucks, Tractors and Trailers (A)  
 Loss Development

Accident Year <u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
3/31/2009	458,185	522,853	508,908	498,113	502,967
3/31/2010	499,449	523,717	536,407	525,546	529,833
3/31/2011	706,629	684,304	693,243	696,068	707,218
3/31/2012	787,291	782,110	745,041	745,548	751,194
3/31/2013	518,786	504,847	568,249	610,057	618,765
3/31/2014	758,398	776,307	750,213	742,912	753,998
3/31/2015	442,430	489,636	515,146	527,341	
3/31/2016	832,905	907,540	890,864		
3/31/2017	580,405	683,194			
3/31/2018	465,725				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
3/31/2009	1.141	0.973	0.979	1.010
3/31/2010	1.049	1.024	0.980	1.008
3/31/2011	0.968	1.013	1.004	1.016
3/31/2012	0.993	0.953	1.001	1.008
3/31/2013	0.973	1.126	1.074	1.014
3/31/2014	1.024	0.966	0.990	1.015
3/31/2015	1.107	1.052	1.024	
3/31/2016	1.090	0.982		
3/31/2017	1.177			

## Average Factor:

(Best 3 of 5)	1.074	1.000	1.010	1.012
(Latest 3)	1.125	1.000	1.029	1.012
(Latest 5)	1.074	1.016	1.019	1.012

## Selected Factor:

1.074	1.000	1.010	1.012
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## Summary of Factors

63 to Ult:	(75:63) (75:Ult) =	1.000
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.012
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.022
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.022
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.098

(A) Includes Basic Benefits Losses.

## INSURANCE SERVICES OFFICE, INC.

MINNESOTA  
 Automobile Liability Insurance - Private Passenger Types  
 Loss Development  
 Incurred Losses and Expenses  
 Bodily Injury

Accident Year <u>Ending</u>	\$100,000 Basic Limit			Loss Development Factors	
	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>15 to 27 Months</u>	<u>27 to 39 Months</u>
12/31/2006	1,277,224	1,276,503	1,409,240	0.999	1.104
12/31/2007	1,459,158	2,012,283	1,994,753	1.379	0.991
12/31/2008	1,321,754	1,508,675	1,446,661	1.141	0.959
12/31/2009	1,706,599	1,771,398	2,006,143	1.038	1.133
12/31/2010	800,781	1,218,518	1,404,797	1.522	1.153
12/31/2011	703,040	757,510	773,437	1.077	1.021
12/31/2012	659,070	943,222	1,289,623	1.431	1.367
12/31/2013	794,963	1,131,912	1,136,813	1.424	1.004
12/31/2014	513,014	510,028	602,390	0.994	1.181
12/31/2015	963,497	853,940	995,282	0.886	1.166
12/31/2016	1,255,919	1,127,331		0.898	
12/31/2017	599,648				

(1) Average Factor (Best 3 of 5) :	(A) State	1.105	1.123
	(B) Multistate	1.397	1.158
(2) Credibility		0.800	0.590
(3) Credibility Weighted Factors		1.163	1.137

## Property Damage

Accident Year <u>Ending</u>	\$100,000 Basic Limit			Loss Development Factors	
	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>15 to 27 Months</u>	<u>27 to 39 Months</u>
12/31/2006	1,197,418	1,268,460	1,251,670	1.059	0.987
12/31/2007	1,461,431	1,384,334	1,385,764	0.947	1.001
12/31/2008	1,537,174	1,562,161	1,578,871	1.016	1.011
12/31/2009	1,199,439	1,206,234	1,208,054	1.006	1.002
12/31/2010	1,124,563	1,184,980	1,192,701	1.054	1.007
12/31/2011	1,267,486	1,280,390	1,281,161	1.010	1.001
12/31/2012	1,206,283	1,215,259	1,230,736	1.007	1.013
12/31/2013	1,262,618	1,321,143	1,321,970	1.046	1.001
12/31/2014	1,152,443	1,164,883	1,164,883	1.011	1.000
12/31/2015	1,066,825	1,190,101	1,190,838	1.116	1.001
12/31/2016	1,114,966	1,155,882		1.037	
12/31/2017	1,008,297				

(1) Average Factor (Best 3 of 5) :	(A) State	1.031	1.001
	(B) Multistate	1.047	1.008
(2) Credibility		0.850	0.000
(3) Credibility Weighted Factors		1.033	1.008

## Summary of Factors

	<u>Bodily Injury</u>	<u>Property Damage</u>
39 to Ultimate **	1.090	1.004
27 to Ultimate	1.239	1.012
15 to Ultimate	1.441	1.045

\*\* Multistate factors

## INSURANCE SERVICES OFFICE, INC.

Basic Limits Loss Development  
Private Passenger Types - Bodily Injury  
No Fault States  
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>
12/31/2006	31,954,189	43,579,185	50,036,652	52,579,754	53,361,761
12/31/2007	30,913,696	42,916,389	49,669,335	52,129,384	52,920,005
12/31/2008	29,649,516	40,032,265	46,076,230	48,259,651	49,552,517
12/31/2009	29,392,992	41,765,669	47,993,429	50,430,208	50,298,605
12/31/2010	33,153,741	46,119,401	51,718,085	56,161,152	57,451,045
12/31/2011	33,408,657	47,969,505	54,172,149	56,794,563	57,787,888
12/31/2012	35,370,867	46,804,037	54,983,368	58,033,030	59,547,301
12/31/2013	35,367,020	49,031,415	55,844,490	61,069,381	62,022,469
12/31/2014	33,941,429	48,451,630	57,215,271	60,130,274	
12/31/2015	31,986,551	47,691,838	55,306,335		
12/31/2016	38,443,855	52,940,685			
12/31/2017	33,711,764				

## Ratios

Accident Year <u>Ending</u>				
	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
12/31/2006	1.364	1.148	1.051	1.015
12/31/2007	1.388	1.157	1.050	1.015
12/31/2008	1.350	1.151	1.047	1.027
12/31/2009	1.421	1.149	1.051	0.997
12/31/2010	1.391	1.121	1.086	1.023
12/31/2011	1.436	1.129	1.048	1.017
12/31/2012	1.323	1.175	1.055	1.026
12/31/2013	1.386	1.139	1.094	1.016
12/31/2014	1.428	1.181	1.051	
12/31/2015	1.491	1.160		
12/31/2016	1.377			
Average Factor: ( Best 3 of 5 )	1.397	1.158	1.064	1.019

## Summary of Factors

63 to Ult:	(75:63) (75:Ult) =	1.005
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.024
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.090
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.262
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.763

INSURANCE SERVICES OFFICE, INC.

