

# I 000008 STIP

Section I - Rate Recommendation  
 Subsection A - Introduction  
 7/1/2020

Section I - A  
 Exhibit 1

## RATE INDICATION SUMMARY

Statewide Rate Change Summary		
<i>Indication Effective Date: 7/1/2020</i>		
(1)	Indicated Rate Change Based on Policy Year 2016 Data (Section I-B, Exhibit 1)	-7.1%
(2)	Indicated Rate Change Based on Policy Year 2017 Data (Section I-B, Exhibit 1)	-6.5%
(3)	Average Indicated Rate Change = [ (1) + (2) ] / 2.0	-6.8%

Expense Constants			
	Current	Recommended	
(4)	For Risks developing at least \$1,000 in Standard Premium (Section VI-D, Exhibit 1)	\$338	\$338
(5)	For Risks developing at least \$200 and less than \$1,000 in Standard Premium (Section VI-D, Exhibit 1)	\$250	\$250
(6)	For Risks developing less than \$200 in Standard Premium (Section VI-D, Exhibit 1)	\$159	\$159
(7)	Per Capita Risks (for each exposure, up to a maximum of 4)	\$64	\$64

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 Subsection B - Calculation of Indicated Rate Change  
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Calculation of Indicated Rate Change		Policy Year <u>2016</u>	Policy Year <u>2017</u>
(1)	Standard Earned Premium plus Adjusted ARAP Premium (Section I-D, Exhibit 2)	1,203,414,718	1,252,889,200
(2)	Composite Adjustment Factor (Section I-D, Exhibit 2)	1.041	1.043
(3)	Adjusted Standard Earned Premium plus Adjusted ARAP = [ (1) x (2) ]	1,252,810,112	1,307,148,410
(4)	Cumulative Premium Development Factor to Ultimate (Section I-D, Exhibit 2)	0.999	1.010
(5)	Rate On-Level Factor (Section I-D, Exhibit 2)	0.878	0.871
(6)	Factor to Remove Expense Constant (Section I-D, Exhibit 2)	0.960	0.962
(7)	Adjusted On-Level Standard Earned Premium plus Adjusted ARAP at Ultimate = [ (3) x (4) x (5) x (6) ]	1,054,546,187	1,106,105,799
(8)	Annual Wage Trend (Section I-D, Exhibit 4)	0.034	0.034
(9)	Wage Trend Factor to 7/1/2021 (based on Section I-D, Exhibit 4)	1.160	1.122
(10)	Standard Earned Premium plus ARAP Projected to Prospective Effective Period = [ (7) x (9) ]	1,222,981,872	1,241,211,376
(11)	Average On-Level Incurred Losses Projected to Prospective Effective Period (Section I-C Exhibit I, Page 1 Item (30), Page 2 Item (30))	724,763,887	741,670,888
(12)	Loss Ratio Projected to Prospective Effective Period = [ (11) / (10) ]	0.593	0.598
(13)	Factor to Remove the Large Deductible Contribution to the Residual Market Subsidy (Section I-E)	0.999	0.999
(14)	Loss Adjustment Expense Factor (Section I-D, Exhibit 5)	1.187	1.187
(15)	Fixed Expense Ratio (Section I-D, Exhibit 5)	0.051	0.050
(16)	Indicated Policy Year Loss, LAE, and Fixed Expense Ratio = { [ (12) x (14) ] + (15) } x (13)	0.754	0.759
(17)	Commission and Other Acquisition Expense Ratio (Section I-D, Exhibit 5)	0.122	0.122
(18)	Premium Tax Ratio (Section I-D, Exhibit 5)	0.022	0.022
(19)	Premium Discount Ratio (Section I-D, Exhibit 5)	0.053	0.053
(20)	Variable Expense Ratio = [ (17) + (18) + (19) ]	0.196	0.196
(21)	Underwriting Profit Provision (Section VII-A)	-0.008	-0.008
(22)	Permissible Loss, LAE, and Fixed Expense Ratio = [ 1.0 - (20) - (21) ]	0.811	0.811
(23)	Indicated Rate Change = [ (16) / (22) ] - 1.0	<b>-7.1%</b>	<b>-6.5%</b>
(24)	Overall Indicated Rate Change = [ (23) PY2016 + (23) PY2017 ] / 2.0		<b>-6.8%</b>

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Section I - Rate Recommendation  
 Subsection C - Indicated Rate Change Detail  
 7/1/2020

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## Premium and Incurred Losses Projected to the Prospective Effective Period Policy Year 2016

**Premium**

(1)	Adjusted On-Level Standard Earned Premium plus Adjusted ARAP at Ultimate (Section I -D, Exhibit 2)	1,054,546,187
(2)	Annual Wage Trend (Section I-D, Exhibit 4)	0.034
(3)	Wage Trend Factor to Prospective Effective Period (7/1/2021)	1.160
(4)	Standard Earned Premium plus ARAP Projected to Prospective Effective Period = [ (1) x (3) ]	1,222,981,872

**Indemnity Losses**

		<u>Paid</u>	<u>Paid + Case</u>
(5)	Indemnity Losses at Latest Month - Industry Total (Section I-D, Exhibit 1)	255,298,897	350,952,166
(6)	Indemnity Loss Development Factor to 252 Months (Section I-D, Exhibit 1)	1.749	1.254
(7)	Tail Factor 252 Months to Ultimate (Section I-D, Exhibit 1)	1.036	1.015
(8)	Factor to Adjust for Escalated Benefits (Section I-D, Exhibit 1)	1.038	1.008
(9)	Estimated Ultimate Indemnity Loss = [ (5) x (6) x (7) x (8) ]	480,242,281	450,500,106
(10)	Annual Indemnity Loss Trend (Section I-D, Exhibit 4)	0.005	0.005
(11)	Indemnity Loss Trend Factor to 7/1/2021	1.023	1.023
(12)	Estimated Indemnity Losses Trended = [ (9) x (11) ]	491,371,353	460,939,937
(13)	Estimated Benefit Change Factor Prior to 1/1/2020 (Section I-D, Exhibit 3)	1.032	1.032
(14)	On Level Losses = [ (12) x (13) ]	507,305,735	475,887,477
(15)	Estimated Benefit Change Factor Subsequent to 1/1/2020 (Section I-D, Exhibit 3)	1.012	1.012
(16)	On-Level Incurred Losses Projected to Prospective Effective Period = [ (14) x (15) ]	513,207,660	481,423,886

**Medical Losses**

(17)	Medical Losses at Latest Month - Industry Total (Section I-D, Exhibit 1)	162,736,370	219,904,647
(18)	Medical Loss Development Factor to 252 Months (Section I-D, Exhibit 1)	1.292	1.026
(19)	Tail Factor 252 Months to Ultimate (Section I-D, Exhibit 1)	1.079	1.017
(20)	Factor to Adjust for Escalated Benefits (1.000 for Medical Losses)	1.000	1.000
(21)	Estimated Ultimate Medical Loss = [ (17) x (18) x (19) x (20) ]	226,735,491	229,517,208
(22)	Annual Medical Loss Trend (Section I-D, Exhibit 4)	-0.001	-0.001
(23)	Medical Loss Trend Factor to 7/1/2021	0.997	0.997
(24)	Estimated Medical Losses Trended = [ (21) x (23) ]	226,061,390	228,834,837
(25)	Estimated Benefit Change Factor Prior to 1/1/2020 (Section I-D, Exhibit 3)	1.000	1.000
(26)	On Level Losses = [ (24) x (25) ]	226,061,390	228,834,837
(27)	Estimated Benefit Change Factor Subsequent to 1/1/2020 (Section I-D, Exhibit 3)	1.000	1.000
(28)	On-Level Incurred Losses Projected to Prospective Effective Period = [ (26) x (27) ]	226,061,390	228,834,837

**Total Combined Medical and Indemnity Losses**

(29)	Total Estimated Ultimate Losses Trended and On Level = [ (16) + (28) ]	739,269,050	710,258,723
(30)	Average On-Level Incurred Losses Projected to Prospective Effective Period	724,763,887	

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 Subsection C - Indicated Rate Change Detail  
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 Page 2

## Premium and Incurred Losses Projected to the Prospective Effective Period Policy Year 2017

### Premium

(1)	Adjusted On-Level Standard Earned Premium plus Adjusted ARAP at Ultimate (Section I -D, Exhibit 2)	1,106,105,799
(2)	Annual Wage Trend (Section I-D, Exhibit 4)	0.034
(3)	Wage Trend Factor to Prospective Effective Period (7/1/2021)	1.122
(4)	Standard Earned Premium plus ARAP Projected to Prospective Effective Period = [ (1) x (3) ]	1,241,211,376

### Indemnity Losses

		<u>Paid</u>	<u>Paid + Case</u>
(5)	Indemnity Losses at Latest Month - Industry Total (Section I-D, Exhibit 1)	141,456,490	254,587,379
(6)	Indemnity Loss Development Factor to 252 Months (Section I-D, Exhibit 1)	3.288	1.773
(7)	Tail Factor 252 Months to Ultimate (Section I-D, Exhibit 1)	1.036	1.015
(8)	Factor to Adjust for Escalated Benefits (Section I-D, Exhibit 1)	1.038	1.008
(9)	Estimated Ultimate Indemnity Loss = [ (5) x (6) x (7) x (8) ]	500,185,355	461,849,531
(10)	Annual Indemnity Loss Trend (Section I-D, Exhibit 4)	0.005	0.005
(11)	Indemnity Loss Trend Factor to 7/1/2021	1.018	1.018
(12)	Estimated Indemnity Losses Trended = [ (9) x (11) ]	509,176,970	470,151,999
(13)	Estimated Benefit Change Factor Prior to 1/1/2020 (Section I-D, Exhibit 3)	1.023	1.023
(14)	On Level Losses = [ (12) x (13) ]	520,767,533	480,854,224
(15)	Estimated Benefit Change Factor Subsequent to 1/1/2020 (Section I-D, Exhibit 3)	1.012	1.012
(16)	On-Level Incurred Losses Projected to Prospective Effective Period = [ (14) x (15) ]	526,826,070	486,448,416

### Medical Losses

(17)	Medical Losses at Latest Month - Industry Total (Section I-D, Exhibit 1)	132,614,660	212,723,290
(18)	Medical Loss Development Factor to 252 Months (Section I-D, Exhibit 1)	1.652	1.086
(19)	Tail Factor 252 Months to Ultimate (Section I-D, Exhibit 1)	1.079	1.017
(20)	Factor to Adjust for Escalated Benefits (1.000 for Medical Losses)	1.000	1.000
(21)	Estimated Ultimate Medical Loss = [ (17) x (18) x (19) x (20) ]	236,229,946	234,927,108
(22)	Annual Medical Loss Trend (Section I-D, Exhibit 4)	-0.001	-0.001
(23)	Medical Loss Trend Factor to 7/1/2021	0.998	0.998
(24)	Estimated Medical Losses Trended = [ (21) x (23) ]	235,683,557	234,383,733
(25)	Estimated Benefit Change Factor Prior to 1/1/2020 (Section I-D, Exhibit 3)	1.000	1.000
(26)	On Level Losses = [ (24) x (25) ]	235,683,557	234,383,733
(27)	Estimated Benefit Change Factor Subsequent to 1/1/2020 (Section I-D, Exhibit 3)	1.000	1.000
(28)	On-Level Incurred Losses Projected to Prospective Effective Period = [ (26) x (27) ]	235,683,557	234,383,733

### Total Combined Medical and Indemnity Losses

(29)	Total Estimated Ultimate Losses Trended and On Level = [ (16) + (28) ]	762,509,627	720,832,148
(30)	Average On-Level Incurred Losses Projected to Prospective Effective Period	741,670,888	

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Section I - Rate Recommendation  
 Subsection D - Loss Development Summary  
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Section I - D  
 Exhibit 1

## Summary of Estimated Ultimate Losses

### Paid Loss Development Method

Policy Year (1)	Benefit Type (2)	Paid Losses at 12/31/18 (3)	Cumulative Factors from Latest Month to 252 Months (4)	Losses Developed to 252 Months (5)	Tail Factor from 252 Months to Ultimate (6)	Factor to Adjust for Escalated Benefits (7)	Estimated Ultimate Losses (8)
2016	Indemnity	255,298,897	1.749	446,576,391	1.036	1.038	480,242,281
2016	Medical	162,736,370	1.292	210,232,031	1.079	1.000	226,735,491
2016	Total	418,035,267		656,808,422			706,977,772
2017	Indemnity	141,456,490	3.288	465,121,418	1.036	1.038	500,185,355
2017	Medical	132,614,660	1.652	219,035,411	1.079	1.000	236,229,946
2017	Total	274,071,150		684,156,829			736,415,301

### Paid Plus Case Loss Development Method

Policy Year (9)	Benefit Type (10)	Paid Plus Case Losses at 12/31/18 (11)	Cumulative Factors from Latest Month to 252 Months (12)	Losses Developed to 252 Months (13)	Tail Factor from 252 Months to Ultimate (14)	Factor to Adjust for Escalated Benefits (15)	Estimated Ultimate Losses (16)
2016	Indemnity	350,952,166	1.254	440,233,011	1.015	1.008	450,500,106
2016	Medical	219,904,647	1.026	225,717,324	1.017	1.000	229,517,208
2016	Total	570,856,813		665,950,335			680,017,315
2017	Indemnity	254,587,379	1.773	451,323,777	1.015	1.008	461,849,531
2017	Medical	212,723,290	1.086	231,037,658	1.017	1.000	234,927,108
2017	Total	467,310,669		682,361,435			696,776,639

Notes:

- (3), (11): Aggregate Financial Data.
- (4), (12): Section II - B, Exhibit 1.
- (5) = (3) x (4)
- (6): Section II - C, Exhibit 1, Page 1.
- (7): Section II - D, Exhibit 1, Page 1.
- (8) = (5) x (6) x (7)
- (13) = (11) x (12)
- (14): Section II - C, Exhibit 2, Page 1.
- (15): Section II - D, Exhibit 2, Page 1.
- (16) = (13) x (14) x (15)

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Section I - D  
 Exhibit 2

Policy Year Aggregate Financial Data  
 Calculation of Standard Premium plus Adjusted ARAP Premium Development Factors  
 Industrywide

Summary Exhibit

	Policy Year as of 12/31/2018	
	2016	2017
(1) Standard Earned Premium plus Adjusted ARAP Premium	1,203,414,718	1,252,889,200
(2) Adjustment for Experience and Merit Rating, ARAP, and Construction Credit Off-balance	1.041	1.041
(3) Adjustment Factor to Remove the Impact of Loading for Recoupment of Insolvency Fund Assessments	1.000	1.002
(4) Composite Adjustment Factor = (2) x (3)	1.041	1.043
(5) Adjusted Standard Earned Premium plus ARAP = (1) x (4)	1,252,810,112	1,307,148,410
(6) Cumulative Premium Development Factor to Ultimate (see Section III-A, Exhibit 1, Page 2)	0.999	1.010
(7) Rate On-Level Factor	0.878	0.871
(8) Factor to Remove Expense Constant	0.960	0.962
(9) Adjusted On-Level Standard Earned Premium plus Adjusted ARAP at Ultimate = (5) x (6) x (7) x (8)	1,054,546,187	1,106,105,799

Notes:

- (1): Section III-B, Exhibit 2
- (2): Section III-B, Exhibit 1
- (3): Section III-C, Exhibit 1
- (6): Premiums are deemed to be fully developed at 252 months.
- (7): Section III-D, Exhibit 1
- (8): Section VI-F, Exhibit 2.

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Section I - Rate Recommendation  
 Subsection D - Benefit Change Adjustments Summary  
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Section I - D  
 Exhibit 3

## Benefit Level Adjustment Factors

### All Injury Types

Time Period		Indemnity					Medical	Total
Beginning Period	Ending Period	Death	Permanent Total	Permanent Partial	Temporary Total	All Injury Types	All Injury Types	All Injury Types
1/1/2020	Prosp. Eff. Period					1.012	1.000	
PY 2016	1/1/2020					1.032	1.000	
PY 2017	1/1/2020					1.023	1.000	
PY 2003	Prosp. Eff. Period	1.092	1.110	1.192	1.064	1.147	1.046	
PY 2004	Prosp. Eff. Period	1.088	1.105	1.182	1.062	1.140	1.036	
PY 2005	Prosp. Eff. Period	1.083	1.097	1.165	1.057	1.128	1.032	
PY 2006	Prosp. Eff. Period	1.077	1.089	1.148	1.053	1.116	1.032	
PY 2007	Prosp. Eff. Period	1.071	1.080	1.132	1.048	1.104	1.032	
PY 2008	Prosp. Eff. Period	1.065	1.071	1.116	1.043	1.092	1.024	
PY 2009	Prosp. Eff. Period	1.063	1.068	1.111	1.041	1.087	1.002	
PY 2010	Prosp. Eff. Period	1.063	1.069	1.112	1.042	1.088	1.000	
PY 2011	Prosp. Eff. Period	1.060	1.064	1.102	1.040	1.081	1.000	
PY 2012	Prosp. Eff. Period	1.055	1.057	1.090	1.036	1.072	1.000	
PY 2013	Prosp. Eff. Period	1.053	1.054	1.085	1.034	1.067	1.000	
PY 2014	Prosp. Eff. Period	1.047	1.050	1.078	1.032	1.062	1.000	
PY 2015	Prosp. Eff. Period	1.036	1.043	1.067	1.029	1.053	1.000	
PY 2016	Prosp. Eff. Period	1.030	1.037	1.056	1.024	1.044	1.000	
PY 2017	Prosp. Eff. Period	1.023	1.029	1.044	1.019	1.035	1.000	
PY 2015	CPY 2016_07	1.009	1.011	1.016	1.007		1.000	
PY 2016	CPY 2017_07	1.010	1.012	1.019	1.008		1.000	
PY 2017	CPY 2018_07	1.010	1.013	1.019	1.008		1.000	
CPY 2016_07	Prosp. Eff. Period							1.026
CPY 2017_07	Prosp. Eff. Period							1.019
CPY 2018_07	Prosp. Eff. Period							1.013
CPY 2008_09	Prosp. Eff. Period							1.058
Prior Eff. Period (using benefit level projections from prior filing)	Prosp. Eff. Period					1.021	1.000	1.014

Notes:

From Section IV-A, Exhibit 1.

1/1/2020 refers to a point in time. All other time periods refer to Policy Years.

Example: PY 2009 to Prosp. Eff. Period for Permanent Partial =  $1.111 = 1.193 / 1.074$

where 1.193 is the Index Factor for Prosp. Eff. Period and 1.074 is the Index Factor for PY 2009 for Indemnity Permanent Partial, from Exhibit 2.

**Paid Trend Summary**

	Indemnity				Medical								SAWW		
	Severity		Frequency		Lost-Time Medical				Medical Only				Trend	Credibility	
	Trend	Credibility	Trend	Credibility	Trend	Credibility	Trend	Credibility	Trend	Credibility	Trend	Credibility			
(1) Massachusetts Trend															
5 Year	2.5%	46.7%	-1.4%	59.7%	2.4%	40.0%	-1.4%	59.7%	2.5%	71.6%	-3.5%	39.5%	3.4%	100.0%	
6 Year	2.6%	67.9%	-1.5%	86.0%	2.5%	58.3%	-1.5%	86.0%	2.1%	91.9%	-3.8%	54.4%	3.3%	100.0%	
7 Year	2.6%	88.6%	-1.8%	98.6%	2.3%	75.2%	-1.8%	98.6%	2.3%	100.0%	-4.2%	53.5%	3.3%	100.0%	
8 Year	2.9%	99.6%	-2.0%	100.0%	2.5%	89.7%	-2.0%	100.0%	2.3%	100.0%	-4.5%	57.5%	3.0%	100.0%	
9 Year	2.6%	100.0%	-1.6%	80.0%	2.1%	84.3%	-1.6%	80.0%	2.2%	100.0%	-4.3%	60.3%	2.9%	100.0%	
10 Year	2.5%	100.0%	-1.5%	85.2%	2.2%	94.1%	-1.5%	85.2%	1.8%	100.0%	-4.2%	65.7%	3.0%	100.0%	
(2) Selected Trend	2.6%		-2.0%		2.2%		-2.0%		2.3%		-4.2%		3.4%		
(3) 15 Year Massachusetts Complement of Credibility	2.8%		-1.9%		2.5%		-1.9%		2.3%		-4.2%		2.7%		
(4) <b>Credibility Weighted Trend</b>	<b>2.6%</b>		<b>-2.0%</b>		<b>2.3%</b>		<b>-2.0%</b>		<b>2.3%</b>		<b>-4.2%</b>		<b>3.4%</b>		
					Lost-Time Medical				Medical Only						
(5) Medical Loss Trend					0.2%				-2.0%						
(6) Fraction of Total Medical					87.9%				12.1%						
(7) Total Medical Loss Trend					-0.1%										
					Indemnity				Medical						
(8) Total Loss Trend	0.5%				-0.1%										
(9) SAWW Trend	3.4%				3.4%										
(10) Total Net Trend	-2.7%				-3.3%										

Notes:

- (1), (3): Section V, Exhibit 2 Severity; Exhibit 3 Frequency and SAWW.
- (2): Selection based on the fit with the highest credibility and least number of years.
- (4) = Credibility Weighted Selected Trend
- (5) = [(1.0 + Credibility Weighted Severity Trend) x (1.0 + Credibility Weighted Frequency Trend)] - 1.0
- (6) Medical Only = Medical Only Fraction of Total Medical from Section IV-E, Exhibit 2  
 Lost Time Medical = 1.0 - Medical Only
- (7) = Weighted Average of (5) using (6) as weights
- (8): Indemnity = (1.0 + Credibility Weighted Severity Trend) x (1.0 + Credibility Weighted Frequency Trend) - 1.0  
 Medical = Row (7)
- (9): (4) for SAWW.

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Section I - Rate Recommendation  
Subsection D - Expenses Summary  
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Section I - D  
Exhibit 5

## Summary of Expense Ratios

(1)	Commission and Other Acquisition Expense Ratio	12.2%
(2)	Average Premium Discount as a % of Standard Premium + ARAP	5.3%
(3)	Premium Tax Ratio = 2.28% x [ 1.0 - (2) ]	2.2%
(4)	Variable Expense Ratio = (1) + (2) + (3)	19.6%
(5)	Fixed Expense Ratio	5.1%
(6)	Total Loss Adjustment Expense Ratio (LAE / Loss)	18.7%

### Notes:

(1): Section VI-G, Exhibit 1.

(2): Section VI-E, Exhibit 1.

(3): 2.28% from Section VI-B, Exhibit 3.

(5): Section VI-B, Exhibit 1.

(6): Section VI-H, Exhibit 1.

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Section I - Rate Recommendation  
 Subsection E - Reflecting the Impact of Large Deductibles  
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Section I - E  
 Exhibit 1  
 Page 1

## Factor to Remove the Large Deductible Contribution to the Residual Market Subsidy

	Total Market	Residual Market ("rm")	Voluntary Market ("vol")
(1) Permissible Loss, LAE, and Fixed Expense Ratio	81.1%		
(2) Fixed Expense Ratio	5.1%		
(3) Permissible Loss and LAE Ratio = [ (1) - (2) ]	76.1%		
(4) Loss Ratio Differential, r	1.193		
(5) Market Weight - $w_x$		23%	77%
(6) Implied Permissible Loss and LAE Ratio		0.869	0.729
(7) Implied Permissible Loss, LAE, and Fixed Expense Ratio		0.920	0.779
(8) Implied Permissible Loss, LAE, and Fixed Expense Ratio Differential	1.180		
(9) Variable Expense Ratio	19.6%	9.6%	22.6%
(10) Underwriting Profit Provision	-0.76%		
(11) Implied Rate Factor Equivalent		1.009	0.997
(12) Implied Rate Differential, d	1.012		
(13) Residual Market Rate equivalent, $Q_{rm}$	1.009		
(14) Proportion of Total Voluntary Assessable Premium Not from Large Deductibles, u	0.751		
(15) Factor to Remove the Large Deductible Contribution to the Residual Market Subsidy	<b>0.999</b>		

### Notes

(1): from Section VI-A, Exhibit 1 and Section VII-A, Exhibit 1

(2): Section VI-B, Exhibit 1, average of column (18).

(4): Loss Ratio Differential from Page 2, assumes LAE as % of loss is the same for Residual and Voluntary Market.

(5): Residual Market weight,  $w_{rm}$ , from Section I-E, Exhibit 2, Voluntary Market weight,  $w_{vol} = 1.0 - w_{rm}$

(6): Voluntary Market Implied Permissible Loss and LAE Ratio = (3) / [ (5 $w_{rm}$ ) x (4) + (5 $w_{vol}$ ) ]

Residual Market Permissible Implied Loss and LAE Ratio = (4) x (6) $_{vol}$

(7) = (2) + (6)

(8) = (7) $_{rm}$  / (7) $_{vol}$

(9): Section VI-A, Exhibit 1, Total Market; Residual Market commission calculated based on the Residual Market - Pool Procedures - Producer Fee Schedule.

Premium discounts were discontinued in the Residual Market effective 1/1/1991.

(10): Section VII-A, Exhibit 1.

(11) = (7) / [ 1.0 - (9) - (10) ]

(12) = (11) $_{rm}$  / (11) $_{vol}$

(13) = d / [  $w_{vol}$  + ( $w_{rm}$  x d) ]

(14): Exhibit 2.

(15) = [ 1.0 -  $w_{rm}$  x  $Q_{rm}$  x (1.0 - u) ] / [ 1.0 -  $w_{rm}$  x (1.0 - u) ]

Calculation of Residual Market to Voluntary Loss Ratio Differential  
 (\$ amounts in millions)

Policy Year	Total Market			Residual Market			Voluntary Market			Loss Ratio Differential LR <sub>rm</sub> / LR <sub>vol</sub> = (7) / (10)
	Standard Earned Premium plus ARAP	Paid Losses and Case Reserves	Paid + Case Loss Ratio = (3) / (2)	Standard Earned Premium Plus ARAP	Paid Losses and Case Reserves	Paid + Case Loss Ratio = (6) / (5)	Standard Earned Premium Plus ARAP	Paid Losses and Case Reserves	Paid + Case Loss Ratio = (9) / (8)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2011	953	581	61.0%	134	101	75.8%	819	480	58.6%	1.294
2012	968	583	60.2%	176	130	73.7%	792	453	57.2%	1.287
2013	1,020	576	56.4%	209	124	59.2%	811	452	55.7%	1.064
2014	1,078	664	61.5%	242	162	66.9%	836	502	60.0%	1.114
2015	1,151	630	54.7%	262	155	59.2%	889	474	53.4%	1.110
2016	1,201	571	47.5%	267	154	57.5%	934	417	44.7%	1.286
2017	1,250	467	37.4%	273	113	41.5%	978	354	36.2%	1.146
(12) Average Last 2 Years				270	133	49.4%	956	386	40.4%	1.225
(13) Average All Years				223	134	60.1%	866	448	51.7%	1.162
(14) Selected Loss Ratio Differential										<b>1.193</b>

Notes:  
 Data as of 12/31/2018 from Aggregate Financial Database, excluding large deductible policies.

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Residual Market Weight "w<sub>rm</sub>"  
 Proportion of Voluntary Assessable Premium Not from Large Deductibles "u"  
 (\$ amounts in millions)

Calendar Year	Voluntary Assessable Premium Basis Used to Determine Shares of the Residual Market	Take-Out Program Written Premium	Take-Out Credits	Residual Market Direct Written Premium	Large Deductible Standard + ARAP Written Premium	Voluntary Non-Large Deductible Not in Take-Out Program Written Premium = (2) - (3) - (6) + (4)	Residual Market Weight "w <sub>rm</sub> " = (5) / [(3) + (5) + (7)]	"u" -- Proportion of Assessable Premium Not from Large Deductibles = (7) / [(7) + (6)]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2017	1153	39	36	277	288	861	0.236	0.749
2018	1170	50	46	266	287	879	0.222	0.754
Selected	1161	45	41	272	288	870	0.229	0.751

Note:

Refers to the prospective effective period from 7/1/2020 through 7/1/2021.

(2),(3),(4),(5),(6): Massachusetts Workers' Compensation Assigned Risk Pool Special Bulletin No. SB-09-18 for Calendar Year 2017 and Special Bulletin No. SB-11-19 for Calendar Year 2018.

(2),(3),(4),(5),(6),(7): Selected based on two-year average of Calendar Year 2017 and 2018.

# II 000011 STIP

Section II - Loss Development  
 Subsection A - Loss Development Summary  
 7/1/2020

Section II - A  
 Exhibit 1

## Summary of Estimated Ultimate Losses Industry

### Paid Loss Development Method

Policy Year (1)	Benefit Type (2)	Paid Losses at 12/31/18 (3)	Cumulative Factors from Latest Month to 252 Months (4)	Losses Developed to 252 Months (5)	Tail Factor from 252 Months to Ultimate (6)	Factor to Adjust for Escalated Benefits (7)	Estimated Ultimate Losses (8)
2016	Indemnity	255,298,897	1.749	446,576,391	1.036	1.038	480,242,281
2016	Medical	162,736,370	1.292	210,232,031	1.079	1.000	226,735,491
2016	Total	418,035,267		656,808,422			706,977,772

2017	Indemnity	141,456,490	3.288	465,121,418	1.036	1.038	500,185,355
2017	Medical	132,614,660	1.652	219,035,411	1.079	1.000	236,229,946
2017	Total	274,071,150		684,156,829			736,415,301

### Paid Plus Case Loss Development Method

Policy Year (9)	Benefit Type (10)	Paid Plus Case Losses at 12/31/18 (11)	Cumulative Factors from Latest Month to 252 Months (12)	Losses Developed to 252 Months (13)	Tail Factor from 252 Months to Ultimate (14)	Factor to Adjust for Escalated Benefits (15)	Estimated Ultimate Losses (16)
2016	Indemnity	350,952,166	1.254	440,233,011	1.015	1.008	450,500,106
2016	Medical	219,904,647	1.026	225,717,324	1.017	1.000	229,517,208
2016	Total	570,856,813		665,950,335			680,017,315

2017	Indemnity	254,587,379	1.773	451,323,777	1.015	1.008	461,849,531
2017	Medical	212,723,290	1.086	231,037,658	1.017	1.000	234,927,108
2017	Total	467,310,669		682,361,435			696,776,639

Notes:

- (3), (11): Aggregate Financial Data.
- (4), (12): Section II - B, Exhibit 1.
- (5) = (3) x (4)
- (6): Section II - C, Exhibit 1, Page 1.
- (7): Section II - D, Exhibit 1, Page 1.
- (8) = (5) x (6) x (7)
- (13) = (11) x (12)
- (14): Section II - C, Exhibit 2, Page 1.
- (15): Section II - D, Exhibit 2, Page 1.
- (16) = (13) x (14) x (15)

Policy Year Aggregate Financial Data  
 Summary of Loss Development Factors  
 Industry

Loss Development Factors From																			
Months of Development	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252
<b>(1) Indemnity Paid Losses</b>																			
2 Year Average	1.880	1.343	1.139	1.056	1.026	1.014	1.006	1.006	1.006	1.004	1.004	1.003	1.001	1.002	1.001	1.001	1.002	1.002	1.002
Cumulative Factor to 252	3.288	1.749	1.302	1.144	1.083	1.056	1.041	1.035	1.029	1.022	1.018	1.014	1.011	1.010	1.008	1.007	1.006	1.004	1.002
<b>(2) Medical Paid Losses</b>																			
2 Year Average	1.279	1.090	1.033	1.015	1.011	1.013	1.010	1.006	1.006	1.010	1.011	1.007	1.005	1.008	1.007	1.009	1.008	1.007	1.005
Cumulative Factor to 252	1.652	1.292	1.185	1.147	1.130	1.118	1.104	1.092	1.086	1.080	1.069	1.057	1.050	1.045	1.037	1.029	1.020	1.012	1.005
<b>(3) Indemnity Paid Plus Case Losses</b>																			
5 Year Average	1.413	1.134	1.061	1.019	1.004	1.002	1.000	1.004	1.002	1.001	1.003	1.002	1.000	1.001	1.001	1.001	1.002	1.000	1.001
Cumulative Factor to 252	1.773	1.254	1.106	1.043	1.024	1.020	1.018	1.018	1.014	1.012	1.011	1.008	1.006	1.006	1.005	1.004	1.003	1.001	1.001
<b>(4) Medical Paid Plus Case Losses</b>																			
5 Year Average	1.058	1.025	1.005	0.997	0.993	0.996	1.002	0.996	1.000	0.999	1.002	1.002	1.005	0.997	1.005	1.003	1.003	0.997	1.000
Cumulative Factor to 252	1.086	1.026	1.002	0.997	0.999	1.007	1.011	1.009	1.013	1.012	1.013	1.012	1.010	1.005	1.008	1.003	1.000	0.997	1.000

Notes:  
 (1): Exhibit 2, Page 1.  
 (2): Exhibit 2, Page 2.  
 (3): Exhibit 3, Page 1.  
 (4): Exhibit 3, Page 2.

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# II 000013 STIP

Section II - Loss Development  
 Subsection B - Policy Year Data  
 7/1/2020

Section II - B  
 Exhibit 2  
 Page 1

## Policy Year Aggregate Financial Data Calculation of Indemnity Paid Loss Development Factors Industry

Policy Year	Losses (in 000's)		Loss Development Factor	Policy Year	Losses (in 000's)		Loss Development Factor
	Evaluated at Month				Evaluated at Month		
	24	36			144	156	
2012	108,696	209,757	1.930	2002	292,465	293,140	1.002
2013	119,627	224,862	1.880	2003	309,737	311,807	1.007
2014	130,054	246,507	1.895	2004	341,493	344,249	1.008
2015	135,004	251,394	1.862	2005	334,884	336,242	1.004
2016	134,208	254,641	1.897	2006	328,008	329,275	1.004
2 Yr Average			1.880	2 Yr Average			1.004
5 Yr Average			1.893	5 Yr Average			1.005
Selected Average			1.880	Selected Average			1.004
	36	48			156	168	
2011	209,327	286,765	1.370	2001	275,972	276,864	1.003
2012	209,757	281,436	1.342	2002	293,140	294,567	1.005
2013	224,862	294,980	1.312	2003	311,807	312,718	1.003
2014	246,507	334,241	1.356	2004	344,249	345,382	1.003
2015	251,394	334,561	1.331	2005	336,242	336,875	1.002
2 Yr Average			1.343	2 Yr Average			1.003
5 Yr Average			1.342	5 Yr Average			1.003
Selected Average			1.343	Selected Average			1.003
	48	60			168	180	
2010	262,060	303,410	1.158	2000	274,515	274,722	1.001
2011	286,765	326,982	1.140	2001	276,864	277,382	1.002
2012	281,436	324,567	1.153	2002	294,567	295,498	1.003
2013	294,980	335,853	1.139	2003	312,718	313,064	1.001
2014	334,241	380,578	1.139	2004	345,382	345,872	1.001
2 Yr Average			1.139	2 Yr Average			1.001
5 Yr Average			1.146	5 Yr Average			1.002
Selected Average			1.139	Selected Average			1.001
	60	72			180	192	
2009	278,743	299,198	1.073	1999	244,433	244,733	1.001
2010	303,410	323,319	1.066	2000	274,722	275,545	1.003
2011	326,982	344,162	1.053	2001	277,382	279,172	1.006
2012	324,567	346,094	1.066	2002	295,498	295,799	1.001
2013	335,853	351,257	1.046	2003	313,064	313,872	1.003
2 Yr Average			1.056	2 Yr Average			1.002
5 Yr Average			1.061	5 Yr Average			1.003
Selected Average			1.056	Selected Average			1.002
	72	84			192	204	
2008	308,164	317,912	1.032	1998	229,679	230,434	1.003
2009	299,198	305,836	1.022	1999	244,733	245,336	1.002
2010	323,319	331,972	1.027	2000	275,545	275,813	1.001
2011	344,162	352,144	1.023	2001	279,172	279,373	1.001
2012	346,094	355,972	1.029	2002	295,799	296,189	1.001
2 Yr Average			1.026	2 Yr Average			1.001
5 Yr Average			1.026	5 Yr Average			1.002
Selected Average			1.026	Selected Average			1.001
	84	96			204	216	
2007	321,955	329,628	1.024	1997	215,044	215,982	1.004
2008	317,912	322,198	1.013	1998	230,434	231,645	1.005
2009	305,836	310,433	1.015	1999	245,336	246,321	1.004
2010	331,972	335,829	1.012	2000	275,813	276,036	1.001
2011	352,144	357,569	1.015	2001	279,373	279,978	1.002
2 Yr Average			1.014	2 Yr Average			1.001
5 Yr Average			1.016	5 Yr Average			1.003
Selected Average			1.014	Selected Average			1.001
	96	108			216	228	
2006	319,182	322,781	1.011	1996	203,003	204,060	1.005
2007	329,628	334,077	1.013	1997	215,982	216,591	1.003
2008	322,198	324,078	1.006	1998	231,645	232,067	1.002
2009	310,433	313,061	1.008	1999	246,321	246,476	1.001
2010	335,829	337,344	1.005	2000	276,036	276,991	1.003
2 Yr Average			1.006	2 Yr Average			1.002
5 Yr Average			1.009	5 Yr Average			1.003
Selected Average			1.006	Selected Average			1.002
	108	120			228	240	
2005	330,849	332,025	1.004	1995	222,381	222,686	1.001
2006	322,781	324,196	1.004	1996	204,060	204,368	1.002
2007	334,077	336,399	1.007	1997	216,591	217,492	1.004
2008	324,078	325,989	1.006	1998	232,067	232,784	1.003
2009	313,061	314,927	1.006	1999	246,476	246,793	1.001
2 Yr Average			1.006	2 Yr Average			1.002
5 Yr Average			1.005	5 Yr Average			1.002
Selected Average			1.006	Selected Average			1.002
	120	132			240	252	
2004	336,837	338,699	1.006	1994	220,592	221,226	1.003
2005	332,025	333,488	1.004	1995	222,686	223,032	1.002
2006	324,196	327,064	1.009	1996	204,368	204,636	1.001
2007	336,399	337,679	1.004	1997	217,492	217,854	1.002
2008	325,989	328,849	1.009	1998	232,784	233,116	1.001
2 Yr Average			1.006	2 Yr Average			1.002
5 Yr Average			1.006	5 Yr Average			1.002
Selected Average			1.006	Selected Average			1.002
	132	144					
2003	308,155	309,737	1.005				
2004	338,699	341,493	1.008				
2005	333,488	334,884	1.004				
2006	327,064	328,008	1.003				
2007	337,679	339,509	1.005				
2 Yr Average			1.004				
5 Yr Average			1.005				
Selected Average			1.004				

Notes:  
 Losses from Aggregate Financial Data.

# II 000014 STIP

Section II - Loss Development  
 Subsection B - Policy Year Data  
 7/1/2020

Section II - B  
 Exhibit 2  
 Page 2

## Policy Year Aggregate Financial Data Calculation of Medical Paid Loss Development Factors Industry

Policy Year	Losses (in 000's) Evaluated at Month		Loss Development Factor	Policy Year	Losses (in 000's) Evaluated at Month		Loss Development Factor
	24	36			144	156	
2012	114,494	147,821	1.291	2002	145,901	147,294	1.010
2013	116,338	149,178	1.282	2003	158,105	159,480	1.009
2014	127,722	166,209	1.301	2004	173,188	174,501	1.008
2015	126,440	164,026	1.297	2005	170,927	172,216	1.008
2016	128,868	162,346	1.260	2006	174,295	176,839	1.015
2 Yr Average			1.279	2 Yr Average			1.011
5 Yr Average			1.286	5 Yr Average			1.010
Selected Average			1.279	Selected Average			1.011
	36	48			156	168	
2011	146,774	160,779	1.095	2001	129,280	130,436	1.009
2012	147,821	160,938	1.089	2002	147,294	148,642	1.009
2013	149,178	161,172	1.080	2003	159,480	160,792	1.008
2014	166,209	181,517	1.092	2004	174,501	175,763	1.007
2015	164,026	178,421	1.088	2005	172,216	173,227	1.006
2 Yr Average			1.090	2 Yr Average			1.007
5 Yr Average			1.089	5 Yr Average			1.008
Selected Average			1.090	Selected Average			1.007
	48	60			168	180	
2010	153,214	159,208	1.039	2000	122,731	123,788	1.009
2011	160,779	166,974	1.039	2001	130,436	131,592	1.009
2012	160,938	166,543	1.035	2002	148,642	149,910	1.009
2013	161,172	165,728	1.028	2003	160,792	161,812	1.006
2014	181,517	188,400	1.038	2004	175,763	176,527	1.004
2 Yr Average			1.033	2 Yr Average			1.005
5 Yr Average			1.036	5 Yr Average			1.007
Selected Average			1.033	Selected Average			1.005
	60	72			180	192	
2009	152,754	155,531	1.018	1999	115,056	116,460	1.012
2010	159,208	162,002	1.018	2000	123,788	124,718	1.008
2011	166,974	171,106	1.025	2001	131,592	132,567	1.007
2012	166,543	168,744	1.013	2002	149,910	151,209	1.009
2013	165,728	168,572	1.017	2003	161,812	162,928	1.007
2 Yr Average			1.015	2 Yr Average			1.008
5 Yr Average			1.018	5 Yr Average			1.009
Selected Average			1.015	Selected Average			1.008
	72	84			192	204	
2008	155,233	156,346	1.007	1998	111,444	112,452	1.009
2009	155,531	157,509	1.013	1999	116,460	117,995	1.013
2010	162,002	165,590	1.022	2000	124,718	126,075	1.011
2011	171,106	173,174	1.012	2001	132,567	133,624	1.008
2012	168,744	170,350	1.010	2002	151,209	152,249	1.007
2 Yr Average			1.011	2 Yr Average			1.007
5 Yr Average			1.013	5 Yr Average			1.010
Selected Average			1.011	Selected Average			1.007
	84	96			204	216	
2007	167,526	169,090	1.009	1997	100,207	100,898	1.007
2008	156,346	157,527	1.008	1998	112,452	113,237	1.007
2009	157,509	157,759	1.002	1999	117,995	119,063	1.009
2010	165,590	167,771	1.013	2000	126,075	127,427	1.011
2011	173,174	175,393	1.013	2001	133,624	134,523	1.007
2 Yr Average			1.013	2 Yr Average			1.009
5 Yr Average			1.009	5 Yr Average			1.008
Selected Average			1.013	Selected Average			1.009
	96	108			216	228	
2006	165,428	167,501	1.013	1996	98,023	98,848	1.008
2007	169,090	170,536	1.009	1997	100,898	101,290	1.004
2008	157,527	158,607	1.007	1998	113,237	114,424	1.010
2009	157,759	159,034	1.008	1999	119,063	120,069	1.008
2010	167,771	169,863	1.012	2000	127,427	128,400	1.008
2 Yr Average			1.010	2 Yr Average			1.008
5 Yr Average			1.010	5 Yr Average			1.008
Selected Average			1.010	Selected Average			1.008
	108	120			228	240	
2005	166,523	167,887	1.008	1995	99,838	100,483	1.006
2006	167,501	169,573	1.012	1996	98,848	99,789	1.010
2007	170,536	171,746	1.007	1997	101,290	101,635	1.003
2008	158,607	159,326	1.005	1998	114,424	115,237	1.007
2009	159,034	160,109	1.007	1999	120,069	120,949	1.007
2 Yr Average			1.006	2 Yr Average			1.007
5 Yr Average			1.008	5 Yr Average			1.007
Selected Average			1.006	Selected Average			1.007
	120	132			240	252	
2004	170,567	172,035	1.009	1994	110,250	110,946	1.006
2005	167,887	169,477	1.009	1995	100,483	101,518	1.010
2006	169,573	171,889	1.014	1996	99,789	100,351	1.006
2007	171,746	172,968	1.007	1997	101,635	102,127	1.005
2008	159,326	160,187	1.005	1998	115,237	115,789	1.005
2 Yr Average			1.006	2 Yr Average			1.005
5 Yr Average			1.009	5 Yr Average			1.006
Selected Average			1.006	Selected Average			1.005
	132	144					
2003	156,506	158,105	1.010				
2004	172,035	173,188	1.007				
2005	169,477	170,927	1.009				
2006	171,889	174,295	1.014				
2007	172,968	173,981	1.006				
2 Yr Average			1.010				
5 Yr Average			1.009				
Selected Average			1.010				

Notes:  
 Losses from Aggregate Financial Data.



# II 000015 STIP

Section II - Loss Development  
 Subsection B - Policy Year Data  
 7/1/2020

Section II - B  
 Exhibit 3  
 Page 1

## Policy Year Aggregate Financial Data Calculation of Indemnity Paid Plus Case Loss Development Factors Industry

Policy Year	Losses (in 000's)		Loss Development Factor	Policy Year	Losses (in 000's)		Loss Development Factor
	Evaluated at Month				Evaluated at Month		
	24	36			144	156	
2012	206,853	296,005	1.431	2002	300,307	299,834	0.998
2013	229,996	312,626	1.359	2003	315,803	317,405	1.005
2014	244,560	352,059	1.442	2004	349,833	351,928	1.006
2015	250,045	350,171	1.400	2005	340,793	342,171	1.004
2016	244,171	350,021	1.434	2006	333,617	333,814	1.001
2 Yr Average			1.417	2 Yr Average			1.002
5 Yr Average			1.413	5 Yr Average			1.003
Selected Average			1.413	Selected Average			1.003
	36	48			156	168	
2011	293,617	340,663	1.160	2001	281,489	282,058	1.002
2012	296,005	336,705	1.137	2002	299,834	301,238	1.005
2013	312,626	346,083	1.107	2003	317,405	317,556	1.000
2014	352,659	397,783	1.128	2004	351,928	352,410	1.001
2015	350,171	398,126	1.137	2005	342,171	342,791	1.002
2 Yr Average			1.132	2 Yr Average			1.002
5 Yr Average			1.134	5 Yr Average			1.002
Selected Average			1.134	Selected Average			1.002
	48	60			168	180	
2010	317,959	336,637	1.059	2000	280,312	279,280	0.996
2011	340,663	363,049	1.066	2001	282,058	282,198	1.000
2012	336,705	358,235	1.064	2002	301,238	300,964	0.999
2013	346,083	366,011	1.058	2003	317,556	317,624	1.000
2014	397,783	420,571	1.057	2004	352,410	352,919	1.001
2 Yr Average			1.057	2 Yr Average			1.001
5 Yr Average			1.061	5 Yr Average			1.000
Selected Average			1.061	Selected Average			1.000
	60	72			180	192	
2009	318,596	323,290	1.015	1999	248,923	249,207	1.001
2010	336,637	344,326	1.023	2000	279,280	279,474	1.001
2011	363,049	366,678	1.010	2001	282,198	281,807	0.999
2012	358,235	367,202	1.025	2002	300,964	301,276	1.001
2013	366,011	373,753	1.021	2003	317,624	318,585	1.003
2 Yr Average			1.023	2 Yr Average			1.002
5 Yr Average			1.019	5 Yr Average			1.001
Selected Average			1.019	Selected Average			1.001
	72	84			192	204	
2008	332,557	334,314	1.005	1998	235,698	235,789	1.000
2009	323,290	323,530	1.001	1999	249,207	249,949	1.003
2010	344,326	342,951	0.996	2000	279,474	279,599	1.000
2011	366,678	368,558	1.005	2001	281,807	282,069	1.001
2012	367,202	371,812	1.013	2002	301,276	301,695	1.001
2 Yr Average			1.009	2 Yr Average			1.001
5 Yr Average			1.004	5 Yr Average			1.001
Selected Average			1.004	Selected Average			1.001
	84	96			204	216	
2007	340,289	343,425	1.009	1997	219,588	220,460	1.004
2008	334,314	333,016	0.996	1998	235,789	235,898	1.000
2009	323,530	323,554	1.000	1999	249,949	249,407	0.998
2010	342,951	343,788	1.002	2000	279,599	279,743	1.001
2011	368,558	369,558	1.003	2001	282,069	282,226	1.001
2 Yr Average			1.003	2 Yr Average			1.001
5 Yr Average			1.002	5 Yr Average			1.001
Selected Average			1.002	Selected Average			1.001
	96	108			216	228	
2006	328,089	331,005	1.009	1996	207,248	208,259	1.005
2007	343,425	342,873	0.998	1997	220,460	220,337	0.999
2008	333,016	331,476	0.995	1998	235,898	236,528	1.003
2009	323,554	322,237	0.996	1999	249,407	249,509	1.000
2010	343,788	344,153	1.001	2000	279,743	280,551	1.003
2 Yr Average			0.998	2 Yr Average			1.002
5 Yr Average			1.000	5 Yr Average			1.002
Selected Average			1.000	Selected Average			1.002
	108	120			228	240	
2005	338,984	340,247	1.001	1995	227,302	227,131	0.999
2006	331,005	332,214	1.004	1996	208,259	208,158	1.000
2007	342,873	343,136	1.001	1997	220,337	221,040	1.003
2008	331,476	334,199	1.008	1998	236,528	236,470	1.000
2009	322,237	323,982	1.005	1999	249,509	249,466	1.000
2 Yr Average			1.007	2 Yr Average			1.000
5 Yr Average			1.004	5 Yr Average			1.000
Selected Average			1.004	Selected Average			1.000
	120	132			240	252	
2004	348,296	348,868	1.002	1994	226,372	226,568	1.001
2005	340,247	340,034	0.999	1995	227,131	227,580	1.002
2006	332,214	333,061	1.003	1996	208,158	208,114	1.000
2007	343,136	344,084	1.003	1997	221,040	221,222	1.001
2008	334,199	335,243	1.003	1998	236,470	236,765	1.001
2 Yr Average			1.003	2 Yr Average			1.001
5 Yr Average			1.002	5 Yr Average			1.001
Selected Average			1.002	Selected Average			1.001
	132	144					
2003	315,630	315,803	1.001				
2004	348,868	349,833	1.003				
2005	340,034	340,793	1.002				
2006	333,061	333,617	1.002				
2007	344,084	343,977	1.000				
2 Yr Average			1.001				
5 Yr Average			1.001				
Selected Average			1.001				

Notes:  
 Losses from Aggregate Financial Data.