Basic Limits Loss Development  
 Private Passenger Types - Bodily Injury  
 No Fault States  
 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>
12/31/2006	53,684,987	53,575,402	53,560,862	53,566,938	53,561,271
12/31/2007	53,508,112	53,618,107	53,393,020	53,403,266	53,405,233
12/31/2008	49,689,883	50,115,772	50,066,468	50,029,733	50,035,002
12/31/2009	50,424,138	50,206,906	50,263,686	50,342,361	
12/31/2010	57,984,032	57,954,186	57,858,643		
12/31/2011	57,677,805	57,784,827			
12/31/2012	60,223,058				

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>
12/31/2006	1.006	0.998	1.000	1.000	1.000
12/31/2007	1.011	1.002	0.996	1.000	1.000
12/31/2008	1.003	1.009	0.999	0.999	1.000
12/31/2009	1.002	0.996	1.001	1.002	
12/31/2010	1.009	0.999	0.998		
12/31/2011	0.998	1.002			
12/31/2012	1.011				
Average Factor: ( Best 3 of 5 )	1.005	1.001	0.999	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)	=	0.999
75 to Ult:	(87:75) (99:87) (111:99) (123:111) (123:Ult)	=	1.000

INSURANCE SERVICES OFFICE, INC.

Basic Limits Loss Development  
 Private Passenger Types - 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>
12/31/2006	83,098,790	85,907,146	86,598,960	86,547,522	86,576,693
12/31/2007	89,099,727	91,221,074	91,698,455	92,014,965	92,058,892
12/31/2008	84,278,908	87,080,906	87,473,802	87,660,113	87,752,268
12/31/2009	79,051,900	81,631,511	82,050,225	82,310,601	82,362,550
12/31/2010	80,406,512	83,289,682	83,783,075	83,992,012	84,033,169
12/31/2011	85,300,807	87,910,015	88,722,316	89,128,522	89,633,747
12/31/2012	87,837,873	91,484,939	92,117,338	92,413,659	92,377,080
12/31/2013	88,910,315	92,951,898	93,707,131	93,998,146	94,030,889
12/31/2014	88,647,590	93,300,822	94,021,732	94,246,537	
12/31/2015	92,584,198	97,159,581	98,129,539		
12/31/2016	96,111,659	100,515,211			
12/31/2017	90,654,520				

Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
	12/31/2006	1.034	1.008	0.999
12/31/2007	1.024	1.005	1.003	1.000
12/31/2008	1.033	1.005	1.002	1.001
12/31/2009	1.033	1.005	1.003	1.001
12/31/2010	1.036	1.006	1.002	1.000
12/31/2011	1.031	1.009	1.005	1.006
12/31/2012	1.042	1.007	1.003	1.000
12/31/2013	1.045	1.008	1.003	1.000
12/31/2014	1.052	1.008	1.002	
12/31/2015	1.049	1.010		
12/31/2016	1.046			
Average Factor: ( Best 3 of 5 )	1.047	1.008	1.003	1.000

Summary of Factors

63 to Ult:	(75:63) (75:Ult) =	1.001
51 to Ult:	(63:51) (75:63) (75:Ult) =	1.001
39 to Ult:	(51:39) (63:51) (75:63) (75:Ult) =	1.004
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.012
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.060

INSURANCE SERVICES OFFICE, INC.

Basic Limits Loss Development  
Private Passenger Types - Property Damage  
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>
12/31/2006	86,516,087	86,628,897	86,642,601	86,645,287
12/31/2007	92,150,595	92,043,515	92,044,457	92,045,346
12/31/2008	87,716,947	87,688,303	87,691,521	87,704,468
12/31/2009	82,400,605	82,442,958	82,435,669	82,426,862
12/31/2010	84,404,563	84,315,784	84,446,019	
12/31/2011	89,772,919	89,895,004		
12/31/2012	92,497,494			

Ratios

Accident Year <u>Ending</u>	<u>75:63</u>	<u>87:75</u>	<u>99:87</u>	<u>111:99</u>
	12/31/2006	0.999	1.001	1.000
12/31/2007	1.001	0.999	1.000	1.000
12/31/2008	1.000	1.000	1.000	1.000
12/31/2009	1.000	1.001	1.000	1.000
12/31/2010	1.004	0.999	1.002	
12/31/2011	1.002	1.001		
12/31/2012	1.001			
Average Factor: ( Best 3 of 5 )	1.001	1.000	1.000	1.000

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

## INSURANCE SERVICES OFFICE, INC.

## MINNESOTA

No-Fault Insurance - Private Passenger Types (A)  
Loss Development

Accident Year <u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
3/31/2009	475,972	459,237	464,710	460,807	460,971
3/31/2010	381,846	385,970	379,234	358,458	358,802
3/31/2011	708,600	776,415	742,992	746,924	737,481
3/31/2012	502,846	497,412	493,472	499,946	506,074
3/31/2013	633,816	668,488	624,926	642,553	642,553
3/31/2014	397,419	409,354	392,564	388,213	388,213
3/31/2015	328,280	357,449	374,333	378,933	
3/31/2016	628,372	641,662	635,856		
3/31/2017	440,165	437,305			
3/31/2018	537,187				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
3/31/2009	0.965	1.012	0.992	1.000
3/31/2010	1.011	0.983	0.945	1.001
3/31/2011	1.096	0.957	1.005	0.987
3/31/2012	0.989	0.992	1.013	1.012
3/31/2013	1.055	0.935	1.028	1.000
3/31/2014	1.030	0.959	0.989	1.000
3/31/2015	1.089	1.047	1.012	
3/31/2016	1.021	0.991		
3/31/2017	0.994			

## Average Factor:

(Best 3 of 5)	1.035	0.981	1.010	1.000
(Latest 3)	1.035	0.999	1.010	1.004
(Latest 5)	1.038	0.985	1.009	1.000

## Selected Factor:

1.035	0.981	1.010	1.000
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## 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) =	1.010
27 to Ult:	(39:27) (51:39) (63:51) (75:63) (75:Ult) =	0.991
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.025

(A) Includes Basic Benefits Losses.

## INSURANCE SERVICES OFFICE, INC.

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

Accident Year <u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
12/31/2006	98,082,141	99,570,826	99,675,876	99,664,223	99,583,503
12/31/2007	107,638,162	110,454,261	110,361,829	110,260,923	110,208,181
12/31/2008	137,122,373	139,908,087	139,866,459	139,813,877	139,779,849
12/31/2009	114,660,398	116,504,959	116,757,149	116,756,042	116,776,150
12/31/2010	135,128,533	137,634,833	137,794,964	137,585,300	137,721,236
12/31/2011	155,314,049	157,824,117	157,904,335	158,001,294	157,953,547
12/31/2012	180,363,644	184,498,422	184,490,013	184,589,660	184,837,405
12/31/2013	143,423,767	146,941,713	147,170,848	147,524,413	147,490,867
12/31/2014	152,832,576	156,631,466	156,718,406	156,584,392	
12/31/2015	151,825,756	155,301,171	155,401,626		
12/31/2016	197,225,418	201,436,790			
12/31/2017	210,656,303				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
12/31/2006	1.015	1.001	1.000	0.999
12/31/2007	1.026	0.999	0.999	1.000
12/31/2008	1.020	1.000	1.000	1.000
12/31/2009	1.016	1.002	1.000	1.000
12/31/2010	1.019	1.001	0.998	1.001
12/31/2011	1.016	1.001	1.001	1.000
12/31/2012	1.023	1.000	1.001	1.001
12/31/2013	1.025	1.002	1.002	1.000
12/31/2014	1.025	1.001	0.999	
12/31/2015	1.023	1.001		
12/31/2016	1.021			
Average Factor: ( Best 3 of 5 )	1.024	1.001	1.000	1.000

## 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) =	1.025

## INSURANCE SERVICES OFFICE, INC.

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

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>
12/31/2006	99,531,436	99,491,076	99,645,606	99,637,532	99,634,047
12/31/2007	110,295,675	110,239,335	110,231,195	110,143,735	110,146,525
12/31/2008	139,750,075	139,719,763	139,726,923	139,782,088	139,783,800
12/31/2009	116,622,376	116,624,245	116,628,016	116,705,263	
12/31/2010	137,813,090	137,861,438	137,853,760		
12/31/2011	157,928,691	157,925,614			
12/31/2012	184,812,760				

## 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>
12/31/2006	0.999	1.000	1.002	1.000	1.000
12/31/2007	1.001	0.999	1.000	0.999	1.000
12/31/2008	1.000	1.000	1.000	1.000	1.000
12/31/2009	0.999	1.000	1.000	1.001	
12/31/2010	1.001	1.000	1.000		
12/31/2011	1.000	1.000			
12/31/2012	1.000				
Average Factor: ( Best 3 of 5 )	1.000	1.000	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)	=	1.000

## INSURANCE SERVICES OFFICE, INC.

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

Accident Year <u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
12/31/2006	302,645,818	296,798,485	295,222,795	294,284,201	294,561,691
12/31/2007	340,453,072	333,909,574	332,185,435	331,893,438	331,664,028
12/31/2008	347,435,033	342,000,636	341,250,356	340,642,037	339,756,369
12/31/2009	294,402,025	289,371,339	288,570,906	288,200,387	288,337,661
12/31/2010	319,957,837	313,620,107	312,517,083	312,435,470	312,441,599
12/31/2011	347,553,934	340,912,188	339,125,243	338,785,261	338,872,521
12/31/2012	347,097,111	341,903,217	339,841,871	339,248,848	339,276,761
12/31/2013	367,238,812	360,936,623	359,658,365	360,407,015	359,176,393
12/31/2014	406,032,389	398,705,367	396,317,742	395,942,108	
12/31/2015	439,518,764	426,758,300	424,285,439		
12/31/2016	473,249,101	460,379,561			
12/31/2017	504,898,279				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
12/31/2006	0.981	0.995	0.997	1.001
12/31/2007	0.981	0.995	0.999	0.999
12/31/2008	0.984	0.998	0.998	0.997
12/31/2009	0.983	0.997	0.999	1.000
12/31/2010	0.980	0.996	1.000	1.000
12/31/2011	0.981	0.995	0.999	1.000
12/31/2012	0.985	0.994	0.998	1.000
12/31/2013	0.983	0.996	1.002	0.997
12/31/2014	0.982	0.994	0.999	
12/31/2015	0.971	0.994		
12/31/2016	0.973			
Average Factor: ( Best 3 of 5 )	0.979	0.994	0.999	1.000

## 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) =	0.993
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	0.972

INSURANCE SERVICES OFFICE, INC.

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

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>
12/31/2006	294,561,462	294,537,764	294,504,170	294,498,489	294,480,227
12/31/2007	331,596,380	331,555,640	331,509,158	331,504,619	331,484,786
12/31/2008	339,801,367	339,689,840	339,665,150	339,637,143	339,620,971
12/31/2009	288,167,973	288,094,406	288,058,541	288,077,603	
12/31/2010	312,344,533	312,243,031	312,203,804		
12/31/2011	338,814,535	338,808,804			
12/31/2012	339,198,595				

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>
12/31/2006	1.000	1.000	1.000	1.000	1.000
12/31/2007	1.000	1.000	1.000	1.000	1.000
12/31/2008	1.000	1.000	1.000	1.000	1.000
12/31/2009	0.999	1.000	1.000	1.000	
12/31/2010	1.000	1.000	1.000		
12/31/2011	1.000	1.000			
12/31/2012	1.000				
Average Factor: ( Best 3 of 5 )	1.000	1.000	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)	=	1.000

## INSURANCE SERVICES OFFICE, INC.

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

Accident Year <u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
12/31/2006	45,114,278	45,385,500	45,319,535	45,227,602	45,212,891
12/31/2007	42,128,856	42,864,766	42,700,321	42,732,392	42,854,370
12/31/2008	49,404,261	49,930,543	49,773,473	49,756,906	49,747,595
12/31/2009	45,494,807	45,557,731	45,554,037	45,481,046	45,471,729
12/31/2010	49,970,542	50,065,679	50,048,669	50,044,521	50,042,803
12/31/2011	65,579,947	65,685,728	65,561,570	65,609,177	65,605,889
12/31/2012	76,646,808	75,604,294	75,655,840	75,689,175	75,699,041
12/31/2013	52,392,978	52,776,253	52,990,791	52,995,210	52,987,388
12/31/2014	55,417,509	56,112,419	56,190,048	56,141,485	
12/31/2015	48,449,166	48,998,670	48,885,069		
12/31/2016	60,490,144	61,135,257			
12/31/2017	69,620,635				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
12/31/2006	1.006	0.999	0.998	1.000
12/31/2007	1.017	0.996	1.001	1.003
12/31/2008	1.011	0.997	1.000	1.000
12/31/2009	1.001	1.000	0.998	1.000
12/31/2010	1.002	1.000	1.000	1.000
12/31/2011	1.002	0.998	1.001	1.000
12/31/2012	0.986	1.001	1.000	1.000
12/31/2013	1.007	1.004	1.000	1.000
12/31/2014	1.013	1.001	0.999	
12/31/2015	1.011	0.998		
12/31/2016	1.011			
Average Factor: ( Best 3 of 5 )	1.010	1.000	1.000	1.000

## 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) =	1.000
15 to Ult:	(27:15) (39:27) (51:39) (63:51) (75:63) (75:Ult) =	1.010

## INSURANCE SERVICES OFFICE, INC.

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

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>
12/31/2006	45,258,837	45,257,926	45,251,978	45,251,164	45,250,006
12/31/2007	42,786,448	42,784,413	42,783,337	42,781,970	42,789,006
12/31/2008	49,744,909	49,746,319	49,744,650	49,743,452	49,752,496
12/31/2009	45,472,774	45,472,791	45,474,947	45,480,910	
12/31/2010	50,022,081	50,021,144	50,049,267		
12/31/2011	65,614,001	65,620,616			
12/31/2012	75,705,383				

## 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>
12/31/2006	1.001	1.000	1.000	1.000	1.000
12/31/2007	0.998	1.000	1.000	1.000	1.000
12/31/2008	1.000	1.000	1.000	1.000	1.000
12/31/2009	1.000	1.000	1.000	1.000	
12/31/2010	1.000	1.000	1.001		
12/31/2011	1.000	1.000			
12/31/2012	1.000				
Average Factor: ( Best 3 of 5 )	1.000	1.000	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)	=	1.000