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Section II - Loss Development  
 Subsection B - Policy Year Data  
 7/1/2020

Section II - B  
 Exhibit 3  
 Page 2

## Policy Year Aggregate Financial Data Calculation of Medical Paid Plus Case Loss Development Factors Industry

Policy Year	Losses (in 000's)		Loss Development Factor	Policy Year	Losses (in 000's)		Loss Development Factor
	Evaluated at Month				Evaluated at Month		
	24	36			144	156	
2012	195,998	209,560	1.069	2002	171,443	171,106	0.998
2013	193,375	199,412	1.031	2003	179,864	179,148	0.996
2014	224,140	237,529	1.060	2004	199,435	199,536	0.995
2015	209,018	226,295	1.083	2005	192,929	195,218	1.012
2016	209,378	219,391	1.048	2006	200,393	201,686	1.006
2 Yr Average			1.065	2 Yr Average			1.009
5 Yr Average			1.058	5 Yr Average			1.002
Selected Average			1.058	Selected Average			1.002
	36	48			156	168	
2011	203,011	213,860	1.053	2001	155,835	155,303	0.997
2012	209,560	216,736	1.034	2002	171,106	172,875	1.010
2013	199,412	199,004	0.998	2003	179,148	179,481	1.002
2014	237,529	241,178	1.015	2004	198,536	198,437	1.000
2015	226,295	231,168	1.022	2005	195,218	195,216	1.000
2 Yr Average			1.018	2 Yr Average			1.000
5 Yr Average			1.025	5 Yr Average			1.002
Selected Average			1.025	Selected Average			1.002
	48	60			168	180	
2010	198,386	199,788	1.007	2000	155,564	157,048	1.010
2011	213,860	214,906	1.005	2001	155,303	156,042	1.005
2012	216,736	217,665	1.004	2002	172,875	173,497	1.004
2013	199,004	200,382	1.007	2003	179,481	180,402	1.005
2014	241,178	241,678	1.002	2004	198,437	199,102	1.003
2 Yr Average			1.004	2 Yr Average			1.004
5 Yr Average			1.005	5 Yr Average			1.005
Selected Average			1.005	Selected Average			1.005
	60	72			180	192	
2009	189,421	190,837	1.007	1999	138,608	139,322	1.005
2010	199,788	201,052	1.006	2000	157,048	153,219	0.976
2011	214,906	211,313	0.983	2001	156,042	155,669	0.998
2012	217,665	215,028	0.988	2002	173,497	173,063	0.998
2013	200,382	200,877	1.002	2003	180,402	181,672	1.007
2 Yr Average			0.995	2 Yr Average			1.002
5 Yr Average			0.997	5 Yr Average			0.997
Selected Average			0.997	Selected Average			0.997
	72	84			192	204	
2008	179,469	176,872	0.986	1998	137,483	140,434	1.021
2009	190,837	189,421	0.993	1999	139,322	140,678	1.010
2010	201,052	201,167	1.001	2000	153,219	152,897	0.998
2011	211,313	212,516	1.006	2001	155,669	155,438	0.999
2012	215,028	210,549	0.979	2002	173,063	172,955	0.999
2 Yr Average			0.992	2 Yr Average			0.999
5 Yr Average			0.993	5 Yr Average			1.005
Selected Average			0.993	Selected Average			1.005
	84	96			204	216	
2007	194,810	195,459	1.003	1997	110,995	110,936	0.999
2008	176,872	174,103	0.984	1998	140,434	139,731	0.995
2009	189,421	187,055	0.988	1999	140,678	143,663	1.021
2010	201,167	203,305	1.011	2000	152,897	152,373	0.997
2011	212,516	211,533	0.995	2001	155,438	155,711	1.002
2 Yr Average			1.003	2 Yr Average			0.999
5 Yr Average			0.996	5 Yr Average			1.003
Selected Average			0.996	Selected Average			1.003
	96	108			216	228	
2006	195,798	199,149	1.017	1996	111,273	111,244	1.000
2007	195,459	193,528	0.990	1997	110,936	111,323	1.003
2008	174,103	173,560	0.997	1998	139,731	140,432	1.005
2009	187,055	187,392	1.002	1999	143,663	144,018	1.002
2010	203,305	203,809	1.002	2000	152,373	152,838	1.003
2 Yr Average			1.002	2 Yr Average			1.003
5 Yr Average			1.002	5 Yr Average			1.003
Selected Average			1.002	Selected Average			1.003
	108	120			228	240	
2005	195,104	194,255	0.996	1995	109,703	110,274	1.005
2006	199,149	200,949	1.009	1996	111,244	111,878	1.006
2007	193,528	192,467	0.995	1997	111,323	110,781	0.995
2008	173,560	173,124	0.997	1998	140,432	137,083	0.976
2009	187,392	184,434	0.984	1999	144,018	144,501	1.003
2 Yr Average			0.991	2 Yr Average			0.990
5 Yr Average			0.996	5 Yr Average			0.997
Selected Average			0.996	Selected Average			0.997
	120	132			240	252	
2004	199,483	199,410	1.000	1994	123,241	123,347	1.001
2005	194,255	193,262	0.995	1995	110,274	110,869	1.005
2006	200,949	200,692	0.999	1996	111,878	111,168	0.994
2007	192,467	193,536	1.006	1997	110,781	110,861	1.001
2008	173,124	173,611	1.003	1998	137,083	136,982	0.999
2 Yr Average			1.004	2 Yr Average			1.000
5 Yr Average			1.000	5 Yr Average			1.000
Selected Average			1.000	Selected Average			1.000
	132	144					
2003	178,051	179,864	1.010				
2004	199,410	199,435	1.000				
2005	193,262	192,929	0.998				
2006	200,692	200,393	0.999				
2007	193,536	191,380	0.994				
2 Yr Average			0.994				
5 Yr Average			0.999				
Selected Average			0.999				

Notes:  
 Losses from Aggregate Financial Data.

Paid Loss Tail Factors

Indemnity Paid 252nd Month to Ultimate Loss Tail Development Factor

(1) Policy Year	(2) Losses for Policy Year 252 mo	(3) Losses for All Prior Years		(5) 252 - Ult for PY	(6) Growth Factor	(7) Indicated 252 - Ult for PY
		Previous	Current			
1993	268,665,927		8,880,158,689			
1994	221,225,984	9,148,824,616	9,167,116,861	1.083	0.490	1.041
1995	223,031,870	9,388,342,845	9,402,180,565	1.062	0.510	1.032
1996	204,636,242	9,625,212,435	9,638,721,643	1.066	0.490	1.032
1997	217,854,132	9,843,357,885	9,860,598,230	1.079	0.520	1.041
1998	233,116,085	10,078,452,362	10,092,933,458	1.062	0.570	1.035
					5yr average	1.036

Medical Paid 252nd Month to Ultimate Loss Tail Development Factor

(8) Policy Year	(9) Losses for Policy Year 252 mo	(10) Losses for All Prior Years		(12) 252 - Ult for PY	(13) Growth Factor	(14) Indicated 252 - Ult for PY
		Previous	Current			
1993	123,599,131		2,706,130,189			
1994	110,946,330	2,829,729,320	2,841,180,205	1.103	0.790	1.082
1995	101,518,268	2,952,126,535	2,962,984,911	1.107	0.730	1.078
1996	100,351,087	3,064,503,179	3,075,454,227	1.109	0.720	1.079
1997	102,127,029	3,175,805,314	3,187,040,541	1.110	0.750	1.083
1998	115,788,696	3,289,167,570	3,299,307,208	1.088	0.820	1.072
					5yr average	1.079

Notes:

(2), (3), (4): Indemnity Paid Losses from Aggregate Financial Data.

(9), (10), (11): Medical Paid Losses from Aggregate Financial Data.

(5) = 1.000 + ((4)-(3)) / (2)

(6): From Page 2

(7) = 1.000 + [(5) - 1.000] x (6)

(12) = 1.000 + ((11)-(10)) / (9)

(13): From Page 3

(14) = 1.000 + [(12) - 1.000] x (13)

Growth Factor Adjustment  
 Indemnity Paid Losses

Policy Year (1)	Paid Losses (2)	Relative Development for Report Interval (3)					Dollar Development (4)					On-Level Dollar Development (5)					
							Prior to 1998	Prior to 1997	Prior to 1996	Prior to 1995	Prior to 1994	Prior to 1998	Prior to 1997	Prior to 1996	Prior to 1995	Prior to 1994	
1969	61,150,937					0.013%					7,659					25,798	
1970	63,137,628				0.010%	0.025%				6,105					20,098	51,596	
1971	62,891,597		0.010%		0.019%	0.038%				12,162				19,249	40,197	77,395	
1972	69,381,355		0.013%	0.020%	0.029%	0.050%				8,765				25,719	38,498	103,193	
1973	80,756,773	0.011%	0.025%	0.030%	0.039%	0.063%	8,834	20,403	23,889	31,232	50,572	23,973	51,438	57,747	80,394	128,991	
1974	85,055,307	0.022%	0.038%	0.039%	0.048%	0.075%	18,608	32,234	33,547	41,119	63,916	47,946	77,157	76,997	100,492	154,789	
1975	85,395,338	0.033%	0.051%	0.049%	0.058%	0.088%	28,023	43,151	42,102	49,540	74,867	71,919	102,876	96,246	120,590	180,587	
1976	102,015,770	0.044%	0.063%	0.059%	0.068%	0.100%	44,636	64,436	60,355	69,045	102,216	95,893	128,595	115,495	140,689	206,386	
1977	118,593,916	0.055%	0.076%	0.069%	0.077%	0.113%	64,862	89,889	81,857	91,732	133,680	119,866	154,314	134,744	160,787	232,184	
1978	166,564,835	0.066%	0.088%	0.079%	0.087%	0.125%	109,319	147,291	131,393	144,941	208,614	143,839	180,033	153,993	180,886	257,982	
1979	192,792,326	0.077%	0.101%	0.089%	0.097%	0.138%	147,621	194,838	171,092	186,404	265,609	167,812	205,752	173,242	200,984	283,780	
1980	212,043,084	0.088%	0.114%	0.099%	0.106%	0.150%	185,555	241,079	209,085	225,519	318,688	191,785	231,471	192,491	221,083	309,578	
1981	252,097,708	0.098%	0.126%	0.108%	0.116%	0.163%	248,182	318,465	273,438	292,494	410,461	215,758	257,190	211,740	241,181	335,377	
1982	276,922,150	0.109%	0.139%	0.118%	0.126%	0.175%	302,912	384,808	327,670	348,071	485,563	239,731	282,909	230,990	261,279	361,175	
1983	311,545,443	0.120%	0.152%	0.128%	0.135%	0.188%	374,864	472,276	399,358	421,712	585,292	263,705	308,628	250,239	281,378	386,973	
1984	372,535,769	0.131%	0.164%	0.138%	0.145%	0.200%	489,000	611,793	514,273	540,289	746,531	287,678	334,347	269,488	301,476	412,771	
1985	456,659,428	0.142%	0.177%	0.148%	0.155%	0.213%	649,374	807,633	675,432	706,446	972,302	311,651	360,066	288,737	321,575	438,569	
1986	576,220,704	0.153%	0.189%	0.158%	0.164%	0.225%	882,422	1,091,877	909,089	947,119	1,299,036	335,624	385,785	307,986	341,673	464,368	
1987	728,298,652	0.164%	0.202%	0.168%	0.174%	0.238%	1,194,978	1,472,051	1,220,833	1,267,502	1,733,098	359,597	411,504	327,235	361,771	490,166	
1988	803,630,650	0.175%	0.215%	0.177%	0.184%	0.250%	1,406,487	1,725,833	1,426,352	1,476,307	2,013,012	383,570	437,223	346,484	381,870	515,964	
1989	834,658,187	0.186%	0.227%	0.187%	0.193%	0.263%	1,552,090	1,897,905	1,563,724	1,614,006	2,195,270	407,543	462,942	365,734	401,968	541,762	
1990	760,174,086	0.197%	0.240%	0.197%	0.203%	0.276%	1,496,734	1,824,568	1,499,135	1,543,473	2,094,574	431,517	488,662	384,983	422,067	567,560	
1991	508,433,535	0.208%	0.253%	0.207%	0.213%	0.288%	1,056,688	1,284,569	1,052,813	1,081,492	1,464,610	455,490	514,381	404,232	442,165	593,359	
1992	312,473,246	0.219%	0.265%	0.217%	0.222%	0.301%	683,600	828,945	677,849	694,876	939,256	479,463	540,100	423,481	462,264	619,157	
1993	253,188,245	0.230%	0.278%	0.227%	0.232%	0.313%	581,597	703,655	574,208	587,518	792,763	503,436	565,819	442,730	482,362	644,955	
1994	205,982,098	0.241%	0.291%	0.237%	0.242%		495,691	598,481	487,459	497,893		527,409	591,538	461,979	502,460		
1995	207,871,610	0.252%	0.303%	0.247%			522,977	630,231	512,428			551,382	617,257	481,228			
1996	195,215,124	0.263%	0.316%				512,488	616,520				575,355	642,976				
1997	203,592,199	0.273%					556,750					599,329					
<b>1998</b>	<b>219,162,288</b>																
							<b>13,614,291</b>	<b>16,111,697</b>	<b>12,887,266</b>	<b>12,897,122</b>	<b>17,031,792</b>	<b>7,791,272</b>	<b>8,358,684</b>	<b>6,255,969</b>	<b>6,531,985</b>	<b>8,384,415</b>	
(6) Indicated Growth Factor:												0.572	0.519	0.485	0.506	0.492	
<b>(7) Selected Growth Factor:</b>												<b>0.570</b>	<b>0.520</b>	<b>0.490</b>	<b>0.510</b>	<b>0.490</b>	

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Notes:  
 (2): Losses from Aggregate Financial Data evaluated as of 108 months.  
 (3): Estimated % paid loss emergence for the report interval.  
 (4) = (2) x (3)  
 (5) = (3) x [(2) for PY199X] respectively for each 'Prior to 199X' column  
 (6) = [ Sum of (5) ] / [ Sum of (4) ]

Growth Factor Adjustment  
 Medical Paid Losses

Policy Year (1)	Paid Losses (2)	Relative Development for Report Interval (3)				Dollar Development					On-Level Dollar Development						
		Prior to 1998	Prior to 1997	Prior to 1996	Prior to 1995	Prior to 1994	Prior to 1998	Prior to 1997	Prior to 1996	Prior to 1995	Prior to 1994						
1969	17,362,159				0.025%					4,340							24,538
1970	17,935,954				0.024%				4,323	8,967						22,110	49,075
1971	19,844,783			0.024%	0.048%	0.075%			4,802	14,881						44,221	73,613
1972	19,854,253		0.026%	0.048%	0.072%	0.100%			9,609	14,358						66,331	98,151
1973	26,362,657	0.022%	0.051%	0.073%	0.096%	0.125%	5,826	13,474	19,138	25,419	32,948	22,463	48,003	65,394	88,441	122,689	
1974	27,492,043	0.044%	0.077%	0.097%	0.121%	0.150%	12,152	21,076	26,610	33,135	41,232	44,926	72,005	87,192	110,551	147,226	
1975	29,776,884	0.066%	0.102%	0.121%	0.145%	0.175%	19,743	30,437	36,027	43,067	52,102	67,389	96,007	108,991	132,662	171,764	
1976	33,819,434	0.088%	0.128%	0.145%	0.169%	0.200%	29,898	43,211	49,102	57,066	67,629	89,852	120,009	130,789	154,772	196,302	
1977	38,038,776	0.111%	0.153%	0.169%	0.193%	0.225%	42,035	58,323	64,432	73,355	85,575	112,315	144,010	152,587	176,882	220,839	
1978	49,641,906	0.133%	0.179%	0.194%	0.217%	0.250%	65,828	88,799	96,099	107,697	124,086	134,778	168,012	174,385	198,993	245,377	
1979	56,638,181	0.155%	0.204%	0.218%	0.241%	0.275%	87,624	115,787	123,348	136,527	155,732	157,241	192,014	196,183	221,103	269,915	
1980	63,479,077	0.177%	0.230%	0.242%	0.265%	0.300%	112,237	145,994	153,607	168,319	190,409	179,704	216,016	217,981	243,213	294,452	
1981	75,831,715	0.199%	0.256%	0.266%	0.289%	0.325%	150,837	193,781	201,847	219,353	246,417	202,168	240,017	239,779	265,324	318,990	
1982	76,241,100	0.221%	0.281%	0.290%	0.313%	0.350%	168,501	214,310	221,386	238,915	266,804	224,631	264,019	261,577	287,434	343,528	
1983	85,985,480	0.243%	0.307%	0.315%	0.337%	0.375%	209,041	263,674	270,488	290,178	322,398	247,094	288,021	283,375	309,544	368,066	
1984	101,461,971	0.265%	0.332%	0.339%	0.362%	0.400%	269,091	337,061	343,725	366,864	405,788	269,557	312,023	305,173	331,654	392,603	
1985	130,574,847	0.287%	0.358%	0.363%	0.386%	0.425%	375,160	467,142	473,947	503,605	554,861	292,020	336,024	326,972	353,765	417,141	
1986	153,278,583	0.309%	0.383%	0.387%	0.410%	0.450%	474,268	587,535	593,445	628,118	689,652	314,483	360,026	348,770	375,875	441,679	
1987	186,366,588	0.332%	0.409%	0.411%	0.434%	0.475%	617,836	761,990	766,648	808,633	885,110	336,946	384,028	370,568	397,985	466,216	
1988	209,142,716	0.354%	0.434%	0.436%	0.458%	0.500%	739,566	908,559	910,950	957,871	1,045,559	359,409	408,029	392,366	420,096	490,754	
1989	224,450,238	0.376%	0.460%	0.460%	0.482%	0.525%	843,302	1,032,414	1,031,936	1,082,084	1,178,190	381,872	432,031	414,164	442,206	515,292	
1990	211,293,690	0.398%	0.486%	0.484%	0.506%	0.550%	840,568	1,025,892	1,022,576	1,069,588	1,161,944	404,335	456,033	435,962	464,316	539,829	
1991	179,075,841	0.420%	0.511%	0.508%	0.530%	0.575%	751,977	915,226	909,988	949,665	1,029,534	426,798	480,035	457,760	486,427	564,367	
1992	138,830,229	0.442%	0.537%	0.532%	0.554%	0.600%	613,660	745,014	739,071	769,702	832,858	449,261	504,036	479,558	508,537	588,905	
1993	114,397,185	0.464%	0.562%	0.557%	0.579%	0.625%	530,944	643,131	636,682	661,816	714,877	471,724	528,038	501,356	530,647	613,443	
1994	98,165,322	0.486%	0.588%	0.581%	0.603%		477,304	576,962	570,097	591,574		494,187	552,040	523,154	552,757		
1995	91,724,159	0.508%	0.613%	0.605%			466,257	562,544	554,885			516,650	576,042	544,953			
1996	90,082,306	0.530%	0.639%				477,820	575,494				539,113	600,043				
1997	93,925,011	0.553%					518,962					561,576					
1998	101,637,736																
						8,900,436	10,332,904	9,830,443	9,810,800	10,131,744	7,300,494	7,800,563	7,084,384	7,185,847	7,974,754		
(6) Indicated Growth Factor:											0.820	0.755	0.721	0.732	0.787		
(7) Selected Growth Factor:											0.820	0.750	0.720	0.730	0.790		

II 000019 STIP

- Notes:  
 (2): Losses from Aggregate Financial Data evaluated as of 108 months.  
 (3): Estimated % paid loss emergence for the report interval.  
 (4) = (2) x (3)  
 (5) = (3) x [(2) for PY199X] respectively for each 'Prior to 199X' column  
 (6) = [ Sum of (5) ] / [ Sum of (4) ]

Paid Plus Case Loss Tail Factors

Indemnity Paid Plus Case 252nd Month to Ultimate Loss Tail Development Factor

(1) Policy Year	(2) Losses for Policy Year 252 mo	(3) Losses for All Prior Years		(5) 252 - Ult for PY	(6) Growth Factor	(7) Indicated 252 - Ult for PY
		Previous	Current			
1993	273,150,830		8,995,185,204			
1994	226,568,491	9,268,336,034	9,276,061,837	1.034	0.450	1.015
1995	227,580,266	9,502,630,328	9,510,686,884	1.035	0.470	1.017
1996	208,113,561	9,738,267,150	9,745,942,759	1.037	0.440	1.016
1997	221,222,248	9,954,056,320	9,960,113,766	1.027	0.480	1.013
1998	236,765,020	10,181,336,014	10,187,878,703	1.028	0.540	1.015
					5yr average	1.015

Medical Paid Plus Case 252nd Month to Ultimate Loss Tail Development Factor

(8) Policy Year	(9) Losses for Policy Year 252 mo	(10) Losses for All Prior Years		(12) 252 - Ult for PY	(13) Growth Factor	(14) Indicated 252 - Ult for PY
		Previous	Current			
1993	135,457,291		2,854,356,774			
1994	123,347,374	2,989,814,065	2,991,536,326	1.014	0.790	1.011
1995	110,868,845	3,114,883,700	3,125,894,585	1.099	0.700	1.070
1996	111,167,724	3,236,763,430	3,239,647,943	1.026	0.700	1.018
1997	110,861,446	3,350,815,667	3,346,132,902	0.958	0.730	0.969
1998	136,981,651	3,456,994,348	3,459,447,179	1.018	0.910	1.016
					5yr average	1.017

Notes:

- (2), (3), (4): Indemnity Paid Plus Case Losses from Aggregate Financial Data.
- (9), (10), (11): Medical Paid Plus Case Losses from Aggregate Financial Data.
- (5) =  $1.000 + ((4)-(3)) / (2)$
- (6): From Page 2
- (7) =  $1.000 + [(5) - 1.000] \times (6)$
- (12) =  $1.000 + ((11)-(10)) / (9)$
- (13): From Page 3
- (14) =  $1.000 + [(12) - 1.000] \times (13)$

II 000020 STIP

Growth Factor Adjustment  
Indemnity Paid Plus Case Losses

Policy Year (1)	Incurred Losses (2)	Relative Development for Report Interval (3)					Dollar Development					On-Level Dollar Development						
		Prior to 1998	Prior to 1997	Prior to 1996	Prior to 1995	Prior to 1994	Prior to 1998	Prior to 1997	Prior to 1996	Prior to 1995	Prior to 1994	Prior to 1998	Prior to 1997	Prior to 1996	Prior to 1995	Prior to 1994		
1974	93,114,446										6,802						16,360	
1975	94,118,500			0.008%	0.016%	0.022%					7,439						17,836	32,720
1976	111,635,916			0.008%	0.016%	0.022%					17,647						35,673	49,079
1977	129,878,901		0.006%	0.016%	0.024%	0.029%					30,797						53,509	65,439
1978	180,931,363	0.007%	0.013%	0.023%	0.032%	0.037%	12,840	22,878	42,108	57,203	66,086	16,296	27,269	47,731	71,346	81,799	81,799	81,799
1979	209,145,757	0.014%	0.019%	0.031%	0.040%	0.044%	29,685	39,668	64,899	82,655	91,670	32,592	40,904	63,642	89,182	98,159	98,159	98,159
1980	233,648,579	0.021%	0.025%	0.039%	0.047%	0.051%	49,743	59,087	90,627	110,806	119,478	48,887	54,539	79,552	107,019	114,518	114,518	114,518
1981	277,638,496	0.028%	0.032%	0.047%	0.055%	0.058%	78,812	87,765	129,228	153,612	162,254	65,183	68,173	95,463	124,855	130,878	130,878	130,878
1982	302,127,753	0.035%	0.038%	0.054%	0.063%	0.066%	107,204	114,608	164,065	191,042	198,636	81,479	81,808	111,373	142,692	147,238	147,238	147,238
1983	342,570,596	0.043%	0.044%	0.062%	0.071%	0.073%	145,866	151,607	212,602	243,692	250,251	97,775	95,443	127,284	160,528	163,598	163,598	163,598
1984	405,050,772	0.050%	0.051%	0.070%	0.079%	0.080%	201,214	204,867	282,800	320,153	325,483	114,071	109,077	143,194	178,365	179,958	179,958	179,958
1985	486,076,366	0.057%	0.057%	0.078%	0.087%	0.088%	275,960	276,579	377,078	422,616	426,100	130,366	122,712	159,105	196,201	196,317	196,317	196,317
1986	616,197,715	0.064%	0.063%	0.085%	0.095%	0.095%	393,563	389,576	525,823	584,453	585,180	146,662	136,346	175,015	214,037	212,677	212,677	212,677
1987	782,769,183	0.071%	0.070%	0.093%	0.103%	0.102%	555,501	544,375	728,688	804,314	800,548	162,958	149,981	190,926	231,874	229,037	229,037	229,037
1988	850,068,974	0.078%	0.076%	0.101%	0.111%	0.110%	663,587	644,922	857,283	940,656	931,475	179,254	163,616	206,836	249,710	245,397	245,397	245,397
1989	886,552,419	0.085%	0.082%	0.109%	0.119%	0.117%	754,983	728,652	962,851	1,051,100	1,036,216	195,550	177,250	222,747	267,547	261,757	261,757	261,757
1990	807,089,871	0.092%	0.089%	0.116%	0.126%	0.124%	744,589	714,368	939,161	1,020,682	1,002,298	211,845	190,885	238,657	285,383	278,116	278,116	278,116
1991	535,910,333	0.099%	0.095%	0.124%	0.134%	0.131%	532,441	508,224	665,180	720,095	704,678	228,141	204,520	254,568	303,220	294,476	294,476	294,476
1992	330,105,459	0.106%	0.101%	0.132%	0.142%	0.139%	351,395	333,922	435,340	469,649	458,176	244,437	218,154	270,478	321,056	310,836	310,836	310,836
1993	270,377,734	0.114%	0.107%	0.140%	0.150%	0.146%	307,003	290,598	377,546	406,044	395,027	260,733	231,789	286,388	338,893	327,196	327,196	327,196
1994	223,950,296	0.121%	0.114%	0.147%	0.158%		270,179	254,857	330,090	354,022		277,029	245,424	302,299	356,729			
1995	225,662,856	0.128%	0.120%	0.155%			288,260	271,073	350,120			293,324	259,058	318,209				
1996	205,095,562	0.135%	0.126%				276,542	259,333				309,620	272,693					
1997	215,661,055	0.142%					306,093					325,916						
<b>1998</b>	<b>229,627,686</b>																	
							<b>6,345,458</b>	<b>5,905,171</b>	<b>7,564,300</b>	<b>7,988,678</b>	<b>7,636,525</b>	<b>3,422,117</b>	<b>2,863,275</b>	<b>3,341,199</b>	<b>3,745,656</b>	<b>3,435,554</b>		
(6) Indicated Growth Factor:												0.539	0.485	0.442	0.469	0.450		
<b>(7) Selected Growth Factor:</b>												<b>0.540</b>	<b>0.480</b>	<b>0.440</b>	<b>0.470</b>	<b>0.450</b>		

II 000021 STIP

- Notes:  
(2): Losses from Aggregate Financial Data evaluated as of 108 months.  
(3): Estimated % paid loss emergence for the report interval.  
(4) = (2) x (3)  
(5) = (3) x [(2) for PY199X] respectively for each 'Prior to 199X' column  
(6) = [ Sum of (5) ] / [ Sum of (4) ]

Growth Factor Adjustment  
 Medical Paid Plus Case Losses

Policy Year (1)	Incurred Losses (2)	Relative Development for Report Interval (3)				Dollar Development					On-Level Dollar Development					
						Prior to 1998	Prior to 1997	Prior to 1996 (4)	Prior to 1995	Prior to 1994	Prior to 1998	Prior to 1997	Prior to 1996 (5)	Prior to 1995	Prior to 1994	
1974	29,251,756				0.005%					1,544					6,289	
1975	31,935,594			0.033%	0.011%				10,592	3,372			34,934	12,577		
1976	35,848,325		0.009%	0.066%	0.016%			3,095	23,780	5,677			69,868	18,866		
1977	40,538,158	-0.015%	0.017%	0.100%	0.021%		(5,971)	7,000	40,337	8,560		(15,803)	17,927	104,802	25,154	
1978	52,386,790	0.008%	-0.029%	0.026%	0.133%	0.026%	4,056	(15,433)	13,568	69,502	13,828	10,155	(31,607)	26,890	139,736	31,443
1979	60,704,663	0.015%	-0.044%	0.035%	0.166%	0.032%	9,401	(26,826)	20,964	100,672	19,228	20,310	(47,410)	35,854	174,670	37,731
1980	67,230,488	0.023%	-0.059%	0.043%	0.199%	0.037%	15,618	(39,613)	29,022	133,793	24,844	30,466	(63,213)	44,817	209,604	44,020
1981	83,085,174	0.031%	-0.074%	0.052%	0.232%	0.042%	25,734	(61,193)	43,039	192,902	35,089	40,621	(79,017)	53,780	244,538	50,308
1982	80,268,854	0.039%	-0.088%	0.060%	0.265%	0.048%	31,077	(70,942)	48,510	212,987	38,137	50,776	(94,820)	62,744	279,471	56,597
1983	91,349,585	0.046%	-0.103%	0.069%	0.299%	0.053%	42,441	(94,192)	63,093	272,688	48,224	60,931	(110,623)	71,707	314,405	62,885
1984	109,642,919	0.054%	-0.118%	0.078%	0.332%	0.058%	59,430	(129,205)	85,194	363,661	63,670	71,087	(126,427)	80,670	349,339	69,174
1985	144,722,883	0.062%	-0.133%	0.086%	0.365%	0.063%	89,651	(191,861)	124,946	528,015	91,681	81,242	(142,230)	89,634	384,273	75,462
1986	170,452,040	0.070%	-0.147%	0.095%	0.398%	0.069%	118,787	(251,079)	161,875	678,422	116,978	91,397	(158,033)	98,597	419,207	81,751
1987	206,097,408	0.077%	-0.162%	0.104%	0.431%	0.074%	159,587	(333,944)	213,520	888,653	152,321	101,552	(173,836)	107,561	454,141	88,039
1988	223,149,941	0.085%	-0.177%	0.112%	0.464%	0.079%	190,071	(394,444)	250,452	1,036,194	176,704	111,708	(189,640)	116,524	489,075	94,328
1989	236,003,923	0.093%	-0.191%	0.121%	0.498%	0.084%	219,294	(451,929)	285,254	1,174,158	199,342	121,863	(205,443)	125,487	524,009	100,616
1990	222,561,096	0.101%	-0.206%	0.130%	0.531%	0.090%	224,036	(458,971)	288,221	1,181,097	199,736	132,018	(221,246)	134,451	558,943	106,905
1991	189,013,342	0.108%	-0.221%	0.138%	0.564%	0.095%	204,902	(417,630)	261,094	1,065,756	179,607	142,173	(237,050)	143,414	593,877	113,193
1992	147,102,539	0.116%	-0.236%	0.147%	0.597%	0.100%	170,859	(346,695)	215,901	878,231	147,548	152,329	(252,853)	152,377	628,811	119,482
1993	129,907,619	0.124%	-0.250%	0.155%	0.630%	0.106%	160,946	(325,305)	201,880	818,662	137,159	162,484	(268,656)	161,341	663,745	125,770
1994	119,121,012	0.132%	-0.265%	0.164%	0.663%		156,806	(315,841)	195,401	790,196		172,639	(284,460)	170,304	698,679	
1995	105,324,958	0.139%	-0.280%	0.173%			146,801	(294,776)	181,864			182,794	(300,263)	179,268		
1996	103,821,317	0.147%	-0.295%				152,745	(305,861)				192,950	(316,066)			
1997	107,285,363	0.155%					166,148					203,105				
<b>1998</b>	<b>131,148,981</b>															
						<b>2,348,390</b>	<b>(4,531,712)</b>	<b>2,693,893</b>	<b>10,460,297</b>	<b>1,663,250</b>	<b>2,132,602</b>	<b>(3,318,697)</b>	<b>1,882,309</b>	<b>7,336,126</b>	<b>1,320,586</b>	
<b>(6) Indicated Growth Factor:</b>											<b>0.908</b>	<b>0.732</b>	<b>0.699</b>	<b>0.701</b>	<b>0.794</b>	
<b>(7) Selected Growth Factor:</b>											<b>0.910</b>	<b>0.730</b>	<b>0.700</b>	<b>0.700</b>	<b>0.790</b>	

II 000022 STIP

Notes:  
 (2): Losses from Aggregate Financial Data evaluated as of 108 months.  
 (3): Estimated % paid loss emergence for the report interval.  
 (4) = (2) x (3)  
 (5) = (3) x [(2) for PY199X] respectively for each 'Prior to 199X' column  
 (6) = [ Sum of (5) ] / [ Sum of (4) ]



# II 000023 STIP

Section II - Loss Development  
 Subsection D - Adjustment for Escalation of Benefits  
 7/1/2020

Section II - D  
 Exhibit 1  
 Page 1

## Differential in Indemnity Loss Development

### Paid Loss Development Method Calculation of Adjustment for Differential in Loss Development

Escalated or Unescalated (1)	Injury Type (2)	Implicit LDF to Ultimate From Month				
		168	180	192 (3)	204	216
Escalated	Fatal	3.036	2.859	2.703	2.562	2.433
Escalated	Permanent Total	4.073	3.719	3.417	3.157	2.929
Escalated	Other Indemnity	1.000	1.000	1.000	1.000	1.000
Escalated	Total Indemnity	1.126	1.122	1.117	1.113	1.108
Unescalated	Fatal	1.942	1.861	1.789	1.725	1.668
Unescalated	Permanent Total	2.452	2.295	2.160	2.043	1.941
Unescalated	Other Indemnity	1.000	1.000	1.000	1.000	1.000
Unescalated	Total Indemnity	1.049	1.047	1.044	1.042	1.040

Escalated or Unescalated (4)	Injury Type (5)	Differential in Loss Development at Month				
		168	180	192 (6)	204	216
Escalated	Fatal	1.563	1.536	1.511	1.485	1.459
Escalated	Permanent Total	1.661	1.620	1.582	1.545	1.509
Escalated	Other Indemnity	1.000	1.000	1.000	1.000	1.000
Escalated	Total Indemnity	<b>1.073</b>	<b>1.072</b>	<b>1.070</b>	<b>1.068</b>	<b>1.066</b>

Selected Differential in Indemnity Loss Development at Month 384 1.038

Notes:

(3) = [ (8) Exhibit 1, Page 2 ] / [ (9) Exhibit 1, Page 2 ]

(6) = [ (3) for Escalated ] / [ (3) for Unescalated ]

# II 000024 STIP

## Differential in Indemnity Loss Development

### Paid Loss Development Method Calculation of Adjustment for Differential in Loss Development

Escalated or Unescalated (1)	Injury Type (2)	Losses at Month						Injury Type Weights @ Ultimate (5)
		Ultimate (3)	168	180	192 (4)	204	216	
Escalated	Fatal	874,958	288,217	306,023	323,680	341,550	359,626	1.50%
Escalated	Permanent Total	1,668,738	409,709	448,697	488,350	528,641	569,759	8.44%
Escalated	Other Indemnity							55.93%
Escalated	Total Indemnity							65.87%
Unescalated	Fatal	465,615	239,708	250,218	260,195	269,862	279,221	0.80%
Unescalated	Permanent Total	824,906	336,400	359,427	381,858	403,713	424,987	4.17%
Unescalated	Other Indemnity							55.93%
Unescalated	Total Indemnity							60.90%

Escalated or Unescalated (6)	Injury Type (7)	Estimated Losses at Month					
		Ultimate (8)	168	180	192 (9)	204	216
Escalated	Fatal	1,501	495	525	555	586	617
Escalated	Permanent Total	8,445	2,073	2,271	2,471	2,675	2,883
Escalated	Other Indemnity	55,928	55,928	55,928	55,928	55,928	55,928
Escalated	Total Indemnity	65,875	58,496	58,724	58,955	59,190	59,429
Unescalated	Fatal	799	411	429	447	463	479
Unescalated	Permanent Total	4,174	1,702	1,819	1,932	2,043	2,151
Unescalated	Other Indemnity	55,928	55,928	55,928	55,928	55,928	55,928
Unescalated	Total Indemnity	60,902	58,042	58,177	58,307	58,435	58,558

**Notes:**

Escalation calculation applied only to Fatal and Permanent Total Injury Types.

(4): Average discounted losses are calculated from Simulation Model loss flows using a 3.5% discount rate.

(5): Escalated: From Section IV-E, Exhibit 2, Page 1. As a % of total losses, Indemnity and Medical.

Unescalated: [ (5) for Escalated ] x { [ (3) for Unescalated ] / [ (3) for Escalated ] }.

(8) = (5) x 100,000

(9) = (8) x [ (4) / (3) ]

# II 000025 STIP

Section II - Loss Development  
 Subsection D - Adjustment for Escalation of Benefits  
 7/1/2020

Section II - D  
 Exhibit 2  
 Page 1

## Differential in Indemnity Loss Development

### Paid Plus Case Loss Development Method Calculation of Adjustment for Differential in Loss Development

Escalated or Unescalated (1)	Injury Type (2)	Implicit LDF to Ultimate From Month				
		168	180	192 (3)	204	216
Escalated	Fatal	1.364	1.340	1.317	1.295	1.274
Escalated	Permanent Total	1.398	1.368	1.340	1.313	1.288
Escalated	Other Indemnity	1.000	1.000	1.000	1.000	1.000
Escalated	Total Indemnity	1.044	1.042	1.039	1.037	1.035
Unescalated	Fatal	1.212	1.198	1.184	1.171	1.159
Unescalated	Permanent Total	1.253	1.234	1.215	1.198	1.183
Unescalated	Other Indemnity	1.000	1.000	1.000	1.000	1.000
Unescalated	Total Indemnity	1.016	1.015	1.014	1.013	1.013

Escalated or Unescalated (4)	Injury Type (5)	Differential in Loss Development at Month				
		168	180	192 (6)	204	216
Escalated	Fatal	1.125	1.119	1.112	1.105	1.099
Escalated	Permanent Total	1.115	1.109	1.102	1.096	1.089
Escalated	Other Indemnity	1.000	1.000	1.000	1.000	1.000
Escalated	Total Indemnity	<b>1.028</b>	<b>1.026</b>	<b>1.025</b>	<b>1.023</b>	<b>1.022</b>

Selected Differential in Indemnity Loss Development at Month 384 1.008

Notes:

(3) = [ (8) Exhibit 2, Page 2 ] / [ (9) Exhibit 2, Page 2 ]

(6) = [ (3) for Escalated ] / [ (3) for Unescalated ]

# II 000026 STIP

Section II - Loss Development  
 Subsection D - Adjustment for Escalation of Benefits  
 7/1/2020

Section II - D  
 Exhibit 2  
 Page 2

## Differential in Indemnity Loss Development

### Paid Plus Case Loss Development Method Calculation of Adjustment for Differential in Loss Development

Escalated or Unescalated (1)	Injury Type (2)	Losses at Month						Injury Type Weights @ Ultimate (5)
		Ultimate (3)	168	180	192 (4)	204	216	
Escalated	Fatal	874,958	641,246	652,979	664,504	675,808	686,874	1.50%
Escalated	Permanent Total	1,668,738	1,193,905	1,219,988	1,245,595	1,270,688	1,295,221	8.44%
Escalated	Other Indemnity							55.93%
Escalated	Total Indemnity							65.87%
Unescalated	Fatal	465,615	384,035	388,719	393,217	397,535	401,676	0.80%
Unescalated	Permanent Total	824,906	658,201	668,658	678,696	688,321	697,538	4.17%
Unescalated	Other Indemnity							55.93%
Unescalated	Total Indemnity							60.90%

Escalated or Unescalated (6)	Injury Type (7)	Estimated Losses at Month					
		Ultimate (8)	168	180	192 (9)	204	216
Escalated	Fatal	1,501	1,100	1,121	1,140	1,160	1,179
Escalated	Permanent Total	8,445	6,042	6,174	6,303	6,430	6,554
Escalated	Other Indemnity	55,928	55,928	55,928	55,928	55,928	55,928
Escalated	Total Indemnity	65,875	63,071	63,223	63,372	63,518	63,662
Unescalated	Fatal	799	659	667	675	682	689
Unescalated	Permanent Total	4,174	3,331	3,384	3,435	3,483	3,530
Unescalated	Other Indemnity	55,928	55,928	55,928	55,928	55,928	55,928
Unescalated	Total Indemnity	60,902	59,918	59,979	60,038	60,094	60,148

**Notes:**

Escalation calculation applied only to Fatal and Permanent Total Injury Types.

(4): Average discounted losses are calculated from Simulation Model loss flows using a 3.5% discount rate.

(5): Escalated: From Section IV-E, Exhibit 2, Page 1. As a % of total losses, Indemnity and Medical.

Unescalated: [ (5) for Escalated ] x { [ (3) for Unescalated ] / [ (3) for Escalated ] }.

(8) = (5) x 100,000

(9) = (8) x [ (4) / (3) ]

Accident Year Aggregate Financial Data  
 Summary of Loss Development Factors

Months of Development	Loss Development Factors From																			Tail Factor	Escalation Factor	
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240			240-252
<u>(1) Indemnity Paid Losses</u>																						
2 Year Average	2.953	1.588	1.237	1.086	1.037	1.017	1.012	1.007	1.005	1.006	1.004	1.003	1.002	1.002	1.001	1.001	1.003	1.002	1.001	1.001	1.036	1.038
Cumulative	7.517	2.545	1.603	1.296	1.194	1.151	1.132	1.118	1.110	1.104	1.098	1.093	1.090	1.088	1.086	1.085	1.084	1.081	1.078	1.077	1.075	1.038
<u>(2) Medical Paid Losses</u>																						
2 Yr Average	1.923	1.143	1.059	1.024	1.012	1.010	1.013	1.009	1.005	1.010	1.010	1.007	1.006	1.007	1.009	1.007	1.008	1.009	1.005	1.004	1.079	1.000
Cumulative	2.928	1.522	1.332	1.257	1.228	1.214	1.203	1.187	1.176	1.170	1.159	1.147	1.139	1.132	1.124	1.115	1.107	1.098	1.089	1.083	1.079	1.000

Notes:  
 Tail Factors from Section II-C, Exhibit 1, Page 1 (accident year tail factors, were approximated using policy year tail factors).  
 Escalation Factor from Section II-D, Exhibit 1, page 1.

II 000027 STIP



# II 000029 STIP

Section II - Loss Development  
 Subsection E - Accident Year Data  
 7/1/2020

Section II - E  
 Exhibit 1  
 Page 3

## Accident Year Aggregate Financial Data Calculation of Medical Paid Loss Development Factors

Accident Year	Losses (in 000's)		Loss Development Factor	Accident Year	Losses (in 000's)		Loss Development Factor
	Evaluated at Month				Evaluated at Month		
	12	24			132	144	
2013	71,248	140,590	1.973	2003	156,017	157,751	1.011
2014	73,574	145,333	1.975	2004	170,253	171,832	1.009
2015	75,704	149,317	1.972	2005	172,454	174,100	1.010
2016	78,845	152,313	1.933	2006	163,310	164,518	1.007
2017	77,842	148,921	1.913	2007	179,995	182,263	1.013
2 Yr Average			1.923	2 Yr Average			1.010
5 Yr Average			1.953	5 Yr Average			1.010
Selected Average			1.923	Selected Average			1.010
	24	36			144	156	
2012	128,859	148,154	1.150	2002	138,977	140,541	1.011
2013	140,590	161,395	1.148	2003	157,751	159,083	1.008
2014	145,333	166,468	1.145	2004	171,832	173,205	1.008
2015	149,317	171,886	1.151	2005	174,100	175,541	1.008
2016	152,413	173,049	1.135	2006	164,518	165,550	1.006
2 Yr Average			1.143	2 Yr Average			1.007
5 Yr Average			1.146	5 Yr Average			1.008
Selected Average			1.143	Selected Average			1.007
	36	48			156	168	
2011	156,414	165,339	1.057	2001	122,255	122,939	1.006
2012	148,154	156,705	1.058	2002	140,541	142,004	1.010
2013	161,395	169,658	1.051	2003	159,083	160,308	1.008
2014	166,468	176,689	1.061	2004	173,205	174,439	1.007
2015	171,886	181,688	1.057	2005	175,541	176,424	1.005
2 Yr Average			1.059	2 Yr Average			1.006
5 Yr Average			1.057	5 Yr Average			1.007
Selected Average			1.059	Selected Average			1.006
	48	60			168	180	
2010	151,591	156,325	1.031	2000	118,970	120,452	1.012
2011	165,339	169,350	1.024	2001	122,939	123,685	1.006
2012	156,705	160,961	1.027	2002	142,004	143,451	1.010
2013	169,658	172,507	1.017	2003	160,308	161,298	1.006
2014	176,689	182,051	1.030	2004	174,439	175,752	1.008
2 Yr Average			1.024	2 Yr Average			1.007
5 Yr Average			1.026	5 Yr Average			1.008
Selected Average			1.024	Selected Average			1.007
	60	72			180	192	
2009	149,491	150,927	1.010	1999	114,595	115,641	1.009
2010	156,325	158,600	1.015	2000	120,452	121,963	1.013
2011	169,350	174,178	1.029	2001	123,685	124,272	1.005
2012	160,961	163,022	1.013	2002	143,451	145,086	1.011
2013	172,507	174,281	1.010	2003	161,298	162,222	1.006
2 Yr Average			1.012	2 Yr Average			1.009
5 Yr Average			1.015	5 Yr Average			1.009
Selected Average			1.012	Selected Average			1.009
	72	84			192	204	
2008	165,376	166,628	1.008	1998	105,249	106,048	1.008
2009	150,927	152,336	1.009	1999	115,641	116,551	1.008
2010	158,600	158,979	1.002	2000	121,963	123,579	1.013
2011	174,178	175,762	1.009	2001	124,272	124,879	1.005
2012	163,022	164,678	1.010	2002	145,086	146,315	1.008
2 Yr Average			1.010	2 Yr Average			1.007
5 Yr Average			1.008	5 Yr Average			1.008
Selected Average			1.010	Selected Average			1.007
	84	96			204	216	
2007	171,357	173,345	1.012	1997	97,333	98,181	1.009
2008	166,628	168,049	1.009	1998	106,048	106,589	1.005
2009	152,336	153,725	1.009	1999	116,551	117,478	1.008
2010	158,979	161,158	1.014	2000	123,579	125,123	1.012
2011	175,762	178,051	1.013	2001	124,879	125,342	1.004
2 Yr Average			1.013	2 Yr Average			1.008
5 Yr Average			1.011	5 Yr Average			1.008
Selected Average			1.013	Selected Average			1.008
	96	108			216	228	
2006	159,416	160,958	1.010	1996	98,521	99,353	1.008
2007	173,345	175,398	1.012	1997	98,181	98,767	1.006
2008	168,049	169,076	1.006	1998	106,589	107,446	1.008
2009	153,725	154,772	1.007	1999	117,478	118,312	1.007
2010	161,158	162,972	1.011	2000	125,123	126,367	1.010
2 Yr Average			1.009	2 Yr Average			1.009
5 Yr Average			1.009	5 Yr Average			1.008
Selected Average			1.009	Selected Average			1.009
	108	120			228	240	
2005	169,645	171,008	1.008	1995	101,708	102,357	1.006
2006	160,958	162,130	1.007	1996	99,353	100,594	1.012
2007	175,398	177,699	1.013	1997	98,767	99,206	1.004
2008	169,076	169,972	1.005	1998	107,446	108,129	1.006
2009	154,772	155,643	1.006	1999	118,312	118,857	1.005
2 Yr Average			1.005	2 Yr Average			1.005
5 Yr Average			1.008	5 Yr Average			1.007
Selected Average			1.005	Selected Average			1.005
	120	132			240	252	
2004	168,766	170,253	1.009	1994	113,530	114,052	1.005
2005	171,008	172,454	1.008	1995	102,357	102,946	1.006
2006	162,130	163,310	1.007	1996	100,594	101,184	1.006
2007	177,699	179,995	1.013	1997	99,206	99,675	1.005
2008	169,972	171,024	1.006	1998	108,129	108,574	1.004
2 Yr Average			1.010	2 Yr Average			1.004
5 Yr Average			1.009	5 Yr Average			1.005
Selected Average			1.010	Selected Average			1.004

Notes:  
 Losses from Aggregate Financial Data.

# III 000006 STIP

Section III - Premiums  
 Subsection A - Summary  
 7/1/2020

Section III - A  
 Exhibit 1  
 Page 1

Policy Year Aggregate Financial Data  
 Calculation of Adjusted On-Level Standard Premium plus Adjusted ARAP at Ultimate  
 Industrywide

Summary Exhibit

	Policy Year as of 12/31/2018	
	2016	2017
(1) Standard Earned Premium plus Adjusted ARAP Premium	1,203,414,718	1,252,889,200
(2) Adjustment for Experience and Merit Rating, ARAP, and Construction Credit Off-balance	1.041	1.041
(3) Adjustment Factor to Remove the Impact of Loading for Recoupment of Insolvency Fund Assessments	1.000	1.002
(4) Composite Adjustment Factor = (2) x (3)	1.041	1.043
(5) Adjusted Standard Earned Premium plus ARAP = (1) x (4)	1,252,810,112	1,307,148,410
(6) Cumulative Premium Development Factor to Ultimate (see Page 2)	0.999	1.010
(7) Rate On-Level Factor	0.878	0.871
(8) Factor to Remove Expense Constant	0.960	0.962
(9) Adjusted On-Level Standard Earned Premium plus Adjusted ARAP at Ultimate = (5) x (6) x (7) x (8)	1,054,546,187	1,106,105,799

Notes:

- (1): Section III-B, Exhibit 2
- (2): Section III-B, Exhibit 1
- (3): Section III-C, Exhibit 1
- (6): Premiums are deemed to be fully developed at 252 months.
- (7): Section III-D, Exhibit 1
- (8): Section VI-F, Exhibit 2.



Policy Year Aggregate Financial Data  
 Calculation of Standard Premium plus Adjusted ARAP Premium Development Factors  
 Industrywide

Premium Development Factors From:																			
Months of Development	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252
2 Year Average	1.010	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative Factor to 252	1.009	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
5 Year Average	1.011	0.998	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative Factor to 252	1.010	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Notes:  
 From Page 3

III 000007 STIP

# III 00008 STIP

Section III - Premiums  
Subsection A - Summary  
7/1/2020

Section III - A  
Exhibit 1  
Page 3

Policy Year Aggregate Financial Data  
Calculation of Standard Premium plus Adjusted ARAP Premium Development Factors  
Industrywide

Policy Year	Premium (in 000's) Evaluated at Month		Premium Development Factor	Policy Year	Premium (in 000's) Evaluated at Month		Premium Development Factor
	24	36			132	144	
2012	923,029	933,710	1.012	2003	916,209	916,208	1.000
2013	970,639	978,415	1.008	2004	918,160	918,159	1.000
2014	1,014,423	1,029,696	1.015	2005	952,995	952,996	1.000
2015	1,081,412	1,089,349	1.007	2006	1,011,090	1,011,089	1.000
2016	1,118,732	1,133,855	1.014	2007	993,159	993,156	1.000
2 yr Average			1.010	2 yr Average			1.000
5 yr Average			1.011	5 yr Average			1.000
	36	48			144	156	
2011	919,564	915,931	0.996	2002	860,464	860,464	1.000
2012	933,710	931,644	0.998	2003	916,208	916,193	1.000
2013	978,415	977,075	0.999	2004	918,159	918,158	1.000
2014	1,029,696	1,028,702	0.999	2005	952,996	952,996	1.000
2015	1,089,349	1,089,011	1.000	2006	1,011,089	1,011,087	1.000
2 yr Average			0.999	2 yr Average			1.000
5 yr Average			0.998	5 yr Average			1.000
	48	60			156	168	
2010	848,586	848,212	1.000	2001	749,556	749,556	1.000
2011	915,931	918,558	1.003	2002	860,464	860,464	1.000
2012	931,644	931,564	1.000	2003	916,193	916,194	1.000
2013	977,075	976,807	1.000	2004	918,158	918,157	1.000
2014	1,028,702	1,028,359	1.000	2005	952,996	952,994	1.000
2 yr Average			1.000	2 yr Average			1.000
5 yr Average			1.000	5 yr Average			1.000
	60	72			168	180	
2009	776,924	776,831	1.000	2000	689,084	689,084	1.000
2010	848,212	848,615	1.000	2001	749,556	749,556	1.000
2011	918,558	918,367	1.000	2002	860,464	860,464	1.000
2012	931,564	931,460	1.000	2003	916,194	916,194	1.000
2013	976,807	976,824	1.000	2004	918,157	918,157	1.000
2 yr Average			1.000	2 yr Average			1.000
5 yr Average			1.000	5 yr Average			1.000
	72	84			180	192	
2008	815,548	815,429	1.000	1999	703,599	703,600	1.000
2009	776,831	776,862	1.000	2000	689,084	689,084	1.000
2010	848,615	848,403	1.000	2001	749,556	749,558	1.000
2011	918,367	918,322	1.000	2002	860,464	860,459	1.000
2012	931,460	931,473	1.000	2003	916,194	916,194	1.000
2 yr Average			1.000	2 yr Average			1.000
5 yr Average			1.000	5 yr Average			1.000
	84	96			192	204	
2007	993,317	993,234	1.000	1998	732,385	732,385	1.000
2008	815,429	815,440	1.000	1999	703,600	703,600	1.000
2009	776,862	776,835	1.000	2000	689,084	689,084	1.000
2010	848,403	848,428	1.000	2001	749,558	749,555	1.000
2011	918,322	918,334	1.000	2002	860,459	860,459	1.000
2 yr Average			1.000	2 yr Average			1.000
5 yr Average			1.000	5 yr Average			1.000
	96	108			204	216	
2006	1,011,104	1,011,076	1.000	1997	750,009	750,009	1.000
2007	993,234	993,179	1.000	1998	732,385	732,385	1.000
2008	815,440	815,523	1.000	1999	703,600	703,600	1.000
2009	776,835	776,827	1.000	2000	689,084	689,084	1.000
2010	848,428	848,446	1.000	2001	749,555	749,555	1.000
2 yr Average			1.000	2 yr Average			1.000
5 yr Average			1.000	5 yr Average			1.000
	108	120			216	228	
2005	952,971	952,981	1.000	1996	713,390	713,390	1.000
2006	1,011,076	1,011,087	1.000	1997	750,009	750,009	1.000
2007	993,179	993,163	1.000	1998	732,385	732,385	1.000
2008	815,523	815,478	1.000	1999	703,600	703,600	1.000
2009	776,827	776,851	1.000	2000	689,084	689,084	1.000
2 yr Average			1.000	2 yr Average			1.000
5 yr Average			1.000	5 yr Average			1.000
	120	132			228	240	
2004	918,160	918,160	1.000	1995	807,503	807,503	1.000
2005	952,981	952,995	1.000	1996	713,390	713,389	1.000
2006	1,011,087	1,011,090	1.000	1997	750,009	750,009	1.000
2007	993,163	993,159	1.000	1998	732,385	732,385	1.000
2008	815,478	815,485	1.000	1999	703,600	703,600	1.000
2 yr Average			1.000	2 yr Average			1.000
5 yr Average			1.000	5 yr Average			1.000
					240	252	
				1994	946,605	946,607	1.000
				1995	807,503	807,503	1.000
				1996	713,389	713,390	1.000
				1997	750,009	750,009	1.000
				1998	732,385	732,385	1.000
				1999	703,600	703,600	1.000
				2 yr Average			1.000
				5 yr Average			1.000

Adjustment for Experience and Merit Rating, ARAP and Construction Credit Off-Balance

Rate Level Effective Date (1)	Experience Mod for Non-Merit Rated Risks		Merit Rating Impact		Average Experience Mod and Merit Rating Factor (6)	ARAP Charge in Rates (7)	Construction Credit in Construction Rates (8)	Policy Year Written Weights		Calendar Year Earned Weights		
	Anticipated in Rates (2)	Percentage of Premium (3)	Anticipated in Rates (4)	Percentage of Premium (5)				2016 (9)	2017 (10)	2016 (11)	2017 (12)	2018 (13)
7/1/2016	1.000	0.845	-0.020	0.155	0.997	0.052	-0.042	45.8%	100.0%	13.5%	89.6%	88.1%
7/1/2018	1.000	0.856	-0.021	0.144	0.997	0.051	-0.033					11.9%

	Policy Year		Calendar Year Earned		
	2016	2017	2016	2017	2018
(14) Weighted Average Experience and Merit Rating factor anticipated in rates	0.997	0.997	0.997	0.997	0.997
(15) Weighted ARAP Charge anticipated in rates	0.052	0.052	0.052	0.052	0.052
(16) Percentage of Premium for CCPAP Eligible Classes	0.364	0.376	0.361	0.370	0.370
(17) Weighted Average Construction Credit anticipated in rates	-0.013	-0.016	-0.012	-0.015	-0.015
(18) Combined Weighted Average impact anticipated in rates = (14) x [ 1.0 + (15) ] x [ 1.0 + (17) ]	1.035	1.032	1.036	1.033	1.033
(19) Manual Premium	1,172,596,373	1,250,143,763	1,146,911,773	1,211,370,068	
(20) Standard Earned Premium at DSR Level, excluding Expense Constants	1,114,359,165	1,185,670,158	1,088,819,498	1,150,014,662	
(21) ARAP Premium	48,619,726	51,254,264	47,711,894	49,936,995	
(22) Adjustment Factor to Adjust from Company Level to DSR Level Premium	1.049	1.053	1.049	1.051	
(23) Standard Earned Premium plus Adjusted ARAP = (20) + [ (21) x (22) ]	1,165,354,761	1,239,646,633	1,138,871,240	1,202,496,068	
(24) Combined Actual impact = (23) / (19)	0.994	0.992	0.993	0.993	0.993
(25) Adjustment for Experience and Merit Rating, ARAP, and Construction Credit Off-balance = (18) / (24)	<b>1.041</b>	<b>1.041</b>	<b>1.043</b>	<b>1.040</b>	<b>1.040</b>

Notes:  
 (3) = 1.0 - (5)  
 (2), (4), (5), (7), (8): Previous filings.  
 (6) = [ (2) x (3) ] + [ 1.0 + (4) ] x (5)  
 (9),(10): Section III-D, Exhibit 2.  
 (11),(12): Section III-D, Exhibit 3.  
 (13): Section III-D, Exhibit 4.  
 (14) = Sum [ (6) x (9) through (13) ]  
 (15) = Sum [ (7) x (9) through (13) ]  
 (17) = Sum [ (8) x (9) through (13) ] x (16)  
 (16), (19), (20), (21): Unit Statistical Plan Data, Excluding Large Deductible Policies. CY 2018 uses CY 2017 values.  
 (22): from Section III-B, Exhibit 2.

III 000009 STIP

Policy Year Aggregate Financial Data  
 Calculation of Standard Premium plus ARAP Premium  
 Industrywide

	Policy Year valued as of 12/31/2018		Calendar Years		
	2016	2017	2016	2017	2018
(1) Aggregate Financial: Standard Earned Premium at DSR Level	1,152,105,090	1,199,295,709	1,148,727,923	1,183,565,353	1,212,615,339
(2) Aggregate Financial: Standard Earned Premium at Company Level	1,098,428,843	1,138,811,280	1,095,026,520	1,126,183,565	1,151,652,761
(3) Aggregate Financial: ARAP Premium	48,919,127	50,890,595	47,797,438	50,885,683	51,617,455
(4) Adjustment Factor to Adjust from Company Level to DSR Level Premium = (1) / (2)	1.049	1.053	1.049	1.051	1.053
(5) Adjusted ARAP Premium = (3) x (4)	51,309,628	53,593,491	50,141,481	53,478,432	54,349,818
(6) Standard Earned Premium plus adjusted ARAP Premium = (1) + (5)	1,203,414,718	1,252,889,200	1,198,869,404	1,237,043,785	1,266,965,157

Notes:

(1),(2),(3): Aggregate Financial Policy Year Calls

Factor to Remove the Impact of Loading for Recoupment of Insolvency Fund Assessments

Rate Level Effective Date (1)	Loading for Recoupment of Insolvency Fund Assessments (2)	Policy Year Weights		Calendar Year Earned Weights		
		2016 (3)	2017 (4)	2016 (5)	2017 (6)	2018 (7)
4/1/2014	0.19%	54.2%		86.5%	10.4%	
7/1/2016	-0.23%	45.8%	100.0%	13.5%	89.6%	88.1%
7/1/2018	0.26%					11.9%

Policy Year		Calendar Year Earned		
2016	2017	2016	2017	2018

(8) Weighted Average Loading for Recoupment of Insolvency Fund Assessment in the Rates = Sum [ (2) x (3) through (7) ]	0.0000	-0.0023	0.0014	-0.0019	-0.0017
(9) Adjustment Factor to Remove the Impact of Loading for Recoupment of Insolvency Fund Assessments = [ 1.0 - (8) ]	<b>1.000</b>	<b>1.002</b>	<b>0.999</b>	<b>1.002</b>	<b>1.002</b>

Notes:

- (2): Previous filings.
- (3),(4): Section III-D, Exhibit 2.
- (5),(6): Section III-D, Exhibit 3.
- (7): Section III-D, Exhibit 4.

III 000011 STIP

# III 00012 STIP

Section III - Premiums  
 Subsection D - Rate On-Level Factors  
 7/1/2020

Section III - D  
 Exhibit 1

## Rate On-Level Factors

Rate Level Effective Date (1)	Rate Change (2)	Cumulative Rate Level Change (3)	Factor to Current Rate Level (4)	Policy Year Weights	
				2016 (5)	2017 (6)
4/1/2014		1.000	0.884	54.2%	
7/1/2016	1.015	1.015	0.871	45.8%	100.0%
7/1/2018	0.871	0.884	1.000		

(7) Rate On-Level Factor  
 = Sum [ (4) x (5) through (6) ]

Policy Year	
2016	2017
0.878	0.871

**Notes:**

- (2) From previous filings.
- (3): 1 + (2) for first date; (3) for prior date \* (2)
- (4): (3)<sub>latest rate level effective date</sub> / (3).
- (5),(6): From Exhibit 2.

# III 000013 STIP

Section III - Premiums  
 Subsection D - Premium On-Level Factors  
 7/1/2020

Section III - D  
 Exhibit 2

Policy Year Weights for On-Leveling Earned Premium

Policy Year (1)	Policy Month (2)	Standard Earned Premium plus ARAP at Rate Level Effective			Earned Premiums (6)
		4/1/2014 (3)	7/1/2016 (4)	7/1/2018 (5)	
2016	1	191,429,491			191,429,491
2016	2	71,114,570			71,114,570
2016	3	88,737,616			88,737,616
2016	4	112,172,544			112,172,544
2016	5	87,247,456			87,247,456
2016	6	104,275,842			104,275,842
2016	7		134,145,362		134,145,362
2016	8		74,505,307		74,505,307
2016	9		92,375,226		92,375,226
2016	10		89,917,412		89,917,412
2016	11		67,626,257		67,626,257
2016	12		95,698,307		95,698,307
2016	Total	654,977,519	554,267,871		1,209,245,390

2017	1		206,862,765		206,862,765
2017	2		76,980,595		76,980,595
2017	3		96,134,869		96,134,869
2017	4		118,802,392		118,802,392
2017	5		93,446,474		93,446,474
2017	6		109,259,457		109,259,457
2017	7		145,982,825		145,982,825
2017	8		76,883,220		76,883,220
2017	9		93,060,873		93,060,873
2017	10		94,109,673		94,109,673
2017	11		73,824,165		73,824,165
2017	12		98,437,447		98,437,447
2017	Total		1,283,784,756		1,283,784,756

2018	1		217,746,219		217,746,219
2018	2		81,037,524		81,037,524
2018	3		101,192,562		101,192,562
2018	4		125,052,566		125,052,566
2018	5		98,362,580		98,362,580
2018	6		115,007,460		115,007,460
2018	7			133,841,027	133,841,027
2018	8			70,488,632	70,488,632
2018	9			85,320,736	85,320,736
2018	10			86,282,267	86,282,267
2018	11			67,683,998	67,683,998
2018	12			90,250,023	90,250,023
2018	Total		738,398,911	533,866,683	1,272,265,594

Rate Level Effective Date (7)	Policy Year Weights		
	2016 (8)	2017 (9)	2018 (10)
4/1/2014	54.2%		
7/1/2016	45.8%	100.0%	58.0%
7/1/2018			42.0%

**Notes:**

(3),(4),(5): From Unit Statistical Plan Data. PY 2018 based on PY 2017 data subject to adjustments for rate level, exposure growth, and wage changes.

(6) = (3) + (4) + (5)

(8),(9),(10) = [ PY Total of (3), (4) or (5) ] / [ PY Total of (6) ]

# III 00014 STIP

Section III - Premiums  
 Subsection D - Premium On-Level Factors  
 7/1/2020

Section III - D  
 Exhibit 3

Calendar Year ("CY") Weights for On-Leveling Earned Premium

Policy Year (1)	Policy Month (2)	CY in which Premium is Earned (3)	Standard Earned Premium plus ARAP at Rate Level Effective			Earned Premiums (7)
			4/1/2014 (4)	7/1/2016 (5)	7/1/2018 (6)	
2014	12	2016				0
2015	1	2016	1,917,711			1,917,711
2015	2	2016	7,266,384			7,266,384
2015	3	2016	16,457,969			16,457,969
2015	4	2016	28,851,067			28,851,067
2015	5	2016	28,878,282			28,878,282
2015	6	2016	46,090,162			46,090,162
2015	7	2016	62,627,929			62,627,929
2015	8	2016	40,096,185			40,096,185
2015	9	2016	61,916,246			61,916,246
2015	10	2016	65,171,763			65,171,763
2015	11	2016	51,870,178			51,870,178
2015	12	2016	88,351,245			88,351,245
2016	1	2016	189,251,622			189,251,622
2016	2	2016	63,882,871			63,882,871
2016	3	2016	71,990,634			71,990,634
2016	4	2016	82,775,439			82,775,439
2016	5	2016	57,545,420			57,545,420
2016	6	2016	58,758,508			58,758,508
2016	7	2016		66,688,628		66,688,628
2016	8	2016		30,070,097		30,070,097
2016	9	2016		28,743,821		28,743,821
2016	10	2016		21,253,955		21,253,955
2016	11	2016		9,967,343		9,967,343
2016	12	2016		3,572,630		3,572,630
Total		2016	1,023,699,613	160,296,475		1,183,996,088

2015	12	2017				0
2016	1	2017	2,179,653			2,179,653
2016	2	2017	7,232,514			7,232,514
2016	3	2017	16,748,550			16,748,550
2016	4	2017	29,400,009			29,400,009
2016	5	2017	29,704,362			29,704,362
2016	6	2017	45,520,934			45,520,934
2016	7	2017		67,464,781		67,464,781
2016	8	2017		44,439,359		44,439,359
2016	9	2017		63,637,781		63,637,781
2016	10	2017		68,669,232		68,669,232
2016	11	2017		57,663,164		57,663,164
2016	12	2017		92,131,864		92,131,864
2017	1	2017		204,560,654		204,560,654
2017	2	2017		69,040,483		69,040,483
2017	3	2017		78,415,738		78,415,738
2017	4	2017		87,766,200		87,766,200
2017	5	2017		61,290,772		61,290,772
2017	6	2017		61,423,890		61,423,890
2017	7	2017		72,921,872		72,921,872
2017	8	2017		30,618,373		30,618,373
2017	9	2017		28,763,674		28,763,674
2017	10	2017		22,159,830		22,159,830
2017	11	2017		10,811,630		10,811,630
2017	12	2017		3,576,521		3,576,521
Total		2017	130,786,021	1,125,355,816		1,256,141,837

Rate Level Effective Date (8)	Calendar Year Earned Weights	
	2016 (9)	2017 (10)
4/1/2014	86.5%	10.4%
7/1/2016	13.5%	89.6%
7/1/2018		

**Notes:**

(4),(5),(6): From Unit Statistical Plan Data.

(7) = (4) + (5) + (6)

(9),(10) = [ CY Total of (4), (5) or (6) ] / [ CY Total of (7) ]



# III 000015 STIP

Section III - Premiums  
 Subsection D - Premium On-Level Factors  
 7/1/2020

Section III - D  
 Exhibit 4

Calendar Year ("CY") Weights for On-Leveling Earned Premium

Policy Year (1)	Policy Month (2)	CY in which Premium is Earned (3)	Standard Earned Premium plus ARAP at Rate Level Effective			PY Premiums Earned During CY (7)
			4/1/2014 (4)	7/1/2016 (5)	7/1/2018 (6)	
2016	12	2018		30		30
2017	1	2018		2,279,269		2,279,269
2017	2	2018		7,935,320		7,935,320
2017	3	2018		17,713,569		17,713,569
2017	4	2018		31,028,509		31,028,509
2017	5	2018		32,150,608		32,150,608
2017	6	2018		47,830,191		47,830,191
2017	7	2018		73,053,469		73,053,469
2017	8	2018		46,261,934		46,261,934
2017	9	2018		64,294,115		64,294,115
2017	10	2018		71,947,496		71,947,496
2017	11	2018		63,011,342		63,011,342
2017	12	2018		94,860,098		94,860,098
2018	1	2018		215,345,055		215,345,055
2018	2	2018		72,683,679		72,683,679
2018	3	2018		82,546,507		82,546,507
2018	4	2018		92,390,785		92,390,785
2018	5	2018		64,519,932		64,519,932
2018	6	2018		64,660,212		64,660,212
2018	7	2018			66,862,581	66,862,581
2018	8	2018			28,073,950	28,073,950
2018	9	2018			26,373,524	26,373,524
2018	10	2018			20,318,294	20,318,294
2018	11	2018			9,913,096	9,913,096
2018	12	2018			3,279,281	3,279,281
	Total	2018		1,144,512,121	154,820,727	1,299,332,848

Rate Level Effective Date (8)	Calendar Year Earned Weights
	2018 (9)
4/1/2014	
7/1/2016	88.1%
7/1/2018	11.9%

Notes:

(4),(5),(6): From Unit Statistical Plan Data. PY 2018 based on PY 2017 data subject to adjustments for rate level, exposure growth, and wage changes.

(7) = (4) + (5) + (6)

(9) = [CY Total of (4), (5) or (6)] / [CY Total of (7)]

# III 00016 STIP

Section III - Premiums  
Subsection E - Premium Adjustment Factors  
7/1/2020

Section III - E  
Exhibit 1

## Calculation of Premium Adjustment Factor PY 2017 to Prospective Effective Period 7/1/2020 - 6/30/2021

(1)	Wage Trend from PY 2017 to Prospective Effective Period 7/1/2020 - 6/30/2021	1.123
(2)	Exposure Growth	1.064
(3)	Rate On-Level Factor	0.871
(4)	Overall Indicated Rate Change for Policies Effective 7/1/2020	0.932
(5)	Adjustment Factor to Balance Experience Rating, ARAP, and Construction Credits	1.041
(6)	Impact of Change in Indicated Loading for Recoupment of Insolvency Fund Assessments	0.997
(7)	Adjustment Factor = (1) x (2) x (3) x (4) x (5) x (6)	1.007
(8)	<b>Selected Factor</b>	<b>1.01</b>

### Notes:

(1):	Statewide Average Weekly Wage for PY 2017 (Section V-G, Exhibit 1)	1,395.56
	Statewide Average Weekly Wage for 10/1/2019, based on data period 4/1/18 to 4/1/19 (Section V-G, Exhibit 1)	1,431.66
	Statewide Average Weekly Wage at 7/1/2021 (using wage trend of 3.4%, Section V-A, Exhibit 1)	1,567.50
(2):	Exposure growth from PY 2017 to Prospective Effective Period 7/1/2020 - 6/30/2021 (Section V-H, Exhibit 3)	
(3):	Section III-D Exhibit 1.	
(4):	Section I-B Exhibit 1.	
(5):	Exhibit 2.	
(6):	PY 2017 factor to load for Recoupment of Insolvency Fund (Section III-C, Exhibit 1: [ 1.0 + (8) ]).	0.998
	Policy Effective factor to load for Recoupment of Insolvency Fund Assessments (Section IX-K, Exhibit 5, Page 1).	0.995

# III 00017 STIP

Section III - Premiums  
Subsection E - Premium Adjustment Factors  
7/1/2020

Section III - E  
Exhibit 2

## Factor to Balance Experience Rating, ARAP, and Construction Credit

### Beginning Period - PY 2017

(1)	Anticipated Impact on Manual Rates of Experience Rating, ARAP, and Construction Credits	1.032
(2)	Actual Impact on Manual Rates of Experience Rating, ARAP, and Construction Credits	0.992
(3)	Ratio of Anticipated to Actual = (1) / (2)	1.041

### Ending Period - Prospective Effective Period 7/1/2020 - 6/30/2021

(4)	Anticipated Impact on Manual Rates of Experience Rating, ARAP, and Construction Credits	1.037
(5)	Actual is Assumed to be equal to the Anticipated, Since the Actual Impact has yet to be Determined	1.037
(6)	Ratio of Anticipated to Actual is Assumed to be 1.000	1.000
(7)	Adjustment Factor to Balance Experience Rating, ARAP, and Construction Credits = (3) / (6)	1.041

### Notes:

(1),(2): PY 2017, Section III-B, Exhibit 1.

(4),(5): Prospective Effective Period, Section IX-K, Exhibit 1.

# IV 000007 STIP

Section IV - Benefit Change Adjustments  
 Subsection A - Summary  
 7/1/2020

Section IV - A  
 Exhibit 1

## Benefit Level Adjustment Factors

### All Injury Types

Time Period		Indemnity					Medical	Total
Beginning Period	Ending Period	Death	Permanent Total	Permanent Partial	Temporary Total	All Injury Types	All Injury Types	All Injury Types
1/1/2020	Prosp. Eff. Period					1.012	1.000	
PY 2016	1/1/2020					1.032	1.000	
PY 2017	1/1/2020					1.023	1.000	
PY 2003	Prosp. Eff. Period	1.092	1.110	1.192	1.064	1.147	1.046	
PY 2004	Prosp. Eff. Period	1.088	1.105	1.182	1.062	1.140	1.036	
PY 2005	Prosp. Eff. Period	1.083	1.097	1.165	1.057	1.128	1.032	
PY 2006	Prosp. Eff. Period	1.077	1.089	1.148	1.053	1.116	1.032	
PY 2007	Prosp. Eff. Period	1.071	1.080	1.132	1.048	1.104	1.032	
PY 2008	Prosp. Eff. Period	1.065	1.071	1.116	1.043	1.092	1.024	
PY 2009	Prosp. Eff. Period	1.063	1.068	1.111	1.041	1.087	1.002	
PY 2010	Prosp. Eff. Period	1.063	1.069	1.112	1.042	1.088	1.000	
PY 2011	Prosp. Eff. Period	1.060	1.064	1.102	1.040	1.081	1.000	
PY 2012	Prosp. Eff. Period	1.055	1.057	1.090	1.036	1.072	1.000	
PY 2013	Prosp. Eff. Period	1.053	1.054	1.085	1.034	1.067	1.000	
PY 2014	Prosp. Eff. Period	1.047	1.050	1.078	1.032	1.062	1.000	
PY 2015	Prosp. Eff. Period	1.036	1.043	1.067	1.029	1.053	1.000	
PY 2016	Prosp. Eff. Period	1.030	1.037	1.056	1.024	1.044	1.000	
PY 2017	Prosp. Eff. Period	1.023	1.029	1.044	1.019	1.035	1.000	
PY 2015	CPY 2016_07	1.009	1.011	1.016	1.007		1.000	
PY 2016	CPY 2017_07	1.010	1.012	1.019	1.008		1.000	
PY 2017	CPY 2018_07	1.010	1.013	1.019	1.008		1.000	
CPY 2016_07	Prosp. Eff. Period							1.026
CPY 2017_07	Prosp. Eff. Period							1.019
CPY 2018_07	Prosp. Eff. Period							1.013
CPY 2008_09	Prosp. Eff. Period							1.058
Prior Eff. Period (using benefit level projections from prior filing)	Prosp. Eff. Period					1.021	1.000	1.014

**Notes:**

1/1/2020 refers to a point in time. All other time periods refer to Policy Years.

Example: PY 2009 to Prosp. Eff. Period for Permanent Partial =  $1.111 = 1.193 / 1.074$

where 1.193 is the Index Factor for Prosp. Eff. Period and 1.074 is the Index Factor for PY 2009 for Indemnity Permanent Partial, from Exhibit 2.

Benefit Level Changes and Weights

Injury Type: Death																									
Date of Change	12/1/2002	10/1/2003	9/1/2004	10/1/2004	10/1/2005	10/1/2006	10/1/2007	10/1/2008	4/1/2009	10/1/2009	10/1/2010	10/1/2011	10/1/2012	10/1/2013	10/1/2014	3/24/2015	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019	10/1/2020	10/1/2021	Weighted Average Benefit Level	
Benefit Level Change	1.000	1.000	1.000	1.005	1.005	1.005	1.006	1.006	1.000	1.000	0.999	1.006	1.004	1.001	1.004	1.009	1.005	1.005	1.007	1.007	1.007	1.007	1.004		
Level Change	1.000	1.000	1.000	1.005	1.010	1.015	1.021	1.027	1.027	1.027	1.026	1.032	1.037	1.038	1.042	1.051	1.056	1.062	1.069	1.076	1.084	1.091	1.096		
Time Period																									
PY 2003	0.346	0.608	0.020	0.026																				1.000	
PY 2004		0.281	0.062	0.629	0.028																				1.003
PY 2005				0.336	0.635	0.029																			1.008
PY 2006					0.341	0.632	0.027																		1.014
PY 2007						0.630	0.343																		1.019
PY 2008							0.350	0.417	0.208	0.024															1.025
PY 2009								0.055	0.290	0.629	0.026														1.027
PY 2010										0.333	0.640	0.027													1.027
PY 2011											0.343	0.632	0.025												1.030
PY 2012												0.341	0.634	0.025											1.035
PY 2013													0.340	0.635	0.025										1.037
PY 2014														0.340	0.408	0.227	0.025								1.043
PY 2015															0.044	0.295	0.636	0.024							1.054
PY 2016																	0.340	0.636	0.025						1.060
PY 2017																		0.341	0.635	0.025					1.067
CPY 2016_07																	0.037	0.689	0.274						1.064
CPY 2017_07																		0.046	0.677	0.277					1.071
CPY 2018_07																			0.046	0.677	0.277				1.078
CPY 2008_09							0.004	0.180	0.426	0.390															1.027
Prior Eff. Period																			0.046	0.677	0.277				1.078
Prosp. Eff. Period																						0.677	0.277		1.092
1/1/2020																									1.084

Indemnity All Injury Types - Average Benefit Level for Current Policy Period, Estimated at 7/1/2018 (using benefit level projections from prior filing).																							
Date of Change	12/1/2002	10/1/2003	9/1/2004	10/1/2004	10/1/2005	10/1/2006	10/1/2007	10/1/2008	4/1/2009	10/1/2009	10/1/2010	10/1/2011	10/1/2012	10/1/2013	10/1/2014	3/24/2015	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019		Weighted Average Benefit Level
Benefit Level Change	1.000	1.000	1.000	1.009	1.011	1.011	1.011	1.012	1.000	1.000	0.998	1.011	1.008	1.002	1.007	1.000	1.008	1.008	1.010	1.008	1.008		
Cumulative Level Change	1.000	1.000	1.000	1.009	1.020	1.031	1.043	1.055	1.055	1.055	1.053	1.065	1.073	1.075	1.083	1.083	1.092	1.101	1.112	1.121	1.130		1.123

Medical All Injury Types - Average Benefit Level for Current Policy Period, Estimated at 7/1/2018 (using benefit level projections from prior filing).																							
Date of Change	12/1/2002	10/1/2003	9/1/2004	10/1/2004	10/1/2005	10/1/2006	10/1/2007	10/1/2008	4/1/2009	10/1/2009	10/1/2010	10/1/2011	10/1/2012	10/1/2013	10/1/2014	3/24/2015	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019		Weighted Average Benefit Level
Benefit Level Change	1.000	1.000	1.014	1.000	1.000	1.000	1.000	1.000	1.032	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Cumulative Level Change	1.000	1.000	1.014	1.014	1.014	1.014	1.014	1.014	1.046	1.046	1.046	1.046	1.046	1.046	1.046	1.046	1.046	1.046	1.046	1.046	1.046		1.046

All Injury Types - Average Benefit Level for Current Policy Period, Estimated at 7/1/2018 (using benefit level projections from prior filing).																							
Date of Change	12/1/2002	10/1/2003	9/1/2004	10/1/2004	10/1/2005	10/1/2006	10/1/2007	10/1/2008	4/1/2009	10/1/2009	10/1/2010	10/1/2011	10/1/2012	10/1/2013	10/1/2014	3/24/2015	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019		Weighted Average Benefit Level
Benefit Level Change	1.000	1.000	1.005	1.006	1.007	1.007	1.007	1.007	1.013	1.000	0.999	1.007	1.005	1.001	1.005	1.000	1.005	1.005	1.007	1.005	1.005		
Cumulative Level Change	1.000	1.000	1.005	1.011	1.018	1.025	1.032	1.040	1.053	1.053	1.052	1.059	1.065	1.066	1.071	1.071	1.077	1.082	1.090	1.095	1.100		1.096

Time Period	Index Factors for All Injury Types						
	Indemnity					Medical	Total
	Death	Permanent Total	Permanent Partial	Temporary Total	All Injury Types	All Injury Types	All Injury Types
PY 2003	1.000	1.000	1.001	1.000	1.000	1.001	1.000
PY 2004	1.003	1.005	1.009	1.003	1.006	1.010	1.008
PY 2005	1.008	1.013	1.024	1.007	1.017	1.014	1.016
PY 2006	1.014	1.020	1.039	1.011	1.028	1.014	1.023
PY 2007	1.019	1.028	1.054	1.016	1.039	1.014	1.030
PY 2008	1.025	1.037	1.069	1.020	1.051	1.022	1.040
PY 2009	1.027	1.040	1.074	1.022	1.055	1.045	1.052
PY 2010	1.027	1.039	1.073	1.022	1.054	1.046	1.053
PY 2011	1.030	1.044	1.082	1.024	1.061	1.046	1.057
PY 2012	1.035	1.051	1.094	1.027	1.070	1.046	1.063
PY 2013	1.037	1.054	1.100	1.029	1.075	1.046	1.066
PY 2014	1.043	1.058	1.107	1.032	1.081	1.046	1.069
PY 2015	1.054	1.064	1.118	1.035	1.089	1.046	1.075
PY 2016	1.060	1.071	1.130	1.039	1.098	1.046	1.081
PY 2017	1.067	1.080	1.143	1.044	1.109	1.046	1.087
CPY 2016_07	1.064	1.076	1.137	1.042	1.104	1.046	1.084
CPY 2017_07	1.071	1.084	1.151	1.048	1.115	1.046	1.091
CPY 2018_07	1.078	1.093	1.165	1.053	1.126	1.046	1.098
CPY 2008_09	1.027	1.040	1.074	1.022	1.055	1.040	1.051
Prior Eff. Period	1.078	1.093	1.165	1.053	1.126	1.046	1.098
Prosp. Eff. Period	1.092	1.111	1.193	1.064	1.147	1.046	1.112
1/1/2020	1.084	1.100	1.176	1.058	1.134	1.046	1.104

Notes:  
 1/1/2020 refers to a point in time. All other time periods refer to Policy Years.  
 Index Factors for All Injury Types Table is an Excel Data Table that repeats the calculation of the Weighted Average Benefit Level for all Injury Types.

IV 000008 STIP

# IV 000009 STIP

Section IV - Benefit Change Adjustments  
 Subsection A - Summary  
 7/1/2020

Section IV - A  
 Exhibit 3

## Historical and Estimated Benefit Level Changes

Effective Date (1)	Indemnity					Medical	Total
	Death (2)	Permanent Total (3)	Permanent Partial (4)	Temporary Total (5)	All Injury Types (6)	All Injury Types (7)	All Injury Types (8)
10/1/2002	-0.1%	-0.1%	-0.3%	-0.1%	-0.2%	0.0%	-0.1%
12/1/2002	0.0%	0.0%	0.0%	0.0%	0.0%	5.2%	2.0%
10/1/2003	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
9/1/2004	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.5%
10/1/2004	0.5%	0.7%	1.2%	0.4%	0.9%	0.0%	0.6%
10/1/2005	0.5%	0.8%	1.5%	0.4%	1.1%	0.0%	0.7%
10/1/2006	0.5%	0.7%	1.5%	0.4%	1.1%	0.0%	0.7%
10/1/2007	0.6%	0.9%	1.4%	0.5%	1.1%	0.0%	0.7%
10/1/2008	0.6%	0.8%	1.5%	0.5%	1.2%	0.0%	0.7%
4/1/2009	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	1.3%
10/1/2009	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10/1/2010	-0.1%	-0.1%	-0.2%	-0.1%	-0.2%	0.0%	-0.1%
10/1/2011	0.6%	0.8%	1.4%	0.4%	1.1%	0.0%	0.7%
10/1/2012	0.4%	0.6%	1.0%	0.3%	0.8%	0.0%	0.5%
10/1/2013	0.1%	0.1%	0.2%	0.1%	0.2%	0.0%	0.1%
10/1/2014	0.4%	0.5%	0.9%	0.3%	0.7%	0.0%	0.5%
3/24/2015	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10/1/2015	0.5%	0.6%	1.1%	0.3%	0.8%	0.0%	0.5%
10/1/2016	0.5%	0.7%	1.0%	0.4%	0.8%	0.0%	0.5%
10/1/2017	0.7%	0.8%	1.3%	0.6%	1.0%	0.0%	0.7%
10/1/2018	0.7%	0.8%	1.2%	0.5%	1.0%	0.0%	0.6%
10/1/2019	0.7%	0.8%	1.2%	0.5%	1.0%	0.0%	0.6%
10/1/2020	0.7%	0.8%	1.2%	0.5%	0.9%	0.0%	0.6%
10/1/2021	0.4%	0.8%	1.2%	0.5%	0.9%	0.0%	0.6%

**Notes:**

Estimated changes for 10/1/2020 and 10/1/2021 use projected SAWW values for 10/1/2020 and 10/1/2021.

Effects of SAWW Change

Person(s) Receiving Benefits (1)	Number of Cases (2)	Average Number of Dependents (3)	Average Arithmetic Age (4)	Annuity Symbol (5)	Annuity Value (6)	Effects of SAWW Change of 10/1/2018		Effects of SAWW Change of 10/1/2019		Effects of SAWW Change of 10/1/2020		Effects of SAWW Change of 10/1/2021	
						10/1/2017 Cost (7)	10/1/2018 Cost (8)	10/1/2018 Cost (9)	10/1/2019 Cost (10)	10/1/2019 Cost (11)	10/1/2020 Cost (12)	10/1/2020 Cost (13)	10/1/2021 Cost (14)
None	204	0	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Spouse, No Children	212	1	40	$a_{40:\overline{Life} }$	24.73	207,038,394	208,357,170	213,981,030	215,378,567	221,199,862	222,584,148	194,676,046	195,438,263
Spouse with Children	407	1	38	$a_{38:\overline{Life} }$	24.71	397,131,791	399,661,408	410,448,845	413,129,537	424,295,686	426,950,961	373,418,887	374,880,937
Child(ren)		1.9	10	$a_{\overline{6} }$	7.35								
Orphan, No Sibling	21	1	13	$a_{13:\overline{5} }$	4.69	3,890,186	3,914,965	4,020,636	4,046,895	4,156,276	4,182,286	3,657,901	3,672,223
Orphan with Sibling(s)	15	2.5	12	$a_{\overline{6} }$	5.59	3,313,383	3,334,488	3,424,491	3,446,857	3,540,019	3,562,173	3,115,540	3,127,738
Other Dependents (No Spouse)	141	1.7	58	$a_{58:\overline{Life} }$	19.48	18,907,165	18,907,165	18,909,478	18,909,478	18,911,870	18,911,870	18,941,117	18,941,117
(15) Total Survivor Benefits	1,000					630,280,918	634,175,196	650,784,481	654,911,335	672,103,713	676,191,437	593,809,491	596,060,278
(16) Cost of Burial (1,000 cases)						10,704,400	11,067,280	11,067,280	11,453,280	11,453,280	11,837,092	11,837,092	12,233,765
(17) Total Monetary Cost [ = (15) + (16) ]						640,985,318	645,242,476	661,851,761	666,364,615	683,556,993	688,028,529	605,646,582	608,294,043
(18) Fatal Benefit Change Factors							1.007		1.007		1.007		1.004

Notes:

(2), (3): Section IV-D, Exhibit 2.

(4): Section IV-D, Exhibit 2, Column (4) rounded to nearest whole number.

(5): For two or more dependents, benefits are last-survivor contingent. An annuity certain is used to approximate the joint-survivor annuity for "Child(ren)" and "Orphan with Sibling(s)".

(6): Life annuity values from *Massachusetts Workers' Compensation Statistical Plan*, Part I, Section IX (Effective 7/1/2019).

Annuity certain values assume the same discount rate and elevation rate used in the derivation of the Pension Tables contained in the *Massachusetts Workers' Compensation Statistical Plan*.

(7), (9), (11), (13) = 52 x (2) x (6) x [ Page 2, (14) ] for Spouses and Orphans and = 52 x (2) x (3) x (6) x [ Page 2, (30) ] for All Others Dependents

(8), (10), (12), (14) = 52 x (2) x (6) x [ Page 2, (15) ] for Spouses and Orphans and = 52 x (2) x (3) x (6) x [ Page 2, (31) ] for All Others Dependents

(16) = 8 x SAWW

(18): Ratio of (17) for later date to (17) for earlier date.

IV 000010 STIP

# IV 00011 STIP

## Determination of the Average Weekly Survivor Benefit for Fatalities

### Fatal: Spouse and Orphans - Effective 10/1/2018

(1)	Nominal Rate of Compensation Based on Gross Wages ("Comp. Rate")	66.67%
(2)	Min Weekly Compensation	110.00
(3)	Max Weekly Compensation	1,383.41
(4)	Average Injured Worker Weekly Wage ("AIWWW") for 12 months starting 10/1/2018	1,203.82

Wage Intervals (5)		Benefit (6)	Wage Distribution Entry Ratios = (5) / (4) (7)		Percentage in Interval		Average Wage in Interval = (9) / (8) x (4) (10)	Average Benefit in Interval (11)
					Workers (8)	Wages (9)		
0.00	165.00	Statutory Minimum	0.00	0.15	1.19%	0.11%	107.00	110.00
165.00	2,075.12	Actual Wage x Comp. Rate	0.15	1.70	88.29%	76.94%	1,048.99	699.33
2,075.12	over	Statutory Maximum	1.70	over	10.52%	22.96%	2,628.27	1,383.41

(12) Average Weekly Benefit **764.23**

	Effects of SAWW Change			
	10/1/2018	10/1/2019	10/1/2020	10/1/2021
(13) Starting date of 12 month period for AIWWW				
(14) Benefits Effective	10/1/2017	10/1/2018	10/1/2019	10/1/2020
Average Weekly Benefits	759.39	784.86	811.34	714.05
(15) Benefits Effective	10/1/2018	10/1/2019	10/1/2020	10/1/2021
Average Weekly Benefits	<b>764.23</b>	789.98	816.41	716.85
(16) Fatal: Spouse and Orphans Benefit Change Factors	1.006	1.007	1.006	1.004

### Fatal: All Others - Effective 10/1/2018

(17)	Nominal Rate of Compensation Based on Gross Wages ("Comp. Rate")	66.67%
(18)	Min Weekly Compensation	0.00
(19)	Max Weekly Compensation	80.00
(20)	Average Injured Worker Weekly Wage ("AIWWW") for 12 months starting 10/1/2018	1,203.82

Wage Intervals (21)		Benefit (22)	Wage Distribution Entry Ratios = (21) / (20) (23)		Percentage in Interval		Average Wage in Interval = (25) / (24) x (20) (26)	Average Benefit in Interval (27)
					Workers (24)	Wages (25)		
0.00	0.00	Statutory Minimum	0.00	0.00	0.00%	0.00%	0.00	0.00
0.00	120.00	Actual Wage x Comp. Rate	0.00	0.10	0.64%	0.04%	68.11	45.41
120.00	over	Statutory Maximum	0.10	over	99.36%	99.96%	1,211.15	80.00

(28) Average Weekly Benefit **79.78**

	Effects of SAWW Change			
	10/1/2018	10/1/2019	10/1/2020	10/1/2021
(29) Starting date of 12 month period for AIWWW				
(30) Benefits Effective	10/1/2017	10/1/2018	10/1/2019	10/1/2020
Average Weekly Benefits	79.78	79.79	79.80	79.92
(31) Benefits Effective	10/1/2018	10/1/2019	10/1/2020	10/1/2021
Average Weekly Benefits	<b>79.78</b>	79.79	79.80	79.92
(32) Fatal: All Others Benefit Change Factors	1.000	1.000	1.000	1.000

**Notes:**

- (1)-(3), (17)-(19): Section IV-C, Exhibit 1.
- (4), (20): Section IV-D, Exhibit 3.
- (5), (21): Wage Intervals follow Massachusetts General Law.
- (7), (23): Rounded to nearest 0.05.
- (8), (24): Section IV-D, Exhibit 1, column (2).
- (9), (25): Section IV-D, Exhibit 1, column (3).
- (11), (27): Comp Rate x Average Wage in Interval, subject to a statutory maximum and statutory minimum.
- (12) = Sum [ (8) x (11) ]
- (14), (15): Average Weekly Benefits results from an Excel Data Table that repeats the calculation of (12) for different dates.
- (16) = (15) / (14)
- (28) = Sum [ (24) x (27) ]
- (30), (31): Average Weekly Benefits results from an Excel Data Table that repeats the calculation of (28) for different dates.
- (32) = (31) / (30)



# IV 000012 STIP

Section IV - Benefit Change Adjustments  
 Subsection B - Effects of SAWW Change  
 7/1/2020

Section IV-B  
 Exhibit 2

## Determination of the Average Weekly Benefit for Permanent Totals

### Permanent Total - Effective 10/1/2018

(1)	Nominal Rate of Compensation Based on Gross Wages ("Comp. Rate")	66.67%
(2)	Min Weekly Compensation	276.68
(3)	Max Weekly Compensation	1,383.41
(4)	Average Injured Worker Weekly Wage ("AIWW") for 12 months starting 10/1/2018	1,203.82

Wage Intervals (5)		Benefit (6)	Wage Distribution Entry Ratios = (5) / (4) (7)		Percentage in Interval		Average Wage in Interval = (9) / (8) x (4) (10)	Average Benefit in Interval (11)
					Workers (8)	Wages (9)		
0.00	415.02	Statutory Minimum	0.00	0.35	6.21%	1.46%	282.12	276.68
415.02	2,075.12	Actual Wage x Comp. Rate	0.35	1.70	83.27%	75.59%	1,092.71	728.47
2,075.12	over	Statutory Maximum	1.70	over	10.52%	22.96%	2,628.27	1,383.41

(12) Average Weekly Benefit **769.27**

	Effects of SAWW Change			
	10/1/2018	10/1/2019	10/1/2020	10/1/2021
(13) Starting date of 12 month period for AIWW	10/1/2018	10/1/2019	10/1/2020	10/1/2021
(14) Benefits Effective	10/1/2017	10/1/2018	10/1/2019	10/1/2020
Average Weekly Wage Loss Benefit	763.87	789.54	816.24	843.59
(15) Benefits Effective	10/1/2018	10/1/2019	10/1/2020	10/1/2021
Average Weekly Wage Loss Benefit	<b>769.27</b>	795.26	821.91	849.46
(16) Permanent Total Wage Loss Benefit Change Factors	1.007	1.007	1.007	1.007
(17) Specific Injury Benefits				
SAWW Effect on Specific Injury Benefits	1.034	1.035	1.034	1.034
(18) Benefit Proportions Associated with Permanent Total Claims				
(a) Permanent Total Wage Loss Benefits	96.50%	96.50%	96.50%	96.50%
(b) Specific Injury Benefits	3.50%	3.50%	3.50%	3.50%
(19) Permanent Total Benefit Change Factors	1.008	1.008	1.008	1.008
= [(16) x (18a)] + [(17) x (18b)]				

**Notes:**

(1), (2), (3): Section IV-C, Exhibit 1.

(4): Section IV-D, Exhibit 3.

(5): Wage Intervals follow Massachusetts General Law.

(7): Rounded to nearest 0.05.

(8): Section IV-D, Exhibit 1, column (2).

(9): Section IV-D, Exhibit 1, column (3).

(11): Comp Rate x Average Wage in Interval, subject to a statutory maximum and statutory minimum.

(12) = Sum [ (8) x (11) ]

(14), (15): Average Weekly Benefits results from an Excel Data Table that repeats the calculation of (12) for different dates.

(16) = (15) / (14)

(17): Ratio of SAWW from Section IV-D, Exhibit 3.

Example: Effect of SAWW Change of 10/1/2019 = SAWW 10/1/2019 / SAWW 10/1/2018 = 1.035 = 1,431.66 / 1,383.41

(18): Estimated Average Schedule Benefit compared to Average Indemnity Cost per Claim.

DCI data for Permanent Total Claims in Massachusetts.

# IV 000013 STIP

Section IV - Benefit Change Adjustments  
 Subsection B - Effects of SAWW Change  
 7/1/2020

Section IV-B  
 Exhibit 3

## Determination of the Average Weekly Benefit for Permanent Partials

### Permanent Partial - Effective 10/1/2018

(1)	Nominal Rate of Compensation Based on Gross Wages ("Comp. Rate")	37.20%
(2)	Min Weekly Compensation	0.00
(3)	Max Weekly Compensation	1,037.56
(4)	Average Injured Worker Weekly Wage ("AIWWW") for 12 months starting 10/1/2018	1,203.82
(5)	SAWW effective 10/1/2018	1,383.41

Wage Intervals (6)	Benefit (7)	Wage Distribution Entry Ratios = (6) / (4) (8)	Percentage in Interval		Average Wage in Interval =(10) / (9) x (4) (11)	Average Benefit in Interval (12)
			Workers (9)	Wages (10)		
0.00 - 2,789.13	Actual Wage x Comp. Rate	0.00 - 2.30	97.00%	91.62%	1,137.03	422.98
2,789.13 - 4,550.69	Statutory Maximum	2.30 - 3.80	2.85%	7.72%	3,263.42	1037.56
4,550.69 - 7,281.11	Statutorily Reduced	3.80 - 6.05	0.15%	0.64%	5,189.86	794.67
7,281.11 - over	Exceeds Statutory Limit	6.05 - over	0.00%	0.02%	8,037.28	0.00

(13) Average Weekly Benefit **441.01**

	Effects of SAWW Change			
	10/1/2018	10/1/2019	10/1/2020	10/1/2021
(14) Starting date of 12 month period for AIWWW	10/1/2018	10/1/2019	10/1/2020	10/1/2021
(15) Benefits Effective Average Weekly Wage Loss Benefit	10/1/2017 439.84	10/1/2018 454.60	10/1/2019 469.88	10/1/2020 485.63
(16) Benefits Effective Average Weekly Wage Loss Benefit	10/1/2018 <b>441.01</b>	10/1/2019 455.83	10/1/2020 471.11	10/1/2021 486.89
(17) Permanent Partial Wage Loss Benefit Change Factors	1.003	1.003	1.003	1.003
(18) Specific Injury Benefits SAWW Effect on Specific Injury Benefits	1.034	1.035	1.034	1.034
(19) Permanent Partial Healing Period Effect on Healing Period Benefits	1.005	1.005	1.005	1.005
(20) Benefit Proportions Associated with Permanent Partial Claims				
(a) Permanent Partial Wage Loss Benefits	27%	27%	27%	27%
(b) Specific Injury Benefits	26%	26%	26%	26%
(c) Healing Period - Temporary Total Benefits	47%	47%	47%	47%
(21) Permanent Partial Benefit Change Factors = [(17) x (20a)] + [(18) x (20b)] + [(19) x (20c)]	1.012	1.012	1.012	1.012

**Notes:**

- (1), (2), (3): Section IV-C, Exhibit 1.
- (4), (5): Section IV-D, Exhibit 3.
- (6): Wage Intervals follow Massachusetts General Law.
- (7): Statutory Maximum: Insurer may reduce benefit to level at which benefits + earnings = 2 x SAWW.
- (8): Rounded to nearest 0.05.
- (9): Section IV-D, Exhibit 1, column (2).
- (10): Section IV-D, Exhibit 1, column (3).
- (12): Comp Rate x Average Wage in Interval, subject to a statutory maximum and a statutory limitation.
- (13) = Sum [ (9) x (12) ]
- (15), (16): Average Weekly Benefits results from an Excel Data Table that repeats the calculation of (13) for different dates.
- (17) = (16) / (15)
- (18): Ratio of SAWW from Section IV-D, Exhibit 3.  
 Example: Effect of SAWW Change of 10/1/2019 = 1.035 = 1,431.66 / 1,383.41
- (19): Temporary Total Benefit Change Factors, Exhibit 4.
- (20): DCI data for Permanent Partial Claims in Massachusetts.

# IV 000014 STIP

Section IV - Benefit Change Adjustments  
 Subsection B - Effects of SAWW Change  
 7/1/2020

Section IV-B  
 Exhibit 4

## Determination of the Average Weekly Benefit for Temporary Totals

Temporary Total - Effective 10/1/2018

(1)	Nominal Rate of Compensation Based on Gross Wages ("Comp. Rate")	60.00%
(2)	Min Weekly Compensation	276.68
(3)	Max Weekly Compensation	1,383.41
(4)	Average Injured Worker Weekly Wage ("AIWW") for 12 months starting 10/1/2018	1,203.82

Wage Intervals (5)	Benefit (6)	Wage Distribution Entry Ratios = (5) / (4) (7)		Percentage in Interval		Average Wage in Interval = (9) / (8) x (4) (10)	Average Benefit in Interval (11)
				Workers (8)	Wages (9)		
0.00      276.68	Actual Wage	0.00	0.25	2.99%	0.48%	191.10	191.10
276.68    461.14	Statutory Minimum	0.25	0.40	5.58%	1.87%	403.01	276.68
461.14    2,305.68	Actual Wage x Comp. Rate	0.40	1.90	84.49%	81.12%	1,155.79	693.47
2,305.68    over	Statutory Maximum	1.90	over	6.93%	16.53%	2,870.86	1,383.41
(12) Average Weekly Benefit							<b>703.02</b>

	Effects of SAWW Change			
	10/1/2018	10/1/2019	10/1/2020	10/1/2021
(13) Starting date of 12 month period for AIWW				
(14) Benefits Effective	10/1/2017	10/1/2018	10/1/2019	10/1/2020
Average Weekly Benefits	699.29	722.77	747.15	772.19
(15) Benefits Effective	10/1/2018	10/1/2019	10/1/2020	10/1/2021
Average Weekly Benefits	<b>703.02</b>	726.73	751.08	776.25
(16) Temporary Total Benefit Change Factors	1.005	1.005	1.005	1.005

**Notes:**

- (1), (2), (3): Section IV-C, Exhibit 1.
- (4): Section IV-D, Exhibit 3.
- (5): Wage Intervals follow Massachusetts General Law.
- (7): Rounded to nearest 0.05.
- (8): Section IV-D, Exhibit 1, column (2).
- (9): Section IV-D, Exhibit 1, column (3).
- (11): Comp Rate x Average Wage in Interval, subject to a statutory maximum and statutory minimum, unless the actual wage is less than the statutory minimum.
- (12) = Sum [ (8) x (11) ]
- (14), (15): Average Weekly Benefits results from an Excel Data Table that repeats the calculation of (12) for different dates.
- (16) = (15) / (14)

Summary of Principal Benefit Changes Due to the Increase in the Maximum and Minimum Weekly Benefits

	10/1/2017	10/1/2018	10/1/2019	10/1/2020	10/1/2021
(1) Fatal					
% Rate of Compensation	66.67%	66.67%	66.67%	66.67%	66.67%
Minimum Weekly Benefit					
Widow/Orphan	\$110.00	\$110.00	\$110.00	\$110.00	\$110.00
Others	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Maximum Weekly Benefit					
Widow/Orphan	\$1,338.05	\$1,383.41	\$1,431.66	<i>\$1,479.64</i>	<i>\$1,529.22</i>
Others	\$80.00	\$80.00	\$80.00	\$80.00	\$80.00
Each Additional Child	\$6.00, if benefit under \$150.00	\$6.00, if benefit under \$150.00	\$6.00, if benefit under \$150.00	\$6.00, if benefit under \$150.00	\$6.00, if benefit under \$150.00
Maximum Aggregate Payable	250 x SAWW	250 x SAWW	250 x SAWW	250 x SAWW	250 x SAWW
Burial Allowance	8 X SAWW	8 X SAWW	8 X SAWW	8 X SAWW	8 X SAWW
Cost of Living Adjustment - benefits increase annually by:	Each October 1 after 2 years after injury. Based on the lesser of 5%, N.E. region urban area CPI, and the % change in the SAWW	Each October 1 after 2 years after injury. Based on the lesser of 5%, N.E. region urban area CPI, and the % change in the SAWW	Each October 1 after 2 years after injury. Based on the lesser of 5%, N.E. region urban area CPI, and the % change in the SAWW	Each October 1 after 2 years after injury. Based on the lesser of 5%, N.E. region urban area CPI, and the % change in the SAWW	Each October 1 after 2 years after injury. Based on the lesser of 5%, N.E. region urban area CPI, and the % change in the SAWW
(2) Total Disability					
Permanent Total					
% Rate of Compensation	66.67%	66.67%	66.67%	66.67%	66.67%
Minimum Weekly Benefit	\$267.61	\$276.68	\$286.33	<i>\$295.93</i>	<i>\$305.84</i>
Maximum Weekly Benefit	\$1,338.05	\$1,383.41	\$1,431.66	<i>\$1,479.64</i>	<i>\$1,529.22</i>
Duration	Lifetime	Lifetime	Lifetime	Lifetime	Lifetime
Cost of Living Adjustment - benefits increase annually by:	Same as Fatal	Same as Fatal	Same as Fatal	Same as Fatal	Same as Fatal
Temporary Total					
% Rate of Compensation	60.00%	60.00%	60.00%	60.00%	60.00%
Minimum Weekly Benefit	\$267.61	\$276.68	\$286.33	<i>\$295.93</i>	<i>\$305.84</i>
Maximum Weekly Benefit	\$1,338.05	\$1,383.41	\$1,431.66	<i>\$1,479.64</i>	<i>\$1,529.22</i>
Waiting Period/Retroactive After	5 days/21 days	5 days/21 days	5 days/21 days	5 days/21 days	5 days/21 days
(3) Permanent Partial Disability					
% Rate of Compensation	37.20%	37.20%	37.20%	37.20%	37.20%
Minimum Weekly Benefit	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Maximum Weekly Benefit	\$1,003.54	\$1,037.56	\$1,073.75	<i>\$1,109.73</i>	<i>\$1,146.92</i>
(4) Specific Injury Payments					
Scheduled Injuries	According to the injury, a scheduled number multiplied by the SAWW	According to the injury, a scheduled number multiplied by the SAWW	According to the injury, a scheduled number multiplied by the SAWW	According to the injury, a scheduled number multiplied by the SAWW	According to the injury, a scheduled number multiplied by the SAWW
Non-Scheduled Injuries	32 x SAWW	32 x SAWW	32 x SAWW	32 x SAWW	32 x SAWW
Disfigurement					
Maximum Benefit	\$15,000	\$15,000.00	\$15,000.00	\$15,000.00	\$15,000.00
Benefit	As determined by the reviewing board	As determined by the reviewing board	As determined by the reviewing board	As determined by the reviewing board	As determined by the reviewing board

Notes:  
 Source: The General Laws of Massachusetts, Chapter 152, Sections 31-36.  
 (1), (2): Maximum Weekly Benefit for Fatalities and Total Disabilities is 100% of the SAWW.  
 (2): Minimum Weekly Benefit for Total Disability is 20% of the SAWW.  
 (3): Maximum Weekly Benefit for Permanent Partial is 75% of the SAWW. There is no Minimum Weekly Benefit for Permanent Partial Disability.  
 (3): Permanent Partial % Rate of Compensation is 60% of 62%, the lost wage-earning capacity, Section IV-D, Exhibit 4.