## INSURANCE SERVICES OFFICE, INC.

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

Accident Year <u>Ending</u>	<u>15 Months</u>	<u>27 Months</u>	<u>39 Months</u>	<u>51 Months</u>	<u>63 Months</u>
12/31/2006	133,446,222	128,067,207	127,361,727	127,104,840	127,095,289
12/31/2007	140,082,730	135,466,447	134,924,052	134,629,930	134,625,922
12/31/2008	142,390,051	137,275,953	136,576,145	136,443,074	136,401,498
12/31/2009	134,239,533	129,513,409	128,927,299	128,851,382	128,796,720
12/31/2010	137,897,068	131,091,100	130,458,613	130,280,329	130,263,603
12/31/2011	147,518,654	141,059,573	140,588,934	140,371,170	140,330,647
12/31/2012	147,900,685	142,042,690	141,481,656	141,339,034	141,326,463
12/31/2013	149,039,642	142,479,239	141,538,708	141,540,704	141,483,316
12/31/2014	157,105,568	150,508,434	150,322,658	150,123,029	
12/31/2015	167,933,099	159,428,483	158,168,605		
12/31/2016	167,271,024	159,580,288			
12/31/2017	163,651,912				

## Ratios

Accident Year <u>Ending</u>	<u>27:15</u>	<u>39:27</u>	<u>51:39</u>	<u>63:51</u>
12/31/2006	0.960	0.994	0.998	1.000
12/31/2007	0.967	0.996	0.998	1.000
12/31/2008	0.964	0.995	0.999	1.000
12/31/2009	0.965	0.995	0.999	1.000
12/31/2010	0.951	0.995	0.999	1.000
12/31/2011	0.956	0.997	0.998	1.000
12/31/2012	0.960	0.996	0.999	1.000
12/31/2013	0.956	0.993	1.000	1.000
12/31/2014	0.958	0.999	0.999	
12/31/2015	0.949	0.992		
12/31/2016	0.954			
Average Factor: ( Best 3 of 5 )	0.956	0.995	0.999	1.000

## 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

INSURANCE SERVICES OFFICE, INC.

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

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>
12/31/2006	127,163,010	127,128,284	127,110,487	127,094,829	127,071,833
12/31/2007	134,578,142	134,562,396	134,550,501	134,546,377	134,543,564
12/31/2008	136,368,351	136,328,521	136,319,717	136,314,095	136,306,539
12/31/2009	128,735,197	128,710,652	128,693,873	128,684,410	
12/31/2010	130,211,565	130,179,285	130,179,687		
12/31/2011	140,249,870	140,244,299			
12/31/2012	141,279,608				

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>
12/31/2006	1.001	1.000	1.000	1.000	1.000
12/31/2007	1.000	1.000	1.000	1.000	1.000
12/31/2008	1.000	1.000	1.000	1.000	1.000
12/31/2009	1.000	1.000	1.000	1.000	
12/31/2010	1.000	1.000	1.000		
12/31/2011	0.999	1.000			
12/31/2012	1.000				
Average Factor: ( Best 3 of 5 )	1.000	1.000	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)	=	1.000

## INSURANCE SERVICES OFFICE, INC.

<b>(1)</b>	<b>Public Automobiles Liability</b>	Differentials to Base Loss Cost CSL Liab	PIP
	Taxis & Limos	6.20	4.69
	School and Church Buses	0.55	0.57
	Other Buses	3.80	5.46
	Van Pools	1.50	0.62
<b>(2)</b>	<b>Public Automobiles Physical Damage</b>		
	Taxis, Limos and Van Pools		
	Other Than Collision:	1.02	
	Collision	1.27	
	School, Church, and Other Buses		
	Other Than Collision:	0.70	
	Collision	0.65	
<b>(3)</b>	<b>PIP Relativities</b>		
	Class of Business		
	TTT Covered by Workers' Compensation	0.500	
	PPT principally operated by employees	0.555	
	T&L Other Than Owner Operated	0.712	
	Van Pool Furnished by Employer	0.555	
<b>(4)</b>	<b>Specified Cause of Loss Relativity</b>	0.576	

**COMMERCIAL LINES MANUAL  
DIVISION ONE  
AUTOMOBILE  
LOSS COST PAGES**

**MINNESOTA (22)  
TERRITORY 101**

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>						
\$ 297	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 38	<b>Covered By Workers' Compensation</b> \$ 19
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 250	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 89	<b>Principally Operated By Employees</b> \$ 49
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1841	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 178	<b>Other Than Owner Operated</b> \$ 127
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 163	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 22	
<b>– OTHER BUSES</b>						
\$ 1129	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 207	
<b>– VAN POOLS</b>						
\$ 446	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 13	<b>All Other</b> \$ 24
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 431	Refer to Rule 49.				<b>All Autos</b> \$ 43	
<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 Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 176	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 29	Covered By Workers' Compensation \$ 15
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 211	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 54	Principally Operated By Employees \$ 30
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1091	N/A	N/A	N/A	N/A	Owner Operated \$ 136	Other Than Owner Operated \$ 97
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 97	N/A	N/A	N/A	N/A	All Autos \$ 17	
<b>– OTHER BUSES</b>						
\$ 669	N/A	N/A	N/A	N/A	All Autos \$ 158	
<b>– VAN POOLS</b>						
\$ 264	N/A	N/A	N/A	N/A	Employer Furnished \$ 10	All Other \$ 18
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 261	Refer to Rule 49.				All Autos \$ 31	
<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**

**MINNESOTA (22)  
TERRITORY 104**

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>						
\$ 135	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 32	<b>Covered By Workers' Compensation</b> \$ 16
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 161	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 76	<b>Principally Operated By Employees</b> \$ 42
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 837	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 150	<b>Other Than Owner Operated</b> \$ 107
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 74	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 18	
<b>– OTHER BUSES</b>						
\$ 513	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 175	
<b>– VAN POOLS</b>						
\$ 203	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 11	<b>All Other</b> \$ 20
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 197	Refer to Rule 49.				<b>All Autos</b> \$ 35	
<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 Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 319	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 31	Covered By Workers' Compensation \$ 16
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 224	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 57	Principally Operated By Employees \$ 32
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1978	N/A	N/A	N/A	N/A	Owner Operated \$ 145	Other Than Owner Operated \$ 103
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 175	N/A	N/A	N/A	N/A	All Autos \$ 18	
<b>– OTHER BUSES</b>						
\$ 1212	N/A	N/A	N/A	N/A	All Autos \$ 169	
<b>– VAN POOLS</b>						
\$ 479	N/A	N/A	N/A	N/A	Employer Furnished \$ 11	All Other \$ 19
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 402	Refer to Rule 49.				All Autos \$ 34	
<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**