*Values in Italics are Projected*

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# IV 000016 STIP

Section IV - Benefit Change Adjustments  
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Section IV-D  
 Exhibit 1

Standard Wage Distribution Table

R = Ratio to Average Wage  
 A = Cumulative Percentage of Workers  
 B = Cumulative Percentage of Wages

R (1)	A (2)	B (3)	R (1)	A (2)	B (3)	R (1)	A (2)	B (3)
0.05	0.2575	0.0069	2.40	97.5655	92.9442	4.75	99.9722	99.8509
0.10	0.6416	0.0363	2.45	97.8056	93.5264	4.80	99.9745	99.8618
0.15	1.1926	0.1060	2.50	98.0216	94.0607	4.85	99.9766	99.8719
0.20	1.9563	0.2406	2.55	98.2157	94.5509	4.90	99.9785	99.8812
0.25	2.9922	0.4750	2.60	98.3904	95.0005	4.95	99.9802	99.8897
0.30	4.3800	0.8583	2.65	98.5474	95.4128	5.00	99.9818	99.8977
0.35	6.2125	1.4559	2.70	98.6888	95.7907	5.05	99.9833	99.9050
0.40	8.5723	2.3431	2.75	98.8159	96.1372	5.10	99.9846	99.9118
0.45	11.5064	3.5926	2.80	98.9304	96.4548	5.15	99.9858	99.9181
0.50	15.0106	5.2593	2.85	99.0334	96.7458	5.20	99.9870	99.9239
0.55	19.0259	7.3693	2.90	99.1262	97.0125	5.25	99.9880	99.9293
0.60	23.4487	9.9139	2.95	99.2098	97.2570	5.30	99.9889	99.9343
0.65	28.1475	12.8515	3.00	99.2851	97.4810	5.35	99.9898	99.9389
0.70	32.9823	16.1152	3.05	99.3530	97.6863	5.40	99.9906	99.9432
0.75	37.8216	19.6235	3.10	99.4142	97.8745	5.45	99.9913	99.9471
0.80	42.5554	23.2915	3.15	99.4694	98.0469	5.50	99.9920	99.9508
0.85	47.1012	27.0409	3.20	99.5192	98.2050	5.55	99.9926	99.9542
0.90	51.4058	30.8063	3.25	99.5641	98.3500	5.60	99.9932	99.9574
0.95	55.4411	34.5379	3.30	99.6047	98.4828	5.65	99.9937	99.9603
1.00	59.1992	38.2009	3.35	99.6414	98.6047	5.70	99.9942	99.9630
1.05	62.6854	41.7731	3.40	99.6745	98.7165	5.75	99.9946	99.9656
1.10	65.9126	45.2413	3.45	99.7044	98.8190	5.80	99.9950	99.9679
1.15	68.8968	48.5975	3.50	99.7315	98.9131	5.85	99.9954	99.9701
1.20	71.6541	51.8365	3.55	99.7560	98.9994	5.90	99.9958	99.9721
1.25	74.1997	54.9540	3.60	99.7782	99.0786	5.95	99.9961	99.9740
1.30	76.5470	57.9460	3.65	99.7982	99.1514	6.00	99.9964	99.9757
1.35	78.7079	60.8084	3.70	99.8164	99.2181	6.05	99.9966	99.9773
1.40	80.6934	63.5378	3.75	99.8329	99.2795	6.10	99.9969	99.9789
1.45	82.5138	66.1312	3.80	99.8478	99.3358	6.15	99.9971	99.9803
1.50	84.1791	68.5868	3.85	99.8613	99.3876	6.20	99.9973	99.9816
1.55	85.6991	70.9043	3.90	99.8736	99.4352	6.25	99.9975	99.9828
1.60	87.0837	73.0845	3.95	99.8848	99.4789	6.30	99.9977	99.9839
1.65	88.3424	75.1293	4.00	99.8949	99.5191	6.35	99.9979	99.9850
1.70	89.4847	77.0422	4.05	99.9041	99.5561	6.40	99.9980	99.9860
1.75	90.5197	78.8273	4.10	99.9124	99.5902	6.45	99.9982	99.9869
1.80	91.4563	80.4893	4.15	99.9200	99.6215	6.50	99.9983	99.9877
1.85	92.3028	82.0338	4.20	99.9269	99.6503	6.55	99.9984	99.9885
1.90	93.0671	83.4665	4.25	99.9332	99.6768	6.60	99.9985	99.9893
1.95	93.7565	84.7934	4.30	99.9389	99.7013	6.65	99.9986	99.9899
2.00	94.3780	86.0206	4.35	99.9441	99.7238	6.70	99.9987	99.9906
2.05	94.9379	87.1541	4.40	99.9489	99.7445	6.75	99.9988	99.9912
2.10	95.4420	88.1999	4.45	99.9532	99.7637	6.80	99.9989	99.9918
2.15	95.8958	89.1639	4.50	99.9571	99.7813	6.85	99.9990	99.9923
2.20	96.3040	90.0517	4.55	99.9607	99.7975	6.90	99.9991	99.9928
2.25	96.6712	90.8686	4.60	99.9640	99.8125	6.95	99.9991	99.9932
2.30	97.0015	91.6198	4.65	99.9670	99.8264	7.00	99.9992	99.9936
2.35	97.2985	92.3101	4.70	99.9697	99.8391			

Notes:  
 Source: NCCI - The 2009 Standard Wage Distribution Table.

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Section IV - Benefit Change Adjustments  
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 7/1/2020

Section IV-D  
 Exhibit 2

Dependency Table

Dependency Class (1)	Number of Cases (2)	Average Number of Dependents (3)	Average Dependent Age (4)
No Dependents	<b>204</b>	<b>0</b>	N/A
Spouse, No Children	<b>212</b>	<b>1</b>	40
Spouse with Children	153	1	38
1 Child		1	11
Spouse with Children	166	1	38
2 Children		2	10
Spouse with Children	63	1	37
3 Children		3	10
Spouse with Children	18	1	37
4 Children		4	10
Spouse with Children	5	1	37
5 Children		5	10
Spouse with Children	2	1	38
More than 5 Children		7	10
<b>Spouse with Children</b>	<b>407</b>	<b>1</b>	38
<b>Summary</b>		<b>1.9</b>	10
<b>Orphan, No Sibling</b>	<b>21</b>	<b>1</b>	13
1 Child			
Orphans with Sibling(s)	10	2	12
2 Children		3	12
3 Children	3	3	12
4 Children	1	4	12
More than 4 Children	1	5	12
<b>Orphans with Sibling(s)</b>	<b>15</b>	<b>2.5</b>	12
<b>Summary</b>			
Other Dependents (No Spouse)	41	1	62
1 Parent			
2 Parents	91	2	58
Sibling	7	1	37
Other	2	2	31
<b>Other Dependents</b>	<b>141</b>	<b>1.7</b>	58
<b>Summary</b>			

Notes:

Source: NCCI, CPS data, 1989-1993, reweighted using DCI Data for Fatalities, 1984-1993.

(2): Dependent count includes working adult household members standardized to a total of 1,000 cases.

Derivation of Estimated SAWW (Statewide Average Weekly Wage) and AIWWW (Average Injured Worker Weekly Wage)

SAWW Effective Date (1)	SAWW Based on Data (2)	Midpoint of the SAWW Data (3)	Actual SAWW (4)	Estimated Annual SAWW Trend Factor (5)	Actual and Projected SAWW (6)	AIWWW Period (7)	Actual and Projected Effective AIWWW (8)
10/1/2017	4/1/16 to 4/1/17	10/1/2016	1,338.05		1,338.05	10/1/17 to 10/1/18	1,164.03
10/1/2018	4/1/17 to 4/1/18	10/1/2017	1,383.41		1,383.41	10/1/18 to 10/1/19	1,203.82
10/1/2019	4/1/18 to 4/1/19	10/1/2018	1,431.66		1,431.66	10/1/19 to 10/1/20	1,244.16
10/1/2020	4/1/19 to 4/1/20	10/1/2019		1.034	1,479.64	10/1/20 to 10/1/21	1,285.86
10/1/2021	4/1/20 to 4/1/21	10/1/2020		1.034	1,529.22	10/1/21 to 10/1/22	1,328.95

Notes:

(4): Section V-G, Exhibit 2.

(5): 3.4% Estimated Annual Trend in SAWW, Section V-A, Exhibit 1.

(6): For SAWW Effective Date 10/1/2017 - 10/1/2019, (6) = (4)

For SAWW Effective Date 10/1/2020 & 10/1/2021, (6) = (5) x (6 from Prior Period)

(8): For the AIWWW Period 10/1/17 to 10/1/18, (8) is the product of .827 and the average of the SAWWs effective 10/1/2018 and 10/1/2019, respectively.

For the AIWWW Period 10/1/18 to 10/1/19, (8) is the product of .827 and the average of the SAWWs effective 10/1/2019 and 10/1/2020, respectively.

For the AIWWW Period 10/1/19 to 10/1/20, (8) is the product of .827 and the average of the SAWWs effective 10/1/2020 and 10/1/2021, respectively.

For the AIWWW Periods 10/1/20 to 10/1/21 and 10/1/21 to 10/1/22, (8) = (5) x (8 from Prior Period).

Historical Relationship of .827 for the ratio of AIWWW to SAWW is selected based on DCI data.

4/1/1996: SAWW = 648, AIWWW = 536

4/1/1994: SAWW = 595, AIWWW = 492

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Section IV-D  
 Exhibit 4

## Average Wage Loss for Permanent Partial Claimants

DCI Report Level	(Pre-Injury - Post-Injury) / Pre-Injury Wage					Average
	1979 (1)	1980 (2)	1981 (3)	1982 (4)	1983 (5)	
<b>Average Wage Loss for Major Permanent Partial Claimants</b>						
1	0.61	0.62	0.60	0.62	0.60	0.61
2	0.62	0.62	0.59	0.63	0.62	0.62
3	0.64	0.60	0.65	0.60		0.62
4	0.60	0.64	0.62			0.62
<b>(6) Selected Average Wage Loss for Major Permanent Partial Claimants</b>						<b>0.62</b>

<b>Average Wage Loss for Minor Permanent Partial Claimants</b>						
1	0.58	0.58	0.58	0.60	0.59	0.59
2	0.62	0.60	0.59	0.58	0.64	0.61
3	0.66	0.64	0.65	0.56		0.63
4	0.62	0.70	0.66			0.66
<b>(7) Selected Average Wage Loss for Minor Permanent Partial Claimants</b>						<b>0.62</b>

**Notes:**

Source: Detail Claim Information ("DCI") Data, compiled as of 10/1/1985.

(6), (7): These data were compiled prior to Chapter 398. To be consistent with Chapter 398, 62% will be used as the wage loss as a percent of pre-injury wage.

The percent of that that is paid is 60% subject to maximums.



Post-Chapter 398 Injury Type Weights at 5th Report

Injury Type (1)	Policy Year (2)	Indemnity - Likely to Develop			Indemnity - Not Likely to Develop			Indemnity On-level Losses at Fifth Report = (5) + (8) (9)	Weights at 5th report (10)
		Losses at Fifth Report (3)	Benefit On-Level Factor to Prosp. Eff. Period (4)	On-level Losses at Fifth Report = (3) x (4) (5)	Losses at Fifth Report (6)	Benefit On-Level Factor to Prosp. Eff. Period (7)	On-level Losses at Fifth Report = (6) x (7) (8)		
Death	2009	1,354,447	1.063	1,439,666	6,993,542	1.063	7,433,560	8,873,226	
Death	2010	1,811,505	1.063	1,926,408	4,442,116	1.063	4,723,878	6,650,286	
Death	2011	381,438	1.060	404,198	7,241,840	1.060	7,673,951	8,078,149	
Death	2012	1,909,719	1.055	2,014,377	8,207,921	1.055	8,657,740	10,672,117	
Death	2013	1,592,212	1.053	1,675,963	8,257,420	1.053	8,691,762	10,367,724	
<b>Total Death</b>		<b>7,049,321</b>		<b>7,460,612</b>	<b>35,142,839</b>		<b>37,180,891</b>	<b>44,641,502</b>	<b>1.51%</b>
Permanent Total	2009	35,820,594	1.068	38,269,478	0	1.068	0	38,269,478	
Permanent Total	2010	32,315,172	1.069	34,539,193	0	1.069	0	34,539,193	
Permanent Total	2011	41,303,252	1.064	43,932,331	0	1.064	0	43,932,331	
Permanent Total	2012	58,086,200	1.057	61,380,655	0	1.057	0	61,380,655	
Permanent Total	2013	56,457,147	1.054	59,492,166	0	1.054	0	59,492,166	
<b>Total Permanent Total</b>		<b>223,982,365</b>		<b>237,613,822</b>	<b>0</b>		<b>0</b>	<b>237,613,822</b>	<b>8.05%</b>
Permanent Partial	2009	78,570,735	1.111	87,261,282	116,945,244	1.111	129,880,316	217,141,598	
Permanent Partial	2010	81,967,235	1.112	91,116,367	129,328,575	1.112	143,764,150	234,880,517	
Permanent Partial	2011	86,787,257	1.102	95,670,160	124,177,025	1.102	136,886,869	232,557,029	
Permanent Partial	2012	74,816,277	1.090	81,562,927	118,198,273	1.090	128,856,948	210,419,875	
Permanent Partial	2013	72,384,170	1.085	78,527,599	124,896,982	1.085	135,497,308	214,024,907	
<b>Total Permanent Partial</b>		<b>394,525,674</b>		<b>434,138,335</b>	<b>613,546,099</b>		<b>674,885,590</b>	<b>1,109,023,925</b>	<b>37.59%</b>
Temporary Total	2009	27,258,036	1.041	28,386,528	57,477,123	1.041	59,856,695	88,243,222	
Temporary Total	2010	30,245,454	1.042	31,514,477	63,408,679	1.042	66,069,148	97,583,626	
Temporary Total	2011	32,011,447	1.040	33,279,236	77,272,315	1.040	80,332,627	113,611,863	
Temporary Total	2012	36,643,350	1.036	37,969,449	72,651,696	1.036	75,280,913	113,250,362	
Temporary Total	2013	31,778,602	1.034	32,871,701	83,369,545	1.034	86,237,235	119,108,937	
<b>Total Temporary Total</b>		<b>157,936,889</b>		<b>164,021,391</b>	<b>354,179,358</b>		<b>367,776,618</b>	<b>531,798,010</b>	<b>18.03%</b>
<b>(11) Total Indemnity</b>		<b>783,494,249</b>		<b>843,234,160</b>	<b>1,002,868,296</b>		<b>1,079,843,099</b>	<b>1,923,077,259</b>	<b>65.19%</b>

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- (12) Aggregate Financial Policy Year Call, Indemnity Fifth to Ultimate Development Factor Paid + Case 1.048  
 (13) Tail Development Attributed to Likely to Develop Claims 0.8  
 (14) Percentage Likely to Develop 0.438  
 (15) Indemnity Likely to Develop - Loss Development Factor from 5th Report to Ultimate =  $1.0 + \{ [(12) - 1.0] \times (13) \} / (14)$  1.087  
 (16) Indemnity Not Likely to Develop - Loss Development Factor from 5th Report to Ultimate =  $1.0 + \{ [(12) - 1.0] \times [1.0 - (13)] \} / [1.0 - (14)]$  1.017

Notes:

- (3), (6): Unit Statistical Plan data, excluding Large Deductibles.  
 (4), (7): Section IV - A, Exhibit 1  
 (10) = (9), Total / Page 2, Column (9), Total Medical & Indemnity  
 (12) =  $1.024 \times 1.015 \times 1.008$  where 1.024 is the loss development factor from Section II - B, Exhibit 1, 1.015 is the tail factor from Section II - C, Exhibit 2, Page 1.  
 and 1.008 is the escalation factor from Section II - D, Exhibit 2, Page 1.  
 (14) = (5), Total Indemnity / (9), Total Indemnity

Post-Chapter 398 Injury Type Weights at 5th Report

Injury Type (1)	Policy Year (2)	Medical - Likely to Develop			Medical - Not Likely to Develop			Medical On-level Losses at Fifth Report = (5) + (8) (9)	Weights at 5th report (10)
		Losses at Fifth Report (3)	Benefit On-Level Factor to Prosp. Eff. Period (4)	On-level Losses at Fifth Report = (3) x (4) (5)	Losses at Fifth Report (6)	Benefit On-Level Factor to Prosp. Eff. Period (7)	On-level Losses at Fifth Report = (6) x (7) (8)		
Death	2009	777,286	1.002	778,624	378,555	1.002	379,207	1,157,830	
Death	2010	63,834	1.000	63,834	176,427	1.000	176,427	240,261	
Death	2011	13,739	1.000	13,739	271,119	1.000	271,119	284,858	
Death	2012	233,322	1.000	233,322	334,710	1.000	334,710	568,032	
Death	2013	277,312	1.000	277,312	593,619	1.000	593,619	870,931	
<b>Total Death</b>		<b>1,365,493</b>		<b>1,366,831</b>	<b>1,754,430</b>		<b>1,755,082</b>	<b>3,121,912</b>	<b>0.11%</b>
Permanent Total	2009	19,379,593	1.002	19,412,946	0	1.002	0	19,412,946	
Permanent Total	2010	31,951,308	1.000	31,951,308	0	1.000	0	31,951,308	
Permanent Total	2011	29,341,328	1.000	29,341,328	0	1.000	0	29,341,328	
Permanent Total	2012	42,854,830	1.000	42,854,830	0	1.000	0	42,854,830	
Permanent Total	2013	27,720,398	1.000	27,720,398	0	1.000	0	27,720,398	
<b>Total Permanent Total</b>		<b>151,247,457</b>		<b>151,280,810</b>	<b>0</b>		<b>0</b>	<b>151,280,810</b>	<b>5.13%</b>
Permanent Partial	2009	35,903,999	1.002	35,965,791	50,699,935	1.002	50,787,191	86,752,982	
Permanent Partial	2010	28,038,664	1.000	28,038,664	51,642,011	1.000	51,642,011	79,680,675	
Permanent Partial	2011	40,439,521	1.000	40,439,521	47,591,743	1.000	47,591,743	88,031,264	
Permanent Partial	2012	32,686,497	1.000	32,686,497	43,255,190	1.000	43,255,190	75,941,687	
Permanent Partial	2013	27,412,480	1.000	27,412,480	49,920,834	1.000	49,920,834	77,333,314	
<b>Total Permanent Partial</b>		<b>164,481,161</b>		<b>164,542,953</b>	<b>243,109,713</b>		<b>243,196,969</b>	<b>407,739,922</b>	<b>13.82%</b>
Temporary Total	2009	13,192,788	1.002	13,215,493	45,467,853	1.002	45,546,104	58,761,598	
Temporary Total	2010	14,733,512	1.000	14,733,512	48,490,007	1.000	48,490,007	63,223,519	
Temporary Total	2011	16,302,716	1.000	16,302,716	55,255,968	1.000	55,255,968	71,558,684	
Temporary Total	2012	17,045,582	1.000	17,045,582	55,948,615	1.000	55,948,615	72,994,197	
Temporary Total	2013	12,953,904	1.000	12,953,904	59,472,525	1.000	59,472,525	72,426,429	
<b>Total Temporary Total</b>		<b>74,228,502</b>		<b>74,251,207</b>	<b>264,634,968</b>		<b>264,713,219</b>	<b>338,964,427</b>	<b>11.49%</b>
Medical Only	2009	0	1.002	0	23,928,366	1.002	23,969,547	23,969,547	
Medical Only	2010	0	1.000	0	25,549,114	1.000	25,549,114	25,549,114	
Medical Only	2011	0	1.000	0	25,605,549	1.000	25,605,549	25,605,549	
Medical Only	2012	0	1.000	0	25,210,465	1.000	25,210,465	25,210,465	
Medical Only	2013	0	1.000	0	25,628,010	1.000	25,628,010	25,628,010	
<b>Total Medical Only</b>		<b>0</b>		<b>0</b>	<b>125,921,504</b>		<b>125,962,685</b>	<b>125,962,685</b>	<b>4.27%</b>
<b>(11) Total Medical</b>		<b>391,322,613</b>		<b>391,441,801</b>	<b>635,420,615</b>		<b>635,627,955</b>	<b>1,027,069,756</b>	<b>34.81%</b>
<b>(12) Total Medical &amp; Indemnity</b>		<b>1,174,816,862</b>		<b>1,234,675,961</b>	<b>1,638,288,911</b>		<b>1,715,471,054</b>	<b>2,950,147,015</b>	

- (13) Medical Only fraction of Total Medical 12.26%
- (14) Aggregate Financial Policy Year Call, Medical Fifth to Ultimate Development Factor Paid + Case 1.016
- (15) Tail Development Attributed to Likely to Develop Claims 0.8
- (16) Percentage Likely to Develop 0.381
- (17) Medical Likely to Develop - Loss Development Factor from 5th Report to Ultimate =  $1.0 + \{ [(14) - 1.0] \times (15) \} / (16)$  1.034
- (18) Medical Not Likely to Develop - Loss Development Factor from 5th Report to Ultimate =  $1.0 + \{ [(14) - 1.0] \times [1.0 - (15)] \} / [1.0 - (16)]$  1.005
- (19) Indemnity Likely Weight at 5th Report 28.58%
- (20) Indemnity Not Likely Weight at 5th Report 36.60%
- (21) Medical Likely Weight at 5th Report 13.27%
- (22) Medical Not Likely Weight at 5th Report 21.55%

Notes:

- (3), (6): Unit Statistical Plan data, excluding Large Deductibles.
- (4), (7): Section IV - A, Exhibit 1
- (10) = (9), Total / (9), Total Medical & Indemnity
- (13) = (10), Total Medical Only / (10), Total Medical
- (14) =  $0.999 \times 1.017$  where 0.999 is the loss development factor from Section II - B, Exhibit 1, 1.017 is the tail factor from Section II - C, Exhibit 2, Page 1.
- (16) = (5), Total Medical / (9), Total Medical
- (19) = Page 1, (5), Total Indemnity / (9), Total Medical & Indemnity
- (20) = Page 1, (8), Total Indemnity / (9), Total Medical & Indemnity
- (21) = (5), Total Medical / (9), Total Medical & Indemnity
- (22) = (8), Total Medical / (9), Total Medical & Indemnity

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Post-Chapter 398 Injury Type Weights at Ultimate

Injury Type (1)	Policy Year (2)	Indemnity - Likely to Develop			Indemnity - Not Likely to Develop			Indemnity Ult. On-level Losses at Ultimate = (5) + (8) (9)	Weights at Ultimate (10)
		On-level Losses at Fifth Report (3)	Development Factors 5th to Ultimate (4)	Est. Ult On-level Losses = (3) x (4) (5)	On-level Losses at Fifth Report (6)	Development Factors 5th to Ultimate (7)	Est. Ult On-level Losses = (6) x (7) (8)		
Death	2009	1,439,666	1.087	1,564,810	7,433,560	1.017	7,559,706	9,124,516	
Death	2010	1,926,408	1.087	2,093,863	4,723,878	1.017	4,804,041	6,897,905	
Death	2011	404,198	1.087	439,333	7,673,951	1.017	7,804,176	8,243,509	
Death	2012	2,014,377	1.087	2,189,479	8,657,740	1.017	8,804,660	10,994,139	
Death	2013	1,675,963	1.087	1,821,647	8,691,762	1.017	8,839,259	10,660,906	
<b>Total Death</b>		<b>7,460,612</b>		<b>8,109,132</b>	<b>37,180,891</b>		<b>37,811,843</b>	<b>45,920,975</b>	<b>1.50%</b>
Permanent Total	2009	38,269,478	1.087	41,596,087	0	1.017	0	41,596,087	
Permanent Total	2010	34,539,193	1.087	37,541,543	0	1.017	0	37,541,543	
Permanent Total	2011	43,932,331	1.087	47,751,189	0	1.017	0	47,751,189	
Permanent Total	2012	61,380,655	1.087	66,716,224	0	1.017	0	66,716,224	
Permanent Total	2013	59,492,166	1.087	64,663,577	0	1.017	0	64,663,577	
<b>Total Permanent Total</b>		<b>237,613,822</b>		<b>258,268,621</b>	<b>0</b>		<b>0</b>	<b>258,268,621</b>	<b>8.44%</b>
Permanent Partial	2009	87,261,282	1.087	94,846,548	129,880,316	1.017	132,084,359	226,930,908	
Permanent Partial	2010	91,116,367	1.087	99,036,740	143,764,150	1.017	146,203,799	245,240,539	
Permanent Partial	2011	95,670,160	1.087	103,986,376	136,886,869	1.017	139,209,812	243,196,189	
Permanent Partial	2012	81,562,927	1.087	88,652,859	128,856,948	1.017	131,043,625	219,696,484	
Permanent Partial	2013	78,527,599	1.087	85,353,683	135,497,308	1.017	137,796,670	223,150,353	
<b>Total Permanent Partial</b>		<b>434,138,335</b>		<b>471,876,206</b>	<b>674,885,590</b>		<b>686,338,266</b>	<b>1,158,214,472</b>	<b>37.87%</b>
Temporary Total	2009	28,386,528	1.087	30,854,052	59,856,695	1.017	60,872,451	91,726,503	
Temporary Total	2010	31,514,477	1.087	34,253,902	66,069,148	1.017	67,190,329	101,444,231	
Temporary Total	2011	33,279,236	1.087	36,172,064	80,332,627	1.017	81,695,856	117,867,920	
Temporary Total	2012	37,969,449	1.087	41,269,978	75,280,913	1.017	76,558,415	117,828,393	
Temporary Total	2013	32,871,701	1.087	35,729,104	86,237,235	1.017	87,700,664	123,429,768	
<b>Total Temporary Total</b>		<b>164,021,391</b>		<b>178,279,101</b>	<b>367,776,618</b>		<b>374,017,715</b>	<b>552,296,816</b>	<b>18.06%</b>
<b>(11) Total Indemnity</b>		<b>843,234,160</b>		<b>916,533,060</b>	<b>1,079,843,099</b>		<b>1,098,167,824</b>	<b>2,014,700,884</b>	<b>65.87%</b>

IV 000022 STIP

Notes:

- (3): Exhibit 1, Page 1, Column (5)
- (4): Exhibit 1, Page 1, Row (15)
- (6): Exhibit 1, Page 1, Column (8)
- (7): Exhibit 1, Page 1, Row (16)
- (10) = (9), Total / Page 2, Column (9), Total Medical & Indemnity

Post-Chapter 398 Injury Type Weights at Ultimate

Injury Type (1)	Policy Year (2)	Medical - Likely to Develop			Medical - Not Likely to Develop			Medical On-level Losses at Ultimate = (5) + (8) (9)	Weights at Ultimate (10)
		On-level Losses at Fifth Report (3)	Development Factors 5th to Ultimate (4)	Est. Ult On-level Losses = (3) x (4) (5)	On-level Losses at Fifth Report (6)	Development Factors 5th to Ultimate (7)	Est. Ult On-level Losses = (6) x (7) (8)		
Death	2009	778,624	1.034	805,070	379,207	1.005	381,190	1,186,260	
Death	2010	63,834	1.034	66,002	176,427	1.005	177,350	243,352	
Death	2011	13,739	1.034	14,206	271,119	1.005	272,537	286,742	
Death	2012	233,322	1.034	241,247	334,710	1.005	336,460	577,707	
Death	2013	277,312	1.034	286,731	593,619	1.005	596,723	883,454	
<b>Total Death</b>		<b>1,366,831</b>		<b>1,413,256</b>	<b>1,755,082</b>		<b>1,764,259</b>	<b>3,177,516</b>	<b>0.10%</b>
Permanent Total	2009	19,412,946	1.034	20,072,322	0	1.005	0	20,072,322	
Permanent Total	2010	31,951,308	1.034	33,036,560	0	1.005	0	33,036,560	
Permanent Total	2011	29,341,328	1.034	30,337,930	0	1.005	0	30,337,930	
Permanent Total	2012	42,854,830	1.034	44,310,429	0	1.005	0	44,310,429	
Permanent Total	2013	27,720,398	1.034	28,661,944	0	1.005	0	28,661,944	
<b>Total Permanent Total</b>		<b>151,280,810</b>		<b>156,419,185</b>	<b>0</b>		<b>0</b>	<b>156,419,185</b>	<b>5.11%</b>
Permanent Partial	2009	35,965,791	1.034	37,187,398	50,787,191	1.005	51,052,774	88,240,172	
Permanent Partial	2010	28,038,664	1.034	28,991,020	51,642,011	1.005	51,912,064	80,903,084	
Permanent Partial	2011	40,439,521	1.034	41,813,082	47,591,743	1.005	47,840,616	89,653,698	
Permanent Partial	2012	32,686,497	1.034	33,796,720	43,255,190	1.005	43,481,386	77,278,106	
Permanent Partial	2013	27,412,480	1.034	28,343,567	49,920,834	1.005	50,181,887	78,525,454	
<b>Total Permanent Partial</b>		<b>164,542,953</b>		<b>170,131,787</b>	<b>243,196,969</b>		<b>244,468,727</b>	<b>414,600,514</b>	<b>13.56%</b>
Temporary Total	2009	13,215,493	1.034	13,664,368	45,546,104	1.005	45,784,280	59,448,648	
Temporary Total	2010	14,733,512	1.034	15,233,948	48,490,007	1.005	48,743,577	63,977,525	
Temporary Total	2011	16,302,716	1.034	16,856,451	55,255,968	1.005	55,544,920	72,401,371	
Temporary Total	2012	17,045,582	1.034	17,624,549	55,948,615	1.005	56,241,189	73,865,738	
Temporary Total	2013	12,953,904	1.034	13,393,894	59,472,525	1.005	59,783,527	73,177,420	
<b>Total Temporary Total</b>		<b>74,251,207</b>		<b>76,773,210</b>	<b>264,713,219</b>		<b>266,097,493</b>	<b>342,870,702</b>	<b>11.21%</b>
Medical Only	2009	0	1.034	0	23,969,547	1.005	24,094,892	24,094,892	
Medical Only	2010	0	1.034	0	25,549,114	1.005	25,682,719	25,682,719	
Medical Only	2011	0	1.034	0	25,605,549	1.005	25,739,449	25,739,449	
Medical Only	2012	0	1.034	0	25,210,465	1.005	25,342,299	25,342,299	
Medical Only	2013	0	1.034	0	25,628,010	1.005	25,762,027	25,762,027	
<b>Total Medical Only</b>		<b>0</b>		<b>0</b>	<b>125,962,685</b>		<b>126,621,386</b>	<b>126,621,386</b>	<b>4.14%</b>
<b>(11) Total Medical</b>		<b>391,441,801</b>		<b>404,737,438</b>	<b>635,627,955</b>		<b>638,951,865</b>	<b>1,043,689,303</b>	<b>34.13%</b>
<b>(12) Total Medical &amp; Indemnity</b>		<b>1,234,675,961</b>		<b>1,321,270,499</b>	<b>1,715,471,054</b>		<b>1,737,119,689</b>	<b>3,058,390,188</b>	

(13) Medical Only fraction of Total Medical	12.13%
(14) Indemnity Likely to Develop at Ultimate	29.97%
(15) Indemnity Not Likely to Develop at Ultimate	35.91%
(16) Medical Likely to Develop at Ultimate	13.23%
(17) Medical Not Likely to Develop at Ultimate	20.89%

Notes:

- (3): Exhibit 1, Page 2, Column (5)
- (4): Exhibit 1, Page 2, Row (17)
- (6): Exhibit 1, Page 2, Column (8)
- (7): Exhibit 1, Page 2, Row (18)
- (10) = (9), Total / Total Medical & Indemnity
- (12) = (11), Total Medical + Page 1, (11) Total Indemnity
- (13) = (10), Total Medical Only / (10), Total Medical

IV 000023 STIP

USL&HW Benefit Level Factors

All Injury Types

Time Period		Indemnity					Medical	Total
Beginning Period	Ending Period	Death	Permanent Total	Permanent Partial	Temporary Total	All Injury Types	All Injury Types	All Injury Types
PY 2013	Prosp. Eff. Period	1.036	1.029	1.013	1.029		1.000	
PY 2014	Prosp. Eff. Period	1.032	1.026	1.012	1.026		1.000	
PY 2015	Prosp. Eff. Period	1.028	1.022	1.010	1.022		1.000	
PY 2016	Prosp. Eff. Period	1.024	1.019	1.009	1.019		1.000	
PY 2017	Prosp. Eff. Period	1.019	1.015	1.008	1.015		1.000	
CPY 2016_07	Prosp. Eff. Period							1.008
CPY 2017_07	Prosp. Eff. Period							1.006
CPY 2018_07	Prosp. Eff. Period							1.004
Prior Eff. Period (using benefit level projections from prior filing)	Prosp. Eff. Period					1.009	1.000	1.007

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Notes:  
 All time periods refer to Policy Years.  
 Example: PY 2017 to Prosp. Eff. Period for Indemnity Permanent Partial = 1.008 = 1.014 / 1.006  
 where 1.014 is the Index Factor of Prosp. Eff. Period and 1.006 is the Index Factor of PY 2017 for Indemnity Permanent Partial, from Exhibit 2.

USL&HW Benefit Level Changes and Weights

Death											
Benefit Level Change	10/1/2012	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019	10/1/2020	10/1/2021	Weighted Average Benefit Level
Cumulative Benefit Level Change	1.000	1.003	1.007	1.011	1.015	1.020	1.025	1.030	1.036	1.041	
Time Period											
PY 2013	0.356	0.627	0.017								<b>1.002</b>
PY 2014		0.383	0.607	0.010							<b>1.006</b>
PY 2015			0.355	0.639	0.006						<b>1.010</b>
PY 2016				0.372	0.622	0.005					<b>1.014</b>
PY 2017					0.321	0.675	0.004				<b>1.019</b>
CPY 2016_07				0.016	0.460	0.524					<b>1.018</b>
CPY 2017_07					0.025	0.457	0.518				<b>1.023</b>
CPY 2018_07						0.025	0.457	0.519			<b>1.028</b>
Prior Eff. Period						0.025	0.457	0.519			<b>1.028</b>
Prosp. Eff. Period								0.025	0.457	0.518	<b>1.038</b>

Indemnity All Injury Types - Average Benefit Level for Current Policy Period, Estimated at 7/1/2018 (using benefit level projections from prior filing).

Date of Change	10/1/2012	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019	Weighted Average Benefit Level
Benefit Level Change	1.000	1.002	1.003	1.002	1.002	1.002	1.002	1.002	
Cumulative Level Change	1.000	1.002	1.005	1.007	1.009	1.011	1.013	1.015	<b>1.014</b>

Medical All Injury Types - Average Benefit Level for Current Policy Period, Estimated at 7/1/2018 (using benefit level projections from prior filing).

Date of Change	10/1/2012	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019	Weighted Average Benefit Level
Benefit Level Change	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Cumulative Level Change	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	<b>1.000</b>

All Injury Types - Average Benefit Level for Current Policy Period, Estimated at 7/1/2018 (using benefit level projections from prior filing).

Date of Change	10/1/2012	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019	Weighted Average Benefit Level
Benefit Level Change	1.000	1.001	1.002	1.001	1.001	1.001	1.001	1.001	
Cumulative Level Change	1.000	1.001	1.003	1.004	1.005	1.006	1.007	1.008	<b>1.008</b>

Index Factors for All Injury Types

Time Period	Indemnity					Medical	Total
	Death	Permanent Total	Permanent Partial	Temporary Total	All Injury Types	All Injury Types	All Injury Types
PY 2013	<b>1.002</b>	1.002	1.001	1.002	1.001	1.000	1.001
PY 2014	<b>1.006</b>	1.006	1.002	1.006	1.004	1.000	1.002
PY 2015	<b>1.010</b>	1.009	1.004	1.009	1.006	1.000	1.004
PY 2016	<b>1.014</b>	1.012	1.005	1.012	1.008	1.000	1.005
PY 2017	<b>1.019</b>	1.016	1.006	1.016	1.011	1.000	1.006
CPY 2016_07	<b>1.018</b>	1.015	1.006	1.015	1.011	1.000	1.006
CPY 2017_07	<b>1.023</b>	1.019	1.008	1.019	1.014	1.000	1.008
CPY 2018_07	<b>1.028</b>	1.023	1.010	1.023	1.017	1.000	1.010
Prior Eff. Period	<b>1.028</b>	1.023	1.010	1.023	1.017	1.000	1.010
Prosp. Eff. Period	<b>1.038</b>	1.031	1.014	1.031	1.023	1.000	1.014

Notes:

All time periods refer to Policy Years.

Index Factors for All Injury Types is an Excel Data Table that repeats the calculation of the Weighted Average Benefit Level for all Injury Types.

# IV 00026 STIP

Section IV - Benefit Change Adjustments  
 Subsection F - Effects of USL&HW Benefit Changes  
 7/1/2020

Section IV - F  
 Exhibit 3

## USL&HW Historical and Estimated Benefit Level Changes

Effective Date (1)	Indemnity					Medical	Total
	Death (2)	Permanent Total (3)	Permanent Partial (4)	Temporary Total (5)	All Injury Types (6)	All Injury Types (7)	All Injury Types (8)
10/1/2012	0.6%	0.4%	0.2%	0.4%	0.3%	0.0%	0.2%
10/1/2013	0.3%	0.3%	0.1%	0.3%	0.2%	0.0%	0.1%
10/1/2014	0.4%	0.4%	0.2%	0.4%	0.3%	0.0%	0.2%
10/1/2015	0.4%	0.3%	0.1%	0.3%	0.2%	0.0%	0.1%
10/1/2016	0.4%	0.3%	0.1%	0.3%	0.2%	0.0%	0.1%
10/1/2017	0.5%	0.4%	0.2%	0.4%	0.3%	0.0%	0.2%
10/1/2018	0.5%	0.4%	0.2%	0.4%	0.3%	0.0%	0.2%
10/1/2019	0.5%	0.4%	0.2%	0.4%	0.3%	0.0%	0.2%
10/1/2020	0.5%	0.4%	0.2%	0.4%	0.3%	0.0%	0.2%
10/1/2021	0.5%	0.4%	0.2%	0.4%	0.3%	0.0%	0.2%

**Notes:**

Values prior to 10/1/2018 are from NCCI's Annual Statistical Bulletin, 2019 Edition, Exhibit 3.  
 Changes for 10/1/2018 - 10/1/2021 are assumed to be the same as 10/1/2017.

**Paid Trend Summary**

	Indemnity				Medical								SAWW		
	Severity		Frequency		Lost-Time Medical				Medical Only				Trend	Credibility	
	Trend	Credibility	Trend	Credibility	Severity		Frequency		Severity		Frequency				
					Trend	Credibility	Trend	Credibility	Trend	Credibility	Trend	Credibility			
(1)	Massachusetts Trend														
	5 Year	2.5%	46.7%	-1.4%	59.7%	2.4%	40.0%	-1.4%	59.7%	2.5%	71.6%	-3.5%	39.5%	3.4%	100.0%
	6 Year	2.6%	67.9%	-1.5%	86.0%	2.5%	58.3%	-1.5%	86.0%	2.1%	91.9%	-3.8%	54.4%	3.3%	100.0%
	7 Year	2.6%	88.6%	-1.8%	98.6%	2.3%	75.2%	-1.8%	98.6%	2.3%	100.0%	-4.2%	53.5%	3.3%	100.0%
	8 Year	2.9%	99.6%	-2.0%	100.0%	2.5%	89.7%	-2.0%	100.0%	2.3%	100.0%	-4.5%	57.5%	3.0%	100.0%
	9 Year	2.6%	100.0%	-1.6%	80.0%	2.1%	84.3%	-1.6%	80.0%	2.2%	100.0%	-4.3%	60.3%	2.9%	100.0%
	10 Year	2.5%	100.0%	-1.5%	85.2%	2.2%	94.1%	-1.5%	85.2%	1.8%	100.0%	-4.2%	65.7%	3.0%	100.0%
(2)	Selected Trend	2.6%		-2.0%		2.2%		-2.0%		2.3%		-4.2%		3.4%	
(3)	15 Year Massachusetts Complement of Credibility	2.8%		-1.9%		2.5%		-1.9%		2.3%		-4.2%		2.7%	
(4)	<b>Credibility Weighted Trend</b>	<b>2.6%</b>		<b>-2.0%</b>		<b>2.3%</b>		<b>-2.0%</b>		<b>2.3%</b>		<b>-4.2%</b>		<b>3.4%</b>	

	Lost-Time Medical	Medical Only
(5) Medical Loss Trend	0.2%	-2.0%
(6) Fraction of Total Medical	87.9%	12.1%
(7) Total Medical Loss Trend	-0.1%	

	Indemnity	Medical
(8) Total Loss Trend	0.5%	-0.1%
(9) SAWW Trend	3.4%	3.4%
(10) Total Net Trend	-2.7%	

Notes:

- (1), (3): Section V, Exhibit 2 Severity; Exhibit 3 Frequency and SAWW.
- (2): Selection based on the fit with the highest credibility and least number of years.
- (4) = Credibility Weighted Selected Trend
- (5) = [(1.0 + Credibility Weighted Severity Trend) x (1.0 + Credibility Weighted Frequency Trend)] - 1.0
- (6) Medical Only = Medical Only Fraction of Total Medical from Section IV-E, Exhibit 2  
 Lost Time Medical = 1.0 - Medical Only
- (7) = Weighted Average of (5) using (6) as weights
- (8): Indemnity = (1.0 + Credibility Weighted Severity Trend) x (1.0 + Credibility Weighted Frequency Trend) - 1.0  
 Medical = Row (7)
- (9): (4) for SAWW.
- (10) = {[ 1.0 + (8) ] / [ 1.0 + (9) ]} - 1.0

V 000019 STIP



**Indemnity Paid Severity Trend Calculation**

Policy Year	Massachusetts Indemnity Severity	5 Year		6 Year		7 Year		8 Year		9 Year		10 Year	
		Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared
2008	25,214											24,978	55,688
2009	26,284											25,600	467,848
2010	25,235							25,751	266,830	25,493	625,297	26,148	833,372
2011	26,834					26,808	694	26,499	112,195	26,819	226	26,889	3,038
2012	27,376			27,489	12,751	27,507	17,140	27,269	11,432	27,508	17,455	27,558	33,292
2013	27,410	28,304	799,698	28,211	641,929	28,224	662,816	28,061	424,066	28,214	647,529	28,244	695,866
2014	30,203	29,012	1,418,793	28,952	1,564,452	28,960	1,545,543	28,876	1,760,688	28,939	1,597,276	28,947	1,578,224
2015	29,773	29,737	1,242	29,713	3,566	29,715	3,338	29,715	3,338	29,682	8,132	29,667	11,168
2016	30,644	30,481	26,639	30,493	22,700	30,489	23,919	30,578	4,392	30,445	39,767	30,405	57,194
2017	30,789	31,243	206,643	31,295	256,102	31,284	245,842	31,466	458,967	31,227	191,918	31,161	139,056
(1)	<b>Massachusetts Trend</b>		<b>2.5%</b>		<b>2.6%</b>		<b>2.6%</b>		<b>2.9%</b>		<b>2.6%</b>		<b>2.5%</b>
(2)	n		5		6		7		8		9		10
(3)	s		904.25		790.81		707.01		712.03		752.23		711.08
(4)	t		2.35		2.13		2.02		1.94		1.89		1.86
(5)	m		5.50		6.00		6.50		7.00		7.50		8.00
(6)	$[1 + 1/n + 12 \times m^2 / (n^3 - n)]^{.5}$		2.05		1.80		1.63		1.51		1.43		1.37
(7)	Confidence Interval		4,372.77		3,027.43		2,319.32		2,094.63		2,039.36		1,810.97
(8)	Projected Value Prospective Period		34,062.18		34,272.22		34,230.66		34,787.02		34,121.74		33,963.06
(9)	CI/Projected Severity		0.13		0.09		0.07		0.06		0.06		0.05
(10)	<b>Credibility - MA Trend (Z)</b>		<b>47%</b>		<b>68%</b>		<b>89%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>
(11)	<b>Complement of Credibility</b>							<b>2.8%</b>					
(12)	<b>Credibility Weighted Severity Trend</b>		<b>2.6%</b>		<b>2.7%</b>		<b>2.6%</b>		<b>2.9%</b>		<b>2.6%</b>		<b>2.5%</b>

- Notes:
- (1): Massachusetts Trend from exponential fit to Severities.
  - (2): Number of data points used in the exponential fitting of the severities.
  - (3):  $\sqrt{SSR / (n - 2)}$  where SSR is the sum of squared residuals and n is the number of data points used in the exponential fitting of the data.
  - (4): T-value based on a two-tailed t-test with probability parameter, p, of 90% and a t-distribution with n - 2 degrees of freedom.
  - (5): Number of years between midpoint of data and projected point.
  - (7) = (3) x (4) x (6)
  - (8): Severity projected to policy effective period using exponential fit to data.
  - (9) = (7) / (8)
  - (10): The credibility is the ratio of the target value, k, to the quotient of the confidence interval and the projected frequency, capped at 100%. Numerically, (10) = the minimum of k / (9) and 100%.
  - (11): Complement of credibility is based on a fifteen-year exponential fit to the MA Indemnity Paid + Case Severities. Section C, Exhibit 1, Page 3
  - (12) = [(1) x (10)] + [(11) x [1 - (10)]]

V 000020 STIP

Lost Time Medical Paid Severity Trend Calculation

Policy Year	Lost Time Medical Severity	5 Year		6 Year		7 Year		8 Year		9 Year		10 Year	
		Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared
2008	9,623												
2009	10,500												
2010	9,971												
2011	10,501					10,436	4,246	10,103	17,421	10,304	111,338	10,239	71,826
2012	10,598			10,635	1,319	10,679	6,487	10,619	421	10,520	354	10,468	1,075
2013	10,532	10,926	155,166	10,896	132,533	10,928	156,617	10,887	125,858	10,964	186,531	10,942	168,384
2014	11,742	11,183	312,297	11,164	334,023	11,182	312,929	11,161	336,852	11,193	301,211	11,187	307,282
2015	11,494	11,446	2,273	11,438	3,081	11,443	2,577	11,443	2,577	11,427	4,476	11,438	3,088
2016	11,625	11,715	8,135	11,719	8,874	11,710	7,137	11,732	11,342	11,666	1,634	11,694	4,782
2017	11,890	11,991	10,236	12,007	13,828	11,982	8,594	12,028	18,992	11,909	381	11,956	4,418
(1)	<b>Massachusetts Trend</b>		<b>2.4%</b>		<b>2.5%</b>		<b>2.3%</b>		<b>2.5%</b>		<b>2.1%</b>		<b>2.2%</b>
(2)	n		5		6		7		8		9		10
(3)	s		403.36		351.30		315.78		298.33		336.26		323.57
(4)	t		2.35		2.13		2.02		1.94		1.89		1.86
(5)	m		5.50		6.00		6.50		7.00		7.50		8.00
(6)	$[1 + 1/n + 12 \times m^2 / (n^3 - n)]^{.5}$		2.05		1.80		1.63		1.51		1.43		1.37
(7)	Confidence Interval		1,950.58		1,344.89		1,035.91		877.61		911.64		824.08
(8)	Projected Value Prospective Period		13,007.08		13,073.89		12,987.75		13,124.82		12,802.29		12,921.10
(9)	CI/Projected Severity		0.15		0.10		0.08		0.07		0.07		0.06
(10)	<b>Credibility - MA Trend (Z)</b>		<b>40%</b>		<b>58%</b>		<b>75%</b>		<b>90%</b>		<b>84%</b>		<b>94%</b>
(11)	<b>Complement of Credibility</b>						<b>2.5%</b>						
(12)	<b>Credibility Weighted Severity Trend</b>		<b>2.4%</b>		<b>2.5%</b>		<b>2.4%</b>		<b>2.5%</b>		<b>2.2%</b>		<b>2.3%</b>

- Notes:
- (1): Massachusetts Trend from exponential fit to Severities.
  - (2): Number of data points used in the exponential fitting of the severities.
  - (3):  $\sqrt{SSR / (n - 2)}$  where SSR is the sum of squared residuals and n is the number of data points used in the exponential fitting of the data.
  - (4): T-value based on a two-tailed t-test with probability parameter, p, of 90% and a t-distribution with n - 2 degrees of freedom.
  - (5): Number of years between midpoint of data and projected point.
  - (7) = (3) x (4) x (6)
  - (8): Severity projected to policy effective period using exponential fit to data.
  - (9) = (7) / (8)
  - (10): The credibility is the ratio of the target value, k, to the quotient of the confidence interval and the projected frequency, capped at 100%. Numerically, (10) = the minimum of k / (9) and 100%.
  - (11): Complement of credibility is based on a fifteen-year exponential fit to the MA Lost Time Medical Paid + Case Severities. Section D, Exhibit 1, Page 3.
  - (12) = [ (1) x (10) ] + { (11) x [ 1.0 - (10) ] }

V 000021 STIP

Medical Only Paid Severity Trend Calculation

Policy Year	Massachusetts Medical Only Severity	5 Year		6 Year		7 Year		8 Year		9 Year		10 Year	
		Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared
2008	819											785	1,148
2009	792									784	64	799	47
2010	797							797	0	801	17	814	269
2011	809					815	40	815	40	819	92	828	371
2012	848			838	97	834	201	834	202	836	139	843	24
2013	866	848	325	856	101	853	174	853	174	855	135	859	58
2014	850	869	365	874	586	873	501	873	501	873	529	874	578
2015	887	891	17	893	38	892	32	892	32	892	29	890	11
2016	906	913	55	912	41	913	54	913	54	912	36	906	0
2017	949	936	174	931	308	934	229	934	228	931	306	923	686
(1)	<b>Massachusetts Trend</b>		<b>2.5%</b>		<b>2.1%</b>		<b>2.3%</b>		<b>2.3%</b>		<b>2.2%</b>		<b>1.8%</b>
(2)	n		5		6		7		8		9		10
(3)	s		17.66		17.10		15.69		14.32		13.87		19.97
(4)	t		2.35		2.13		2.02		1.94		1.89		1.86
(5)	m		5.50		6.00		6.50		7.00		7.50		8.00
(6)	$[1 + 1/n + 12 \times m^2 / (n^3 - n)]^{.5}$		2.05		1.80		1.63		1.51		1.43		1.37
(7)	Confidence Interval		85.42		65.48		51.47		42.13		37.61		50.86
(8)	Projected Value Prospective Period		1,019.41		1,002.45		1,010.41		1,010.59		1,004.03		982.58
(9)	CI/Projected Severity		0.08		0.07		0.05		0.04		0.04		0.05
(10)	<b>Credibility - MA Trend (Z)</b>		<b>72%</b>		<b>92%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>
(11)	<b>Complement of Credibility</b>						<b>2.3%</b>						
(12)	<b>Credibility Weighted Severity Trend</b>		<b>2.4%</b>		<b>2.1%</b>		<b>2.3%</b>		<b>2.3%</b>		<b>2.2%</b>		<b>1.8%</b>

- Notes:
- (1): Massachusetts Trend from exponential fit to Severities.
  - (2): Number of data points used in the exponential fitting of the severities.
  - (3):  $\sqrt{SSR/(n - 2)}$  where SSR is the sum of squared residuals and n is the number of data points used in the exponential fitting of the data.
  - (4): T-value based on a two-tailed t-test with probability parameter, p, of 90% and a t-distribution with n - 2 degrees of freedom.
  - (5): Number of years between midpoint of data and projected point.
  - (7) = (3) x (4) x (6)
  - (8): Severity projected to policy effective period using exponential fit to data.
  - (9) = (7) / (8)
  - (10): The credibility is the ratio of the target value, k, to the quotient of the confidence interval and the projected frequency, capped at 100%. Numerically, (10) = the minimum of k / (9) and 100%.
  - (11): Complement of credibility is based on a fifteen-year exponential fit to the MA Medical Only Paid+Case Severities. Section D, Exhibit 2, Page 2.
  - (12) = [(1) x (10)] + [(11) x [1 - (10)]]

V 000022 STIP

Lost Time Frequency Trend Calculation

Policy Year	Adjusted Claim Frequency	5 Year		6 Year		7 Year		8 Year		9 Year		10 Year	
		Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared
2008	188.63											192	15
2009	184.60									191	46	190	26
2010	194.85							192	10	188	43	187	63
2011	188.39					186	5	188	0	185	10	184	18
2012	181.90			181	0	183	1	184	5	182	0	181	0
2013	179.16	178	1	179	0	180	0	180	2	179	0	179	0
2014	177.22	176	3	176	2	176	1	177	0	176	1	176	1
2015	169.96	173	9	173	10	173	11	173	11	173	12	174	14
2016	167.50	170	9	170	9	170	7	170	5	171	10	171	13
2017	171.34	168	11	168	13	167	18	166	25	168	12	169	7
(1)	<b>Massachusetts Trend</b>		<b>-1.4%</b>		<b>-1.5%</b>		<b>-1.8%</b>		<b>-2.0%</b>		<b>-1.6%</b>		<b>-1.5%</b>
(2)	n		5		6		7		8		9		10
(3)	s		3.32		2.90		2.91		3.09		4.38		4.43
(4)	t		2.35		2.13		2.02		1.94		1.89		1.86
(5)	m		5.50		6.00		6.50		7.00		7.50		8.00
(6)	$[1 + 1/n + 12 \times m^2 / (n^3 - n)]^{.5}$		2.05		1.80		1.63		1.51		1.43		1.37
(7)	Confidence Interval		16.06		11.09		9.55		9.10		11.88		11.28
(8)	Projected Value Prospective Period		159.67		158.94		156.97		154.97		158.51		160.16
(9)	CI/Projected Frequency		0.10		0.07		0.06		0.06		0.07		0.07
(10)	<b>Credibility - MA Trend (Z)</b>		<b>60%</b>		<b>86%</b>		<b>99%</b>		<b>100%</b>		<b>80%</b>		<b>85%</b>
(11)	<b>Complement of Credibility</b>								<b>-1.9%</b>				
(12)	<b>Credibility Weighted Frequency Trend</b>		<b>-1.6%</b>		<b>-1.6%</b>		<b>-1.8%</b>		<b>-2.0%</b>		<b>-1.7%</b>		<b>-1.5%</b>

Notes:

- (1): Massachusetts Trend from exponential fit to Adjusted Claim Frequencies
- (2): Number of data points used in the exponential fitting of the adjusted claim frequencies.
- (3):  $\sqrt{SSR / (n - 2)}$  where SSR is the sum of squared residuals and n is the number of data points used in the exponential fitting of the data.
- (4): T-value based on a two-tailed t-test with probability parameter, p, of 90% and a t-distribution with n - 2 degrees of freedom.
- (5): Number of years between midpoint of data and projected point.
- (7) = (3) x (4) x (6)
- (8): Frequency projected to policy effective period using exponential fit to data.
- (9) = (7) / (8)
- (10): The credibility is the ratio of the target value, k, to the quotient of the confidence interval and the projected frequency, capped at 100%. Numerically, (10) = the minimum of k / (9) and 100%.
- (11): Complement of credibility is based on a fifteen-year exponential fit to the Adjusted Claim Frequencies. Section B, Exhibit 1.
- (12) = [ (1) x (10) ] + { (11) x [ 1.0 - (10) ] }

V 000023 STIP

Medical Only Frequency Trend Calculation

Policy Year	Adjusted Med Only Claim Frequency	5 Year		6 Year		7 Year		8 Year		9 Year		10 Year	
		Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared
2008	435.20											441	39
2009	417.35									425	66	423	29
2010	419.89							411	81	407	167	405	225
2011	397.51					387	102	392	28	389	68	388	95
2012	368.32			365	13	371	7	374	37	372	16	371	9
2013	353.54	348	29	351	7	355	3	357	15	356	7	356	4
2014	336.97	336	1	338	1	340	10	341	18	341	14	341	13
2015	317.22	324	53	325	62	326	72	326	72	326	75	326	80
2016	305.91	313	54	313	49	312	35	311	25	312	34	312	42
2017	311.10	302	76	301	98	299	156	297	205	298	166	299	143
(1)	<b>Massachusetts Trend</b>		<b>-3.5%</b>		<b>-3.8%</b>		<b>-4.2%</b>		<b>-4.5%</b>		<b>-4.3%</b>		<b>-4.2%</b>
(2)	n		5		6		7		8		9		10
(3)	s		8.40		7.59		8.77		8.95		9.36		9.22
(4)	t		2.35		2.13		2.02		1.94		1.89		1.86
(5)	m		5.50		6.00		6.50		7.00		7.50		8.00
(6)	$[1 + 1/n + 12 \times m^2 / (n^3 - n)]^{.5}$		2.05		1.80		1.63		1.51		1.43		1.37
(7)	Confidence Interval		40.62		29.07		28.77		26.32		25.39		23.48
(8)	Projected Value Prospective Period		267.31		263.47		256.56		252.26		255.30		257.19
(9)	CI/Projected Frequency		0.15		0.11		0.11		0.10		0.10		0.09
(10)	<b>Credibility - MA Trend (Z)</b>		<b>39%</b>		<b>54%</b>		<b>54%</b>		<b>58%</b>		<b>60%</b>		<b>66%</b>
(11)	<b>Complement of Credibility</b>						<b>-4.2%</b>						
(12)	<b>Credibility Weighted Frequency Trend</b>		<b>-3.9%</b>		<b>-3.9%</b>		<b>-4.2%</b>		<b>-4.4%</b>		<b>-4.3%</b>		<b>-4.2%</b>

- Notes:
- (1): Massachusetts Trend from exponential fit to Adjusted Claim Frequencies
  - (2): Number of data points used in the exponential fitting of the adjusted claim frequencies.
  - (3):  $\sqrt{SSR / (n - 2)}$  where SSR is the sum of squared residuals and n is the number of data points used in the exponential fitting of the data.
  - (4): T-value based on a two-tailed t-test with probability parameter, p, of 90% and a t-distribution with n - 2 degrees of freedom.
  - (5): Number of years between midpoint of data and projected point.
  - (7) = (3) x (4) x (6)
  - (8): Frequency projected to policy effective period using exponential fit to data.
  - (9) = (7) / (8)
  - (10): The credibility is the ratio of the target value, k, to the quotient of the confidence interval and the projected frequency, capped at 100%. Numerically, (10) = the minimum of k / (9) and 100%.
  - (11): Complement of credibility is based on a fifteen-year exponential fit to the Adjusted Claim Frequencies. Section B, Exhibit 2.
  - (12) = [ (1) x (10) ] + { (11) x [ 1.0 - (10) ] }

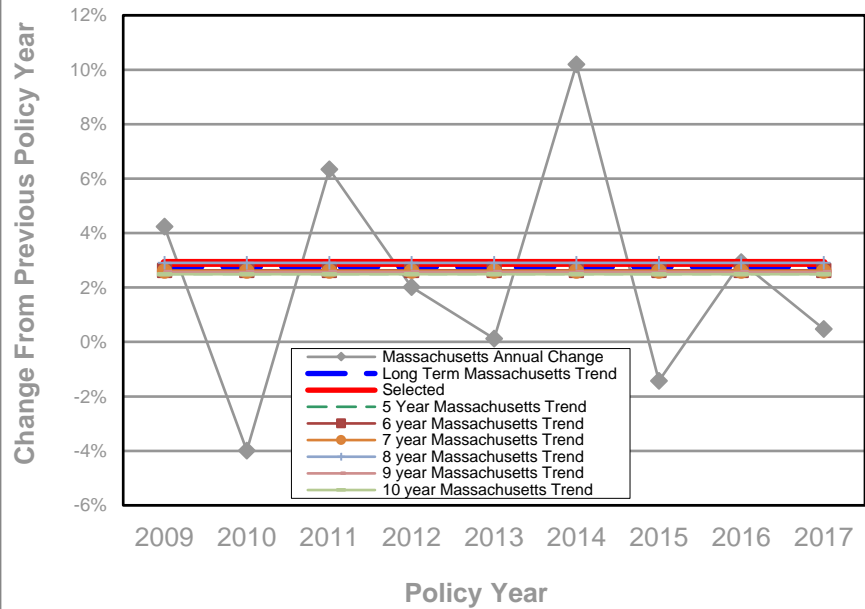
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Statewide Average Weekly Wage Trend Calculation

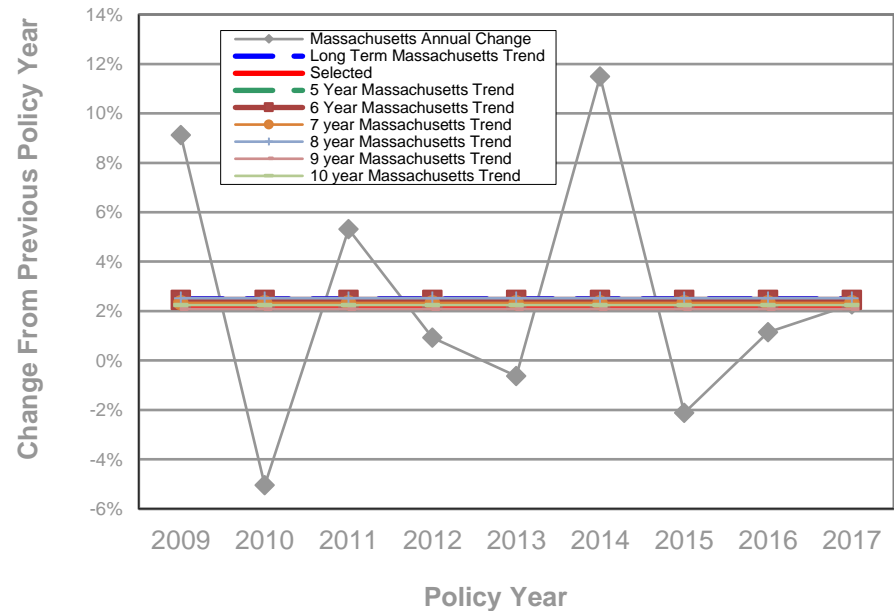
Data Period	Statewide Average Weekly Wage	5 Year		6 Year		7 Year		8 Year		9 Year		10 Year	
		Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared	Exponential Fit	Difference Squared
4/1/09 to 4/1/10	1,088.06											1,092	15
4/1/10 to 4/1/11	1,135.82											1,124	134
4/1/11 to 4/1/12	1,173.06											1,158	241
4/1/12 to 4/1/13	1,181.28											1,192	110
4/1/13 to 4/1/14	1,214.99			1,214	1	1,178	12	1,189	58	1,193	136	1,227	145
4/1/14 to 4/1/15	1,256.47	1,253	9	1,254	5	1,216	2	1,225	97	1,228	166	1,227	145
4/1/15 to 4/1/16	1,291.74	1,295	13	1,296	18	1,256	0	1,262	29	1,264	54	1,263	47
4/1/16 to 4/1/17	1,338.05	1,339	1	1,339	1	1,297	27	1,300	68	1,301	82	1,301	80
4/1/17 to 4/1/18	1,383.41	1,384	0	1,384	0	1,339	2	1,339	2	1,339	1	1,339	1
4/1/18 to 4/1/19	1,431.66	1,430	3	1,430	4	1,383	0	1,380	13	1,378	28	1,379	22
						1,428	12	1,421	103	1,418	175	1,420	147
(1)	<b>Massachusetts Trend</b>		<b>3.4%</b>		<b>3.3%</b>		<b>3.3%</b>		<b>3.0%</b>		<b>2.9%</b>		<b>3.0%</b>
(2)	n		5		6		7		8		9		10
(3)	s		2.95		2.71		3.32		11.05		11.56		10.84
(4)	t		2.35		2.13		2.02		1.94		1.89		1.86
(5)	m		4.75		5.25		5.75		6.25		6.75		7.25
(6)	$[1 + 1/n + 12 \times m^2/(n^3-n)]^{.5}$		1.86		1.66		1.52		1.43		1.37		1.32
(7)	Confidence Interval		12.90		9.56		10.20		30.79		29.95		26.58
(8)	Projected Value Prospective Period		1,565.72		1,564.25		1,560.02		1,542.97		1,535.56		1,538.21
(9)	CI/Projected Wage		0.01		0.01		0.01		0.02		0.02		0.02
(10)	<b>Credibility - MA Trend (Z)</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>
(11)	<b>Complement of Credibility</b>								<b>2.7%</b>				
(12)	<b>Credibility Weighted Wage Trend</b>		<b>3.4%</b>		<b>3.3%</b>		<b>3.3%</b>		<b>3.0%</b>		<b>2.9%</b>		<b>3.0%</b>

- Notes:
- (1): Massachusetts Trend from exponential fit to the SAWW.
  - (2): Number of data points used in the exponential fitting of the statewide average weekly wages.
  - (3):  $\sqrt{SSR/(n - 2)}$  where SSR is the sum of squared residuals and n is the number of data points used in the exponential fitting of the data.
  - (4): T-value based on a two-tailed t-test with probability parameter, p, of 90% and a t-distribution with n - 2 degrees of freedom.
  - (5): Number of years between midpoint of data and projected point.
  - (7) = (3) x (4) x (6)
  - (8): SAWW projected to policy effective period using exponential fit to data.
  - (9) = (7) / (8)
  - (10): The credibility is the ratio of the target value, k, to the quotient of the confidence interval and the projected frequency, capped at 100%. Numerically, (10) = the minimum of k / (9) and 100%.
  - (11): Complement of credibility is based on a fifteen-year exponential fit to the SAWWs. Section G, Exhibit 1.
  - (12) = [ (1) x (10) ] + { (11) x [ 1.0 - (10) ] }

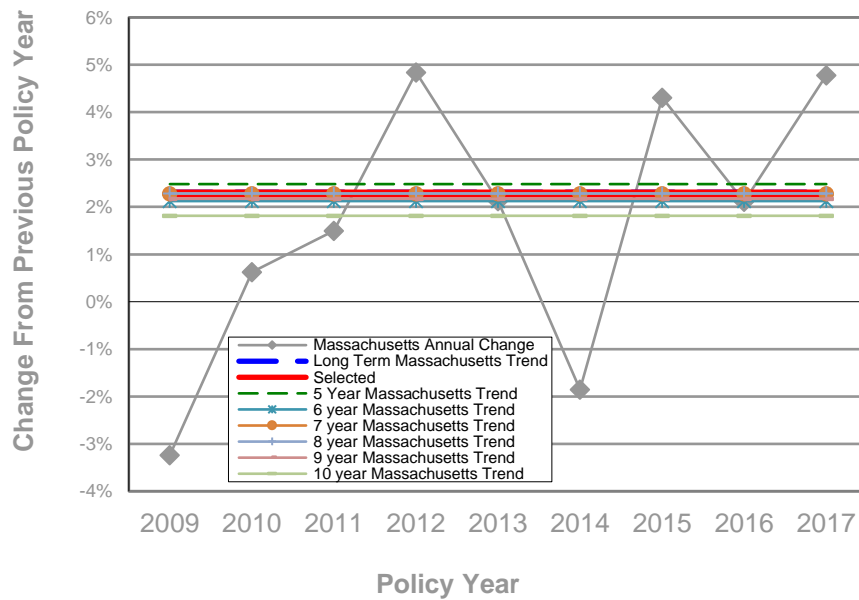
**Indemnity Severity Trend**



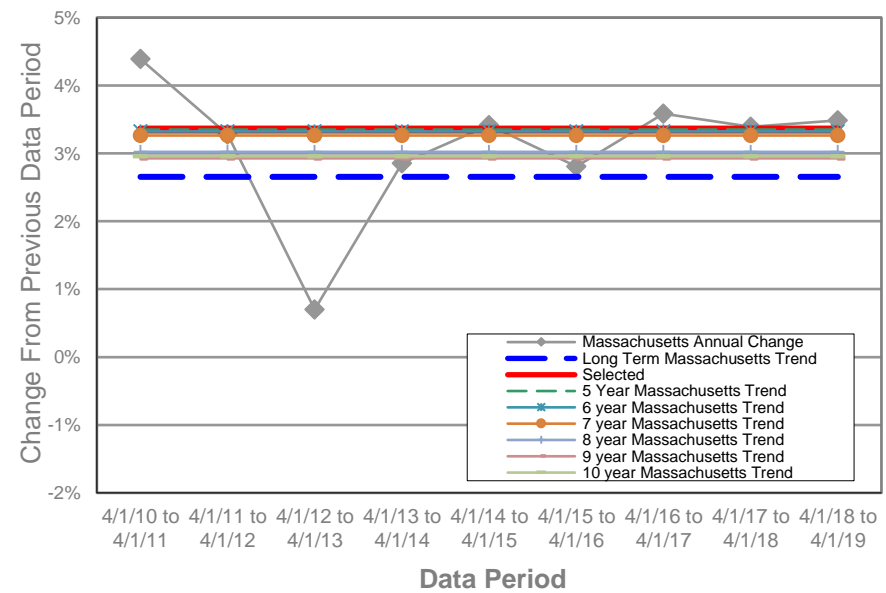
**Lost Time Medical Severity Trend**



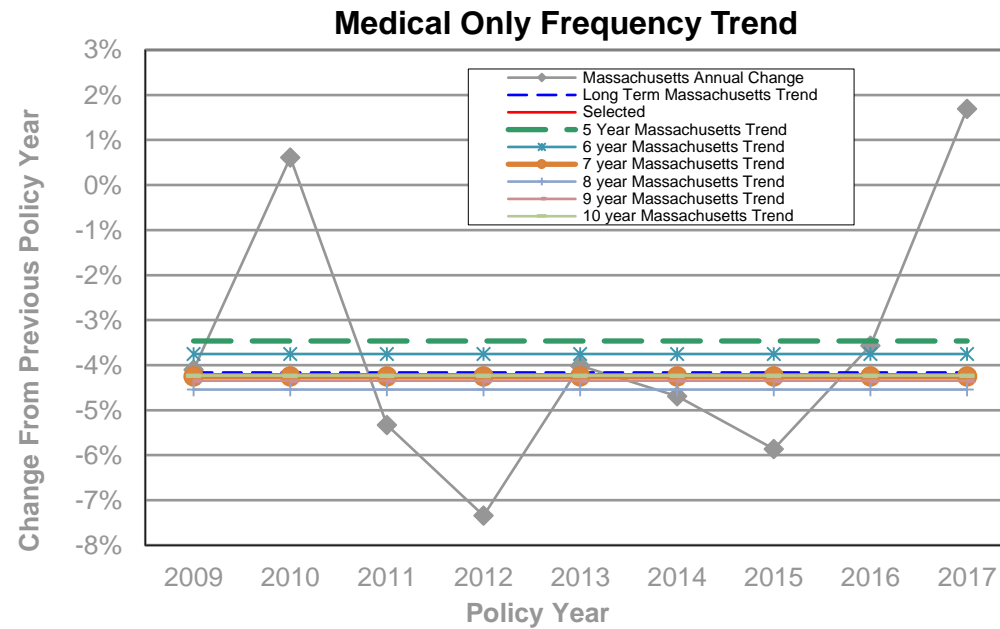
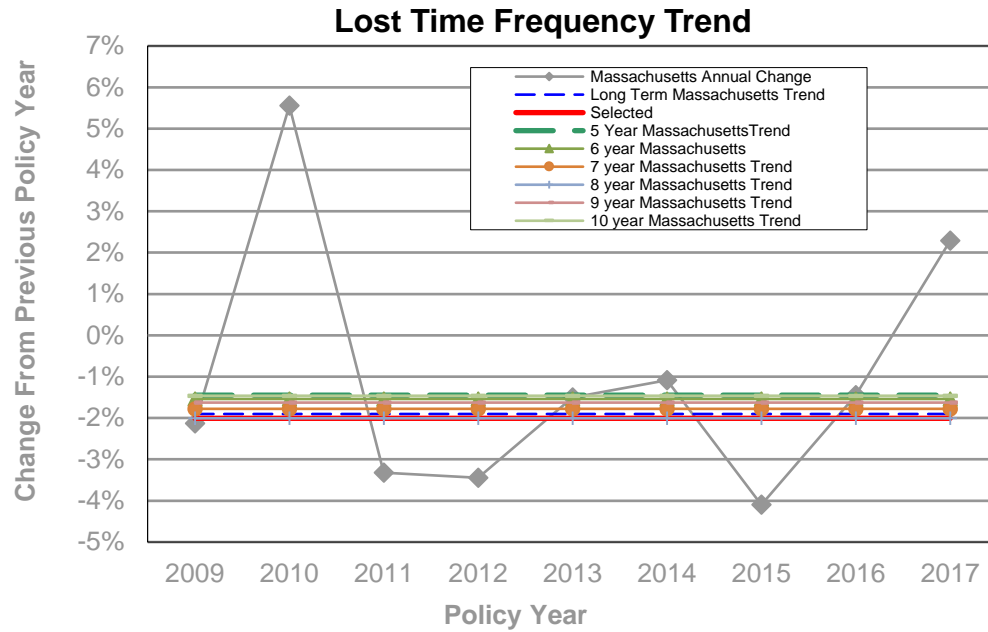
**Medical Only Severity Trend**



**SAWW Trend**



V 000026 STIP





Lost Time Reported Claim Counts - Industrywide

Policy Year (1)	Lost Time Reported Claim Counts Age of Development										Developed to Tenth Report (3)	Estimated Million Worker-Weeks (4)	Unadjusted Claim Frequency = (3) / (4) (5)	Class Mix Adjustment (6)	Adjusted Claim Frequency = (5) x (6) (7)	Percent Change = (7)/previous year (7)-1 (8)	
	18	30	42	54	66 (2)	78	90	102	114	126							
2003_01	18,948	19,162	19,234	19,274	19,304	19,319	19,328	19,336	19,345	19,344	19,344	74.30	260.36	0.863	224.82		
2004_01	17,495	17,733	17,781	17,836	17,865	17,872	17,882	17,886	17,880	17,882	17,882	71.62	249.68	0.867	216.36	-3.8%	
2005_01	16,774	17,058	17,138	17,174	17,199	17,208	17,215	17,218	17,230	17,237	17,237	73.57	234.29	0.896	209.96	-3.0%	
2006_01	15,489	15,766	15,865	15,914	15,925	15,942	15,943	15,943	15,962	15,968	15,968	75.65	211.07	0.950	200.54	-4.5%	
2007_01	15,211	15,548	15,655	15,698	15,720	15,729	15,733	15,740	15,752	15,756	15,756	78.30	201.23	0.996	200.41	-0.1%	
2008_01	13,908	14,174	14,264	14,313	14,352	14,365	14,367	14,374	14,381	14,387	14,387	78.57	183.11	1.030	188.63	-5.9%	
2009_01	12,976	13,210	13,270	13,305	13,317	13,327	13,334	13,336	13,346		13,350	75.29	177.33	1.041	184.60	-2.1%	
2010_01	14,379	14,656	14,725	14,773	14,799	14,814	14,817	14,816			14,830	79.76	185.93	1.048	194.85	5.6%	
2011_01	14,463	14,692	14,786	14,826	14,862	14,875	14,875				14,890	82.97	179.47	1.050	188.39	-3.3%	
2012_01	14,208	14,462	14,532	14,562	14,587	14,590					14,606	83.64	174.62	1.042	181.90	-3.4%	
2013_01	14,409	14,672	14,748	14,798	14,818						14,842	85.13	174.34	1.028	179.16	-1.5%	
2014_01	14,799	15,071	15,154	15,190							15,238	87.11	174.94	1.013	177.22	-1.1%	
2015_01	14,849	15,064	15,147								15,239	90.32	168.71	1.007	169.96	-4.1%	
2016_01	14,634	14,844									15,016	90.16	166.55	1.006	167.50	-1.4%	
2017_01	15,261										15,660	91.40	171.34	1.000	171.34	2.3%	
	Age-to-Age Development Factors																
	18 - 30	30 - 42	42 - 54	54 - 66	66 - 78	78 - 90	90 - 102	102 - 114	114 - 126			Selected Complement of Credibility			-1.9%		
2 Yr Weighted Average	1.014	1.006	1.003	1.002	1.001	1.000	1.000	1.001	1.000								
Selected	1.014	1.006	1.003	1.002	1.001	1.000	1.000	1.001	1.000								
Cumulative	1.026	1.012	1.006	1.003	1.002	1.001	1.001	1.001	1.000								

Notes:  
 Development factors are claim count weighted averages from latest two years.  
 (4): Section V-E, Exhibit 1.  
 (6): Section V-F, Exhibit 1.

V 000028 STIP

Medical Only Reported Claim Counts - Industrywide

Policy Year (1)	Medical Only Reported Claim Counts										Developed to Tenth Report (3)	Estimated Million Worker-Weeks (4)	Unadjusted Claim Frequency = (3) / (4) (5)	Class Mix Adjustment (6)	Adjusted Claim Frequency = (5) x (6) (7)	Percent Change = (7)/previous year (7)-1 (8)	
	Age of Development																
	18	30	42	54	66	78	90	102	114	126							
2003_01	44,219	45,421	45,641	45,676	45,693	45,698	45,701	45,704	45,701	45,707	45,707	74.30	615.20	0.863	531.22		
2004_01	41,844	42,823	42,924	42,980	42,989	42,998	43,004	43,003	43,008	43,016	43,016	71.62	600.61	0.867	520.46	-2.0%	
2005_01	40,395	41,188	41,301	41,315	41,320	41,323	41,320	41,328	41,331	41,332	41,332	73.57	561.79	0.896	503.44	-3.3%	
2006_01	37,304	38,011	38,090	38,118	38,117	38,118	38,123	38,146	38,177	38,176	38,176	75.65	504.63	0.950	479.44	-4.8%	
2007_01	36,550	37,075	37,123	37,122	37,131	37,121	37,124	37,161	37,161	37,159	37,159	78.30	474.58	0.996	472.64	-1.4%	
2008_01	32,711	33,074	33,138	33,153	33,174	33,171	33,190	33,193	33,191	33,194	33,194	78.57	422.48	1.030	435.20	-7.9%	
2009_01	29,840	30,132	30,166	30,174	30,180	30,187	30,186	30,186	30,182		30,182	75.29	400.90	1.041	417.35	-4.1%	
2010_01	31,543	31,912	31,962	31,969	31,962	31,960	31,962	31,960			31,957	79.76	400.66	1.048	419.89	0.6%	
2011_01	30,930	31,362	31,413	31,436	31,431	31,427	31,422				31,418	82.97	378.69	1.050	397.51	-5.3%	
2012_01	29,124	29,506	29,561	29,587	29,582	29,580					29,575	83.64	353.59	1.042	368.32	-7.3%	
2013_01	28,891	29,220	29,281	29,299	29,296						29,288	85.13	344.03	1.028	353.54	-4.0%	
2014_01	28,523	28,924	28,983	28,985							28,974	87.11	332.62	1.013	336.97	-4.7%	
2015_01	27,916	28,378	28,443								28,442	90.32	314.89	1.007	317.22	-5.9%	
2016_01	26,905	27,366									27,424	90.16	304.16	1.006	305.91	-3.6%	
2017_01	27,904										28,434	91.40	311.10	1.000	311.10	1.7%	
	Age-to-Age Development Factors																
	18 - 30	30 - 42	42 - 54	54 - 66	66 - 78	78 - 90	90 - 102	102 - 114	114 - 126				Selected Complement of Credibility		-4.2%		
2 Yr Weighted Average	1.017	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
Selected	1.017	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
Cumulative	1.019	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000								

Notes:  
 Development factors are claim count weighted averages from latest two years.  
 (4): Section V-E, Exhibit 1.  
 (6): Section V-F, Exhibit 1.

V 000029 STIP

Indemnity Paid Losses (in 000's)

Policy Year (1)	Developed to Tenth Report (2)	Indemnity On-Level Factor (3)	On-Level Indemnity Losses (in 000's) Developed to Tenth Report = (2) x (3) (4)	Developed Claim Counts (5)	Severity = 1,000 x (4) / (5) (6)
2003_01	335,428	1.147	384,706	19,344	19,888
2004_01	359,957	1.140	410,382	17,882	22,949
2005_01	349,657	1.128	394,531	17,237	22,889
2006_01	343,142	1.116	382,996	15,968	23,985
2007_01	342,885	1.104	378,550	15,756	24,026
2008_01	332,279	1.092	362,756	14,387	25,214
2009_01	322,739	1.087	350,897	13,350	26,284
2010_01	343,859	1.088	374,231	14,830	25,235
2011_01	369,497	1.081	399,550	14,890	26,834
2012_01	373,054	1.072	399,846	14,606	27,376
2013_01	381,141	1.067	406,819	14,842	27,410
2014_01	433,544	1.062	460,233	15,238	30,203
2015_01	430,848	1.053	453,692	15,239	29,773
2016_01	440,574	1.044	460,153	15,016	30,644
2017_01	466,008	1.035	482,161	15,660	30,789

15 Year Indemnity Trend

2.8%

Notes:

- (2): (3) Exhibit 1, Page 2
- (3): Section IV-A, Exhibit 1.
- (5): Section V-B, Exhibit 1.

V 000030 STIP

Indemnity Paid Losses (in 000's)  
 Industrywide

Policy Year (1)	Age of Development										Developed to Tenth Report (3)
	18	30	42	54	66	78	90	102	114	126	
2003_01	101,479	186,179	246,009	278,979	304,787	318,609	324,492	330,577	332,616	335,428	335,428
2004_01	107,820	198,020	260,479	301,960	327,370	339,300	348,443	352,669	356,713	359,957	359,957
2005_01	110,114	196,752	259,782	297,958	321,547	335,386	342,734	344,717	347,959	349,657	349,657
2006_01	100,324	186,197	254,668	293,733	313,566	324,673	333,625	338,678	341,533	343,142	343,142
2007_01	106,029	195,075	253,709	293,152	314,356	325,087	333,860	339,052	341,169	342,885	342,885
2008_01	103,033	194,337	253,244	288,542	309,174	320,808	324,438	327,815	329,773	332,279	332,279
2009_01	96,056	181,069	241,730	281,316	301,948	311,450	316,235	318,414	320,721		322,739
2010_01	101,956	196,131	261,099	302,564	325,334	333,604	337,047	339,468			343,859
2011_01	108,687	209,231	285,644	326,952	345,906	355,217	362,228				369,497
2012_01	109,361	213,179	283,925	327,790	349,790	360,248					373,054
2013_01	117,458	223,418	294,875	337,198	357,887						381,141
2014_01	127,684	248,464	337,091	382,536							433,544
2015_01	132,380	251,999	333,799								430,848
2016_01	132,947	254,625									440,574
2017_01	141,049										466,008

Age-to-Age Development Factors

	18 - 30	30 - 42	42 - 54	54 - 66	66 - 78	78 - 90	90 - 102	102 - 114	114 - 126
2003_01	1.835	1.321	1.134	1.093	1.045	1.018	1.019	1.006	1.008
2004_01	1.837	1.315	1.159	1.084	1.036	1.027	1.012	1.011	1.009
2005_01	1.787	1.320	1.147	1.079	1.043	1.022	1.006	1.009	1.005
2006_01	1.856	1.368	1.153	1.068	1.035	1.028	1.015	1.008	1.005
2007_01	1.840	1.301	1.155	1.072	1.034	1.027	1.016	1.006	1.005
2008_01	1.886	1.303	1.139	1.072	1.038	1.011	1.010	1.006	1.008
2009_01	1.885	1.335	1.164	1.073	1.031	1.015	1.007	1.007	
2010_01	1.924	1.331	1.159	1.075	1.025	1.010	1.007		
2011_01	1.925	1.365	1.145	1.058	1.027	1.020			
2012_01	1.949	1.332	1.154	1.067	1.030				
2013_01	1.902	1.320	1.144	1.061					
2014_01	1.946	1.357	1.135						
2015_01	1.904	1.325							
2016_01	1.915								
2 Yr Weighted Average	1.909	1.341	1.139	1.064	1.028	1.015	1.007	1.007	1.006
5 Yr Weighted Average	1.923	1.339	1.147	1.067	1.030	1.017	1.011	1.007	1.006
Selected	1.909	1.341	1.139	1.064	1.028	1.015	1.007	1.007	1.006
Cumulative	3.304	1.730	1.291	1.133	1.065	1.036	1.020	1.013	1.006

Notes:  
 Development factors are loss weighted average, paid data uses two years.

V 000031 STIP

Lost Time Medical Paid Losses (in 000's)

Policy Year (1)	Developed to Tenth Report (2)	Medical On-Level Factor (3)	On-Level Lost Time Medical Losses (in 000's) Developed to Tenth Report = (2) x (3) (4)	Developed Claim Counts (5)	Severity = 1,000 x (4) / (5) (6)
2003_01	142,226	1.046	148,735	19,344	7,689
2004_01	156,198	1.036	161,825	17,882	9,050
2005_01	148,621	1.032	153,377	17,237	8,898
2006_01	152,728	1.032	157,616	15,968	9,871
2007_01	152,795	1.032	157,684	15,756	10,008
2008_01	135,151	1.024	138,444	14,387	9,623
2009_01	139,943	1.002	140,184	13,350	10,500
2010_01	147,863	1.000	147,863	14,830	9,971
2011_01	156,351	1.000	156,351	14,890	10,501
2012_01	154,795	1.000	154,795	14,606	10,598
2013_01	156,315	1.000	156,315	14,842	10,532
2014_01	178,920	1.000	178,920	15,238	11,742
2015_01	175,147	1.000	175,147	15,239	11,494
2016_01	174,563	1.000	174,563	15,016	11,625
2017_01	186,198	1.000	186,198	15,660	11,890

15 Year Lost Time Medical Trend

**2.5%**

Notes:

- (2): (3) Exhibit 1, Page 2
- (3): Section IV-A, Exhibit 1.
- (5): Section V-B, Exhibit 1.

V 000032 STIP

Lost Time Medical Paid Losses (in 000's)  
 Industrywide

Policy Year (1)	Age of Development										Developed to Tenth Report (3)
	18	30	42	54	66	78	90	102	114	126	
	(2)										
2003_01	79,877	108,253	120,967	127,862	131,696	134,227	136,039	138,170	140,432	142,226	142,226
2004_01	87,471	118,219	131,022	139,202	144,312	147,598	149,998	152,404	154,748	156,198	156,198
2005_01	88,369	115,528	127,448	134,077	138,067	140,547	143,417	145,078	146,961	148,621	148,621
2006_01	85,564	112,793	126,804	133,695	138,424	141,821	145,744	148,143	150,548	152,728	152,728
2007_01	92,238	120,976	132,565	138,596	142,037	144,973	147,725	149,794	151,366	152,795	152,795
2008_01	84,096	110,557	122,487	127,169	129,750	131,263	132,319	133,517	134,272	135,151	135,151
2009_01	86,791	113,282	124,639	129,678	132,474	134,607	135,956	137,559	138,821		139,943
2010_01	88,064	116,171	127,782	133,969	137,176	141,219	143,573	145,595			147,863
2011_01	93,489	121,606	136,243	142,658	146,865	149,767	151,981				156,351
2012_01	96,073	126,396	137,083	142,844	146,091	148,143					154,795
2013_01	96,130	124,744	137,351	143,980	147,110						156,315
2014_01	108,017	141,443	156,009	164,722							178,920
2015_01	106,168	140,360	153,235								175,147
2016_01	109,544	139,171									174,563
2017_01	114,556										186,198

Age-to-Age Development Factors

	18 - 30	30 - 42	42 - 54	54 - 66	66 - 78	78 - 90	90 - 102	102 - 114	114 - 126
2003_01	1.355	1.117	1.057	1.030	1.019	1.013	1.016	1.016	1.013
2004_01	1.352	1.108	1.062	1.037	1.023	1.016	1.016	1.015	1.009
2005_01	1.307	1.103	1.052	1.030	1.018	1.020	1.012	1.013	1.011
2006_01	1.318	1.124	1.054	1.035	1.025	1.028	1.016	1.016	1.014
2007_01	1.312	1.096	1.045	1.025	1.021	1.019	1.014	1.010	1.009
2008_01	1.315	1.108	1.038	1.020	1.012	1.008	1.009	1.006	1.007
2009_01	1.305	1.100	1.040	1.022	1.016	1.010	1.012	1.009	
2010_01	1.319	1.100	1.048	1.024	1.029	1.017	1.014		
2011_01	1.301	1.120	1.047	1.029	1.020	1.015			
2012_01	1.316	1.085	1.042	1.023	1.014				
2013_01	1.298	1.101	1.048	1.022					
2014_01	1.309	1.103	1.056						
2015_01	1.322	1.092							
2016_01	1.270								
2 Yr Weighted Average	1.296	1.097	1.052	1.022	1.017	1.016	1.013	1.007	1.008
5 Yr Weighted Average	1.303	1.100	1.049	1.024	1.018	1.014	1.013	1.011	1.010
Selected	1.296	1.097	1.052	1.022	1.017	1.016	1.013	1.007	1.008
Cumulative	1.625	1.254	1.143	1.086	1.063	1.045	1.029	1.016	1.008

Notes:  
 Development factors are loss weighted averages, paid data uses two years

V 000033 STIP

Medical Only Paid Losses (in 000's)

Policy Year (1)	Developed to Tenth Report (2)	Medical On-Level Factor (3)	On-Level Medical Only Losses (in 000's) Developed to Tenth Report = (2) x (3) (4)	Developed Claim Counts (5)	Severity = 1,000 x (4) / (5) (6)
2003_01	28,088	1.046	29,374	45,707	643
2004_01	27,544	1.036	28,536	43,016	663
2005_01	28,840	1.032	29,763	41,332	720
2006_01	28,353	1.032	29,260	38,176	766
2007_01	28,845	1.032	29,768	37,159	801
2008_01	26,531	1.024	27,177	33,194	819
2009_01	23,871	1.002	23,912	30,182	792
2010_01	25,476	1.000	25,476	31,957	797
2011_01	25,420	1.000	25,420	31,418	809
2012_01	25,087	1.000	25,087	29,575	848
2013_01	25,371	1.000	25,371	29,288	866
2014_01	24,633	1.000	24,633	28,974	850
2015_01	25,222	1.000	25,222	28,442	887
2016_01	24,833	1.000	24,833	27,424	906
2017_01	26,979	1.000	26,979	28,434	949

15 Year Medical Only Trend

**2.3%**

Notes:

- (2): (3) Exhibit 2, Page 2
- (3): Section IV-A, Exhibit 1.
- (5): Section V-B, Exhibit 2.

V 000034 STIP

Medical Only Paid Losses (in 000's)  
 Industrywide

Policy Year (1)	Age of Development										Developed to Tenth Report (3)
	18	30	42	54	66	78	90	102	114	126	
	(2)										
2003_01	24,321	26,968	27,818	28,007	28,005	28,058	28,032	28,045	28,059	28,088	28,088
2004_01	24,717	26,986	27,384	27,426	27,459	27,520	27,497	27,511	27,524	27,544	27,544
2005_01	26,403	28,509	28,742	28,784	28,775	28,798	28,790	28,807	28,825	28,840	28,840
2006_01	25,974	27,944	28,154	28,278	28,296	28,344	28,192	28,258	28,354	28,353	28,353
2007_01	26,357	28,208	28,474	28,642	28,693	28,681	28,714	28,837	28,837	28,845	28,845
2008_01	24,281	25,926	26,165	26,213	26,321	26,367	26,412	26,528	26,536	26,531	26,531
2009_01	21,701	23,376	23,513	23,670	23,777	23,851	23,870	23,891	23,870		23,871
2010_01	23,377	25,030	25,320	25,359	25,419	25,452	25,471	25,482			25,476
2011_01	23,232	25,031	25,318	25,436	25,401	25,428	25,410				25,420
2012_01	22,797	24,520	24,896	25,047	25,033	25,076					25,087
2013_01	23,723	24,869	25,205	25,272	25,325						25,371
2014_01	22,822	24,283	24,653	24,569							24,633
2015_01	22,991	24,800	25,165								25,222
2016_01	22,586	24,412									24,833
2017_01	24,562										26,979

	Age-to-Age Development Factors									
	18 - 30	30 - 42	42 - 54	54 - 66	66 - 78	78 - 90	90 - 102	102 - 114	114 - 126	
2003_01	1.109	1.032	1.007	1.000	1.002	0.999	1.000	1.000	1.001	
2004_01	1.092	1.015	1.002	1.001	1.002	0.999	1.001	1.000	1.001	
2005_01	1.080	1.008	1.001	1.000	1.001	1.000	1.001	1.001	1.001	
2006_01	1.076	1.007	1.004	1.001	1.002	0.995	1.002	1.003	1.000	
2007_01	1.070	1.009	1.006	1.002	1.000	1.001	1.004	1.000	1.000	
2008_01	1.068	1.009	1.002	1.004	1.002	1.002	1.004	1.000	1.000	
2009_01	1.077	1.006	1.007	1.005	1.003	1.001	1.001	0.999		
2010_01	1.071	1.012	1.002	1.002	1.001	1.001	1.000			
2011_01	1.077	1.011	1.005	0.999	1.001	0.999				
2012_01	1.076	1.015	1.006	0.999	1.002					
2013_01	1.048	1.013	1.003	1.002						
2014_01	1.064	1.015	0.997							
2015_01	1.079	1.015								
2016_01	1.081									
2 Yr Weighted Average	1.080	1.015	1.000	1.001	1.001	1.000	1.001	1.000	1.000	
5 Yr Weighted Average	1.069	1.014	1.002	1.001	1.002	1.001	1.003	1.001	1.000	
Selected	1.080	1.015	1.000	1.001	1.001	1.000	1.001	1.000	1.000	
Cumulative	1.098	1.017	1.002	1.003	1.002	1.000	1.000	1.000	1.000	

Notes:  
 Development factors are loss weighted averages, paid data uses two years

V 000035 STIP



Worker Weeks by Policy Year

Policy Year (1)	Payroll (in millions of dollars) Age of Development								Developed to Tenth Report (3)	State Average Weekly Wage (4)	Estimated Million Worker-Weeks = (3) / (4) (5)		
	18	30	42	54	66	78	90	102				114	126
	(2)												
2003_01										69,014	69,014	928.90	74.30
2004_01										69,408	69,408	969.11	71.62
2005_01										74,399	74,399	1,011.25	73.57
2006_01									79,901	79,901	79,901	1,056.18	75.65
2007_01								85,512	85,512	85,512	85,512	1,092.12	78.30
2008_01							85,857	85,859	85,859	85,859	85,859	1,092.79	78.57
2009_01						82,945	82,942	82,944	82,944	82,944	82,944	1,101.70	75.29
2010_01					91,319	91,313	91,311	91,311			91,311	1,144.80	79.76
2011_01				97,435	97,427	97,424	97,419				97,420	1,174.21	82.97
2012_01			99,610	99,600	99,595	99,579					99,576	1,190.50	83.64
2013_01		104,387	104,396	104,382	104,352						104,340	1,225.60	85.13
2014_01	110,287	110,264	110,244	110,230							110,198	1,265.09	87.11
2015_01	117,826	117,820	117,798								117,749	1,303.66	90.32
2016_01	121,768	121,733									121,660	1,349.36	90.16
2017_01	127,651										127,553	1,395.56	91.40
Age-to-Age Development Factors													
	18 - 30	30 - 42	42 - 54	54 - 66	66 - 78	78 - 90	90 - 102	102 - 114	114 - 126				
2 Yr Weighted Average	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Selected	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Cumulative	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000				

Notes:  
 Development factors are payroll weighted average from latest two years.  
 (4): Section V-G, Exhibit 1.  
 For all policy years the following class codes are excluded from reported Schedule Z payrolls: 0059, 0065, 0066, 0067, 0088, 0770, 0771, 0773, 0774, 0775, 0776, 0779, 0799, 0906, 0909, 0912, 0913, 7445, 7453, and 9985.

V 000036 STIP

# V 000037 STIP

Section V - Trend  
Subsection F - Calculation of Class Mix Adjustment Factor  
7/1/2020

Section V - F  
Exhibit 1

## Class Mix Adjustment Factors

Policy Year (1)	Average Rates Based on Rates Effective 7/1/18 (2)	Class Mix Adjustment Factor = 0.855 / (2) (3)
2003_01	0.991	0.863
2004_01	0.987	0.867
2005_01	0.955	0.896
2006_01	0.900	0.950
2007_01	0.859	0.996
2008_01	0.830	1.030
2009_01	0.822	1.041
2010_01	0.816	1.048
2011_01	0.815	1.050
2012_01	0.821	1.042
2013_01	0.832	1.028
2014_01	0.844	1.013
2015_01	0.849	1.007
2016_01	0.851	1.006
2017_01	0.855	1.000

Notes:

(2): Current rates (Effective 7/1/18) averaged over class payrolls (excluding large deductibles) by Policy Year.

(3): Adjustment to 2017\_01 Policy Year level.

# V 000038 STIP

Section V - Trend  
 Subsection G - External Data  
 7/1/2020

Section V - G  
 Exhibit 1

Summary of Statewide Average Weekly Wage (SAWW) Data

Date Promulgated by DUA (1)	Period of Data Used by DUA (2)	SAWW (3)
10/1/01	4/1/00 to 4/1/01	890.94
10/1/02	4/1/01 to 4/1/02	882.57
10/1/03	4/1/02 to 4/1/03	884.46
10/1/04	4/1/03 to 4/1/04	918.78
10/1/05	4/1/04 to 4/1/05	958.58
10/1/06	4/1/05 to 4/1/06	1,000.43
10/1/07	4/1/06 to 4/1/07	1,043.54
10/1/08	4/1/07 to 4/1/08	1,093.27
10/1/09	4/1/08 to 4/1/09	1,094.70
10/1/10	4/1/09 to 4/1/10	1,088.06
10/1/11	4/1/10 to 4/1/11	1,135.82
10/1/12	4/1/11 to 4/1/12	1,173.06
10/1/13	4/1/12 to 4/1/13	1,181.28
10/1/14	4/1/13 to 4/1/14	1,214.99
10/1/15	4/1/14 to 4/1/15	1,256.47
10/1/16	4/1/15 to 4/1/16	1,291.74
10/1/17	4/1/16 to 4/1/17	1,338.05
10/1/18	4/1/17 to 4/1/18	1,383.41
10/1/19	4/1/18 to 4/1/19	1,431.66
<b>15 Year Exponential Fit, Trend =</b>		<b>2.7%</b>

Policy Year (4)	SAWW (5)
2003_01	928.90
2004_01	969.11
2005_01	1,011.25
2006_01	1,056.18
2007_01	1,092.12
2008_01	1,092.79
2009_01	1,101.70
2010_01	1,144.80
2011_01	1,174.21
2012_01	1,190.50
2013_01	1,225.60
2014_01	1,265.09
2015_01	1,303.66
2016_01	1,349.36
2017_01	1,395.56

Notes:

(5):  $SAWW \text{ for Policy Year } i = [ 0.03125 \times SAWW \text{ during period } 4/1/(i-1) \text{ to } 4/1/i ] + [ 0.6875 \times SAWW \text{ during period } 4/1/i \text{ to } 4/1/(i+1) ] + [ 0.28125 \times SAWW \text{ during period } 4/1/(i+1) \text{ to } 4/1/(i+2) ]$   
 The DUA is the Department of Unemployment Assistance; previously this data was compiled by the DET (Division of Employment and Training).

# V 000039 STIP

Section V - Trend  
 Subsection H - Expense Trends  
 7/1/2020

Section V - H  
 Exhibit 1

Calculation of Expense Trend Index

Time Interval (1)	Time Index (2)	Expense Trend Index (3)	Expense Trend Factors		
			PY2016 (4)	PY2017 (5)	7/1/2020 (6)
CY2004	7/1/2004	64.20			
CY2005	7/1/2005	71.93			
CY2006	7/1/2006	70.39			
CY2007	7/1/2007	77.60			
CY2008	7/1/2008	82.51			
CY2009	7/1/2009	82.85			
CY2010	7/1/2010	85.19			
CY2011	7/1/2011	82.13			
CY2012	7/1/2012	82.35			
CY2013	7/1/2013	87.29			
CY2014	7/1/2014	87.65			
CY2015	7/1/2015	93.01			
CY2016	7/1/2016	94.59	1.006	1.034	1.157
CY2017	7/1/2017	95.68	0.994	1.023	1.144
CY2018	7/1/2018	100.00	0.951	0.978	1.094

**15 Year Exponential Fit, Trend:** 2.6%

PY2016	1/1/2017	95.13			1.150
PY2017	1/1/2018	97.84			1.119
7/1/2019	7/1/2020	106.20			1.031
7/1/2020	7/1/2021	109.44			

**Notes:**

- (1): 7/1/19 and 7/1/20 are time intervals comparable to the policy years.
- (2): Midpoint of the time interval used for determination of Expense Trend Index exponential trend rate of 3.1%.
- (3): Calendar Years: Exhibit 2, Page 2, col (17), Converted to Index with 2018 = 100.  
 PY2016 - Average of indices for CY2016 and CY2017.  
 PY2017 - Average of indices for CY2017 and CY2018.  
 The exponential trend rate derived from an exponential regression of the Expense Trend Index for CY2012 - CY2018 is applied to the CY2018 Expense Trend Index value to derive the Expense Trend Index values for 7/1/2019 and 7/1/2020.
- (4) = [ (3) for PY2016 ] / (3)
- (5) = [ (3) for PY2017 ] / (3)
- (6) = [ (3) for 7/1/2020 ] / (3)

# V 000040 STIP

Section V - Trend  
 Subsection H - Expense Trends  
 7/1/2020

Section V - H  
 Exhibit 2  
 Page 1

## Calculation of Credibility Weighted Expense Trend

Calendar Year (1)	Expense Index (2)	7 Year Exponential Fit (3)	Difference Squared (4)
2012	82.35	83.46	1.23
2013	87.29	86.01	1.66
2014	87.65	88.63	0.97
2015	93.01	91.34	2.80
2016	94.59	94.13	0.21
2017	95.68	97.00	1.76
2018	100.00	99.96	0.00

(5)	7 Year Expense Index Trend	3.1%
(6)	n	7
(7)	s	1.31
(8)	t	2.02
(9)	m	6.00
(10)	$[1 + 1/n + 12 \times m^2 / (n^3 - n)]^{.5}$	1.56
(11)	Confidence Interval	4.13
(12)	Projected Value Prospective Period	109.41
(13)	CI/Projected Expense Index	0.04
(14)	<b>Credibility - 7 Year Expense Index Trend (Z)</b>	<b>100%</b>
(15)	<b>Complement of Credibility - 15 year</b>	<b>2.6%</b>
(16)	<b>Credibility Weighted Expense Trend</b>	<b>3.1%</b>

### Notes:

(2): Exhibit 1.

(5): 7 Year Massachusetts Trend from seven-year exponential fit to expense trend indices.

(6): Number of data points used in the exponential fitting of the 7 Year Massachusetts Trend.

(7):  $\sqrt{SSR/(n-2)}$  where SSR is the sum of squared residuals and n is the number of data points used in the exponential fitting of the data.

(8): T-value based on a two-tailed t-test with probability parameter, p, of 90% and a t-distribution with 5 (= n - 2) degrees of freedom.

(9): Number of years between midpoint of data and projected point.

(11) = (7) x (8) x (10)

(12): Projected to prospective effective period using exponential fit to data.

(13) = (11) / (12)

(14): The credibility is the ratio of the target value, k, to the quotient of the confidence interval and the projected frequency, capped at 100%. Numerically, (14) = the minimum of k / (13) and 100%.

(15): Complement of credibility is based on a 15-year exponential fit, Exhibit 1.