**MINNESOTA (22)  
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>						
\$ 270	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 36	<b>Covered By Workers' Compensation</b> \$ 18
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 270	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 92	<b>Principally Operated By Employees</b> \$ 51
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1674	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 169	<b>Other Than Owner Operated</b> \$ 120
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 149	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 21	
<b>– OTHER BUSES</b>						
\$ 1026	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 197	
<b>– VAN POOLS</b>						
\$ 405	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 12	<b>All Other</b> \$ 22
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 444	Refer to Rule 49.				<b>All Autos</b> \$ 41	
<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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LIABILITY Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 283	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 39	Covered By Workers' Compensation \$ 20
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 226	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 69	Principally Operated By Employees \$ 38
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1755	N/A	N/A	N/A	N/A	Owner Operated \$ 183	Other Than Owner Operated \$ 130
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 156	N/A	N/A	N/A	N/A	All Autos \$ 22	
<b>– OTHER BUSES</b>						
\$ 1075	N/A	N/A	N/A	N/A	All Autos \$ 213	
<b>– VAN POOLS</b>						
\$ 425	N/A	N/A	N/A	N/A	Employer Furnished \$ 13	All Other \$ 24
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 395	Refer to Rule 49.				All Autos \$ 44	
<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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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>						
\$ 110	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 17	<b>Covered By Workers' Compensation</b> \$ 9
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 160	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 48	<b>Principally Operated By Employees</b> \$ 27
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 682	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 80	<b>Other Than Owner Operated</b> \$ 57
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 61	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 10	
<b>– OTHER BUSES</b>						
\$ 418	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 93	
<b>– VAN POOLS</b>						
\$ 165	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 6	<b>All Other</b> \$ 11
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 171	Refer to Rule 49.				<b>All Autos</b> \$ 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>						

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LIABILITY Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 180	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 29	Covered By Workers' Compensation \$ 15
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 175	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 59	Principally Operated By Employees \$ 33
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1116	N/A	N/A	N/A	N/A	Owner Operated \$ 136	Other Than Owner Operated \$ 97
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 99	N/A	N/A	N/A	N/A	All Autos \$ 17	
<b>– OTHER BUSES</b>						
\$ 684	N/A	N/A	N/A	N/A	All Autos \$ 158	
<b>– VAN POOLS</b>						
\$ 270	N/A	N/A	N/A	N/A	Employer Furnished \$ 10	All Other \$ 18
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 256	Refer to Rule 49.				All Autos \$ 33	
<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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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>						
\$ 137	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 19	<b>Covered By Workers' Compensation</b> \$ 10
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 155	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 60	<b>Principally Operated By Employees</b> \$ 33
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 849	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 89	<b>Other Than Owner Operated</b> \$ 63
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 75	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 11	
<b>– OTHER BUSES</b>						
\$ 521	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 104	
<b>– VAN POOLS</b>						
\$ 206	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 7	<b>All Other</b> \$ 12
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 193	Refer to Rule 49.				<b>All Autos</b> \$ 22	
<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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LIABILITY Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 101	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 15	Covered By Workers' Compensation \$ 8
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 171	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 62	Principally Operated By Employees \$ 34
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 626	N/A	N/A	N/A	N/A	Owner Operated \$ 70	Other Than Owner Operated \$ 50
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 56	N/A	N/A	N/A	N/A	All Autos \$ 9	
<b>– OTHER BUSES</b>						
\$ 384	N/A	N/A	N/A	N/A	All Autos \$ 82	
<b>– VAN POOLS</b>						
\$ 152	N/A	N/A	N/A	N/A	Employer Furnished \$ 5	All Other \$ 9
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 159	Refer to Rule 49.				All Autos \$ 17	
<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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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>						
\$ 142	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 18	<b>Covered By Workers' Compensation</b> \$ 9
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 161	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 57	<b>Principally Operated By Employees</b> \$ 32
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 880	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 84	<b>Other Than Owner Operated</b> \$ 60
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 78	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 10	
<b>– OTHER BUSES</b>						
\$ 540	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 98	
<b>– VAN POOLS</b>						
\$ 213	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 6	<b>All Other</b> \$ 11
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 186	Refer to Rule 49.				<b>All Autos</b> \$ 21	
<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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LIABILITY Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 267	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 31	Covered By Workers' Compensation \$ 16
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 203	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 92	Principally Operated By Employees \$ 51
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1655	N/A	N/A	N/A	N/A	Owner Operated \$ 145	Other Than Owner Operated \$ 103
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 147	N/A	N/A	N/A	N/A	All Autos \$ 18	
<b>– OTHER BUSES</b>						
\$ 1015	N/A	N/A	N/A	N/A	All Autos \$ 169	
<b>– VAN POOLS</b>						
\$ 401	N/A	N/A	N/A	N/A	Employer Furnished \$ 11	All Other \$ 19
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 364	Refer to Rule 49.				All Autos \$ 35	
<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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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>						
\$ 157	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 19	<b>Covered By Workers' Compensation</b> \$ 10
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 209	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 49	<b>Principally Operated By Employees</b> \$ 27
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 973	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 89	<b>Other Than Owner Operated</b> \$ 63
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 86	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 11	
<b>– OTHER BUSES</b>						
\$ 597	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 104	
<b>– VAN POOLS</b>						
\$ 236	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 7	<b>All Other</b> \$ 12
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 232	Refer to Rule 49.				<b>All Autos</b> \$ 21	
<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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LIABILITY Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 182	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 19	Covered By Workers' Compensation \$ 10
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 209	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 49	Principally Operated By Employees \$ 27
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1128	N/A	N/A	N/A	N/A	Owner Operated \$ 89	Other Than Owner Operated \$ 63
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 100	N/A	N/A	N/A	N/A	All Autos \$ 11	
<b>– OTHER BUSES</b>						
\$ 692	N/A	N/A	N/A	N/A	All Autos \$ 104	
<b>– VAN POOLS</b>						
\$ 273	N/A	N/A	N/A	N/A	Employer Furnished \$ 7	All Other \$ 12
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 272	Refer to Rule 49.				All Autos \$ 21	
<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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**MINNESOTA (22)  
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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>						
\$ 140	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 19	<b>Covered By Workers' Compensation</b> \$ 10
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 181	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 49	<b>Principally Operated By Employees</b> \$ 27
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 868	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 89	<b>Other Than Owner Operated</b> \$ 63
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 77	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 11	
<b>– OTHER BUSES</b>						
\$ 532	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 104	
<b>– VAN POOLS</b>						
\$ 210	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 7	<b>All Other</b> \$ 12
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 191	Refer to Rule 49.				<b>All Autos</b> \$ 21	
<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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LIABILITY Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 141	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 19	Covered By Workers' Compensation \$ 10
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 201	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 49	Principally Operated By Employees \$ 27
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 874	N/A	N/A	N/A	N/A	Owner Operated \$ 89	Other Than Owner Operated \$ 63
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 78	N/A	N/A	N/A	N/A	All Autos \$ 11	
<b>– OTHER BUSES</b>						
\$ 536	N/A	N/A	N/A	N/A	All Autos \$ 104	
<b>– VAN POOLS</b>						
\$ 212	N/A	N/A	N/A	N/A	Employer Furnished \$ 7	All Other \$ 12
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 222	Refer to Rule 49.				All Autos \$ 21	
<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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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>						
\$ 133	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 20	<b>Covered By Workers' Compensation</b> \$ 10
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 214	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 51	<b>Principally Operated By Employees</b> \$ 28
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 825	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 94	<b>Other Than Owner Operated</b> \$ 67
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 73	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 11	
<b>– OTHER BUSES</b>						
\$ 505	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 109	
<b>– VAN POOLS</b>						
\$ 200	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 7	<b>All Other</b> \$ 12
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 214	Refer to Rule 49.				<b>All Autos</b> \$ 22	
<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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LIABILITY Limit Of Liab. \$100,000	MEDICAL PAYMENTS Limit Per Person				PERSONAL INJURY PROTECTION Basic Limits	
	500	1000	2000	5000		
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>						
\$ 191	N/A	N/A	N/A	N/A	Not Covered By Workers' Compensation \$ 23	Covered By Workers' Compensation \$ 12
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 208	N/A	N/A	N/A	N/A	Not Principally Operated By Employees \$ 64	Principally Operated By Employees \$ 36
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 1184	N/A	N/A	N/A	N/A	Owner Operated \$ 108	Other Than Owner Operated \$ 77
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 105	N/A	N/A	N/A	N/A	All Autos \$ 13	
<b>– OTHER BUSES</b>						
\$ 726	N/A	N/A	N/A	N/A	All Autos \$ 126	
<b>– VAN POOLS</b>						
\$ 287	N/A	N/A	N/A	N/A	Employer Furnished \$ 8	All Other \$ 14
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 272	Refer to Rule 49.				All Autos \$ 26	
<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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**MINNESOTA (22)  
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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>						
\$ 154	N/A	N/A	N/A	N/A	<b>Not Covered By Workers' Compensation</b> \$ 19	<b>Covered By Workers' Compensation</b> \$ 10
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>						
\$ 213	N/A	N/A	N/A	N/A	<b>Not Principally Operated By Employees</b> \$ 62	<b>Principally Operated By Employees</b> \$ 34
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS –</b>						
<b>– TAXICABS AND LIMOUSINES</b>						
\$ 955	N/A	N/A	N/A	N/A	<b>Owner Operated</b> \$ 89	<b>Other Than Owner Operated</b> \$ 63
<b>– SCHOOL AND CHURCH BUSES</b>						
\$ 85	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 11	
<b>– OTHER BUSES</b>						
\$ 585	N/A	N/A	N/A	N/A	<b>All Autos</b> \$ 104	
<b>– VAN POOLS</b>						
\$ 231	N/A	N/A	N/A	N/A	<b>Employer Furnished</b> \$ 7	<b>All Other</b> \$ 12
<b>RULE 49. AUTO DEALERS – PREMIUM DEVELOPMENT</b>						
\$ 234	Refer to Rule 49.				<b>All Autos</b> \$ 21	
<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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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 70	\$ 122	\$ 172
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 109	\$ 339
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 71	\$ 124	\$ 218
– SCHOOL AND CHURCH BUSES			
	\$ 49	\$ 85	\$ 112
– OTHER BUSES			
	\$ 49	\$ 85	\$ 112
– VAN POOLS			
	\$ 71	\$ 124	\$ 218
<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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**MINNESOTA (22)  
TERRITORY 103**

<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			
	\$ 93	\$ 161	\$ 197
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 162	\$ 348
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 95	\$ 164	\$ 250
– SCHOOL AND CHURCH BUSES			
	\$ 65	\$ 113	\$ 128
– OTHER BUSES			
	\$ 65	\$ 113	\$ 128
– VAN POOLS			
	\$ 95	\$ 164	\$ 250
<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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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 101	\$ 176	\$ 186
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 178	\$ 303
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 103	\$ 180	\$ 236
– SCHOOL AND CHURCH BUSES			
	\$ 71	\$ 123	\$ 121
– OTHER BUSES			
	\$ 71	\$ 123	\$ 121
– VAN POOLS			
	\$ 103	\$ 180	\$ 236
<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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**MINNESOTA (22)  
TERRITORY 105**

<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			
	\$ 74	\$ 129	\$ 180
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 110	\$ 263
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 75	\$ 132	\$ 229
– SCHOOL AND CHURCH BUSES			
	\$ 52	\$ 90	\$ 117
– OTHER BUSES			
	\$ 52	\$ 90	\$ 117
– VAN POOLS			
	\$ 75	\$ 132	\$ 229
<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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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 70	\$ 121	\$ 175
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 113	\$ 353
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 71	\$ 123	\$ 222
– SCHOOL AND CHURCH BUSES			
	\$ 49	\$ 85	\$ 114
– OTHER BUSES			
	\$ 49	\$ 85	\$ 114
– VAN POOLS			
	\$ 71	\$ 123	\$ 222
<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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**MINNESOTA (22)  
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			
	\$ 78	\$ 136	\$ 188
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 117	\$ 261
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 80	\$ 139	\$ 239
– SCHOOL AND CHURCH BUSES			
	\$ 55	\$ 95	\$ 122
– OTHER BUSES			
	\$ 55	\$ 95	\$ 122
– VAN POOLS			
	\$ 80	\$ 139	\$ 239
<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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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 101	\$ 175	\$ 199
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 182	\$ 237
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 103	\$ 179	\$ 253
– SCHOOL AND CHURCH BUSES			
	\$ 71	\$ 123	\$ 129
– OTHER BUSES			
	\$ 71	\$ 123	\$ 129
– VAN POOLS			
	\$ 103	\$ 179	\$ 253
<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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**MINNESOTA (22)  
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			
	\$ 101	\$ 175	\$ 171
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 165	\$ 258
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 103	\$ 179	\$ 217
– SCHOOL AND CHURCH BUSES			
	\$ 71	\$ 123	\$ 111
– OTHER BUSES			
	\$ 71	\$ 123	\$ 111
– VAN POOLS			
	\$ 103	\$ 179	\$ 217
<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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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 116	\$ 202	\$ 204
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 200	\$ 262
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 118	\$ 206	\$ 259
– SCHOOL AND CHURCH BUSES			
	\$ 81	\$ 141	\$ 133
– OTHER BUSES			
	\$ 81	\$ 141	\$ 133
– VAN POOLS			
	\$ 118	\$ 206	\$ 259
<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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**MINNESOTA (22)  
TERRITORY 115**

<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	\$ 141	\$ 161
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 191	\$ 212
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 83	\$ 144	\$ 204
– SCHOOL AND CHURCH BUSES			
	\$ 57	\$ 99	\$ 105
– OTHER BUSES			
	\$ 57	\$ 99	\$ 105
– VAN POOLS			
	\$ 83	\$ 144	\$ 204
<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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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 84	\$ 145	\$ 184
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 139	\$ 206
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 86	\$ 148	\$ 234
– SCHOOL AND CHURCH BUSES			
	\$ 59	\$ 102	\$ 120
– OTHER BUSES			
	\$ 59	\$ 102	\$ 120
– VAN POOLS			
	\$ 86	\$ 148	\$ 234
<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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**MINNESOTA (22)  
TERRITORY 117**