(16) = [ (5) x (14) ] + { (15) x [ 1.0 - (14) ] }

# V 000041 STIP

Section V - Trend  
Subsection H - Expense Trends  
7/1/2020

Section V - H  
Exhibit 2  
Page 2

Calculation of Expense Trend Index

Economic Indices							
Calendar Year (1)	Average Weekly Earnings (2)	Food (3)	Private Transportation (4)	Phone (5)	Postage (6)	Machines & Equipment (7)	Paper (8)
2004	1,406.00	187.40	158.80	96.00	191.70	113.20	149.40
2005	1,609.00	193.30	170.30	95.00	191.70	115.10	159.60
2006	1,559.00	199.10	177.50	95.90	201.90	114.70	167.40
2007	1,752.00	206.41	181.50	98.37	206.88	114.60	169.30
2008	1,865.00	215.61	192.49	100.50	213.86	122.10	184.30
2009	1,873.00	223.38	173.49	102.34	224.22	123.50	179.60
2010	1,940.00	226.20	189.26	102.09	230.14	121.00	182.10
2011	1,842.00	231.50	209.94	100.63	239.40	122.20	191.20
2012	1,846.00	238.19	215.46	100.96	247.83	121.20	191.60
2013	1,985.00	243.13	214.71	100.64	263.37	117.60	190.80
2014	1,990.00	249.00	212.77	99.93	274.08	118.80	192.70
2015	2,136.00	256.18	193.84	97.74	274.84	122.70	189.80
2016	2,180.00	262.91	188.94	97.17	276.56	123.10	186.70
2017	2,212.00	269.03	196.44	89.56	283.79	122.50	186.40
2018	2,338.00	276.13	207.10	88.00	289.73	121.10	197.60

Economic Indices, Percentage Changes from Prior Calendar Year								
Calendar Year (9)	Average Weekly Earnings (10)	Food (11)	Private Transportation (12)	Phone (13)	Postage (14)	Machines & Equipment (15)	Paper (16)	Weighted Average (17)
2004								
2005	14.4%	3.1%	7.2%	-1.0%	0.0%	1.7%	6.8%	12.0%
2006	-3.1%	3.0%	4.2%	0.9%	5.3%	-0.3%	4.9%	-2.1%
2007	12.4%	3.7%	2.3%	2.6%	2.5%	-0.1%	1.1%	10.2%
2008	6.4%	4.5%	6.1%	2.2%	3.4%	6.5%	8.9%	6.3%
2009	0.4%	3.6%	-9.9%	1.8%	4.8%	1.1%	-2.6%	0.4%
2010	3.6%	1.3%	9.1%	-0.2%	2.6%	-2.0%	1.4%	2.8%
2011	-5.1%	2.3%	10.9%	-1.4%	4.0%	1.0%	5.0%	-3.6%
2012	0.2%	2.9%	2.6%	0.3%	3.5%	-0.8%	0.2%	0.3%
2013	7.5%	2.1%	-0.3%	-0.3%	6.3%	-3.0%	-0.4%	6.0%
2014	0.3%	2.4%	-0.9%	-0.7%	4.1%	1.0%	1.0%	0.4%
2015	7.3%	2.9%	-8.9%	-2.2%	0.3%	3.3%	-1.5%	6.1%
2016	2.1%	2.6%	-2.5%	-0.6%	0.6%	0.3%	-1.6%	1.7%
2017	1.5%	2.3%	4.0%	-7.8%	2.6%	-0.5%	-0.2%	1.2%
2018	5.7%	2.6%	5.4%	-1.7%	2.1%	-1.1%	6.0%	4.5%

Weights							
Calendar Year (18)	Average Weekly Earnings (19)	Food (20)	Private Transportation (21)	Phone (22)	Postage (23)	Machines & Equipment (24)	Paper (25)
2004	79.9%	2.1%	2.1%	1.8%	1.8%	10.4%	1.8%
2005	79.8%	2.1%	2.1%	2.0%	2.0%	10.0%	2.0%
2006	80.9%	2.1%	2.1%	1.8%	1.8%	9.3%	1.8%
2007	79.9%	2.1%	2.1%	1.8%	1.8%	10.4%	1.8%
2008	78.3%	2.1%	2.1%	1.9%	1.9%	11.9%	1.8%
2009	79.5%	1.6%	1.6%	1.8%	1.8%	12.3%	1.4%
2010	80.3%	1.8%	1.8%	2.0%	2.0%	10.7%	1.4%
2011	81.8%	1.8%	1.8%	1.7%	1.7%	9.9%	1.1%
2012	82.0%	1.8%	1.8%	1.6%	1.6%	10.0%	1.1%
2013	81.2%	1.9%	1.9%	1.5%	1.5%	11.0%	0.9%
2014	80.9%	2.1%	2.1%	1.5%	1.5%	10.9%	0.9%
2015	80.7%	1.9%	1.9%	1.4%	1.4%	12.0%	0.8%
2016	80.0%	1.7%	1.7%	1.3%	1.3%	13.3%	0.7%
2017	79.0%	1.7%	1.7%	1.3%	1.3%	14.4%	0.6%
2018	48.9%	1.0%	1.0%	0.8%	0.8%	8.9%	38.6%

Notes:

- (2): Average Weekly Earnings, Covered Employment and Wages, Private Fire, Marine, and Casualty Insurers - Massachusetts  
Unadjusted for Seasonality  
Years CY2012 - CY2018: Bureau of Labor Statistics, Series ID ENU25000405524126 (Direct Property and Casualty Insurers Average Weekly Wage.)
- (3): Food Away From Home, Consumer Price Index, Urban Wage Earners and Clerical Workers - U.S.  
Unadjusted for Seasonality, Base: 1982 - 1984 = 100, Bureau of Labor Statistics, Series ID CWUR0000SEFV.
- (4): Private Transportation, Consumer Price Index, Urban Wage Earners and Clerical Workers - U.S.  
Unadjusted for Seasonality, Base: 1982 - 1984 = 100, Bureau of Labor Statistics, Series ID CWUR0000SAT1.
- (5): Telephone Services, Consumer Price Index, Urban Wage Earners and Clerical Workers - U.S.  
Unadjusted for Seasonality, Base: December 1997= 100, Bureau of Labor Statistics, Series ID CWUR0000SEED.
- (6): Postage, Consumer Price Index, Urban Wage Earners and Clerical Workers - U.S.  
Unadjusted for Seasonality, Base: 1982 - 1984 = 100, Bureau of Labor Statistics, Series ID CWUR0000SEEC01.
- (7): Office and Store Machines and Equipment, Producer Price Index  
Unadjusted for Seasonality, Base: 1982 = 100, Bureau of Labor Statistics, Series ID WPU1193.
- (8): Paper, Producer Price Index  
Unadjusted for Seasonality, Base: 1982 - 1984 = 100, Bureau of Labor Statistics, Series ID WPU0913.
- (17) Weighted average of (10)-(16) using weights for prior year from columns (19)-(25)
- (19)-(25): Section V-H, Exhibit 2, Page 3 and Page 4 for Calendar Year 2017-2018. Prior Filings for all other years.

# V 000042 STIP

Section V - Trend  
 Subsection H - Expense Trends  
 7/1/2020

Section V - H  
 Exhibit 2  
 Page 3

Calendar Year 2017  
 Weights for Expense Trends

Expense Component (1)	Percentage of Net Written Premium (2)	% of Total = (2) / Total (2) (3)	Corresponding Index (4)	Weights (5)
Salaries	7.94%	64.1%	Average Weekly Earnings Covered Employment and Wages; Private Fire, Marine, Casualty Massachusetts	79.0%
Payroll Taxes	0.52%	4.2%		
Employee Relations	1.33%	10.7%		
Travel & Travel Items	0.43%	3.5%	Food Away From Home-CPI-US	1.7%
			Private Transportation-CPI-US	1.7%
Postage & Telephone	0.31%	2.5%	Postage-CPI-US	1.3%
			Telephone-CPI-US	1.3%
Equipment	1.78%	14.4%	Office & Stores Machines & Equipment-PPI	14.4%
Printing & Stationery	0.08%	0.6%	Paper-PPI	0.6%
<b>Total</b>	<b>12.39%</b>	<b>100.0%</b>		<b>100.0%</b>

Notes:

(2): 2019 Best's Aggregates and Averages, Property-Casualty, Totals for Commercial Casualty

Companies with Written Premium Net of Reinsurance Ceded over \$15 million.

(5) = Based on (3)

# V 000043 STIP

Section V - Trend  
 Subsection H - Expense Trends  
 7/1/2020

Section V - H  
 Exhibit 2  
 Page 4

Calendar Year 2018  
 Weights for Expense Trends

Expense Component (1)	Percentage of Net Written Premium (2)	% of Total = (2) / Total (2) (3)	Corresponding Index (4)	Weights (5)
Salaries	7.21%	39.8%	Average Weekly Earnings Covered Employment and Wages; Private Fire, Marine, Casualty Massachusetts	48.9%
Payroll Taxes	0.46%	2.5%		
Employee Relations	1.19%	6.6%		
Travel & Travel Items	0.37%	2.0%	Food Away From Home-CPI-US	1.0%
			Private Transportation-CPI-US	1.0%
Postage & Telephone	0.28%	1.5%	Postage-CPI-US	0.8%
			Telephone-CPI-US	0.8%
Equipment	1.61%	8.9%	Office & Stores Machines & Equipment-PPI	8.9%
Printing & Stationary	7.00%	38.6%	Paper-PPI	38.6%
<b>Total</b>	<b>18.12%</b>	<b>100.0%</b>		<b>100.0%</b>

Notes:

(2): Best's Aggregates and Averages, Property-Casualty, Totals for Commercial Casualty Companies with Written Premium Net of Reinsurance Ceded over \$15 million.

(5) = Based on (3)



# V 00044 STIP

Section V - Trend  
 Subsection H - Expense Trends  
 7/1/2020

Section V - H  
 Exhibit 3

## Exposure Growth Estimate Based on Trend in Million Worker-Weeks

Policy Year (1)	Estimated Million Worker-Weeks (2)	5 Year Exponential Fit (3)	Difference Squared (4)
2003	74.30		
2004	71.62		
2005	73.57		
2006	75.65		
2007	78.30		
2008	78.57		
2009	75.29		
2010	79.76		
2011	82.97		
2012	83.64		
2013	85.13	85.71	0.34
2014	87.11	87.24	0.02
2015	90.32	88.79	2.34
2016	90.16	90.37	0.05
2017	91.40	91.98	0.34

15 Year Million Worker-Weeks Trend **1.8%**

(5)	<b>5 Year MA Trend</b>	<b>1.8%</b>
(6)	n	5
(7)	s	1.01
(8)	t	2.35
(9)	m	5.50
(10)	$[1 + 1/n + 12 \times m^2 / (n^3 - n)]^{.5}$	2.05
(11)	Confidence Interval	4.90
(12)	Projected	97.84
(13)	CI / Projected	0.05
(14)	<b>Credibility - 5 Year MA Trend (Z)</b>	<b>100%</b>
(15)	<b>Complement of Credibility</b>	<b>1.8%</b>
(16)	<b>Credibility-Weighted Overall Exposure Growth</b>	<b>1.8%</b>

### Notes:

(2): Section V-E, Exhibit 1.

(5): 5 Year Massachusetts Trend from five-year exponential fit to estimated million worker-weeks.

(6): Number of data points used in the exponential fitting of the 5 Year Massachusetts Trend.

(7):  $\sqrt{SSR/(n-2)}$  where SSR is the sum of squared residuals and n is the number of data points used in the exponential fitting of the data.

(8): T-value based on a two-tailed t-test with probability parameter, p, of 90% and a t-distribution with 3 (= n - 2) degrees of freedom.

(9): Number of years between midpoint of data and projected point.

(11) = (7) x (8) x (10)

(12): Million Worker-Weeks projected to prospective effective period using exponential fit to data.

(13) = (11) / (12)

(14): The credibility is the ratio of the target value, k, to the quotient of the confidence interval and the projected frequency, capped at 100%.

Numerically, (14) = the minimum of k / (13) and 100%.

(15): Complement of credibility is based on a 15-year exponential fit.

(16) = [ (5) x (14) ] + { (15) x [ 1.0 - (14) ] }

# VI 000009 STIP

Section VI - Expenses  
Subsection A - Summary  
7/1/2020

Section VI - A  
Exhibit 1

## Summary of Expense Ratios

(1)	Commission and Other Acquisition Expense Ratio	12.2%
(2)	Average Premium Discount as a % of Standard Premium + ARAP	5.3%
(3)	Premium Tax Ratio = 2.28% x [ 1.0 - (2) ]	2.2%
(4)	Variable Expense Ratio = (1) + (2) + (3)	19.6%
(5)	Fixed Expense Ratio	5.1%
(6)	Total Loss Adjustment Expense Ratio (LAE / Loss)	18.7%

### Notes:

(1): Section VI-G, Exhibit 1.

(2): Section VI-E, Exhibit 1.

(3): 2.28% from Section VI-B, Exhibit 3.

(5): Section VI-B, Exhibit 1.

(6): Section VI-H, Exhibit 1.

Calculation of Fixed Expenses

Calendar Year (1)	General Expense Exclusive of Expense Constant Premium (2)	Total Pool Expenses for non-Large Deductible (3)	Total General Expense = (2) + (3) (4)	Projected to PY 2016			Projected to PY 2017		
				Expense Trend Factor (5)	Exposure Growth Factor (6)	Projected General Expense = (4) x (5) x (6) (7)	Expense Trend Factor (8)	Exposure Growth Factor (9)	Projected General Expense = (4) x (8) x (9) (10)
2016	29,192,554	1,638,027	30,830,580	1.006	1.009	31,282,965	1.034	1.027	32,745,962
2017	36,274,916	1,559,318	37,834,235	0.994	0.991	37,288,334	1.023	1.009	39,032,182
2018	34,702,523	1,648,021	36,350,543	0.951	0.974	33,677,151	0.978	0.991	35,252,116
Average			35,005,119			34,082,817			35,676,753

Policy Year (11)	Three Year Average Projected General Expense to PY (12)	Provision for Other Taxes (13)	Provision for Fixed Expenses = (12) + (13) (14)	Expense Trends from PYs to 7/1/2021 (15)	Trended Fixed Expenses = (14) x (15) (16)	Standard Earned Premium plus ARAP Projected to Prospective Effective Period (17)	Fixed Expense Ratio to Standard Earned Premium plus ARAP = (16) / (17) (18)
2016	34,082,817	2,350,596	36,433,413	1.150	41,915,278	821,762,759	5.1%
2017	35,676,753	2,460,525	38,137,278	1.119	42,661,614	853,219,813	5.0%
Average							5.1%

- Notes:
- (2): Exhibit 2, Page 1.
  - (3): Exhibit 2, Page 3.
  - (5): Section V-H, Exhibit 1.
  - (6): 1.8% annual growth in worker-weeks, from Section V-H, Exhibit 3; 0.5 years from CY 2016 to PY 2016, -0.5 years from CY 2017 to PY 2016, -1.5 years from CY 2018 to PY 2016.
  - (8): Section V-H, Exhibit 1.
  - (9): 1.8% annual growth in worker-weeks, from Section V-H, Exhibit 3; 1.5 years from CY 2016 to PY 2017, 0.5 years from CY 2017 to PY 2017, -0.5 years from CY 2018 to PY 2017.
  - (13): Section VI-C, Exhibit 1.
  - (15): Section V-H, Exhibit 1.
  - (17): These premium amounts do not match those displayed in Section I. This is due to the exclusion of data from company groups included in the Section I data. The premium amounts displayed have been adjusted by the same development, trend, and premium level factors shown in Section I and off-balance factors shown in Section III. The ARAP premium has been adjusted from company level to DSR level premium using the policy year adjustment factors from Section III-B, Exhibit 2.

# VI 00011 STIP

Section VI - Expenses  
 Subsection B - Fixed Expenses  
 7/1/2020

Section VI - B  
 Exhibit 2  
 Page 1

## General Expense Exclusive of Proposed Expense Constant

	Calendar Year		
	2016	2017	2018
(1) Standard Earned Premium Including Expense Constant Premium	758,175,113	808,676,141	838,748,849
(2) ARAP Premium at Company Level	30,458,689	32,718,842	34,328,191
(3) Adjustment Factor to Adjust from Company Level to DSR Level Premium	1.049	1.051	1.053
(4) Standard Earned Premium plus Adjusted ARAP = (1) + [ (2) x (3) ]	790,127,532	843,062,087	874,894,198
(5) Adjustment for Experience and Merit Rating, ARAP, and Construction Credit Off-balance	1.043	1.040	1.040
(6) Adjustment Factor to Remove the Impact of Loading for Recoupment of Insolvency Fund Assessments	0.999	1.002	1.002
(7) Adjusted Standard Earned Premium plus ARAP = (4) x (5) x (6)	823,116,737	878,768,343	911,801,141
(8) Ratio of Adjusted General Expense to Adjusted Standard Earned Premium plus ARAP	5.3%	5.8%	5.5%
(9) General Expenses = (7) x (8)	43,516,457	51,062,173	50,158,144
(10) Expense Constant Premium	31,191,835	31,935,671	31,894,777
(11) General Expense Portion of Expense Constant	51.0%	51.0%	51.0%
(12) Average Expense Constant in Effect	251.93	252.73	252.41
(13) Proposed Average Expense Constant	262.62	262.62	262.62
(14) Expense Trend Factor - Calendar Year XXXX to 7/1/21, the midpoint of the Prospective Effective Period	1.157	1.144	1.094
(15) Trend Factor to Adjust Proposed Average Expense Constant to Calendar Year XXXX = 1.0 / (14)	0.864	0.874	0.914
(16) Detrended Proposed Average Expense Constant = (13) x (15)	226.97	229.58	239.96
(17) Adjusted General Expenses Generated by the Expense Constant = [ (10) x (11) ] x [ (16) / (12) ]	14,323,904	14,787,257	15,455,622
(18) General Expenses Exclusive of Expense Constant Premium = (9) - (17)	29,192,554	36,274,916	34,702,523

Notes:

- (1),(2): Aggregate Financial Policy Year Call, excludes large deductible policies.
- (3): Section III-B, Exhibit 2.
- (5): Section III-B, Exhibit 1.
- (6): Section III-C, Exhibit 1.
- (8): Page 2.
- (10): Calculated expense constant premium based on historical Unit Statistical Plan Data.
- (11): Exhibit 3.
- (12): Calculated average expense constant in effect based on historical Unit Statistical Plan Data.
- (13): Section VI-D, Exhibit 1.
- (14): Section V-H, Exhibit 1.

# VI 00012 STIP

Section VI - Expenses  
 Subsection B - Fixed Expenses  
 7/1/2020

Section VI - B  
 Exhibit 2  
 Page 2

## Calculation of General Expense

	Calendar Year		
	2016	2017	2018
(1) Standard Earned Premium Including Expense Constant Premium	977,592,112	1,052,364,914	1,091,757,245
(2) ARAP Premium at Company Level	41,781,275	42,331,721	45,616,548
(3) Adjustment Factor to Adjust from Company Level to DSR Level Premium	1.049	1.051	1.053
(4) Standard Earned Premium plus Adjusted ARAP = (1) + [ (2) x (3) ]	1,021,422,390	1,096,853,539	1,139,788,499
(5) Adjustment for Experience and Merit Rating, ARAP, and Construction Credit Off-balance	1.043	1.040	1.040
(6) Adjustment Factor to Remove the Impact of Loading for Recoupment of Insolvency Fund Assessments	0.999	1.002	1.002
(7) Adjusted Standard Earned Premium plus ARAP = (4) x (5) x (6)	1,064,068,560	1,143,308,639	1,187,869,866
(8) Actual WCRIBMA Expenses	10,209,998	11,285,278	9,314,953
(9) General Expenses (excluding Boards & Bureaus Expenses)	46,045,077	55,148,412	56,029,721
(10) Adjusted General Expense = (8) + (9)	56,255,075	66,433,690	65,344,674
(11) Ratio of Adjusted General Expense to Adjusted Standard Earned Premium plus ARAP (including expense constants) = (10) / (7)	5.3%	5.8%	5.5%

### Notes:

- (1),(2): Aggregate Financial Reconciliation Report Calls, Calendar Years 2016 - 2018, including large deductible policies.  
 (3): Section III-B, Exhibit 2.  
 (5): Section III-B, Exhibit 1.  
 (6): Section III-C, Exhibit 1.  
 (8): WCRIBMA Financial Statements and Expense Analysis Report. Excludes Workers' Compensation Bureau Pool Expenses.  
 (9): Aggregate Financial Expense Calls, Calendar Years 2016 - 2018.

# VI 000013 STIP

Section VI - Expenses  
 Subsection B - Fixed Expenses  
 7/1/2020

Section VI - B  
 Exhibit 2  
 Page 3

## Calculation of Pool Expense

	Calendar Year		
	2016	2017	2018
(1) Administrative Expenses	507,781	520,626	484,110
(2) Other Expense Allowances	-	-	-
(3) Workers' Compensation Bureau Pool Expenses	2,552,578	2,294,318	2,403,510
(4) Total Pool Expenses = (1) + (2) + (3)	3,060,359	2,814,944	2,887,620
(5) Target Pool Expenses for Excluded Companies	880,562	739,888	694,524
(6) Total Pool Expenses, excluding 4 company(ies) = (4) - (5)	2,179,796	2,075,055	2,193,096
(7) Proportion of Voluntary Assessable Premium Not from Large Deductibles " u "	0.751	0.751	0.751
(8) Total Pool Expenses for Non-Large Deductibles = (6) x (7)	1,638,027	1,559,318	1,648,021

**Notes:**

- (1),(2): Massachusetts Workers' Compensation Assigned Risk Pool Annual Report and WCRIBMA Financial Statements and Expense Analysis Report, adjusted for non-large deductible policies.
- (3): From the WCRIB Financial Statements and Expense Analysis Report
- (7): Section I-E, Exhibit 2.

# VI 000014 STIP

Section VI - Expenses  
Subsection B - Fixed Expenses  
7/1/2020

Section VI - B  
Exhibit 3

## Expense Constant Components

(1)	Portion of Expense Constant for General Expenses Loaded for Premium Taxes	52.2%
(2)	Current Premium Tax Rate	2.28%
(3)	General Expense Portion of Expense Constant = (1) x [ 1.0 - (2) ]	51.0%
(4)	Other Acquisition Portion of Expense Constant = [ 1.0 - (1) ] x [ 1.0 - (2) ]	46.7%

### Notes:

(1): NCCI 1991 Calendar Year Expense database.

(2): Massachusetts Department of Revenue, 2018 Form 63-23P.

2.28% is Premium Tax as % of Net Premium.

# VI 000015 STIP

Section VI - Expenses  
 Subsection C - Other Taxes  
 7/1/2020

Section VI - C  
 Exhibit 1

## Calculation of Other Taxes

(1)	Calendar Year 2018 Standard Earned Premium Including Expense Constant Premium	838,748,849	
(2)	Calendar Year 2018 ARAP Premium at Company Level	34,328,191	
(3)	Adjustment Factor to Adjust from Company Level to DSR Level Premium	1.053	
(4)	Calendar Year 2018 Standard Earned Premium plus Adjusted ARAP = (1) + [ (2) x (3) ]	874,894,198	
(5)	Calendar Year 2018 Other Taxes Ratio	0.29%	
(6)	Calendar Year 2018 Other Taxes = (4) x (5)	2,537,193	
		<u>PY2016</u>	<u>PY2017</u>
(7)	Other Tax Trend Factor from CY 2018 to PY XXXX	0.951	0.978
(8)	Annual Exposure Growth	1.8%	1.8%
(9)	Trend Length	-1.5	-0.5
(10)	Provision for Other Taxes = (6) x (7) x { [ 1.0 + (8) ] ^ (9) }	2,350,596	2,460,525

**Notes:**

(1),(2): Based on from Aggregate Financial Policy Year Call.

(3): Section III-B, Exhibit 2.

(5): 2019 Best's Aggregates and Averages. Page 659.

(7): Section V-H, Exhibit 1.

(8): Section V-H, Exhibit 3.

(9): -1.5 years from CY 2018 to PY 2016, -0.5 years from CY 2018 to PY 2017.



# VI 000016 STIP

Section VI - Expenses  
 Subsection D - Expense Constant  
 7/1/2020

Section VI - D  
 Exhibit 1

## Calculation of Expense Constant

Standard Premium Ranges		PY 2017 Adjusted Policy Count	Adjusted Policy Distribution	Current Expense Constant	Trend Factor from 7/1/20 to 7/1/21	Selected Trend Factor	Proposed Expense Constant = (5) x (7) (8)
Unadjusted	Adjusted						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Less than \$200	Less Than \$198	39,154	31%	\$159.00	1.031	1.000	\$159.00
\$200 to \$1,000	\$198 to \$990	29,334	23%	\$250.00	1.031	1.000	\$250.00
\$1,000 or more	\$990 or more	58,735	46%	\$338.00	1.031	1.000	\$338.00
Total		127,223	100%	\$262.62			\$262.62

**Notes:**

Risk sizes in terms of Massachusetts Standard Premium.

(2): Instead of projecting the premiums for all policies forward to the prospective effective period, the end points of the Standard Premium Ranges are adjusted. This is done by dividing the end points by the Premium Adjustment Factor, 1.01, from Section III-E, Exhibit 1.

(3): Unit Statistical Plan Data PY 2017 (excluding Large Deductible policies).

(4) = (3) / Total (3)

TOTAL (5) = (5) weighted by (4)

(6): Section V-H, Exhibit 1.

Total (8) = (8) weighted by (4)

# VI 000017 STIP

Section VI - Expenses  
Subsection E - Expenses Net of Premium Discount  
7/1/2020

Section VI - E  
Exhibit 1

## Calculation of Average Premium Discount

### Elected Premium Discount Table

	<u>Type A</u>	<u>Type B</u>
(1) Average Premium Discount as a % of Standard Premium	7.6%	4.0%
(2) Percentage of Voluntary Written Premium by Discount Type	75.5%	24.5%
(3) Weighted Average Premium Discount as a % of Standard Premium in Voluntary Market = (1) weighted by (2)	<hr/>	
	6.7%	
(4) Voluntary Market Share	83.6%	
(5) Average Premium Discount in Total Market = (3) x (4)	5.6%	
(6) Average ARAP Surcharge for Prospective Effective Period as a % of Standard Premium	5.3%	
(7) Average Premium Discount as a % of Standard Premium + ARAP = (5) / [ 1.0 + (6) ]	<b>5.3%</b>	

#### Notes:

(1): Type "A" - Exhibit 2, Total (10).

Type "B" - Exhibit 3, Total (10).

(2): Exhibit 4.

(4): Special Bulletin 10/18/2019 Market Share is estimated using Standard Premium plus ARAP.

(6): Section IX-K, Exhibit 3.

# VI 000018 STIP

Section VI - Expenses  
 Subsection E - Expenses Net of Premium Discount  
 7/1/2020

Section VI - E  
 Exhibit 2

## Average Premium Discount Voluntary Market Risks - Type "A" Discounts

Intrastate Intervals					
Layer of Standard Premium (1)	Standard Premium Ranges - PY 2017				Total = [ Sum of (2) ] (3)
	0 - 10,000	10,000 - 200,000	200,000 - 1,750,000	1,750,000 & Over	
0 - 10,000	102,935,872	73,340,000	2,720,000	60,000	179,055,872
10,000 - 200,000		172,888,935	51,680,000	1,140,000	225,708,935
200,000 - 1,750,000			62,452,946	9,300,000	71,752,946
1,750,000 - & Over				8,003,795	8,003,795
Total	102,935,872	246,228,935	116,852,946	18,503,795	484,521,548

Interstate Intervals					
Layer of Standard Premium (4)	Standard Premium Ranges - PY 2017				Total Premium in Layer (6)
	0 - 10,000	10,000 - 200,000	200,000 - 1,750,000	1,750,000 & Over	
0 - 10,000	147,501	4,160,075	1,651,248	173,038	6,131,862
10,000 - 200,000		25,789,400	31,373,718	3,287,708	60,450,826
200,000 - 1,750,000			56,823,750	26,820,775	83,644,525
1,750,000 - & Over				71,476,588	71,476,588
Total	147,501	29,949,475	89,848,716	101,758,109	221,703,801

Total		Proportion of Premium in Layer (9)	% Premium Discount Type A Company (10)
Layer of Standard Premium (7)	Total = (3) + (6) (8)		
0 - 10,000	185,187,734	26.2%	0.0%
10,000 - 200,000	286,159,761	40.5%	9.1%
200,000 - 1,750,000	155,397,471	22.0%	11.3%
1,750,000 - & Over	79,480,383	11.3%	12.3%
Total	706,225,349	100.0%	<b>7.6%</b>

**Notes:**

Unit Statistical Plan Data.

Layers correspond to the Premium Discount layers.

For interstate rated policies, the ratio of Massachusetts Standard Premium to Countrywide Standard Premium is assumed to equal the ratio of Massachusetts Expected Losses (used in an interstate experience modification) to Countrywide Expected Losses.

(9) = (8) / Total (8)

Total (10) = (10) weighted by (9)

# VI 000019 STIP

Section VI - Expenses  
 Subsection E - Expenses Net of Premium Discount  
 7/1/2020

Section VI - E  
 Exhibit 3

## Average Premium Discount Voluntary Market Risks - Type "B" Discounts

Intrastate Intervals					
Layer of Standard Premium (1)	Standard Premium Ranges - PY 2017				Total = [ Sum of (2) ] (3)
	0 - 10,000	10,000 - 200,000	200,000 - 1,750,000	1,750,000 & Over	
0 - 10,000	55,826,124	27,240,000	710,000	10,000	83,786,124
10,000 - 200,000		46,461,269	13,490,000	190,000	60,141,269
200,000 - 1,750,000			15,638,168	1,550,000	17,188,168
1,750,000 - & Over				6,641,133	6,641,133
Total	55,826,124	73,701,269	29,838,168	8,391,133	167,756,694

Interstate Intervals					
Layer of Standard Premium (4)	Standard Premium Ranges - PY 2017				Total Premium in Layer (6)
	0 - 10,000	10,000 - 200,000	200,000 - 1,750,000	1,750,000 & Over	
0 - 10,000	49,532	1,253,665	360,531	47,823	1,711,551
10,000 - 200,000		6,883,714	6,850,077	908,640	14,642,431
200,000 - 1,750,000			10,625,290	7,412,591	18,037,881
1,750,000 - & Over				39,825,864	39,825,864
Total	49,532	8,137,379	17,835,898	48,194,918	74,217,727

Total		Proportion of Premium in Layer (9)	% Premium Discount Type B Company (10)
Layer of Standard Premium (7)	Total = (3) + (6) (8)		
0 - 10,000	85,497,675	35.3%	0.0%
10,000 - 200,000	74,783,700	30.9%	5.1%
200,000 - 1,750,000	35,226,049	14.6%	6.5%
1,750,000 - & Over	46,466,997	19.2%	7.5%
Total	241,974,421	100.0%	<b>4.0%</b>

**Notes:**

Unit Statistical Plan Data.

Layers correspond to the Premium Discount layers.

For interstate rated policies, the ratio of Massachusetts Standard Premium to Countrywide Standard Premium is assumed to equal the ratio of Massachusetts Expected Losses (used in an interstate experience modification) to Countrywide Expected Losses.

(9) = (8) / Total (8)

Total (10) = (10) weighted by (9)

# VI 00020 STIP

Section VI - Expenses  
 Subsection E - Expenses Net of Premium Discount  
 7/1/2020

Section VI - E  
 Exhibit 4  
 Page 12

Calendar Year 2018 Direct Written Premiums by Premium Discount Election - Type "A" or Type "B"

NAIC Company Number (1)	Company Name (2)	Elected Discount Schedule (3)	Direct Written Premium (4)	Residual Market Written Premium (5)	Adjusted Voluntary Written Premium		
					Total Written Premium (6)	Type A Written Premium (7)	Type B Written Premium (8)
33758	ASSOCIATED INDUSTRIES OF MASS. MUTUAL INS. CO.	A	95,873,791	55,499,890	40,373,901	40,373,901	0
22667	ACE AMERICAN INSURANCE COMPANY	A	58,845,653	28,247,563	30,598,090	30,598,090	0
23841	NEW HAMPSHIRE INSURANCE COMPANY	B	52,055,789	0	52,055,789	0	52,055,789
25682	TRAVELERS INDEMNITY COMPANY OF CONNECTICUT	A	47,547,273	0	47,547,273	47,547,273	0
25666	TRAVELERS INDEMNITY COMPANY OF AMERICA	A	42,515,081	37,132,259	5,382,822	5,382,822	0
44326	ATLANTIC CHARTER INSURANCE COMPANY	A	36,098,821	10,425,675	25,673,146	25,673,146	0
42390	AMGUARD INSURANCE COMPANY	A	34,713,014	19,915,358	14,797,656	14,797,656	0
11104	ASSOCIATED EMPLOYERS INSURANCE COMPANY	B	34,618,222	0	34,618,222	0	34,618,222
30104	HARTFORD UNDERWRITERS INSURANCE COMPANY	A	34,196,497	21,904,776	12,291,721	12,291,721	0
25658	TRAVELERS INDEMNITY COMPANY	A	33,027,788	24,756	33,003,032	33,003,032	0
40142	AMERICAN ZURICH INSURANCE COMPANY	A	32,945,995	15,089,231	17,856,764	17,856,764	0
33600	LM INSURANCE CORPORATION	A	28,742,411	25,003,717	3,738,694	3,738,694	0
25674	TRAVELERS PROPERTY CASUALTY COMPANY OF AMERICA	A	28,121,656	24,522,093	3,599,563	3,599,563	0
31470	NORGUARD INSURANCE COMPANY	A	25,968,799	0	25,968,799	25,968,799	0
23035	LIBERTY MUTUAL FIRE INSURANCE COMPANY	A	25,377,549	15,851,767	9,525,782	9,525,782	0
16535	ZURICH AMERICAN INSURANCE COMPANY	A	25,285,186	0	25,285,186	25,285,186	0
31325	ACADIA INSURANCE COMPANY	B	23,829,565	9,034,412	14,795,153	0	14,795,153
29459	TWIN CITY FIRE INSURANCE COMPANY	B	23,286,275	0	23,286,275	0	23,286,275
42404	LIBERTY INSURANCE CORPORATION	A	23,061,056	0	23,061,056	23,061,056	0
25011	WESCO INSURANCE COMPANY	A	22,976,972	0	22,976,972	22,976,972	0
11984	INDEPENDENCE CASUALTY INSURANCE COMPANY	A	22,161,613	0	22,161,613	22,161,613	0
19682	HARTFORD FIRE INSURANCE COMPANY	B	18,116,816	0	18,116,816	0	18,116,816
19429	INSURANCE COMPANY OF THE STATE OF PENNSYLVANIA	A	16,492,375	0	16,492,375	16,492,375	0
12886	MASSACHUSETTS EMPLOYERS INSURANCE COMPANY	A	15,520,165	0	15,520,165	15,520,165	0
22357	HARTFORD ACCIDENT AND INDEMNITY COMPANY	A	14,986,356	0	14,986,356	14,986,356	0
24074	OHIO CASUALTY INSURANCE COMPANY (THE)	A	13,736,740	0	13,736,740	13,736,740	0
20281	FEDERAL INSURANCE COMPANY	A	13,461,016	0	13,461,016	13,461,016	0
37478	HARTFORD INSURANCE COMPANY OF THE MIDWEST	B	13,316,306	0	13,316,306	0	13,316,306
24147	OLD REPUBLIC INSURANCE COMPANY	A	13,142,708	0	13,142,708	13,142,708	0
29424	HARTFORD CASUALTY INSURANCE COMPANY	B	12,243,810	0	12,243,810	0	12,243,810
23809	GRANITE STATE INSURANCE COMPANY	B	11,613,133	0	11,613,133	0	11,613,133
41360	ARBELLA PROTECTION INSURANCE COMPANY, INC.	A	10,778,798	0	10,778,798	10,778,798	0
13083	NEW HAMPSHIRE EMPLOYERS INSURANCE COMPANY	A	9,675,742	0	9,675,742	9,675,742	0
28258	CONTINENTAL INDEMNITY COMPANY	B	9,343,705	0	9,343,705	0	9,343,705
12777	CHUBB INDEMNITY INSURANCE COMPANY	A	9,183,992	0	9,183,992	9,183,992	0
12262	PENNSYLVANIA MANUFACTURERS' ASSOCIATION INS. CO.	A	8,571,454	0	8,571,454	8,571,454	0
20443	CONTINENTAL CASUALTY COMPANY	B	8,300,400	3,190,440	5,109,960	0	5,109,960
21458	EMPLOYERS INSURANCE COMPANY OF WAUSAU	B	8,209,179	0	8,209,179	0	8,209,179
22292	HANOVER INSURANCE COMPANY (THE)	A	7,750,927	0	7,750,927	7,750,927	0
11030	MEMIC INDEMNITY COMPANY	A	7,744,191	0	7,744,191	7,744,191	0
23965	NORFOLK & DEDHAM MUTUAL FIRE INSURANCE COMPANY	A	7,676,157	0	7,676,157	7,676,157	0
38318	STARR INDEMNITY & LIABILITY COMPANY	A	7,458,060	0	7,458,060	7,458,060	0
25224	GREAT DIVIDE INSURANCE COMPANY	A	7,397,579	0	7,397,579	7,397,579	0
18023	STAR INSURANCE COMPANY	A	7,383,966	0	7,383,966	7,383,966	0
42376	TECHNOLOGY INSURANCE COMPANY INC.	A	7,305,057	0	7,305,057	7,305,057	0
19445	NATIONAL UNION FIRE INS. CO. OF PITTSBURGH PA	B	7,274,030	0	7,274,030	0	7,274,030
21113	UNITED STATES FIRE INSURANCE COMPANY	A	6,861,346	0	6,861,346	6,861,346	0
13374	ARROW MUTUAL LIABILITY INSURANCE COMPANY	B	6,671,270	0	6,671,270	0	6,671,270
13803	FARM FAMILY CASUALTY INSURANCE COMPANY	A	6,612,033	0	6,612,033	6,612,033	0
11150	ARCH INSURANCE COMPANY	A	6,148,213	0	6,148,213	6,148,213	0
25623	PHOENIX INSURANCE COMPANY, (THE)	A	6,108,875	0	6,108,875	6,108,875	0
20346	PACIFIC INDEMNITY COMPANY	A	5,850,514	0	5,850,514	5,850,514	0
39926	SELECTIVE INSURANCE COMPANY OF THE SOUTHEAST	A	5,803,851	0	5,803,851	5,803,851	0
12831	STATE NATIONAL INSURANCE COMPANY INC.	A	5,632,476	0	5,632,476	5,632,476	0
20052	NATIONAL LIABILITY & FIRE INSURANCE COMPANY	A	5,546,562	0	5,546,562	5,546,562	0
25976	UTICA MUTUAL INSURANCE COMPANY	A	5,394,072	0	5,394,072	5,394,072	0

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NAIC Company Number (1)	Company Name (2)	Elected Discount Schedule (3)	Direct Written Premium (4)	Residual Market Written Premium (5)	Adjusted Voluntary Written Premium		
					Total Written Premium (6)	Type A Written Premium (7)	Type B Written Premium (8)
19038	TRAVELERS CASUALTY AND SURETY COMPANY	A	5,149,249	0	5,149,249	5,149,249	0
13935	FEDERATED MUTUAL INSURANCE COMPANY	A	5,007,107	0	5,007,107	5,007,107	0
21784	FIREMEN'S INSURANCE COMPANY OF WASHINGTON, D.C.	B	4,868,998	0	4,868,998	0	4,868,998
14788	NGM INSURANCE COMPANY	A	4,752,760	0	4,752,760	4,752,760	0
31534	CITIZENS INSURANCE COMPANY OF AMERICA	A	4,598,122	0	4,598,122	4,598,122	0
21261	ELECTRIC INSURANCE COMPANY	A	4,451,129	0	4,451,129	4,451,129	0
15105	SAFETY NATIONAL CASUALTY CORPORATION	A	4,395,858	0	4,395,858	4,395,858	0
21415	EMPLOYERS MUTUAL CASUALTY COMPANY	A	4,393,786	0	4,393,786	4,393,786	0
22306	MASSACHUSETTS BAY INSURANCE COMPANY	A	4,379,026	0	4,379,026	4,379,026	0
24988	SENTRY INSURANCE A MUTUAL COMPANY	A	4,219,862	0	4,219,862	4,219,862	0
24139	OLD REPUBIC GENERAL INSURANCE CORPORATION	A	3,812,397	0	3,812,397	3,812,397	0
10017	ARBELLA INDEMNITY INSURANCE COMPANY, INC.	A	3,587,849	0	3,587,849	3,587,849	0
12416	PROTECTIVE INSURANCE COMPANY	A	3,399,172	0	3,399,172	3,399,172	0
25615	CHARTER OAK FIRE INSURANCE COMPANY, (THE)	A	3,201,544	0	3,201,544	3,201,544	0
24082	OHIO SECURITY INSURANCE COMPANY	A	3,087,734	0	3,087,734	3,087,734	0
21105	NORTH RIVER INSURANCE COMPANY	A	3,072,870	0	3,072,870	3,072,870	0
20427	AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA	A	2,995,663	0	2,995,663	2,995,663	0
37257	PRAETORIAN INSURANCE COMPANY	A	2,991,424	0	2,991,424	2,991,424	0
16608	NEW YORK MARINE AND GENERAL INSURANCE COMPANY	A	2,975,840	0	2,975,840	2,975,840	0
20303	GREAT NORTHERN INSURANCE COMPANY	A	2,924,662	0	2,924,662	2,924,662	0
20508	VALLEY FORGE INSURANCE COMPANY	A	2,905,035	0	2,905,035	2,905,035	0
25844	UNION INSURANCE COMPANY	B	2,787,902	0	2,787,902	0	2,787,902
19801	ARGONAUT INSURANCE COMPANY	A	2,728,084	0	2,728,084	2,728,084	0
41343	HDI GLOBAL INSURANCE COMPANY	A	2,715,714	0	2,715,714	2,715,714	0
20494	TRANSPORTATION INSURANCE COMPANY	B	2,544,012	0	2,544,012	0	2,544,012
10664	ENDEAVOUR INSURANCE COMPANY	B	2,529,793	0	2,529,793	0	2,529,793
35289	CONTINENTAL INSURANCE COMPANY, (THE)	A	2,483,898	0	2,483,898	2,483,898	0
21172	VANLINER INSURANCE COMPANY	A	2,482,646	0	2,482,646	2,482,646	0
23817	ILLINOIS NATIONAL INSURANCE COMPANY	B	2,440,524	0	2,440,524	0	2,440,524
19259	SELECTIVE INSURANCE COMPANY OF SOUTH CAROLINA	A	2,385,222	0	2,385,222	2,385,222	0
10052	CHUBB NATIONAL INSURANCE COMPANY	A	2,335,548	0	2,335,548	2,335,548	0
33588	FIRST LIBERTY INSURANCE CORPORATION (THE)	A	2,308,904	0	2,308,904	2,308,904	0
31348	CRUM & FORSTER INDEMNITY COMPANY	B	2,295,664	0	2,295,664	0	2,295,664
27855	ZURICH AMERICAN INSURANCE COMPANY OF ILLINOIS	A	2,281,484	0	2,281,484	2,281,484	0
14702	EASTGUARD INSURANCE COMPANY	A	2,268,739	0	2,268,739	2,268,739	0
37885	XL SPECIALTY INSURANCE COMPANY	A	2,144,681	0	2,144,681	2,144,681	0
14164	MEMIC CASUALTY COMPANY	A	1,971,375	0	1,971,375	1,971,375	0
21423	UNION INSURANCE COMPANY OF PROVIDENCE	A	1,931,826	0	1,931,826	1,931,826	0
25984	GRAPHIC ARTS MUTUAL INSURANCE COMPANY	A	1,924,674	0	1,924,674	1,924,674	0
20478	NATIONAL FIRE INSURANCE COMPANY OF HARTFORD	A	1,897,756	0	1,897,756	1,897,756	0
23329	MERCHANTS MUTUAL INSURANCE COMPANY	A	1,887,408	0	1,887,408	1,887,408	0
19380	AMERICAN HOME ASSURANCE COMPANY	B	1,867,899	0	1,867,899	0	1,867,899
19410	COMMERCE AND INDUSTRY INSURANCE COMPANY	B	1,840,618	0	1,840,618	0	1,840,618
12475	REPUBLIC FRANKLIN INSURANCE COMPANY	A	1,741,536	0	1,741,536	1,741,536	0
10687	UTICA NATIONAL ASSURANCE COMPANY	A	1,726,922	0	1,726,922	1,726,922	0
29939	MAIN STREET AMERICA ASSURANCE COMPANY	A	1,672,805	0	1,672,805	1,672,805	0
10120	EVEREST NATIONAL INSURANCE COMPANY	B	1,666,163	0	1,666,163	0	1,666,163
42552	NOVA CASUALTY COMPANY	A	1,656,887	0	1,656,887	1,656,887	0
11126	SOMPO JAPAN INSURANCE COMPANY OF AMERICA	A	1,624,296	0	1,624,296	1,624,296	0
10346	EMPLOYERS PREFERRED INSURANCE COMPANY	A	1,599,478	0	1,599,478	1,599,478	0
36064	HANOVER AMERICAN INSURANCE COMPANY (THE)	A	1,598,804	0	1,598,804	1,598,804	0
11149	MAINE EMPLOYERS' MUTUAL INSURANCE COMPANY	B	1,523,605	0	1,523,605	0	1,523,605
24554	XL INSURANCE AMERICA, INC.	A	1,473,998	0	1,473,998	1,473,998	0
38911	BERKLEY NATIONAL INSURANCE COMPANY	A	1,425,849	0	1,425,849	1,425,849	0
26247	AMERICAN GUARANTEE AND LIABILITY INSURANCE COMPANY	A	1,416,880	0	1,416,880	1,416,880	0
31232	WORK FIRST CASUALTY COMPANY	A	1,413,914	0	1,413,914	1,413,914	0

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NAIC Company Number (1)	Company Name (2)	Elected Discount Schedule (3)	Direct Written Premium (4)	Residual Market Written Premium (5)	Adjusted Voluntary Written Premium		
					Total Written Premium (6)	Type A Written Premium (7)	Type B Written Premium (8)
41840	ALLMERICA FINANCIAL BENEFIT INSURANCE COMPANY	A	1,404,881	0	1,404,881	1,404,881	0
20230	CENTRAL MUTUAL INSURANCE COMPANY	B	1,363,152	0	1,363,152	0	1,363,152
18767	CHURCH MUTUAL INSURANCE COMPANY	B	1,362,676	0	1,362,676	0	1,362,676
28460	SENTRY CASUALTY COMPANY	A	1,221,056	0	1,221,056	1,221,056	0
10804	CONTINENTAL WESTERN INSURANCE COMPANY	B	1,180,543	0	1,180,543	0	1,180,543
15954	AMTRUST INSURANCE COMPANY OF KANSAS, INC.	A	1,074,144	0	1,074,144	1,074,144	0
28304	FEDERATED SERVICE INSURANCE COMPANY	A	1,003,652	0	1,003,652	1,003,652	0
25496	STARSTONE NATIONAL INSURANCE COMPANY	A	997,146	0	997,146	997,146	0
43478	UTICA NATIONAL INSURANCE COMPANY OF TEXAS	A	991,166	0	991,166	991,166	0
27154	ATLANTIC SPECIALTY INSURANCE COMPANY	A	966,462	0	966,462	966,462	0
20044	BERKSHIRE HATHAWAY HOMESTATE INSURANCE COMPANY	A	964,359	0	964,359	964,359	0
23442	PATRIOT GENERAL INSURANCE COMPANY	A	899,296	0	899,296	899,296	0
20362	MITSUI SUMITOMO INSURANCE COMPANY OF AMERICA	A	885,813	0	885,813	885,813	0
13706	DORCHESTER MUTUAL INSURANCE COMPANY	A	875,378	0	875,378	875,378	0
20397	VIGILANT INSURANCE COMPANY	A	871,110	0	871,110	871,110	0
25402	EMPLOYERS ASSURANCE COMPANY	A	867,341	0	867,341	867,341	0
22136	GREAT AMERICAN INSURANCE COMPANY OF NEW YORK	A	865,532	0	865,532	865,532	0
26182	HARLEYSVILLE WORCESTER INSURANCE COMPANY	A	834,766	0	834,766	834,766	0
11000	SENTINEL INSURANCE COMPANY, LTD.	A	817,818	0	817,818	817,818	0
44393	WEST AMERICAN INSURANCE COMPANY	A	806,031	0	806,031	806,031	0
19879	SECURITY NATIONAL INSURANCE COMPANY	A	805,580	0	805,580	805,580	0
20222	ALL AMERICA INSURANCE COMPANY	A	752,914	0	752,914	752,914	0
32620	NATIONAL INTERSTATE INSURANCE COMPANY	A	729,648	0	729,648	729,648	0
23434	MIDDLESEX INSURANCE COMPANY	A	716,626	0	716,626	716,626	0
12901	MERCHANTS PREFERRED INSURANCE COMPANY	A	715,665	0	715,665	715,665	0
15067	QUINCY MUTUAL FIRE INSURANCE COMPANY	A	690,150	0	690,150	690,150	0
13978	FLORISTS' MUTUAL INSURANCE COMPANY	A	678,896	0	678,896	678,896	0
38997	SOMPO AMERICAN FIRE AND MARINE INSURANCE COMPANY	A	676,276	0	676,276	676,276	0
23396	AMERISURE MUTUAL INSURANCE COMPANY	B	666,684	0	666,684	0	666,684
11512	EMPLOYERS COMPENSATION INSURANCE COMPANY	A	658,355	0	658,355	658,355	0
13714	PHARMACISTS MUTUAL INSURANCE COMPANY	A	649,903	0	649,903	649,903	0
35408	IMPERIUM INSURANCE COMPANY	A	634,436	0	634,436	634,436	0
38970	MARKEL INSURANCE COMPANY	A	625,045	0	625,045	625,045	0
27626	FIRSTCOMP INSURANCE COMPANY	A	583,845	0	583,845	583,845	0
11673	REDWOOD FIRE AND CASUALTY INSURANCE COMPANY	A	554,218	0	554,218	554,218	0
21849	AMERICAN AUTOMOBILE INSURANCE COMPANY	A	544,760	0	544,760	544,760	0
10166	ACCIDENT FUND INSURANCE COMPANY OF AMERICA	A	544,450	0	544,450	544,450	0
10340	STONINGTON INSURANCE COMPANY	A	530,995	0	530,995	530,995	0
21180	SENTRY SELECT INSURANCE COMPANY	A	527,323	0	527,323	527,323	0
40045	STARNET INSURANCE COMPANY	A	509,835	0	509,835	509,835	0
26662	MILWAUKEE CASUALTY INSURANCE CO.	A	507,105	0	507,105	507,105	0
24414	GENERAL CASUALTY COMPANY OF WISCONSIN	A	494,540	0	494,540	494,540	0
28223	NATIONWIDE AGRIBUSINESS INSURANCE COMPANY	B	478,324	0	478,324	0	478,324
15032	GUIDEONE MUTUAL INSURANCE COMPANY	A	476,774	0	476,774	476,774	0
26832	GREAT AMERICAN ALLIANCE INSURANCE COMPANY	A	471,238	0	471,238	471,238	0
24198	PEERLESS INSURANCE COMPANY	A	446,925	0	446,925	446,925	0
28932	MARKEL AMERICAN INSURANCE COMPANY	A	446,154	0	446,154	446,154	0
11185	FOREMOST INSURANCE COMPANY GRAND RAPIDS, MICHIGAN	B	440,896	0	440,896	0	440,896
21873	FIREMAN'S FUND INSURANCE COMPANY	A	432,851	0	432,851	432,851	0
28886	TRANSGUARD INSURANCE COMPANY OF AMERICA, INC.	A	429,806	0	429,806	429,806	0
22551	MITSUI SUMITOMO INSURANCE USA INC.	A	398,638	0	398,638	398,638	0
11991	NATIONAL CASUALTY COMPANY	A	396,002	0	396,002	396,002	0
24066	AMERICAN FIRE AND CASUALTY COMPANY	A	384,850	0	384,850	384,850	0
10800	PREMIER GROUP INSURANCE COMPANY	B	366,676	0	366,676	0	366,676
10945	TOKIO MARINE AMERICA INSURANCE COMPANY	A	354,705	0	354,705	354,705	0
29157	UNITED WISCONSIN INSURANCE COMPANY	A	334,414	0	334,414	334,414	0