<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	\$ 141	\$ 170
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 135	\$ 231
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 83	\$ 144	\$ 216
– SCHOOL AND CHURCH BUSES			
	\$ 57	\$ 99	\$ 111
– OTHER BUSES			
	\$ 57	\$ 99	\$ 111
– VAN POOLS			
	\$ 83	\$ 144	\$ 216
<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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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 70	\$ 122	\$ 159
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 110	\$ 216
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 71	\$ 124	\$ 202
– SCHOOL AND CHURCH BUSES			
	\$ 49	\$ 85	\$ 103
– OTHER BUSES			
	\$ 49	\$ 85	\$ 103
– VAN POOLS			
	\$ 71	\$ 124	\$ 202
<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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**MINNESOTA (22)  
TERRITORY 119**

<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	\$ 143	\$ 170
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 97	\$ 231
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 84	\$ 146	\$ 216
– SCHOOL AND CHURCH BUSES			
	\$ 57	\$ 100	\$ 111
– OTHER BUSES			
	\$ 57	\$ 100	\$ 111
– VAN POOLS			
	\$ 84	\$ 146	\$ 216
<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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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 79	\$ 138	\$ 148
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 120	\$ 212
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 81	\$ 141	\$ 188
– SCHOOL AND CHURCH BUSES			
	\$ 55	\$ 97	\$ 96
– OTHER BUSES			
	\$ 55	\$ 97	\$ 96
– VAN POOLS			
	\$ 81	\$ 141	\$ 188
<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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**MINNESOTA (22)  
TERRITORY 121**

<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			
	\$ 76	\$ 132	\$ 162
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 129	\$ 214
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 78	\$ 135	\$ 206
– SCHOOL AND CHURCH BUSES			
	\$ 53	\$ 92	\$ 105
– OTHER BUSES			
	\$ 53	\$ 92	\$ 105
– VAN POOLS			
	\$ 78	\$ 135	\$ 206
<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>			

COMMERCIAL LINES MANUAL  
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AUTOMOBILE  
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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 70	\$ 121	\$ 178
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 152	\$ 303
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 71	\$ 123	\$ 226
– SCHOOL AND CHURCH BUSES			
	\$ 49	\$ 85	\$ 116
– OTHER BUSES			
	\$ 49	\$ 85	\$ 116
– VAN POOLS			
	\$ 71	\$ 123	\$ 226
<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>			

**COMMERCIAL LINES MANUAL  
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LOSS COST PAGES**

**MINNESOTA (22)  
TERRITORY 123**

<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	\$ 135	\$ 198
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 138	\$ 282
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 80	\$ 138	\$ 251
– SCHOOL AND CHURCH BUSES			
	\$ 55	\$ 95	\$ 129
– OTHER BUSES			
	\$ 55	\$ 95	\$ 129
– VAN POOLS			
	\$ 80	\$ 138	\$ 251
<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>			

COMMERCIAL LINES MANUAL  
DIVISION ONE  
AUTOMOBILE  
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PHYSICAL DAMAGE Original Cost New Range \$15,001 – 20,000			
	Specified Causes Of Loss	\$500 Ded. Comp.	\$500 Ded. Coll.
<b>RULE 23. TRUCKS, TRACTORS AND TRAILERS CLASSIFICATIONS</b>			
– Local And Intermediate – All Vehicles			
– Long Distance – Light Trucks And Trailers Used With Light Trucks			
	\$ 65	\$ 113	\$ 144
<b>RULE 32. PRIVATE PASSENGER TYPES CLASSIFICATIONS</b>			
	N/A	\$ 97	\$ 249
<b>RULE 40. PUBLIC AUTO CLASSIFICATIONS</b>			
– TAXICABS AND LIMOUSINES			
	\$ 66	\$ 115	\$ 183
– SCHOOL AND CHURCH BUSES			
	\$ 46	\$ 79	\$ 94
– OTHER BUSES			
	\$ 46	\$ 79	\$ 94
– VAN POOLS			
	\$ 66	\$ 115	\$ 183
<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>
<u>6638</u>	<u>0 = 9</u>	<u>\$ 44</u>
<u>6639</u>	<u>10 = 19</u>	<u>93</u>
<u>6640</u>	<u>20 = 25</u>	<u>149</u>
<u>6602</u>	<u>26 = 100</u>	<u>252</u>
<u>6603</u>	<u>101 = 500</u>	<u>659</u>
<u>6604</u>	<u>501 = 1,000</u>	<u>1,517</u>
<u>6605</u>	<u>Over 1,000</u>	<u>3,196</u>

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

**97. UNINSURED MOTORISTS INSURANCE**

<b>Uninsured Motorists Bodily Injury</b>		
<b>Bodily Injury Limits</b>	<b>Private Passenger Types Per Exposure</b>	<b>Other Than Private Passenger Types Per Exposure</b>
\$ 50,000	\$ 4.876.49	\$ 3.742.99
60,000	5.267.01	4.043.23
70,000	5.537.37	4.253.40
100,000	6.358.47	4.883.90
125,000	6.839.10	5.244.19
150,000	7.269.68	5.584.46
200,000	7.8510.46	6.034.82
250,000	8.3211.09	6.395.11
300,000	8.6711.56	6.665.33
350,000	8.9411.92	6.865.49
400,000	9.1812.24	7.055.64
500,000	9.5312.71	7.335.86
600,000	9.8113.08	7.536.02
750,000	10.1213.49	7.786.22
1,000,000	10.4713.96	8.046.43
1,500,000	10.9414.59	8.406.72
2,000,000	11.2214.96	8.616.89

**Table 97.B.1.a.(LC) Single Limits Uninsured Motorists Bodily Injury Coverage Loss Costs**

<b>Underinsured Motorists Bodily Injury</b>		
<b>Bodily Injury Limits</b>	<b>Private Passenger Types Per Exposure</b>	<b>Other Than Private Passenger Types Per Exposure</b>
\$ 50,000	\$ 7.565.09	\$ 4.923.31
60,000	8.926.00	5.803.90
70,000	10.056.76	6.524.39
100,000	13.008.75	8.465.69
125,000	14.9810.08	9.736.55
150,000	16.7011.24	10.867.31
200,000	19.9013.39	12.938.70
250,000	22.5115.15	14.649.85
300,000	24.5816.54	15.9710.75
350,000	26.3917.76	17.1511.54
400,000	27.7618.68	18.0412.14
500,000	30.6920.65	19.9413.42
600,000	32.5621.91	21.1614.24
750,000	35.4023.82	23.0015.48
1,000,000	38.8726.16	25.2617.00
1,500,000	43.3329.16	28.1618.95
2,000,000	46.5031.29	30.2320.34

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

Uninsured Motorists Bodily Injury		
Bodily Injury Limits	Private Passenger Types Per Exposure	Other Than Private Passenger Types Per Exposure
\$ 25,000/50,000	\$ 3.925.23	\$ 3.012.44
50,000/100,000	5.267.04	4.043.23
100,000/300,000	6.759.00	5.194.15
250,000/500,000	8.5144.35	6.545.23
500,000/1,000,000	9.6142.84	7.385.90