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NAIC Company Number (1)	Company Name (2)	Elected Discount Schedule (3)	Direct Written Premium (4)	Residual Market Written Premium (5)	Adjusted Voluntary Written Premium		
					Total Written Premium (6)	Type A Written Premium (7)	Type B Written Premium (8)
10665	AMERITRUST INSURANCE CORPORATION	A	332,753	0	332,753	332,753	0
23582	HARLEYSVILLE INSURANCE COMPANY	A	302,183	0	302,183	302,183	0
10391	BERKSHIRE HATHAWAY DIRECT INSURANCE COMPANY	A	300,926	0	300,926	300,926	0
11800	FOREMOST PROPERTY AND CASUALTY INSURANCE COMPANY	B	277,156	0	277,156	0	277,156
11371	GREAT WEST CASUALTY COMPANY	A	258,613	0	258,613	258,613	0
14190	OBI NATIONAL INSURANCE COMPANY	A	252,700	0	252,700	252,700	0
41513	FOREMOST SIGNATURE INSURANCE COMPANY	B	252,630	0	252,630	0	252,630
41238	TRANS PACIFIC INSURANCE COMPANY	A	248,125	0	248,125	248,125	0
31003	TRI-STATE INSURANCE COMPANY OF MINNESOTA	A	246,283	0	246,283	246,283	0
14923	PATRONS MUTUAL INSURANCE COMPANY OF CONNECTICUT	A	239,683	0	239,683	239,683	0
41106	TRIUMPHE CASUALTY COMPANY	A	236,011	0	236,011	236,011	0
21881	NATIONAL SURETY CORPORATION	A	217,891	0	217,891	217,891	0
23043	LIBERTY MUTUAL INSURANCE COMPANY	B	213,843	0	213,843	0	213,843
25135	STATE AUTOMOBILE MUTUAL INSURANCE COMPANY	A	196,502	0	196,502	196,502	0
13269	ZENITH INSURANCE COMPANY	A	194,340	0	194,340	194,340	0
19984	ACIG INSURANCE COMPANY	A	187,094	0	187,094	187,094	0
10677	CINCINNATI INSURANCE COMPANY	A	184,916	0	184,916	184,916	0
25127	STATE AUTO PROPERTY & CASUALTY INSURANCE COMPANY	A	175,526	0	175,526	175,526	0
19488	AMERISURE INSURANCE COMPANY	B	143,428	0	143,428	0	143,428
13528	BROTHERHOOD MUTUAL INSURANCE COMPANY	B	139,388	0	139,388	0	139,388
24449	REGENT INSURANCE COMPANY	A	136,580	0	136,580	136,580	0
18279	BANKERS STANDARD INSURANCE COMPANY	A	134,382	0	134,382	134,382	0
12866	T.H.E INSURANCE COMPANY	B	129,687	0	129,687	0	129,687
31925	FALLS LAKE NATIONAL INSURANCE COMPANY	A	125,512	0	125,512	125,512	0
43575	INDEMNITY INSURANCE COMPANY OF NORTH AMERICA	A	121,231	0	121,231	121,231	0
11045	EXCELSIOR INSURANCE COMPANY	A	114,995	0	114,995	114,995	0
13056	RLI INSURANCE COMPANY	A	113,758	0	113,758	113,758	0
10642	CHEROKEE INSURANCE COMPANY	A	109,301	0	109,301	109,301	0
16024	FEDERATED RESERVE INSURANCE COMPANY	A	105,860	0	105,860	105,860	0
40460	SAGAMORE INSURANCE COMPANY	A	99,585	0	99,585	99,585	0
15911	AMERICAN MINING INSURANCE COMPANY	A	98,842	0	98,842	98,842	0
19720	AMERICAN ALTERNATIVE INSURANCE CORPORATION	A	91,885	0	91,885	91,885	0
28665	CINCINNATI CASUALTY COMPANY	A	91,388	0	91,388	91,388	0
23280	CINCINNATI INDEMNITY COMPANY	A	90,800	0	90,800	90,800	0
11123	SAFETY FIRST INSURANCE COMPANY	A	90,422	0	90,422	90,422	0
29580	BERKLEY REGIONAL INSURANCE COMPANY	A	81,718	0	81,718	81,718	0
15645	OBI AMERICA INS CO	A	79,058	0	79,058	79,058	0
27740	NORTH POINTE INSURANCE COMPANY	A	64,455	0	64,455	64,455	0
12304	ACCIDENT FUND GENERAL INSURANCE COMPANY	A	61,128	0	61,128	61,128	0
35696	HARLEYSVILLE PREFERRED INSURANCE COMPANY	A	60,803	0	60,803	60,803	0
31895	AMERICAN INTERSTATE INSURANCE COMPANY	A	60,414	0	60,414	60,414	0
40517	ADVANTAGE WORKERS COMPENSATION INSURANCE COMPANY	A	55,191	0	55,191	55,191	0
24767	ST. PAUL FIRE & MARINE INSURANCE COMPANY	A	51,891	0	51,891	51,891	0
16044	EVEREST DENALI INSURANCE COMPANY	A	51,821	0	51,821	51,821	0
20699	ACE PROPERTY AND CASUALTY INSURANCE COMPANY	A	47,529	0	47,529	47,529	0
27847	INSURANCE COMPANY OF THE WEST	A	43,960	0	43,960	43,960	0
12305	ACCIDENT FUND NATIONAL INSURANCE COMPANY	A	39,513	0	39,513	39,513	0
19828	ARGONAUT-MIDWEST INSURANCE COMPANY	A	37,733	0	37,733	37,733	0
25143	STATE FARM FIRE AND CASUALTY COMPANY	A	34,603	0	34,603	34,603	0
10510	CAROLINA CASUALTY INSURANCE COMPANY	A	32,679	0	32,679	32,679	0
41394	BENCHMARK INSURANCE COMPANY	A	25,508	0	25,508	25,508	0
26344	GREAT AMERICAN ASSURANCE COMPANY	A	21,034	0	21,034	21,034	0
22322	GREENWICH INSURANCE COMPANY	A	16,925	0	16,925	16,925	0
21709	TRUCK INSURANCE EXCHANGE	A	16,473	0	16,473	16,473	0
38300	SAMSUNG FIRE & MARINE INSURANCE CO. LTD (U.S. BRANCH)	A	16,224	0	16,224	16,224	0
26069	WAUSAU BUSINESS INSURANCE COMPANY	A	15,304	0	15,304	15,304	0



# VI 00024 STIP

Section VI - Expenses  
 Subsection E - Expenses Net of Premium Discount  
 7/1/2020

Section VI - E  
 Exhibit 4  
 Page 16

Calendar Year 2018 Direct Written Premiums by Premium Discount Election - Type "A" or Type "B"

NAIC Company Number (1)	Company Name (2)	Elected Discount Schedule (3)	Direct Written Premium (4)	Residual Market Written Premium (5)	Adjusted Voluntary Written Premium		
					Total Written Premium (6)	Type A Written Premium (7)	Type B Written Premium (8)
34630	OAK RIVER INSURANCE COMPANY	A	14,130	0	14,130	14,130	0
16691	GREAT AMERICAN INSURANCE COMPANY	A	12,631	0	12,631	12,631	0
14982	PENN MILLERS INSURANCE COMPANY	A	11,863	0	11,863	11,863	0
22713	INSURANCE COMPANY OF NORTH AMERICA	A	9,329	0	9,329	9,329	0
16045	EVEREST PREMIER INSURANCE COMPANY	A	8,698	0	8,698	8,698	0
26042	WAUSAU UNDERWRITERS INSURANCE COMPANY	A	7,357	0	7,357	7,357	0
16551	SAVERS PROPERTY AND CASUALTY INSURANCE COMPANY	A	6,722	0	6,722	6,722	0
12297	PETROLEUM CASUALTY COMPANY	A	6,453	0	6,453	6,453	0
10724	EASTERN ALLIANCE INSURANCE COMPANY	A	6,447	0	6,447	6,447	0
36684	RIVERPORT INSURANCE COMPANY	A	6,102	0	6,102	6,102	0
10212	ALLMERICA FINANCIAL ALLIANCE INSURANCE COMPANY	A	5,635	0	5,635	5,635	0
24171	NETHERLANDS INSURANCE COMPANY (THE)	A	5,612	0	5,612	5,612	0
11242	ALLIED EASTERN INDEMNITY COMPANY	A	5,449	0	5,449	5,449	0
19690	AMERICAN ECONOMY INSURANCE COMPANY	A	5,048	0	5,048	5,048	0
23612	MIDWEST EMPLOYERS CASUALTY COMPANY	A	4,470	0	4,470	4,470	0
15563	CLEAR SPRING PROPERTY AND CASUALTY COMPANY	A	3,681	0	3,681	3,681	0
19399	AIU INSURANCE COMPANY	B	3,562	0	3,562	0	3,562
19704	AMERICAN STATES INSURANCE COMPANY	A	1,936	0	1,936	1,936	0
14990	PENNSYLVANIA NATIONAL MUTUAL CASUALTY INS. CO.	B	1,854	0	1,854	0	1,854
36307	GRAY INSURANCE COMPANY (THE)	A	812	0	812	812	0
34690	PROPERTY AND CASUALTY INSURANCE CO. OF HARTFORD	A	320	0	320	320	0
27120	TRUMBULL INSURANCE COMPANY	A	227	0	227	227	0
13019	EASTERN ADVANTAGE ASSURANCE COMPANY	A	120	0	120	120	0
22195	INSURANCE COMPANY OF GREATER NEW YORK	A	87	0	87	87	0
13331	MOTORISTS COMMERCIAL MUTUAL INSURANCE COMPANY	A	82	0	82	82	0
20702	ACE FIRE UNDERWRITERS INSURANCE COMPANY	A	79	0	79	79	0
41483	FARMINGTON CASUALTY COMPANY	A	72	0	72	72	0
20095	BITCO GENERAL INSURANCE CORPORATION	A	44	0	44	44	0
23787	NATIONWIDE MUTUAL INSURANCE COMPANY	A	3	0	3	3	0
Total			1,277,531,307	265,841,937	1,011,689,370	763,650,045	248,039,325

Percentage of Voluntary written premium electing Type A Discount: 75.5%  
 Percentage of Voluntary written premium electing Type B Discount: 24.5%

Notes:

- (4) = Annual Statement Exhibit of Premium and Losses
- (5) = consistent with the Annual Statement Exhibit of Premium and Losses
- (6) = (4) - (5), subject to a minimum of 0

# VI 000025 STIP

Section VI - Expenses  
Subsection F - Expense Constant Offset  
7/1/2020

Section VI - F  
Exhibit 1

## Calculation of Expense Constant as Percent of Premium for Prospective Effective Period

(1) Expense Constant Offset for Policy Year 2017	0.963
(2) Expense Constant as Percent of Premium for Policy Year 2017 = 1.0 - (1)	3.7%
(3) Calculated Expense Constant for Policy Year 2017	\$253.13
(4) Factor to Bring Policy Year 2017 Premium to Premium Level of Prospective Effective Period	1.01
(5) Estimated Expense Constant for Prospective Effective Period	\$262.62
(6) Expense Constant as Percent of Premium for Prospective Effective Period = { (2) x [ (5) / (3) ] } / { [ (1) x (4) ] + [ (2) x ( (5) / (3) ) ] }	3.8%

### Notes:

(1): Exhibit 2.

(3): Based on Unit Statistical Plan Data

(4): Section III-E, Exhibit 1.

(5): Section D, Exhibit 1.

# VI 00026 STIP

Section VI - Expenses  
 Subsection F - Expense Constant Offset  
 7/1/2020

Section VI - F  
 Exhibit 2

## Expense Constant Offsets

### Used in Section I and Section III

Policy Year (1)	Standard Premium Excluding Expense Constant (2)	ARAP at Company Level (3)	Factor to Adjust ARAP from Company Level to DSR Level Premium (4)	Expense Constant (5)	Expense Constant Offset (6)
2016	1,107,736,305	48,619,726	1.049	48,205,269	0.960
2017	1,179,226,932	51,254,264	1.053	48,314,728	0.962

### Used in the Calculation of Expense Constant as Percent of Premium for Prospective Effective Period

Policy Year (7)	Standard Premium Excluding Expense Constant (8)	ARAP at Company Level (9)	Factor to Adjust ARAP from Company Level to DSR Level Premium (10)	Expense Constant (11)	Expense Constant Offset (12)
2017	810,336,855	33,357,672	1.053	32,451,403	0.963

**Notes:**

Based on Unit Statistical Plan Data, excluding Large Deductible Policies.

(4) Section III-B, Exhibit 2.

(6) = { (2) + [ (3) \* (4) ] } / [ { (2) + [ (3) \* (4) ] } + (5) ]

(10) Section III-B, Exhibit 2.

(12) = { (8) + [ (9) \* (10) ] } / [ { (8) + [ (9) \* (10) ] } + (11) ]

The Standard Premium excluding Expense Constant values for Policy Year 2017 used in Section I and Section III differ from those used in the calculation of the Expense Constant because of a differing company mixes.

# VI 00027 STIP

Section VI - Expenses  
Subsection G - Acquisition Expenses  
7/1/2020

Section VI - G  
Exhibit 1

## Provision for Commission and Other Acquisition Expense Including Frictional Reinsurance Expenses

(1)	Other Acquisition and Field Supervision Expense Ratio, Excluding Expense Constants	2.0%
(2)	Selected Average Commission Ratio, Excluding Expense Constants	9.2%
(3)	Selected Frictional Reinsurance Expenses Ratio (relative to Standard plus ARAP premiums, excluding expense constants)	1.0%
(4)	Selected Effect of Incidental Income and EBUP Expense, Excluding of Expense Constants	0.0%
(5)	Commission and Other Acquisition Expense Ratio = (1) + (2) + (3) + (4)	<b>12.2%</b>

### Notes:

- (1): Exhibit 2.
- (2): Exhibit 3.
- (3): Exhibit 4, Page 1.
- (4): Exhibit 5.

# VI 00028 STIP

Section VI - Expenses  
 Subsection G - Acquisition Expenses  
 7/1/2020

Section VI - G  
 Exhibit 2

## Calculation of Other Acquisition Expense

	Calendar Year		
	2016	2017	2018
(1) Standard Earned Premium Including Expense Constant Premium	977,592,112	1,052,364,914	1,091,757,245
(2) ARAP Premium at Company Level	41,781,275	42,331,721	45,616,548
(3) Adjustment Factor to Adjust from Company Level to DSR Level Premium	1.049	1.051	1.053
(4) Standard Earned Premium plus Adjusted ARAP = (1) + [ (2) x (3) ]	1,021,422,390	1,096,853,539	1,139,788,499
(5) Adjustment for Experience and Merit Rating, ARAP, and Construction Credit Off-balance	1.043	1.040	1.040
(6) Adjustment Factor to Remove the Impact of Loading for Recoupment of Insolvency Fund Assessments	0.999	1.002	1.002
(7) Adjusted Standard Earned Premium plus ARAP = (4) x (5) x (6)	1,064,068,560	1,143,308,639	1,187,869,866
(8) Other Acquisition, Field Supervision, Collection Expenses for Home Office and Branch Office, excluding Commissions	45,412,517	37,490,316	42,037,368
(9) Other Acquisition Expense Ratio = (8) / (7)	4.3%	3.3%	3.5%
(10) Three Year Average		3.7%	
(11) Expense Constant as Percent of Premium for Prospective Effective Period		3.8%	
(12) Other Acquisition Portion of Expense Constant		46.7%	
(13) Percent of Premium due to Portion of Expense Constant for Other Acquisition Expense = (11) x (12)		1.8%	
(14) Other Acquisition and Field Supervision Expense Ratio, Excluding Expense Constants = [ (10) - (13) ] / [ 1.0 - (11) ]		<b>2.0%</b>	

### Notes:

- (1), (2): Aggregate Financial Reconciliation Report Calls, Calendar Years 2016 - 2018.  
 Reported Premium, plus ARAP, and including Large Deductible Policies at Standard Premium.
- (3): Section III-B, Exhibit 2.  
 (5): Section III-B, Exhibit 1.  
 (6): Section III-C, Exhibit 1.  
 (8): Aggregate Financial Expense Calls, Calendar Years 2016 - 2018.  
 (11): Section VI-F, Exhibit 1.  
 (12): Section VI-B, Exhibit 3.

# VI 00029 STIP

Section VI - Expenses  
Subsection G - Acquisition Expenses  
7/1/2020

Section VI - G  
Exhibit 3

## Calculation of Average Commission Rate

	Calendar Year		
	2016	2017	2018
(1) Direct Written Premium	834,888,549	881,014,774	895,327,373
(2) Total Commissions for Agents and Brokers	72,835,503	79,985,653	77,272,093
(3) Average Commission Rate = (2) / (1)	8.7%	9.1%	8.6%
(4) Three Year Average		8.8%	
(5) Expense Constant as Percent of Premium for Prospective Effective Period		3.8%	
(6) Average Commission Ratio, Excluding Expense Constants = (4) / [ 1.0 - (5) ]		<b>9.2%</b>	
(7) Selected Average Commission Ratio, Excluding Expense Constants		<b>9.2%</b>	

### Notes:

- (1): Annual Statement Exhibit of Premium and Losses, Calendar Years 2016 - 2018.
- (2): Aggregate Financial Expense Calls, Calendar Years 2016 - 2018.
- (5): Section VI-F, Exhibit 1.

# VI 00030 STIP

Section VI - Expenses  
 Subsection G - Acquisition Expenses  
 7/1/2020

Section VI - G  
 Exhibit 4  
 Page 1

## Frictional Reinsurance Expenses

Calendar Year	Reinsurer Underwriting Expenses as Percentage of Net Written Premium				
	Commission and Brokerage	Other Acquisition	General Expenses	Taxes	Total Underwriting Expenses = (2) + (3) + (4) + (5)
(1)	(2)	(3)	(4)	(5)	(6)
2004	18.0%	4.0%	2.9%	0.5%	25.4%
2005	26.2%	8.0%	6.4%	0.7%	41.3%
2006	13.3%	4.6%	4.4%	0.5%	22.8%
2007	14.0%	4.9%	4.2%	0.5%	23.6%
2008	18.4%	4.3%	3.9%	0.6%	27.2%
2009	19.8%	2.9%	3.4%	0.2%	26.3%
2010	17.7%	3.2%	3.8%	0.2%	24.9%
2011	19.2%	3.0%	2.8%	0.2%	25.2%
2012	19.1%	3.1%	2.7%	0.3%	25.2%
2013	17.4%	3.6%	3.5%	0.3%	24.8%
2014	18.1%	3.5%	5.3%	0.4%	27.3%
2015	18.5%	3.2%	3.2%	0.3%	25.2%
2016	18.2%	3.0%	3.4%	0.3%	24.9%
2017	18.8%	2.6%	3.0%	0.3%	24.7%
2018	20.9%	2.0%	2.1%	0.2%	25.2%
(7) Average	18.5%	3.7%	3.7%	0.4%	26.3%
(8) Estimated Ceding Commission & Brokerage Rate for Workers' Compensation Non-Proportional Reinsurance	16.3%				
(9) Adjusted Average = (7) - (8)	2.2%	3.7%	3.7%	0.4%	10.0%

- (10) Estimated % of Direct Premium Ceded for Workers' Compensation Non-Proportional Reinsurance 14.5%
- (11) Implied Frictional Reinsurance Expenses Relative to Direct Premiums (as a %)  
= Total (9) x (10) 1.45%
- (12) Selected Frictional Reinsurance Expenses Ratio  
(relative to Standard plus ARAP premiums, excluding expense constants) 1.0%

**Notes:**

(2)-(5): Insurance Expense Exhibit database - By Line Underwriting Experience from Best's Aggregates & Averages for Reinsurance Editions 2005 - 2019.

(8): Page 2, (10).

(10): Page 2, (11).

# VI 00031 STIP

Estimate of Ceding Commission & Brokerage Rate for Workers' Compensation Non-Proportional Reinsurance

Calendar Year	Written Premiums (000's)			Ratio of Commission & Brokerage Incurred to Written Premium		Commission & Brokerage Expenses Incurred (000's)		
	Direct	Net	Direct - Net = (2) - (3)	Direct	Net	Direct = (2) x (5)	Net = (3) x (6)	Direct - Net = (7) - (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2004	51,988,628	45,667,027	6,321,601	0.074	0.063	3,847,158	2,877,023	970,136
2005	53,139,231	46,633,441	6,505,790	0.068	0.056	3,613,468	2,611,473	1,001,995
2006	50,942,134	45,033,012	5,909,122	0.072	0.069	3,667,834	3,107,278	560,556
2007	50,367,861	44,207,021	6,160,840	0.071	0.061	3,576,118	2,696,628	879,490
2008	42,686,615	37,535,546	5,151,069	0.077	0.060	3,286,869	2,252,133	1,034,737
2009	37,879,014	32,642,883	5,236,131	0.079	0.060	2,992,442	1,958,573	1,033,869
2010	37,180,836	32,184,623	4,996,213	0.079	0.060	2,937,286	1,931,077	1,006,209
2011	41,651,380	35,751,070	5,900,310	0.084	0.068	3,498,716	2,431,073	1,067,643
2012	44,555,061	37,992,643	6,562,418	0.084	0.070	3,742,625	2,659,485	1,083,140
2013	49,384,867	41,250,232	8,134,635	0.084	0.068	4,148,329	2,805,016	1,343,313
2014	52,613,735	44,053,515	8,560,220	0.084	0.066	4,419,554	2,907,532	1,512,022
2015	54,522,916	45,090,969	9,431,947	0.088	0.073	4,798,017	3,291,641	1,506,376
2016	58,255,242	47,961,376	10,293,866	0.085	0.067	4,951,696	3,213,412	1,738,283
2017	55,749,285	45,032,688	10,716,597	0.092	0.075	5,128,934	3,377,452	1,751,483
2018	54,900,760	47,963,539	6,937,221	0.091	0.085	4,995,969	4,076,901	919,068
<b>Total</b>	<b>735,817,565</b>	<b>628,999,585</b>	<b>106,817,980</b>	<b>0.081</b>	<b>0.067</b>	<b>59,605,015</b>	<b>42,196,696</b>	<b>17,408,319</b>

- (10) Estimated Ceding Commission & Brokerage Rate for Workers' Compensation Non-Proportional Reinsurance = Total (9) / Total (4) 16.3%
- (11) Estimated % of Direct Premium Ceded for Workers' Compensation Non-Proportional Reinsurance = Total (4) / Total (2) 14.5%

Notes:  
 (2), (3), (5), (6): Insurance Expense Exhibit database - By Line Underwriting Experience from Best's Aggregates & Averages for Workers' Comp Editions 2005 - 2019.



# VI 00032 STIP

Section VI - Expenses  
 Subsection G - Acquisition Expenses  
 7/1/2020

Section VI - G  
 Exhibit 5

## Effect of Incidental Income and Earned but Uncollected Premium

	Calendar Year		
	2016	2017	2018
(1) Standard Earned Premium Including Expense Constant Premium	977,592,112	1,052,364,914	1,091,757,245
(2) ARAP Premium at Company Level	41,781,275	42,331,721	45,616,548
(3) Adjustment Factor to Adjust from Company Level to DSR Level Premium	1.049	1.051	1.053
(4) Standard Earned Premium plus Adjusted ARAP = (1) + [ (2) x (3) ]	1,021,422,390	1,096,853,539	1,139,788,499
(5) Adjustment for Experience and Merit Rating, ARAP, and Construction Credit Off-balance	1.043	1.040	1.040
(6) Adjustment Factor to Remove the Impact of Loading for Recoupment of Insolvency Fund Assessments	0.999	1.002	1.002
(7) Adjusted Standard Earned Premium plus ARAP = (4) x (5) x (6)	1,064,068,560	1,143,308,639	1,187,869,866
(8) Earned But Uncollected Premium ("EBUP")	3,956,924	5,475,413	5,715,900
(9) Incidental Income	1,322,398	1,243,591	1,205,981
(10) Net Effect of Incidental Income and EBUP Expense = [ (8) - (9) ] / (7)	0.2%	0.4%	0.4%
(11) Three Year Average		0.3%	
(12) Expense Constant as Percent of Premium for Prospective Effective Period		3.8%	
(13) Effect of Incidental Income and EBUP Expense, Exclusive of Expense Constants = (11) / [ 1.0 - (12) ]		0.3%	
(14) Selected Effect of Incidental Income and EBUP Expense, Excluding of Expense Constants		0.0%	

### Notes:

- (1), (2): Aggregate Financial Reconciliation Report Calls, Calendar Years 2016 - 2018.  
 Reported Premium and ARAP, including Large Deductible Policies at Standard Premium.
- (3): Section III-B, Exhibit 2.
- (5): Section III-B, Exhibit 1.
- (6): Section III-C, Exhibit 1.
- (8),(9): Aggregate Financial Expense Call.
- (12): Section VI-F, Exhibit 1.

# VI 00033 STIP

Section VI - Expenses  
 Subsection H - Loss Adjustment Expense  
 7/1/2020

Section VI - H  
 Exhibit 1  
 Page 1

## Defense and Cost Containment Expense ("DCCE") Ratio and Total Loss Adjustment Expense ("LAE") Ratio

		Calendar Year		
		2016	2017	2018
(1)	Ground Up Paid Losses	411,597,582	438,317,057	441,167,849
(2)	Ground Up Paid Defense and Cost Containment Expense	35,263,120	36,787,198	37,962,295
(3)	Defense and Cost Containment Expense Ratio = (2) / (1)	8.6%	8.4%	8.6%
(4)	Three Year Average Defense and Cost Containment Expense Ratio = Average of (3)		8.5%	
(5)	Selected Three Year Average Defense and Cost Containment Expense Ratio		8.5%	
(6)	Total Loss Adjustment Expense Ratio (LAE / Loss)		<b>18.5%</b>	

**Notes:**

(1),(2): Aggregate Financial Policy Year Calls.  
 (6): (5) + [ (9) from Section VI-H, Exhibit 2 ]

		Policy Year		
		2016	2017	2018
(1)	Defense and Cost Containment Expense Ratio	8.8%	8.8%	8.8%
(2)	Three Year Average Defense and Cost Containment Expense Ratio = Average of (1)		8.8%	
(3)	Selected Three Year Average Defense and Cost Containment Expense Ratio		8.8%	
(4)	Total Loss Adjustment Expense Ratio (LAE / Loss)		<b>18.7%</b>	

**Notes:**

(1): Section VI-H, Exhibit 1, Page 2  
 (4): (3) + [ (9) from Section VI-H, Exhibit 2 ]

# VI 00034 STIP

Section VI - Expenses  
 Subsection H - Loss Adjustment Expense  
 7/1/2020

Section VI - H  
 Exhibit 1  
 Page 2

Paid Defense and Cost Containment ("DCCE")

Policy Year (1)	Age of Development									
	12	24	36	48	60	72	84	96	108	120
2003						18,400,635	19,310,297	19,829,417	20,119,628	20,291,313
2004					17,336,132	18,478,225	19,181,810	19,620,853	19,932,806	20,040,561
2005				15,677,826	17,076,816	17,940,391	18,473,854	18,799,256	19,073,334	19,273,221
2006			13,818,852	16,833,413	18,530,108	19,447,777	20,069,728	20,402,171	20,686,036	20,855,655
2007		9,921,053	16,030,493	19,129,027	20,955,507	22,052,800	22,745,615	23,197,858	23,547,682	23,837,061
2008	2,551,238	11,126,554	16,857,123	19,757,692	21,584,549	22,808,787	23,537,960	24,074,431	24,428,931	24,728,320
2009	2,433,649	11,060,018	17,095,200	20,497,568	22,394,674	23,609,065	24,406,313	24,874,142	25,264,583	25,648,482
2010	2,338,440	10,880,972	17,467,350	21,242,282	23,606,936	24,871,162	25,609,567	26,045,432	26,363,193	
2011	2,563,788	13,021,363	20,556,786	25,060,791	27,456,219	28,707,039	29,513,546	29,965,272		
2012	2,691,679	13,463,095	21,596,694	25,864,671	28,481,144	29,884,508	30,387,553			
2013	2,960,744	14,337,522	22,566,519	26,743,061	28,994,050	30,171,231				
2014	3,363,569	15,726,790	24,693,611	29,296,796	32,456,975					
2015	2,669,920	14,149,132	23,082,460	27,668,371						
2016	3,011,155	15,662,261	25,016,352							
2017	3,016,212	15,963,618								
2018	3,245,353									

Paid Losses

Policy Year (1)	Age of Development									
	12	24	36	48	60	72	84	96	108	120
2003						222,732,169	227,885,925	231,854,686	234,277,393	235,778,395
2004					220,212,773	229,860,481	235,436,664	238,594,076	241,045,008	243,316,255
2005				198,029,818	215,864,283	225,762,015	230,359,739	234,796,841	237,459,882	239,108,611
2006			166,832,128	206,898,906	228,585,828	238,808,836	244,490,346	249,624,698	253,568,007	254,601,394
2007		124,584,975	191,270,304	231,979,598	252,994,011	265,538,290	270,344,016	276,184,355	281,052,517	283,770,184
2008	31,275,729	127,505,490	193,051,452	231,962,366	253,098,893	265,067,396	271,574,147	275,248,156	277,713,697	279,023,889
2009	31,848,703	132,177,192	202,144,759	243,772,320	272,552,546	289,138,799	295,547,937	300,324,462	303,332,237	305,314,031
2010	32,929,798	132,720,346	202,891,783	248,356,736	277,616,491	290,358,002	298,247,436	301,957,462	303,522,002	
2011	35,627,939	142,418,237	221,845,178	279,597,524	310,039,685	321,316,234	327,549,904	332,092,306		
2012	33,838,977	147,772,949	236,577,817	290,666,540	322,039,453	339,481,450	346,725,200			
2013	34,299,069	151,121,098	237,718,412	288,244,493	317,684,042	329,032,870				
2014	39,629,213	167,526,580	267,502,073	337,628,506	374,116,529					
2015	38,401,064	165,341,595	265,714,514	328,097,002						
2016	40,963,640	174,793,393	278,671,325							
2017	40,003,185	177,723,859								
2018	43,656,569									

Paid Defense and Cost Containment ("DCCE") Ratios

Policy Year (1)	Age of Development										Developed to Tenth Report (3)	
	12	24	36	48	60	72	84	96	108	120		
2003						0.083	0.085	0.086	0.086	0.086	0.086	0.086
2004					0.079	0.080	0.081	0.082	0.083	0.082	0.082	0.082
2005				0.079	0.079	0.079	0.080	0.080	0.080	0.081	0.081	0.081
2006			0.083	0.081	0.081	0.081	0.082	0.082	0.082	0.082	0.082	0.082
2007		0.080	0.084	0.082	0.083	0.083	0.084	0.084	0.084	0.084	0.084	0.084
2008	0.082	0.087	0.087	0.085	0.085	0.086	0.087	0.087	0.088	0.089	0.089	0.089
2009	0.076	0.084	0.085	0.084	0.082	0.082	0.083	0.083	0.083	0.084	0.084	0.084
2010	0.071	0.082	0.086	0.086	0.085	0.086	0.086	0.086	0.087	0.087	0.087	0.087
2011	0.072	0.091	0.093	0.090	0.089	0.089	0.090	0.090	0.090	0.090	0.091	0.091
2012	0.080	0.091	0.091	0.089	0.088	0.088	0.088	0.088			0.089	0.089
2013	0.086	0.095	0.095	0.093	0.091	0.092					0.093	0.093
2014	0.085	0.094	0.092	0.087	0.087						0.089	0.089
2015	0.070	0.086	0.087	0.084							0.085	0.085
2016	0.074	0.090	0.090								0.088	0.088
2017	0.075	0.090									0.088	0.088
2018	0.074										0.088	0.088
	Age-to-Age Development Factors											
	12 - 24	24 - 36	36 - 48	48 - 60	60 - 72	72 - 84	84 - 96	96 - 108	108 - 120			
2003						1.026	1.009	1.004	1.002			
2004					1.021	1.013	1.009	1.006	0.996			
2005				0.999	1.005	1.009	0.998	1.003	1.004			
2006			0.982	0.996	1.005	1.008	0.996	0.998	1.004			
2007		1.052	0.984	1.004	1.003	1.013	0.998	0.997	1.003			
2008		1.070	1.001	0.975	1.001	1.009	1.007	1.009	1.008			
2009		1.095	1.011	0.994	0.977	0.994	1.011	1.003	1.006			
2010		1.154	1.050	0.993	0.994	1.007	1.002	1.005	1.007			
2011		1.271	1.013	0.967	0.988	1.009	1.009	1.001				
2012		1.145	1.002	0.975	0.994	0.995	0.996					
2013		1.099	1.001	0.977	0.984	1.005						
2014		1.106	0.983	0.940	1.000							
2015		1.231	1.015	0.971								
2016		1.219	1.002									
2017		1.191										
2 Yr Weighted Average	1.205	1.008	0.955	0.991	1.000	1.002	1.003	1.006	1.008			
3 Yr Weighted Average	1.213	1.000	0.963	0.992	1.003	1.002	1.003	1.006	1.006			
5 Yr Weighted Average	1.165	1.000	0.966	0.992	1.002	1.005	1.003	1.003	1.005			
Selected	1.213	1.000	0.963	0.992	1.003	1.002	1.003	1.006	1.006			
Cumulative	1.182	0.975	0.975	1.013	1.021	1.018	1.015	1.012	1.006			

Notes:  
 (2),(3): Aggregate Financial Policy Year Calls.  
 Paid DCCE Ratios are calculated as Paid DCCE/(Paid Medical + Paid Indemnity)

# VI 00035 STIP

Section VI - Expenses  
 Subsection H - Loss Adjustment Expense  
 7/1/2020

Section VI - H  
 Exhibit 2

## Adjusting and Other ("AO") Expense Ratio

	Calendar Year		
	2016	2017	2018
(1) Direct Incurred Losses	526,727,149	527,721,101	500,942,197
(2) Factor to Adjust the Direct Losses to Full Coverage Losses	1.254	1.263	1.252
(3) Estimated Full Coverage Incurred Losses = (1) x (2)	660,764,488	666,250,677	627,242,549
(4) Direct Incurred Adjusting and Other Expense	57,165,279	60,499,895	56,941,646
(5) Factor to Adjust the Direct Adjusting and Other Expense to Full Coverage AO Expense	1.113	1.116	1.112
(6) Estimated Full Coverage Adjusting and Other Expense = (4) x (5)	63,617,772	67,519,345	63,316,267
(7) Adjusted Adjusting and Other Expense Ratio = (6) / (3)	9.63%	10.13%	10.09%
(8) Three Year Average Adjusted Adjusting and Other Expense Ratio = Average of (7)		10.0%	
(9) Selected Three Year Average Adjusted Adjusting and Other Expense Ratio		10.0%	

**Notes:**

(1),(4): Aggregate Financial Calendar Year Expense Data Calls, 2016 - 2018.

(2),(5): Section VI-I, Exhibit 1, Page 1.

# VI 00036 STIP

Section VI - Expenses  
Subsection I - Adjustment for Large Deductible Policies  
7/1/2020

Section VI - I  
Exhibit 1  
Page 1

## Adjustment to the Adjusting and Other Expense Provision

	Calendar Year		
	2016	2017	2018
(1) Average Premium Reduction Factor for Large Deductible Policies	0.814	0.818	0.815
(2) Loss Elimination Ratio (LER) for Large Deductible Policies = (1) x 1.105	89.9%	90.4%	90.1%
(3) Market Share (Standard Premium Basis) of Large Deductible Policies	22.6%	23.0%	22.4%
(4) LER for Full Coverage plus Large Deductible Policies = [ (2) x (3) ] + { 0.0 x [ 1.0 - (3) ] }	20.3%	20.8%	20.1%
(5) Factor to Adjust the Direct Losses to Full Coverage Losses = 1.0 / [ 1.0 - (4) ]	1.254	1.263	1.252
(6) Factor to Adjust the Direct AO Expense to Full Coverage AO Expense = 1.0 / { 1.0 - [ 0.5 x (4) ] }	1.113	1.116	1.112

### Notes:

(1),(3): Exhibit 2.

(2): 1.105 from Exhibit 1, Page 2.

(6): Assumes 50% of Adjusting & Other expense varies directly with losses.

# VI 00037 STIP

Section VI - Expenses  
 Subsection I - Adjustment for Large Deductible Policies  
 7/1/2020

Section VI - I  
 Exhibit 1  
 Page 2

## Loss Elimination Ratio for Large Deductible Policies

		<u>As a % of Standard Premium plus ARAP</u>
(1)	Commission and Other Acquisition Expense Ratio	12.6%
(2)	Average Premium Discount as a % of Standard Premium + ARAP	5.1%
(3)	Premium Tax Ratio = 2.28% x [ 1.0 - (2) ]	2.2%
(4)	Profit Provision	-1.4%
(5)	Insolvency Fund Assessment	0.3%
(6)	Residual Market Subsidy (Retrospectively-rated policies)	-0.2%
(7)	Variable Expense Ratio = (1) + (2) + (3) + (4) + (5) + (6)	18.6%
(8)	Expected Loss Ratio without LAE	64.6%
(9)	Defense and Cost Containment Expense ("DCC")	6.1%
(10)	Adjusting and Other Expenses ("AO")	5.9%
(11)	Variable Adjusting and Other Expenses = 0.5 x (10)	2.9%
(12)	Portion of Expected Loss + LAE Ratio that varies with deductible (ELARD) = (8) + (9) + (11)	73.7%
(13)	LER / D = [ 1.0 - (7) ] / (12)	1.105

D = Average Premium Reduction Factor for Large Deductible Policies

LER = Loss Elimination Ratio

ELARD = Loss + DCC + ( 1/2 x AO )

$D = [ \text{LER} \times \text{ELARD} ] / [ 100\% - (\text{Variable Expense}) ]$

$\text{LER} = D \times [ 1.0 - (\text{Variable Expense}) ] / \text{LER} \times ( 1.0 + \text{DCC} + 1/2 \times \text{AO} )$

**Notes:**

Values approved for rates effective 7/1/18.

(1) - (6) = From prior Rate Decision/Stipulation

(8) = From prior Rate Decision/Stipulation

(9) = 9.4% x (8), ratio of DCC to Losses from the 7/1/18 filing.

(10) = 9.1% x (8), ratio of AO to Losses from the 7/1/18 filing.

# VI 00038 STIP

Section VI - Expenses  
 Subsection I - Adjustment for Large Deductible Policies  
 7/1/2020

Section VI - I  
 Exhibit 2

## Average Large Deductible Premium Reduction Factor and Large Deductible Market Share

		Policy Year												
		2015	2016	2017	2018*									
(1)	Standard Earned Premium Excluding Large Deductible Policies	725,547,414	775,712,173	826,402,806	452,446,245									
(2)	Earned Premium Net of Deductible Credit for Large Deductible Policies	38,250,410	43,209,862	43,802,618	24,190,484									
(3)	Standard Earned Premium for Large Deductible Policies	200,205,654	238,288,619	240,079,458	129,172,696									
(4)	Standard Earned Premium for All Policies = (1) + (3)	925,753,068	1,014,000,792	1,066,482,264	581,618,941									
(5)	Average Premium Reduction Factor for Large Deductible Policies = $1.0 - [(2) / (3)]$	0.809	0.819	0.818	0.813									
(6)	Market Share (Standard Premium Basis) of Large Deductible Policies = (3) / (4)	21.6%	23.5%	22.5%	22.2%									
		<table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th colspan="3" style="text-align: center;">Calendar Year</th> </tr> <tr> <th style="text-align: center;">2016</th> <th style="text-align: center;">2017</th> <th style="text-align: center;">2018</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0.814</td> <td style="text-align: center;">0.818</td> <td style="text-align: center;">0.815</td> </tr> </tbody> </table>				Calendar Year			2016	2017	2018	0.814	0.818	0.815
Calendar Year														
2016	2017	2018												
0.814	0.818	0.815												
(7)	Average Premium Reduction Factor for Large Deductible Policies = Average of PY-1 and PY													
(8)	Market Share (Standard Premium Basis) of Large Deductible Policies = Average of PY-1 and PY		22.6%	23.0%	22.4%									

**Notes:**

- (1): Aggregate Financial Policy Year Call, Policy Year Accumulated Earned Premium – Standard at Bureau DSR Level.
- (2): Aggregate Financial Policy Year Large Deductible Call, Policy Year Accumulated Earned Premium – Net.
- (3): Aggregate Financial Policy Year Large Deductible Call, Policy Year Accumulated Earned Premium – Standard at Bureau DSR Level.
- \* Policy Year 2018 is an incomplete Policy Year, valued as of 12/31/2018

# VI 000039 STIP

Section VI - Expenses  
Subsection J - Expected Loss Ratios Underlying the Proposed Rates & Rating Values  
7/1/2020

Section VI - J  
Exhibit 1

## Expected Loss Ratios Underlying the Proposed Rates & Rating Values

	<u>As a % of Standard Premium plus Adjusted ARAP</u>
(1) Commission and Other Acquisition Expense Ratio	12.2%
(2) Average Premium Discount as a % of Standard Premium + ARAP	5.3%
(3) Premium Tax Ratio = 2.28% x [ 1.0 - (2) ]	2.2%
(4) Variable Expense Ratio = (1) + (2) + (3)	19.6%
(5) Underwriting Profit Provision	-0.8%
(6) Permissible Loss, LAE, and Fixed Expense Ratio = 1.0 - [ (4) + (5) ]	81.1%
(7) Fixed Expense Ratio	5.4%
(8) Expected Loss and Loss Adjustment Expense Ratio = (6) - (7)	75.7%
(9) Total Loss Adjustment Expense Ratio (LAE / Loss)	18.7%
(10) Expected Loss Ratio without Loss Adjustment Expense = (8) / [ 1.0 + (9) ]	63.8%

### Notes:

(1): Section VI-G, Exhibit 1.

(2): Section VI-E, Exhibit 1.

(3): 2.28% from Section VI-B, Exhibit 3.

(5): Section VII-A, Exhibit 1.

(7): Section VI-B, Exhibit 1. The Average Fixed Expense Ratio, 5.1%, is divided by [1.0 + indicated rate change], -6.8%, to derive the Fixed Expense Ratio underlying the proposed rates.

(9): Section VI-H, Exhibit 1.



# VII 000015 STIP

Section VII - Profit  
Subsection A - Summary  
7/1/2020

Section VII-A  
Exhibit 1

**TABLE A1: ASSUMPTIONS AND PROFIT PROVISION CALCULATION**

Underwriting Assumptions:		
(1)	Written Premium	
(a)	Gross - Before Premium Discount	1,000.00
(b)	Net - After Premium Discount	946.98
(2)	Collected Premium Net - After Premium Discount	946.98
(3)	Loss & LAE Ratio	75.73%
(4)	Commission Ratio	9.16%
(5)	Premium Discount	5.30%
(6)	General Expense Ratio	5.06%
(7)	Other Acquisition Expense Ratio	2.00%
(8)	Premium Tax Rate	2.16%
(9)	Reinsurance Expense Ratio	1.00%
(10)	Miscellaneous and Other Taxes	0.35%
Cost of Capital:		
(11)	Weighted Average Cost of Capital	7.15%
Portfolio Rate of Return:		
(12)	After Tax Portfolio Rate of Return	3.09%
Leverage Ratio:		
(13)	Reserves to Surplus Ratio	1.93
Profit Provision:		
(14)	Profit Provision Calculation	-0.76%

Notes:

(1b) = (1a) x [ 1.0 - (5) ]

(2) = (1b), assumed that all premium is collectible.

(3) - (10): Section VII-H, Exhibit 1 (average of the two policy years).

(3), (6), (10) are divided by (1.0 + Rate Change).

(11): Section VII-E, Exhibit 1.

(12): Section VII-J, Exhibit 1, page 1.

(13): Section VII-F, Exhibit 1.

(14) = 1.0 - [ (3) + (4) + (5) + (6) + (7) + (8) + (9) + (10) ]

# VII 000035 STIP

Section VII - Profit  
Subsection B - DCF Models  
7/1/2020

Section VII-B  
Exhibit 1

**TABLE B1: INTERNAL RATE OF RETURN (IRR) MODEL - PRESENT VALUE (PV) NOMINAL CASH FLOWS TO INVESTORS**

TIME INTERVAL		POST TAX CASH FROM UW MINUS INVESTABLE RESERVES (3)	BOND INTEREST TAX DEDUCTION FOR INSURERS (4)	NET CASH FLOW FROM UNDERWRITING (5)	CASH POST-TAX INCOME (6)	NET FLOW FROM SURPLUS ACCOUNT (7)	SURPLUS POST-TAX INCOME (8)	CASH FLOWS TO INVESTORS (NOMINAL) (9)	CASH FLOWS TO INVESTORS (PV NOMINAL) (10)
FROM (1)	TO (2)								
07/01/19	09/30/19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/01/19	12/31/19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01/01/20	03/31/20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04/01/20	06/30/20	(4.34)	0.00	(4.34)	0.00	0.00	0.00	(4.34)	(4.12)
07/01/20	09/30/20	(6.84)	0.00	(6.84)	0.04	(113.83)	0.00	(120.63)	(112.57)
10/01/20	12/31/20	(14.26)	0.02	(14.24)	0.29	(85.65)	0.87	(98.73)	(90.56)
01/01/21	03/31/21	(15.91)	0.04	(15.87)	0.90	(113.99)	1.52	(127.43)	(114.88)
04/01/21	06/30/21	(6.56)	0.07	(6.49)	1.84	(82.32)	2.39	(84.57)	(74.94)
07/01/21	09/30/21	11.39	0.09	11.47	2.76	44.79	3.02	62.05	54.04
10/01/21	12/31/21	14.57	0.08	14.65	3.37	40.39	2.68	61.10	52.30
01/01/22	03/31/22	10.09	0.07	10.15	3.54	34.10	2.37	50.16	42.20
04/01/22	06/30/22	(13.43)	0.06	(13.37)	3.45	28.61	2.11	20.81	17.20
07/01/22	09/30/22	(9.29)	0.05	(9.23)	3.37	24.94	1.89	20.97	17.04
10/01/22	12/31/22	11.51	0.05	11.56	3.23	23.21	1.70	39.71	31.72
01/01/23	03/31/23	6.32	0.04	6.36	2.91	20.65	1.53	31.45	24.69
04/01/23	06/30/23	3.11	0.04	3.15	2.61	18.42	1.37	25.55	19.72
07/01/23	09/30/23	1.33	0.03	1.36	2.35	16.54	1.23	21.47	16.29
10/01/23	12/31/23	0.60	0.03	0.63	2.11	15.17	1.10	19.01	14.17
01/01/24	03/31/24	0.29	0.03	0.32	1.88	13.19	0.98	16.37	12.00
04/01/24	06/30/24	0.29	0.03	0.32	1.69	11.45	0.88	14.34	10.33
07/01/24	09/30/24	0.29	0.02	0.31	1.52	9.88	0.80	12.51	8.86
10/01/24	12/31/24	0.29	0.02	0.31	1.38	8.65	0.72	11.07	7.70
01/01/25	03/31/25	0.14	0.02	0.16	1.26	6.94	0.66	9.01	6.16
04/01/25	06/30/25	0.14	0.02	0.16	1.15	5.44	0.60	7.36	4.95
07/01/25	09/30/25	0.14	0.02	0.16	1.08	4.40	0.56	6.20	4.09
10/01/25	12/31/25	0.14	0.02	0.16	1.01	3.89	0.53	5.59	3.63
01/01/26	03/31/26	0.11	0.01	0.12	0.96	3.17	0.50	4.75	3.03
04/01/26	06/30/26	0.11	0.01	0.12	0.91	2.54	0.47	4.05	2.54
07/01/26	09/30/26	0.11	0.01	0.12	0.87	2.11	0.45	3.55	2.19
10/01/26	12/31/26	0.11	0.01	0.12	0.84	1.89	0.44	3.29	1.99
01/01/27	03/31/27	0.11	0.01	0.12	0.81	1.58	0.42	2.93	1.75
04/01/27	06/30/27	0.11	0.01	0.12	0.79	1.31	0.41	2.63	1.54
07/01/27	09/30/27	0.11	0.01	0.12	0.77	1.16	0.40	2.45	1.41
10/01/27	12/31/27	0.11	0.01	0.12	0.75	1.13	0.39	2.40	1.36
01/01/28	03/31/28	0.08	0.01	0.09	0.74	1.08	0.38	2.29	1.27
04/01/28	06/30/28	0.08	0.01	0.09	0.72	1.04	0.38	2.23	1.22
07/01/28	09/30/28	0.08	0.01	0.09	0.71	0.97	0.37	2.13	1.15
10/01/28	12/31/28	0.08	0.01	0.09	0.69	0.89	0.36	2.03	1.07
01/01/29	03/31/29	0.10	0.01	0.11	0.68	0.77	0.35	1.92	0.99
04/01/29	06/30/29	0.10	0.01	0.11	0.67	0.67	0.35	1.80	0.92
07/01/29	09/30/29	0.10	0.01	0.11	0.66	0.60	0.34	1.71	0.86
10/01/29	12/31/29	0.10	0.01	0.11	0.65	0.57	0.34	1.67	0.82
01/01/30	03/31/30	0.09	0.01	0.10	0.64	0.52	0.33	1.59	0.77
04/01/30	06/30/30	0.09	0.01	0.10	0.63	0.47	0.33	1.53	0.73
07/01/30	09/30/30	0.09	0.01	0.10	0.63	0.47	0.33	1.52	0.71
10/01/30	12/31/30	0.09	0.01	0.10	0.62	0.50	0.32	1.53	0.71
01/01/31	03/31/31	0.08	0.01	0.09	0.61	0.53	0.32	1.54	0.70
04/01/31	06/30/31	0.08	0.01	0.09	0.60	0.55	0.31	1.56	0.69
07/01/31	09/30/31	0.08	0.01	0.09	0.60	0.56	0.31	1.56	0.68
10/01/31	12/31/31	0.08	0.01	0.09	0.59	0.56	0.31	1.54	0.66
01/01/32	03/31/32	0.07	0.01	0.07	0.58	0.54	0.30	1.50	0.63
04/01/32	06/30/32	0.07	0.01	0.07	0.57	0.53	0.30	1.47	0.61
07/01/32	09/30/32	0.07	0.01	0.07	0.56	0.50	0.29	1.43	0.58
10/01/32	12/31/32	0.07	0.01	0.07	0.56	0.47	0.29	1.39	0.56
01/01/33	03/31/33	0.06	0.01	0.07	0.55	0.42	0.29	1.32	0.52
04/01/33	06/30/33	0.06	0.01	0.07	0.54	0.37	0.28	1.27	0.49
07/01/33	09/30/33	0.06	0.01	0.07	0.54	0.35	0.28	1.23	0.47
10/01/33	12/31/33	0.06	0.01	0.07	0.53	0.33	0.28	1.21	0.45
01/01/34	03/31/34	0.06	0.01	0.07	0.53	0.31	0.27	1.18	0.43
04/01/34	06/30/34	0.06	0.01	0.07	0.52	0.30	0.27	1.16	0.42
07/01/34	09/30/34	0.06	0.01	0.07	0.52	0.29	0.27	1.14	0.41
10/01/34	12/31/34	0.06	0.01	0.07	0.52	0.29	0.27	1.14	0.40
01/01/35	03/31/35	0.06	0.01	0.06	0.51	0.28	0.27	1.12	0.38
04/01/35	06/30/35	0.06	0.01	0.06	0.51	0.28	0.26	1.11	0.37
07/01/35	09/30/35	0.06	0.01	0.06	0.50	0.28	0.26	1.11	0.37
10/01/35	12/31/35	0.06	0.01	0.06	0.50	0.29	0.26	1.11	0.36
01/01/36	03/31/36	0.05	0.01	0.06	0.49	0.30	0.26	1.11	0.36
04/01/36	06/30/36	0.05	0.01	0.06	0.49	0.31	0.25	1.11	0.35
07/01/36	09/30/36	0.05	0.01	0.06	0.49	0.30	0.25	1.10	0.34
10/01/36	12/31/36	0.05	0.01	0.06	0.48	0.29	0.25	1.09	0.33
01/01/37	03/31/37	0.05	0.01	0.06	0.48	0.28	0.25	1.06	0.32
04/01/37	06/30/37	0.05	0.01	0.06	0.47	0.26	0.25	1.04	0.30
07/01/37	09/30/37	0.05	0.01	0.06	0.47	0.27	0.24	1.05	0.30
10/01/37	12/31/37	0.05	0.01	0.06	0.46	0.30	0.24	1.07	0.30
01/01/38	03/31/38	0.04	0.01	0.05	0.46	0.34	0.24	1.09	0.30
04/01/38	06/30/38	0.04	0.01	0.05	0.46	0.37	0.24	1.11	0.30
07/01/38	09/30/38	0.04	0.01	0.05	0.45	0.38	0.23	1.11	0.30
10/01/38	12/31/38	0.04	0.01	0.05	0.44	0.38	0.23	1.10	0.29
01/01/39	03/31/39	0.01	0.01	0.02	0.44	0.36	0.23	1.05	0.27
04/01/39	06/30/39	0.01	0.01	0.02	0.43	0.35	0.23	1.03	0.26
07/01/39	09/30/39	0.01	0.01	0.02	0.43	0.34	0.22	1.01	0.25
10/01/39	12/31/39	0.01	0.01	0.02	0.42	0.31	0.22	0.98	0.24
01/01/40	03/31/40	0.00	0.01	0.01	0.42	0.28	0.22	0.93	0.22
04/01/40	06/30/40	0.00	0.01	0.01	0.42	0.25	0.22	0.89	0.21
07/01/40	09/30/40	0.00	0.01	0.01	0.41	0.24	0.21	0.87	0.20
10/01/40	12/31/40	0.00	0.01	0.01	0.41	0.23	0.21	0.86	0.20