Table 97.B.1.c.(LC) Split Limits Uninsured Motorists Bodily Injury Coverage Loss Costs

Underinsured Motorists Bodily Injury		
Bodily Injury Limits	Private Passenger Types Per Exposure	Other Than Private Passenger Types Per Exposure
\$ 25,000/50,000	\$ 5.113.44	\$ 3.332.24
50,000/100,000	8.926.00	5.803.90
100,000/300,000	14.589.84	9.486.38
250,000/500,000	23.7045.95	15.4140.37
500,000/1,000,000	31.0920.92	20.2143.60

Table 97.B.1.d.(LC) Split Limits Underinsured Motorists Bodily Injury Coverage Loss Costs

Loss Cost
\$ 1.25

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

## Supplementary Information – Minnesota

### 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 Minnesota

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>
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%
09/30/2017	+3.0%	+5.4%
12/31/2017	+3.8%	+4.8%

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 – Minnesota

### 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 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%
October 2017 - September 2018	1.7%	3.7%

### Claim Frequencies

Historically, frequency trends for Commercial Auto liability have been quite variable, have differed between Trucks, Tractors, and Trailers (TTT) and Private Passenger Types (PPT) liability classes, and have often displayed cyclical patterns. As a result, an exponential curve of the form  $Y=A(B^X)$  does not fit the data well over the long term. To reflect these characteristics 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 – Minnesota****Minnesota Trends****Trucks, Tractors & Trailers and Private Passenger Types Liability**

	Current Trends <u>Data through 12/31/2017</u>	Previous Trends <u>Data through 12/31/2016</u>
Minnesota Claim Cost Trends		
Bodily Injury (\$100,000 Limit)	-0.8%	-6.2%
Property Damage (\$100,000 Limit)	+6.5%	+8.9%
Credibility-Weighted Claim Cost Trends		
Bodily Injury (\$100,000 Limit)	+3.8%	+2.7%
Property Damage (\$100,000 Limit)	+5.1%	+6.5%
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)	+3.8 %	+2.7%
Property Damage (\$100,000 Limit)	+5.1%	+6.5%
Private Passenger Types		
Bodily Injury (\$100,000 Limit)	+3.8%	+2.7%
Property Damage (\$100,000 Limit)	+5.1%	+6.5%

Minnesota bodily injury severity trend receives 0% weight when combined with multistate trend in the filing, property damage trend receives 20% weight.

If the prior trends were used to calculate the indicated changes in this document, the Truck, Tractors & Trailers Liability indication would have been +1.4% rather than +0.4%. For the Private Passenger Types coverage, the indication would have been +4.1% instead of +3.6%.

**No-Fault Coverage (PIP)**

	Current Trends <u>Data through 06/30/2018</u>	Previous Trends <u>Data through 06/30/2017</u>
Minnesota Claim Cost Trends		
Trucks, Tractors & Trailers	+3.4%	+3.4%
Private Passenger Types	+3.6%	+3.6%
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		
	+3.4%	+3.4%
Private Passenger Types		
	+3.6%	+3.6%

If the prior trends were used to calculate the indicated change in this document, the Truck, Tractors & Trailers PIP indication would have remained +1.9%. For the Private Passenger Types PIP coverage, the indication would have remained +4.5%.

## Supplementary Information – Minnesota

### Physical Damage Loss Trend

	<u>Coverage</u>	Current Trends	Previous Trends
		<u>Data through 12/31/2017</u>	<u>Data through 12/31/2016</u>
Trucks, Tractors & Trailers	OTC	+7.0%	+6.5%
	Collision	+5.0%	+5.5%
Private Passenger Types	OTC	+6.5%	+5.0%
	Collision	+4.5%	+5.0%

### Physical Damage OCN Trend

	<u>Coverage</u>	Current Trends	Previous Trends
		<u>Data through 12/31/2017</u>	<u>Data through 12/31/2016</u>
Trucks, Tractors & Trailers	OTC	+1.0%	+0.9%
	Collision	+1.6%	+1.3%
Private Passenger Types	OTC	+1.1%	+1.0%
	Collision	+0.6%	+0.6%

The loss trend has increased by 0.5 points for Trucks, Tractors & Trailers OTC and has increased by 1.5 points for Private Passenger Types OTC. The OCN trend has increased by 0.1 points for Trucks, Tractors and Trailers OTC and 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 +8.2%, instead of +9.2%, and +2.4%, instead of +6.7%, respectively.

The loss trend has decreased by 0.5 points for Trucks, Tractors & Trailers collision and for Private Passenger Types collision. The OCN trend has increased by 0.3 points for Trucks, Tractors, & Trailers collision and has remained the same 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 +5.9%, instead of +3.7%, and +1.0%, instead of -0.8%, respectively.

## Supplementary Information – Minnesota

### Loss Development

#### Methodology

For the Trucks, Tractors & Trailers and Private Passenger Types Liability coverages, we continue to employ a credibility-weighted combination of Minnesota 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	1.094	1.102
27 to Ultimate	1.195	1.197
15 to Ultimate	1.355	1.377
Trucks, Tractors and Trailers PD		
39 to Ultimate	1.003	1.004
27 to Ultimate	1.011	1.012
15 to Ultimate	1.049	1.049
Private Passenger Types BI		
39 to Ultimate	1.090	1.096
27 to Ultimate	1.239	1.309
15 to Ultimate	1.441	1.581
Private Passenger Types PD		
39 to Ultimate	1.004	1.005
27 to Ultimate	1.012	1.012
15 to Ultimate	1.045	1.040

## Supplementary Information – Minnesota

### Other Factors

Unallocated Loss Adjustment Expense factors:

	<u>Data through 12/31/2017</u>	<u>Data through 12/31/2016</u>
Bodily Injury	1.075	1.080
Property Damage	1.100	1.105
Physical Damage	1.130	1.140

### 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 10/01/2019 proposed effective date, with the following exceptions: For Trucks, Tractors & Trailers Liability, Trucks, Tractors & Trailers PIP, and Private Passenger Types Collision, No Change (N.C.) was selected due to the modest indications. The Trucks, Tractors & Trailers and Private Passenger Types UM indications were capped for stability.

<u>Coverage</u>	<u>Indicated Change</u>	<u>Filed Change</u>
Trucks, Tractors, and Trailers Liability	+0.4%	No Change (N.C.)
Trucks, Tractors, and Trailers PIP	+1.9%	No Change (N.C.)
Trucks, Tractors, and Trailers UM/UIM	+42.5%	+41.0%
Private Passenger Types Collision	-0.8%	No Change (N.C.)
Private Passenger Types UM/UIM	+22.6%	+24.4%

The overall filed change is +4.8%.

### Notes

- The Trucks, Tractors, and Trailers OTC indication (+9.2%) is being driven by poor experience in the three accident years included in the review.
- The Trucks, Tractors & Trailers and Private Passenger Types UM indications were capped for stability.
- 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.