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Section VII - Profit  
Subsection B - DCF Models  
7/1/2020

Section VII-B  
Exhibit 1

**TABLE B1: INTERNAL RATE OF RETURN (IRR) MODEL - PRESENT VALUE (PV) NOMINAL CASH FLOWS TO INVESTORS**

TIME INTERVAL		POST TAX CASH FROM UW MINUS INVESTABLE RESERVES (3)	BOND INTEREST TAX DEDUCTION FOR INSURERS (4)	NET CASH FLOW FROM UNDERWRITING (5)	CASH POST-TAX INCOME (6)	NET FLOW FROM SURPLUS ACCOUNT (7)	SURPLUS POST-TAX INCOME (8)	CASH FLOWS TO INVESTORS (NOMINAL) (9)	CASH FLOWS TO INVESTORS (PV NOMINAL) (10)
FROM (1)	TO (2)								
01/01/41	03/31/41	0.00	0.01	0.01	0.41	0.22	0.21	0.85	0.19
04/01/41	06/30/41	0.00	0.01	0.01	0.40	0.21	0.21	0.83	0.19
07/01/41	09/30/41	0.00	0.01	0.01	0.40	0.25	0.21	0.86	0.19
10/01/41	12/31/41	0.00	0.01	0.01	0.40	0.30	0.20	0.91	0.20
01/01/42	03/31/42	0.00	0.01	0.01	0.39	0.38	0.20	0.98	0.21
04/01/42	06/30/42	0.00	0.01	0.01	0.39	0.44	0.20	1.04	0.21
07/01/42	09/30/42	0.00	0.01	0.01	0.38	0.48	0.20	1.06	0.22
10/01/42	12/31/42	0.00	0.01	0.01	0.37	0.48	0.19	1.05	0.21
01/01/43	03/31/43	0.00	0.01	0.01	0.36	0.48	0.19	1.04	0.20
04/01/43	06/30/43	0.00	0.01	0.01	0.36	0.47	0.19	1.03	0.20
07/01/43	09/30/43	0.00	0.01	0.01	0.35	0.48	0.18	1.02	0.19
10/01/43	12/31/43	0.00	0.01	0.01	0.34	0.48	0.18	1.01	0.19
01/01/44	03/31/44	0.00	0.01	0.01	0.34	0.48	0.17	1.00	0.18
04/01/44	06/30/44	0.00	0.01	0.01	0.33	0.47	0.17	0.98	0.18
07/01/44	09/30/44	0.00	0.01	0.01	0.32	0.48	0.17	0.97	0.17
10/01/44	12/31/44	0.00	0.01	0.01	0.32	0.48	0.16	0.97	0.17
01/01/45	03/31/45	0.00	0.01	0.01	0.31	0.48	0.16	0.95	0.16
04/01/45	06/30/45	0.00	0.01	0.01	0.30	0.47	0.16	0.94	0.16
07/01/45	09/30/45	0.00	0.01	0.01	0.29	0.48	0.15	0.93	0.15
10/01/45	12/31/45	0.00	0.01	0.01	0.29	0.48	0.15	0.92	0.15
01/01/46	03/31/46	0.00	0.00	0.01	0.28	0.48	0.15	0.91	0.15
04/01/46	06/30/46	0.00	0.00	0.01	0.27	0.47	0.14	0.90	0.14
07/01/46	09/30/46	0.00	0.00	0.01	0.27	0.48	0.14	0.89	0.14
10/01/46	12/31/46	0.00	0.00	0.01	0.26	0.48	0.13	0.88	0.13
01/01/47	03/31/47	0.00	0.00	0.01	0.25	0.48	0.13	0.87	0.13
04/01/47	06/30/47	0.00	0.00	0.01	0.25	0.47	0.13	0.85	0.13
07/01/47	09/30/47	0.00	0.00	0.01	0.24	0.48	0.12	0.85	0.12
10/01/47	12/31/47	0.00	0.00	0.01	0.23	0.48	0.12	0.84	0.12
01/01/48	03/31/48	0.00	0.00	0.01	0.22	0.48	0.12	0.82	0.11
04/01/48	06/30/48	0.00	0.00	0.01	0.22	0.47	0.11	0.81	0.11
07/01/48	09/30/48	0.00	0.00	0.01	0.21	0.48	0.11	0.80	0.11
10/01/48	12/31/48	0.00	0.00	0.01	0.20	0.48	0.11	0.79	0.11
01/01/49	03/31/49	0.00	0.00	0.01	0.20	0.48	0.10	0.78	0.10
04/01/49	06/30/49	0.00	0.00	0.01	0.19	0.47	0.10	0.77	0.10
07/01/49	09/30/49	0.00	0.00	0.01	0.18	0.48	0.09	0.76	0.10
10/01/49	12/31/49	0.00	0.00	0.01	0.18	0.48	0.09	0.75	0.09
01/01/50	03/31/50	0.00	0.00	0.01	0.17	0.48	0.09	0.74	0.09
04/01/50	06/30/50	0.00	0.00	0.01	0.16	0.47	0.08	0.72	0.09
07/01/50	09/30/50	0.00	0.00	0.01	0.15	0.48	0.08	0.72	0.08
10/01/50	12/31/50	0.00	0.00	0.01	0.15	0.48	0.08	0.71	0.08
01/01/51	03/31/51	0.00	0.00	0.01	0.14	0.48	0.07	0.69	0.08
04/01/51	06/30/51	0.00	0.00	0.01	0.13	0.47	0.07	0.68	0.08
07/01/51	09/30/51	0.00	0.00	0.01	0.13	0.48	0.07	0.67	0.07
10/01/51	12/31/51	0.00	0.00	0.01	0.12	0.48	0.06	0.67	0.07
01/01/52	03/31/52	0.00	0.00	0.01	0.11	0.48	0.06	0.65	0.07
04/01/52	06/30/52	0.00	0.00	0.01	0.11	0.47	0.05	0.64	0.07
07/01/52	09/30/52	0.00	0.00	0.01	0.10	0.48	0.05	0.63	0.06
10/01/52	12/31/52	0.00	0.00	0.01	0.09	0.48	0.05	0.62	0.06
01/01/53	03/31/53	0.00	0.00	0.01	0.08	0.48	0.04	0.61	0.06
04/01/53	06/30/53	0.00	0.00	0.01	0.08	0.47	0.04	0.60	0.06
07/01/53	09/30/53	0.00	0.00	0.01	0.07	0.48	0.04	0.59	0.06
10/01/53	12/31/53	0.00	0.00	0.00	0.06	0.48	0.03	0.58	0.05
01/01/54	03/31/54	0.00	0.00	0.00	0.06	0.48	0.03	0.57	0.05
04/01/54	06/30/54	0.00	0.00	0.00	0.05	0.47	0.03	0.55	0.05
07/01/54	09/30/54	0.00	0.00	0.00	0.04	0.48	0.02	0.54	0.05
10/01/54	12/31/54	0.00	0.00	0.00	0.04	0.48	0.02	0.54	0.05
01/01/55	03/31/55	0.00	0.00	0.00	0.03	0.48	0.01	0.52	0.04
04/01/55	06/30/55	0.00	0.00	0.00	0.02	0.47	0.01	0.51	0.04
07/01/55	09/30/55	0.00	0.00	0.00	0.01	0.41	0.01	0.43	0.04
10/01/55	12/31/55	0.00	0.00	0.00	0.01	0.31	0.00	0.32	0.03
01/01/56	03/31/56	0.00	0.00	0.00	0.00	0.18	0.00	0.18	0.01
04/01/56	06/30/56	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.00
TOTAL		(5.97)	1.64	(4.33)	91.26	0.00	54.20	141.14	0.00

Notes:

(3) = Table C1, (14) - [ Table C3, (7), incremental ]

(4) = Table B2, (5)

(5) = (3) + (4)

(6) = Table C3, (7)<sub>t-1</sub> x [ (1.0 + Table A1, (12)) ^ 0.25 - 1.0 ]

(7) = -1.0 X Table D1, (7), incremental

(8) = Table D1, (7)<sub>t-1</sub> x [ (1.0 + Table A1, (12)) ^ 0.25 - 1.0 ]

(9) = (5) + (6) + (7) + (8)

(10) = (9) x (1 + WACC)<sup>time in years</sup>, based on the time interval with beginning date 07/01/19

WACC is the weighted average cost of capital from Section VII-E, Exhibit 1 which is equal to 7.15%.

The Total PV is equal to zero which implies that the profit provision derived from an investors prospective is equal to the profit provision derived from insurers prospective and is equal to -0.76% from Table A1, (14).



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TABLE B2: INSURER CAPITAL COST (ICC) MODEL - PRESENT VALUE (PV) CASH FLOW TO INSURER

TIME INTERVAL		INVESTOR SUPPLIED	NET CAPITAL CHARGES			SOURCES TO PAY NET CAPITAL CHARGE					CASH FLOW TO INSURER (11)	PV CASH FLOW TO INSURER (12)
						INVESTOR SUPPLIED	POLICYHOLDER SUPPLIED					
			CAPITAL NEEDED FROM INVESTORS (3)	INVESTOR REQUIRED RETURN CAPITAL CHARGE (4)	BOND INTEREST TAX DEDUCTION FOR INSURERS (5)		NET CAPITAL COST TO INSURERS (6)	AFTER TAX INV INCOME ON INVESTOR SUPPLIED FUNDS (7)	POLICYHOLDER SUPPLIED INVESTABLE FUNDS (8)	AFTER TAX INV INCOME ON POLICYHOLDER SUPPLIED FUNDS (9)		
FROM (1)	TO (2)											
07/01/39	09/30/39	34.98	0.62	0.01	0.61	0.27	49.40	0.38	0.00	0.04	0.01	
10/01/39	12/31/39	34.66	0.61	0.01	0.60	0.27	48.83	0.38	0.00	0.04	0.01	
01/01/40	03/31/40	34.37	0.60	0.01	0.60	0.26	48.30	0.37	0.00	0.04	0.01	
04/01/40	06/30/40	34.12	0.60	0.01	0.59	0.26	47.83	0.37	0.00	0.04	0.01	
07/01/40	09/30/40	33.88	0.59	0.01	0.59	0.26	47.39	0.37	0.00	0.04	0.01	
10/01/40	12/31/40	33.65	0.59	0.01	0.58	0.26	46.96	0.36	0.00	0.04	0.01	
01/01/41	03/31/41	33.42	0.59	0.01	0.58	0.26	46.53	0.36	0.00	0.04	0.01	
04/01/41	06/30/41	33.21	0.58	0.01	0.58	0.26	46.12	0.36	0.00	0.03	0.01	
07/01/41	09/30/41	32.96	0.58	0.01	0.57	0.25	45.65	0.35	0.00	0.03	0.01	
10/01/41	12/31/41	32.65	0.57	0.01	0.57	0.25	45.06	0.35	0.00	0.03	0.01	
01/01/42	03/31/42	32.27	0.57	0.01	0.56	0.25	44.34	0.34	0.00	0.03	0.01	
04/01/42	06/30/42	31.83	0.56	0.01	0.56	0.25	43.49	0.34	0.00	0.03	0.01	
07/01/42	09/30/42	31.35	0.55	0.01	0.55	0.24	42.57	0.33	0.00	0.03	0.01	
10/01/42	12/31/42	30.87	0.55	0.01	0.54	0.24	41.65	0.33	0.00	0.02	0.00	
01/01/43	03/31/43	30.39	0.54	0.01	0.53	0.24	40.74	0.32	0.00	0.02	0.00	
04/01/43	06/30/43	29.91	0.53	0.01	0.52	0.23	39.82	0.31	0.00	0.02	0.00	
07/01/43	09/30/43	29.43	0.52	0.01	0.52	0.23	38.91	0.30	0.00	0.02	0.00	
10/01/43	12/31/43	28.95	0.51	0.01	0.51	0.22	37.99	0.30	0.00	0.01	0.00	
01/01/44	03/31/44	28.47	0.50	0.01	0.50	0.22	37.07	0.29	0.00	0.01	0.00	
04/01/44	06/30/44	27.99	0.50	0.01	0.49	0.22	36.16	0.28	0.00	0.01	0.00	
07/01/44	09/30/44	27.52	0.49	0.01	0.48	0.21	35.25	0.28	0.00	0.01	0.00	
10/01/44	12/31/44	27.03	0.48	0.01	0.47	0.21	34.33	0.27	0.00	0.01	0.00	
01/01/45	03/31/45	26.56	0.47	0.01	0.47	0.21	33.41	0.26	0.00	0.00	0.00	
04/01/45	06/30/45	26.08	0.46	0.01	0.46	0.20	32.50	0.26	0.00	0.00	0.00	
07/01/45	09/30/45	25.60	0.45	0.01	0.45	0.20	31.58	0.25	0.00	(0.00)	(0.00)	
10/01/45	12/31/45	25.12	0.45	0.01	0.44	0.20	30.66	0.24	0.00	(0.00)	(0.00)	
01/01/46	03/31/46	24.64	0.44	0.00	0.43	0.19	29.75	0.23	0.00	(0.01)	(0.00)	
04/01/46	06/30/46	24.16	0.43	0.00	0.42	0.19	28.84	0.23	0.00	(0.01)	(0.00)	
07/01/46	09/30/46	23.68	0.42	0.00	0.42	0.18	27.92	0.22	0.00	(0.01)	(0.00)	
10/01/46	12/31/46	23.20	0.41	0.00	0.41	0.18	27.00	0.21	0.00	(0.01)	(0.00)	
01/01/47	03/31/47	22.72	0.40	0.00	0.40	0.18	26.08	0.21	0.00	(0.02)	(0.00)	
04/01/47	06/30/47	22.25	0.40	0.00	0.39	0.17	25.17	0.20	0.00	(0.02)	(0.00)	
07/01/47	09/30/47	21.77	0.39	0.00	0.38	0.17	24.26	0.19	0.00	(0.02)	(0.00)	
10/01/47	12/31/47	21.29	0.38	0.00	0.38	0.17	23.34	0.19	0.00	(0.02)	(0.00)	
01/01/48	03/31/48	20.81	0.37	0.00	0.37	0.16	22.42	0.18	0.00	(0.03)	(0.00)	
04/01/48	06/30/48	20.33	0.36	0.00	0.36	0.16	21.51	0.17	0.00	(0.03)	(0.00)	
07/01/48	09/30/48	19.85	0.35	0.00	0.35	0.16	20.60	0.16	0.00	(0.03)	(0.00)	
10/01/48	12/31/48	19.37	0.35	0.00	0.34	0.15	19.67	0.16	0.00	(0.03)	(0.00)	
01/01/49	03/31/49	18.89	0.34	0.00	0.33	0.15	18.76	0.15	0.00	(0.04)	(0.00)	
04/01/49	06/30/49	18.42	0.33	0.00	0.33	0.14	17.85	0.14	0.00	(0.04)	(0.00)	
07/01/49	09/30/49	17.94	0.32	0.00	0.32	0.14	16.93	0.14	0.00	(0.04)	(0.01)	
10/01/49	12/31/49	17.46	0.31	0.00	0.31	0.14	16.01	0.13	0.00	(0.04)	(0.01)	
01/01/50	03/31/50	16.98	0.30	0.00	0.30	0.13	15.10	0.12	0.00	(0.05)	(0.01)	
04/01/50	06/30/50	16.50	0.30	0.00	0.29	0.13	14.19	0.12	0.00	(0.05)	(0.01)	
07/01/50	09/30/50	16.02	0.29	0.00	0.28	0.13	13.27	0.11	0.00	(0.05)	(0.01)	
10/01/50	12/31/50	15.54	0.28	0.00	0.28	0.12	12.35	0.10	0.00	(0.05)	(0.01)	
01/01/51	03/31/51	15.06	0.27	0.00	0.27	0.12	11.43	0.09	0.00	(0.05)	(0.01)	
04/01/51	06/30/51	14.59	0.26	0.00	0.26	0.12	10.52	0.09	0.00	(0.06)	(0.01)	
07/01/51	09/30/51	14.11	0.25	0.00	0.25	0.11	9.61	0.08	0.00	(0.06)	(0.01)	
10/01/51	12/31/51	13.63	0.25	0.00	0.24	0.11	8.69	0.07	0.00	(0.06)	(0.01)	
01/01/52	03/31/52	13.15	0.24	0.00	0.23	0.10	7.77	0.07	0.00	(0.06)	(0.01)	
04/01/52	06/30/52	12.67	0.23	0.00	0.23	0.10	6.86	0.06	0.00	(0.07)	(0.01)	
07/01/52	09/30/52	12.19	0.22	0.00	0.22	0.10	5.94	0.05	0.00	(0.07)	(0.01)	
10/01/52	12/31/52	11.71	0.21	0.00	0.21	0.09	5.02	0.05	0.00	(0.07)	(0.01)	
01/01/53	03/31/53	11.23	0.20	0.00	0.20	0.09	4.11	0.04	0.00	(0.07)	(0.01)	
04/01/53	06/30/53	10.76	0.20	0.00	0.19	0.09	3.20	0.03	0.00	(0.08)	(0.01)	
07/01/53	09/30/53	10.28	0.19	0.00	0.19	0.08	2.28	0.02	0.00	(0.08)	(0.01)	
10/01/53	12/31/53	9.79	0.18	0.00	0.18	0.08	1.36	0.02	0.00	(0.08)	(0.01)	
01/01/54	03/31/54	9.32	0.17	0.00	0.17	0.07	0.44	0.01	0.00	(0.08)	(0.01)	
04/01/54	06/30/54	8.87	0.16	0.00	0.16	0.07	0.00	0.00	(0.47)	(0.55)	(0.05)	
07/01/54	09/30/54	6.98	0.15	0.00	0.14	0.06	0.00	0.00	(0.92)	(1.00)	(0.09)	
10/01/54	12/31/54	5.58	0.12	0.00	0.12	0.05	0.00	0.00	(0.92)	(0.99)	(0.09)	
01/01/55	03/31/55	4.19	0.10	0.00	0.10	0.04	0.00	0.00	(0.92)	(0.97)	(0.08)	
04/01/55	06/30/55	2.80	0.07	0.00	0.07	0.03	0.00	0.00	(0.91)	(0.95)	(0.08)	
07/01/55	09/30/55	1.60	0.05	0.00	0.05	0.02	0.00	0.00	(0.79)	(0.82)	(0.07)	
10/01/55	12/31/55	0.69	0.03	0.00	0.03	0.01	0.00	0.00	(0.60)	(0.61)	(0.05)	
01/01/56	03/31/56	0.17	0.01	0.00	0.01	0.01	0.00	0.00	(0.34)	(0.35)	(0.03)	
04/01/56	06/30/56	(0.00)	0.00	0.00	0.00	0.00	(0.00)	0.00	(0.11)	(0.11)	(0.01)	
TOTAL		8,312.77	144.86	1.64	143.21	63.48	10,735.62	81.98	(5.97)	(3.72)	0.00	

Notes:

- (3) = Table D1, (9)
- (4) = (3)<sub>t-1</sub> × [ (1.0 + WACC)<sup>0.25</sup> - 1.0 ],  
 where WACC is the weighted average cost of capital from Section VII-E, Exhibit 1 which is equal to 7.15%
- (5) = (3)<sub>t-1</sub> × [ (1.0 + Debt Capital Cost)<sup>0.25</sup> - 1.0 ] × Debt Capital Share × 0.21,  
 where Debt Capital Cost=2.56% and Debt Capital Share=15%, from Section VII-E, Exhibit 1.
- (6) = (4) - (5)
- (7) = (3)<sub>t-1</sub> × [ (1.0 + Table A1, (12))<sup>0.25</sup> - 1.0 ]
- (8) = Table C3, (10)
- (9) = (8)<sub>t-1</sub> × [ (1.0 + Table A1, (12))<sup>0.25</sup> - 1.0 ]
- (10) = Table C3, (9)
- (11) = -1.0 × [ (6) - (7) - (9) - (10) ]
- (12) = (11) × (1 + WACC)<sup>time in years</sup>, based on the time interval with beginning date 07/01/19,  
 where WACC is the weighted average cost of capital from Section VII-E, Exhibit 1 which is equal to 7.15%



# VII 000040 STIP

TABLE C1: POLICYHOLDER SUPPLIED - UNDERWRITING (UW) CASH FLOWS

TIME INTERVAL		COLLECTED PREMIUM NET	LOSS & LAE PAYOUT	UNDERWRITING EXPENSES							PRE TAX CASH FLOWS FROM UW	FEDERAL INCOME TAX EXPENSE ON UW	POST TAX CASH FLOWS FROM UW
				COMMISS. & BROKER.	GENERAL EXPENSES	OTHER ACQ. EXPENSES	PREMIUM TAXES	MISC. AND OTHER TAXES	REINS. EXPENSES	TOTAL PRETAX UW EXPENSES			
FROM (1)	TO (2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
04/01/41	06/30/41	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.41)	(0.00)	(0.41)
07/01/41	09/30/41	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.48)	(0.00)	(0.47)
10/01/41	12/31/41	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.59)	(0.00)	(0.59)
01/01/42	03/31/42	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.73)	(0.00)	(0.73)
04/01/42	06/30/42	0.00	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.85)	(0.00)	(0.85)
07/01/42	09/30/42	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/42	12/31/42	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/43	03/31/43	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/43	06/30/43	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/43	09/30/43	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/43	12/31/43	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/44	03/31/44	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/44	06/30/44	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/44	09/30/44	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/44	12/31/44	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/45	03/31/45	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/45	06/30/45	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/45	09/30/45	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/45	12/31/45	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/46	03/31/46	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/46	06/30/46	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/46	09/30/46	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/46	12/31/46	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/47	03/31/47	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/47	06/30/47	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/47	09/30/47	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/47	12/31/47	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/48	03/31/48	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/48	06/30/48	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/48	09/30/48	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/48	12/31/48	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/49	03/31/49	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/49	06/30/49	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/49	09/30/49	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/49	12/31/49	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/50	03/31/50	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/50	06/30/50	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/50	09/30/50	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/50	12/31/50	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/51	03/31/51	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/51	06/30/51	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/51	09/30/51	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/51	12/31/51	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/52	03/31/52	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/52	06/30/52	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/52	09/30/52	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/52	12/31/52	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/53	03/31/53	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/53	06/30/53	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/53	09/30/53	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/53	12/31/53	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/54	03/31/54	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/54	06/30/54	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/54	09/30/54	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
10/01/54	12/31/54	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
01/01/55	03/31/55	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.92)	(0.00)	(0.92)
04/01/55	06/30/55	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.91)	(0.00)	(0.91)
07/01/55	09/30/55	0.00	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.79)	(0.00)	(0.79)
10/01/55	12/31/55	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.60)	(0.00)	(0.60)
01/01/56	03/31/56	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.34)	(0.00)	(0.34)
04/01/56	06/30/56	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(0.11)	(0.00)	(0.11)
TOTAL		946.98	757.25	91.59	50.64	19.98	21.59	3.49	10.00	197.29	(7.56)	(1.59)	(5.97)

Notes:

- (3) = Table A1, (2) x Table C5\_1, (3)
- (4) = Table A1, (3) x Table A1, (1a) x Table C5\_1, (4)
- (5) = Table A1, (4) x Table A1, (1a) x Table C5\_1, (5)
- (6) = Table A1, (6) x Table A1, (1a) x Table C5\_1, (6)
- (7) = Table A1, (7) x Table A1, (1a) x Table C5\_1, (7)
- (8) = Table A1, (8) x Table A1, (1a) x Table C5\_1, (8)
- (9) = Table A1, (10) x Table A1, (1a) x Table C5\_1, (9)
- (10) = Table A1, (9) x Table A1, (1a) x Table C5\_1, (10)
- (11) = (5) + (6) + (7) + (8) + (9) + (10)
- (12) = (3) - (4) - (11)
- (13) = Table C2.6, (6), annual tax expense allocated to the model time periods.
- (14) = (12) - (13)

# VII 000041 STIP

**TABLE C2\_1: FEDERAL INCOME TAXES - TAXABLE PREMIUM REVENUE**

TIME INTERVAL		WRITTEN PREMIUM NET (3)	UNEARNED PREMIUM RESERVES (4)	CHANGE IN UNEARNED PREMIUM RESERVES (5)	TAX DEDUCTIBLE CHANGE IN UNEARNED PREMIUM RESERVES (6)	NON TAX DEDUCTIBLE CHANGE IN UNEARNED PREMIUM RESERVES (7)	TAXABLE PREMIUM REVENUE (8)
FROM (1)	TO (2)						
01/01/19	12/31/19	0.00	0.00	0.00	0.00	0.00	0.00
01/01/20	12/31/20	429.75	313.08	313.08	250.46	62.62	179.28
01/01/21	12/31/21	517.24	114.49	(198.59)	(158.87)	(39.72)	676.11
01/01/22	12/31/22	0.00	0.00	(114.49)	(91.60)	(22.90)	91.60
01/01/23	12/31/23	0.00	0.00	0.00	0.00	0.00	0.00
01/01/24	12/31/24	0.00	0.00	0.00	0.00	0.00	0.00
01/01/25	12/31/25	0.00	0.00	0.00	0.00	0.00	0.00
01/01/26	12/31/26	0.00	0.00	0.00	0.00	0.00	0.00
01/01/27	12/31/27	0.00	0.00	0.00	0.00	0.00	0.00
01/01/28	12/31/28	0.00	0.00	0.00	0.00	0.00	0.00
01/01/29	12/31/29	0.00	0.00	0.00	0.00	0.00	0.00
01/01/30	12/31/30	0.00	0.00	0.00	0.00	0.00	0.00
01/01/31	12/31/31	0.00	0.00	0.00	0.00	0.00	0.00
01/01/32	12/31/32	0.00	0.00	0.00	0.00	0.00	0.00
01/01/33	12/31/33	0.00	0.00	0.00	0.00	0.00	0.00
01/01/34	12/31/34	0.00	0.00	0.00	0.00	0.00	0.00
01/01/35	12/31/35	0.00	0.00	0.00	0.00	0.00	0.00
01/01/36	12/31/36	0.00	0.00	0.00	0.00	0.00	0.00
01/01/37	12/31/37	0.00	0.00	0.00	0.00	0.00	0.00
01/01/38	12/31/38	0.00	0.00	0.00	0.00	0.00	0.00
01/01/39	12/31/39	0.00	0.00	0.00	0.00	0.00	0.00
01/01/40	12/31/40	0.00	0.00	0.00	0.00	0.00	0.00
01/01/41	12/31/41	0.00	0.00	0.00	0.00	0.00	0.00
01/01/42	12/31/42	0.00	0.00	0.00	0.00	0.00	0.00
01/01/43	12/31/43	0.00	0.00	0.00	0.00	0.00	0.00
01/01/44	12/31/44	0.00	0.00	0.00	0.00	0.00	0.00
01/01/45	12/31/45	0.00	0.00	0.00	0.00	0.00	0.00
01/01/46	12/31/46	0.00	0.00	0.00	0.00	0.00	0.00
01/01/47	12/31/47	0.00	0.00	0.00	0.00	0.00	0.00
01/01/48	12/31/48	0.00	0.00	0.00	0.00	0.00	0.00
01/01/49	12/31/49	0.00	0.00	0.00	0.00	0.00	0.00
01/01/50	12/31/50	0.00	0.00	0.00	0.00	0.00	0.00
01/01/51	12/31/51	0.00	0.00	0.00	0.00	0.00	0.00
01/01/52	12/31/52	0.00	0.00	0.00	0.00	0.00	0.00
01/01/53	12/31/53	0.00	0.00	0.00	0.00	0.00	0.00
01/01/54	12/31/54	0.00	0.00	0.00	0.00	0.00	0.00
01/01/55	12/31/55	0.00	0.00	0.00	0.00	0.00	0.00
01/01/56	12/31/56	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTAL</b>		<b>946.98</b>	<b>427.58</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>946.98</b>

Notes:

- (3) = Table A1, (1b) x Percentage of Premium written in corresponding year
- (4) = Table A1, (1b) x Percentage of Unearned Premium in corresponding year
- (5) = (4), incremental
- (6) = 0.8 x (5)
- (7) = 0.2 x (5)
- (8) = (3) - (6)



# VII 000042 STIP

**TABLE C2\_2: DERIVATION OF DISCOUNTED LOSS & LAE RESERVES**

ACCIDENT YEAR									
2020									
TIME INTERVAL		IRS DISCOUNT FACTOR	UNDISCOUNTED			DISCOUNTED			LOSS & LAE PAID DURING PERIOD
			LOSS & LAE UNPAID BEG OF PERIOD	LOSS & LAE UNPAID END OF PERIOD	CHANGE IN UNDISCOUNTED LOSS & LAE RESERVES	LOSS & LAE UNPAID BEG OF PERIOD	LOSS & LAE UNPAID END OF PERIOD	CHANGE IN DISCOUNTED LOSS & LAE RESERVES	
FROM	TO		(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	(2)	(3)							
01/01/19	12/31/19	0.8742	0.00	78.45	78.45	0.00	68.58	68.58	14.84
01/01/20	12/31/20	0.8584	78.45	54.54	(23.91)	68.58	46.82	(21.76)	23.91
01/01/21	12/31/21	0.8470	54.54	35.26	(19.28)	46.82	29.86	(16.96)	19.28
01/01/22	12/31/22	0.8313	35.26	23.00	(12.26)	29.86	19.12	(10.74)	12.26
01/01/23	12/31/23	0.8255	23.00	16.65	(6.35)	19.12	13.75	(5.38)	6.35
01/01/24	12/31/24	0.8199	16.65	13.74	(2.91)	13.75	11.27	(2.48)	2.91
01/01/25	12/31/25	0.8237	13.74	12.29	(1.45)	11.27	10.12	(1.15)	1.45
01/01/26	12/31/26	0.8325	12.29	11.27	(1.02)	10.12	9.38	(0.74)	1.02
01/01/27	12/31/27	0.8389	11.27	10.55	(0.72)	9.38	8.85	(0.53)	0.72
01/01/28	12/31/28	0.8586	10.55	10.07	(0.48)	8.85	8.64	(0.21)	0.48
01/01/29	12/31/29	0.8713	10.07	9.56	(0.51)	8.64	8.33	(0.31)	0.51
01/01/30	12/31/30	0.8843	9.56	9.05	(0.51)	8.33	8.00	(0.33)	0.51
01/01/31	12/31/31	0.8975	9.05	8.66	(0.39)	8.00	7.77	(0.23)	0.39
01/01/32	12/31/32	0.9110	8.66	8.36	(0.30)	7.77	7.62	(0.15)	0.30
01/01/33	12/31/33	0.9248	8.36	8.09	(0.27)	7.62	7.49	(0.13)	0.27
01/01/34	12/31/34	0.9388	8.09	7.81	(0.29)	7.49	7.33	(0.16)	0.29
01/01/35	12/31/35	0.9531	7.81	7.55	(0.26)	7.33	7.19	(0.14)	0.26
01/01/36	12/31/36	0.9675	7.55	7.22	(0.33)	7.19	6.98	(0.21)	0.33
01/01/37	12/31/37	0.9819	7.22	6.87	(0.34)	6.98	6.75	(0.23)	0.34
01/01/38	12/31/38	0.9846	6.87	6.61	(0.26)	6.75	6.51	(0.24)	0.26
01/01/39	12/31/39	0.9846	6.61	6.40	(0.21)	6.51	6.30	(0.21)	0.21
01/01/40	12/31/40	0.9846	6.40	6.03	(0.37)	6.30	5.94	(0.36)	0.37
01/01/41	12/31/41	0.9846	6.03	5.58	(0.45)	5.94	5.49	(0.45)	0.45
01/01/42	12/31/42	0.9846	5.58	5.13	(0.45)	5.49	5.05	(0.45)	0.45
01/01/43	12/31/43	0.9846	5.13	4.67	(0.45)	5.05	4.60	(0.45)	0.45
01/01/44	12/31/44	0.9846	4.67	4.22	(0.45)	4.60	4.16	(0.45)	0.45
01/01/45	12/31/45	0.9846	4.22	3.77	(0.45)	4.16	3.71	(0.45)	0.45
01/01/46	12/31/46	0.9846	3.77	3.32	(0.45)	3.71	3.27	(0.45)	0.45
01/01/47	12/31/47	0.9846	3.32	2.86	(0.45)	3.27	2.82	(0.45)	0.45
01/01/48	12/31/48	0.9846	2.86	2.41	(0.45)	2.82	2.37	(0.45)	0.45
01/01/49	12/31/49	0.9846	2.41	1.96	(0.45)	2.37	1.93	(0.45)	0.45
01/01/50	12/31/50	0.9846	1.96	1.51	(0.45)	1.93	1.48	(0.45)	0.45
01/01/51	12/31/51	0.9846	1.51	1.05	(0.45)	1.48	1.04	(0.45)	0.45
01/01/52	12/31/52	0.9846	1.05	0.60	(0.45)	1.04	0.59	(0.45)	0.45
01/01/53	12/31/53	0.9846	0.60	0.15	(0.45)	0.59	0.15	(0.45)	0.45
01/01/54	12/31/54	0.9846	0.15	0.00	(0.15)	0.15	0.00	(0.15)	0.15
01/01/55	12/31/55	0.9846	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01/01/56	12/31/56	0.9846	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL			395.28	395.28	0.00	349.28	349.28	0.00	93.29

Notes:

(3): Discount factors specified in IRS Internal Revenue Bulletin 2019-02.

(4) = (5)<sub>t-1</sub>

(5) = (10), Total - (10), cumulative

(6) = (5) - (4)

(7) = (8)<sub>t-1</sub>

(8) = (3) x (5)

(9) = (8) - (7)

(10) = Table A1, (3) x Table A1, (1a) x Loss & LAE Flow (from Section VII-I, Exhibit 1) for each accident year

# VII 000043 STIP

**TABLE C2\_3: DERIVATION OF DISCOUNTED LOSS & LAE RESERVES**

ACCIDENT YEAR									
2021									
TIME INTERVAL		IRS DISCOUNT FACTOR	UNDISCOUNTED			DISCOUNTED			LOSS & LAE PAID DURING PERIOD
			LOSS & LAE UNPAID BEG OF PERIOD	LOSS & LAE UNPAID END OF PERIOD	CHANGE IN UNDISCOUNTED LOSS & LAE RESERVES	LOSS & LAE UNPAID BEG OF PERIOD	LOSS & LAE UNPAID END OF PERIOD	CHANGE IN DISCOUNTED LOSS & LAE RESERVES	
FROM	TO	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
01/01/19	12/31/19								
01/01/20	12/31/20		0.00	0.00	0.00	0.00	0.00	0.00	
01/01/21	12/31/21	0.8742	0.00	438.14	438.14	0.00	383.01	383.01	134.27
01/01/22	12/31/22	0.8584	438.14	285.89	(152.25)	383.01	245.42	(137.60)	152.25
01/01/23	12/31/23	0.8470	285.89	183.74	(102.16)	245.42	155.62	(89.79)	102.16
01/01/24	12/31/24	0.8313	183.74	121.19	(62.54)	155.62	100.75	(54.87)	62.54
01/01/25	12/31/25	0.8255	121.19	93.33	(27.86)	100.75	77.05	(23.71)	27.86
01/01/26	12/31/26	0.8199	93.33	80.12	(13.21)	77.05	65.69	(11.35)	13.21
01/01/27	12/31/27	0.8237	80.12	73.19	(6.93)	65.69	60.29	(5.41)	6.93
01/01/28	12/31/28	0.8325	73.19	67.22	(5.97)	60.29	55.96	(4.33)	5.97
01/01/29	12/31/29	0.8389	67.22	63.58	(3.64)	55.96	53.33	(2.63)	3.64
01/01/30	12/31/30	0.8586	63.58	60.92	(2.66)	53.33	52.30	(1.03)	2.66
01/01/31	12/31/31	0.8713	60.92	57.60	(3.32)	52.30	50.19	(2.12)	3.32
01/01/32	12/31/32	0.8843	57.60	54.54	(3.05)	50.19	48.23	(1.95)	3.05
01/01/33	12/31/33	0.8975	54.54	52.47	(2.08)	48.23	47.09	(1.14)	2.08
01/01/34	12/31/34	0.9110	52.47	50.77	(1.69)	47.09	46.25	(0.84)	1.69
01/01/35	12/31/35	0.9248	50.77	49.14	(1.63)	46.25	45.45	(0.81)	1.63
01/01/36	12/31/36	0.9388	49.14	47.33	(1.82)	45.45	44.43	(1.02)	1.82
01/01/37	12/31/37	0.9531	47.33	45.82	(1.51)	44.43	43.67	(0.76)	1.51
01/01/38	12/31/38	0.9675	45.82	43.57	(2.25)	43.67	42.16	(1.51)	2.25
01/01/39	12/31/39	0.9819	43.57	41.53	(2.05)	42.16	40.77	(1.39)	2.05
01/01/40	12/31/40	0.9846	41.53	40.13	(1.40)	40.77	39.51	(1.26)	1.40
01/01/41	12/31/41	0.9846	40.13	38.89	(1.23)	39.51	38.30	(1.21)	1.23
01/01/42	12/31/42	0.9846	38.89	36.13	(2.77)	38.30	35.57	(2.73)	2.77
01/01/43	12/31/43	0.9846	36.13	33.35	(2.78)	35.57	32.84	(2.74)	2.78
01/01/44	12/31/44	0.9846	33.35	30.57	(2.78)	32.84	30.10	(2.74)	2.78
01/01/45	12/31/45	0.9846	30.57	27.79	(2.78)	30.10	27.37	(2.74)	2.78
01/01/46	12/31/46	0.9846	27.79	25.01	(2.78)	27.37	24.63	(2.74)	2.78
01/01/47	12/31/47	0.9846	25.01	22.24	(2.78)	24.63	21.90	(2.74)	2.78
01/01/48	12/31/48	0.9846	22.24	19.46	(2.78)	21.90	19.16	(2.74)	2.78
01/01/49	12/31/49	0.9846	19.46	16.68	(2.78)	19.16	16.43	(2.74)	2.78
01/01/50	12/31/50	0.9846	16.68	13.90	(2.78)	16.43	13.69	(2.74)	2.78
01/01/51	12/31/51	0.9846	13.90	11.13	(2.78)	13.69	10.96	(2.74)	2.78
01/01/52	12/31/52	0.9846	11.13	8.35	(2.78)	10.96	8.22	(2.74)	2.78
01/01/53	12/31/53	0.9846	8.35	5.57	(2.78)	8.22	5.49	(2.74)	2.78
01/01/54	12/31/54	0.9846	5.57	2.79	(2.78)	5.49	2.75	(2.74)	2.78
01/01/55	12/31/55	0.9846	2.79	0.02	(2.78)	2.75	0.02	(2.74)	2.78
01/01/56	12/31/56	0.9846	0.02	0.00	(0.02)	0.02	0.00	(0.02)	0.02
TOTAL			2,242.08	2,242.08	0.00	1,984.56	1,984.56	0.00	572.41

Notes:

(3): Discount factors specified in IRS Internal Revenue Bulletin 2019-02.

(4) = (5)<sub>t-1</sub>

(5) = (10), Total - (10), cumulative

(6) = (5) - (4)

(7) = (8)<sub>t-1</sub>

(8) = (3) x (5)

(9) = (8) - (7)

(10) = Table A1, (3) x Table A1, (1a) x Loss & LAE Flow (from Section VII-I, Exhibit 1) for each accident year

# VII 000044 STIP

TABLE C2\_4: DERIVATION OF DISCOUNTED LOSS & LAE RESERVES

ACCIDENT YEAR									
2022									
TIME INTERVAL		IRS DISCOUNT FACTOR	UNDISCOUNTED			DISCOUNTED			LOSS & LAE PAID DURING PERIOD
			LOSS & LAE UNPAID BEG OF PERIOD	LOSS & LAE UNPAID END OF PERIOD	CHANGE IN UNDISCOUNTED LOSS & LAE RESERVES	LOSS & LAE UNPAID BEG OF PERIOD	LOSS & LAE UNPAID END OF PERIOD	CHANGE IN DISCOUNTED LOSS & LAE RESERVES	
FROM	TO		(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	(2)	(3)							
1/1/2019	12/31/2019								
1/1/2020	12/31/2020		0.00	0.00	0.00	0.00	0.00	0.00	
1/1/2021	12/31/2021		0.00	0.00	0.00	0.00	0.00	0.00	
1/1/2022	12/31/2022	0.8742	0.00	61.83	61.83	0.00	54.05	54.05	29.73
1/1/2023	12/31/2023	0.8584	61.83	40.15	(21.67)	54.05	34.47	(19.58)	21.67
1/1/2024	12/31/2024	0.8470	40.15	25.97	(14.18)	34.47	22.00	(12.47)	14.18
1/1/2025	12/31/2025	0.8313	25.97	17.85	(8.12)	22.00	14.84	(7.16)	8.12
1/1/2026	12/31/2026	0.8255	17.85	14.20	(3.65)	14.84	11.72	(3.12)	3.65
1/1/2027	12/31/2027	0.8199	14.20	12.44	(1.77)	11.72	10.20	(1.53)	1.77
1/1/2028	12/31/2028	0.8237	12.44	11.38	(1.05)	10.20	9.37	(0.82)	1.05
1/1/2029	12/31/2029	0.8325	11.38	10.55	(0.83)	9.37	8.78	(0.59)	0.83
1/1/2030	12/31/2030	0.8389	10.55	10.02	(0.53)	8.78	8.41	(0.38)	0.53
1/1/2031	12/31/2031	0.8586	10.02	9.56	(0.46)	8.41	8.21	(0.20)	0.46
1/1/2032	12/31/2032	0.8713	9.56	9.05	(0.52)	8.21	7.88	(0.33)	0.52
1/1/2033	12/31/2033	0.8843	9.05	8.61	(0.44)	7.88	7.61	(0.27)	0.44
1/1/2034	12/31/2034	0.8975	8.61	8.30	(0.31)	7.61	7.45	(0.17)	0.31
1/1/2035	12/31/2035	0.9110	8.30	8.03	(0.27)	7.45	7.32	(0.13)	0.27
1/1/2036	12/31/2036	0.9248	8.03	7.76	(0.27)	7.32	7.18	(0.14)	0.27
1/1/2037	12/31/2037	0.9388	7.76	7.49	(0.27)	7.18	7.03	(0.15)	0.27
1/1/2038	12/31/2038	0.9531	7.49	7.21	(0.28)	7.03	6.87	(0.16)	0.28
1/1/2039	12/31/2039	0.9675	7.21	6.86	(0.35)	6.87	6.64	(0.23)	0.35
1/1/2040	12/31/2040	0.9819	6.86	6.57	(0.29)	6.64	6.45	(0.19)	0.29
1/1/2041	12/31/2041	0.9846	6.57	6.35	(0.21)	6.45	6.25	(0.19)	0.21
1/1/2042	12/31/2042	0.9846	6.35	6.07	(0.28)	6.25	5.98	(0.28)	0.28
1/1/2043	12/31/2043	0.9846	6.07	5.63	(0.44)	5.98	5.54	(0.44)	0.44
1/1/2044	12/31/2044	0.9846	5.63	5.18	(0.44)	5.54	5.10	(0.44)	0.44
1/1/2045	12/31/2045	0.9846	5.18	4.74	(0.44)	5.10	4.67	(0.44)	0.44
1/1/2046	12/31/2046	0.9846	4.74	4.29	(0.44)	4.67	4.23	(0.44)	0.44
1/1/2047	12/31/2047	0.9846	4.29	3.85	(0.44)	4.23	3.79	(0.44)	0.44
1/1/2048	12/31/2048	0.9846	3.85	3.41	(0.44)	3.79	3.35	(0.44)	0.44
1/1/2049	12/31/2049	0.9846	3.41	2.96	(0.44)	3.35	2.92	(0.44)	0.44
1/1/2050	12/31/2050	0.9846	2.96	2.52	(0.44)	2.92	2.48	(0.44)	0.44
1/1/2051	12/31/2051	0.9846	2.52	2.07	(0.44)	2.48	2.04	(0.44)	0.44
1/1/2052	12/31/2052	0.9846	2.07	1.63	(0.44)	2.04	1.60	(0.44)	0.44
1/1/2053	12/31/2053	0.9846	1.63	1.18	(0.44)	1.60	1.17	(0.44)	0.44
1/1/2054	12/31/2054	0.9846	1.18	0.74	(0.44)	1.17	0.73	(0.44)	0.44
1/1/2055	12/31/2055	0.9846	0.74	0.30	(0.44)	0.73	0.29	(0.44)	0.44
1/1/2056	12/31/2056	0.9846	0.30	0.00	(0.30)	0.29	0.00	(0.29)	0.30
TOTAL			334.76	334.76	0.00	296.62	296.62	0.00	91.56

Notes:

(3): Discount factors specified in IRS Internal Revenue Bulletin 2019-02.

(4) = (5)<sub>t-1</sub>

(5) = (10), Total - (10), cumulative

(6) = (5) - (4)

(7) = (8)<sub>t-1</sub>

(8) = (3) x (5)

(9) = (8) - (7)

(10) = Table A1, (3) x Table A1, (1a) x Loss & LAE Flow (from Section VII-I, Exhibit 1) for each accident year

**TABLE C2\_5: FEDERAL INCOME TAXES - UNDERWRITING (UW) TAX DEDUCTIONS**

TIME INTERVAL		LOSS & LAE PAID DURING PERIOD (3)	CHANGE IN DISCOUNTED LOSS & LAE RESERVES (4)	TAX DEDUCTIBLE LOSS & LAE (5)	TAX DEDUCTIBLE UW EXPENSES (6)	TOTAL UW TAX DEDUCTIONS (7)
FROM (1)	TO (2)					
01/01/19	12/31/19	0.00	0.00	0.00	0.00	0.00
01/01/20	12/31/20	14.84	68.58	83.42	53.08	136.50
01/01/21	12/31/21	158.18	361.25	519.43	128.76	648.19
01/01/22	12/31/22	201.26	(100.50)	100.75	14.38	115.14
01/01/23	12/31/23	136.08	(120.11)	15.97	1.07	17.04
01/01/24	12/31/24	83.07	(72.72)	10.36	0.00	10.36
01/01/25	12/31/25	38.89	(33.34)	5.55	0.00	5.55
01/01/26	12/31/26	18.32	(15.62)	2.70	0.00	2.70
01/01/27	12/31/27	9.72	(7.68)	2.04	0.00	2.04
01/01/28	12/31/28	7.74	(5.68)	2.07	0.00	2.07
01/01/29	12/31/29	4.95	(3.42)	1.53	0.00	1.53
01/01/30	12/31/30	3.69	(1.72)	1.98	0.00	1.98
01/01/31	12/31/31	4.29	(2.65)	1.65	0.00	1.65
01/01/32	12/31/32	3.96	(2.51)	1.45	0.00	1.45
01/01/33	12/31/33	2.81	(1.56)	1.25	0.00	1.25
01/01/34	12/31/34	2.27	(1.13)	1.14	0.00	1.14
01/01/35	12/31/35	2.18	(1.09)	1.09	0.00	1.09
01/01/36	12/31/36	2.35	(1.30)	1.05	0.00	1.05
01/01/37	12/31/37	2.11	(1.12)	0.99	0.00	0.99
01/01/38	12/31/38	2.87	(1.90)	0.97	0.00	0.97
01/01/39	12/31/39	2.66	(1.86)	0.80	0.00	0.80
01/01/40	12/31/40	1.90	(1.66)	0.24	0.00	0.24
01/01/41	12/31/41	1.82	(1.77)	0.05	0.00	0.05
01/01/42	12/31/42	3.50	(3.45)	0.05	0.00	0.05
01/01/43	12/31/43	3.67	(3.62)	0.06	0.00	0.06
01/01/44	12/31/44	3.67	(3.62)	0.06	0.00	0.06
01/01/45	12/31/45	3.67	(3.62)	0.06	0.00	0.06
01/01/46	12/31/46	3.67	(3.62)	0.06	0.00	0.06
01/01/47	12/31/47	3.67	(3.62)	0.06	0.00	0.06
01/01/48	12/31/48	3.67	(3.62)	0.06	0.00	0.06
01/01/49	12/31/49	3.67	(3.62)	0.06	0.00	0.06
01/01/50	12/31/50	3.67	(3.62)	0.06	0.00	0.06
01/01/51	12/31/51	3.67	(3.62)	0.06	0.00	0.06
01/01/52	12/31/52	3.67	(3.62)	0.06	0.00	0.06
01/01/53	12/31/53	3.67	(3.62)	0.06	0.00	0.06
01/01/54	12/31/54	3.67	(3.62)	0.06	0.00	0.06
01/01/55	12/31/55	3.37	(3.32)	0.05	0.00	0.05
01/01/56	12/31/56	0.31	(0.31)	0.00	0.00	0.00
TOTAL		757.25	(0.00)	757.25	197.29	954.54

Notes:

- (3) = Table C2\_2, (10) + Table C2\_3, (10) + Table C2\_4, (10)
- (4) = Table C2\_2, (9) + Table C2\_3, (9) + Table C2\_4, (9)
- (5) = (3) + (4)
- (6) = Table C1, (11) by tax year
- (7) = (5) + (6)

**TABLE C2\_6: FEDERAL INCOME TAX EXPENSE ON UNDERWRITING**

TIME INTERVAL		TAXABLE PREMIUM REVENUE	TOTAL UW TAX DEDUCTIONS	TAX BASIS NET UW GAIN	FEDERAL INCOME TAX EXPENSE ON UW
FROM (1)	TO (2)	(3)	(4)	(5)	(6)
01/01/19	12/31/19	0.00	0.00	0.00	0.00
01/01/20	12/31/20	179.28	136.50	42.79	8.98
01/01/21	12/31/21	676.11	648.19	27.92	5.86
01/01/22	12/31/22	91.60	115.14	(23.54)	(4.94)
01/01/23	12/31/23	0.00	17.04	(17.04)	(3.58)
01/01/24	12/31/24	0.00	10.36	(10.36)	(2.18)
01/01/25	12/31/25	0.00	5.55	(5.55)	(1.16)
01/01/26	12/31/26	0.00	2.70	(2.70)	(0.57)
01/01/27	12/31/27	0.00	2.04	(2.04)	(0.43)
01/01/28	12/31/28	0.00	2.07	(2.07)	(0.43)
01/01/29	12/31/29	0.00	1.53	(1.53)	(0.32)
01/01/30	12/31/30	0.00	1.98	(1.98)	(0.41)
01/01/31	12/31/31	0.00	1.65	(1.65)	(0.35)
01/01/32	12/31/32	0.00	1.45	(1.45)	(0.30)
01/01/33	12/31/33	0.00	1.25	(1.25)	(0.26)
01/01/34	12/31/34	0.00	1.14	(1.14)	(0.24)
01/01/35	12/31/35	0.00	1.09	(1.09)	(0.23)
01/01/36	12/31/36	0.00	1.05	(1.05)	(0.22)
01/01/37	12/31/37	0.00	0.99	(0.99)	(0.21)
01/01/38	12/31/38	0.00	0.97	(0.97)	(0.20)
01/01/39	12/31/39	0.00	0.80	(0.80)	(0.17)
01/01/40	12/31/40	0.00	0.24	(0.24)	(0.05)
01/01/41	12/31/41	0.00	0.05	(0.05)	(0.01)
01/01/42	12/31/42	0.00	0.05	(0.05)	(0.01)
01/01/43	12/31/43	0.00	0.06	(0.06)	(0.01)
01/01/44	12/31/44	0.00	0.06	(0.06)	(0.01)
01/01/45	12/31/45	0.00	0.06	(0.06)	(0.01)
01/01/46	12/31/46	0.00	0.06	(0.06)	(0.01)
01/01/47	12/31/47	0.00	0.06	(0.06)	(0.01)
01/01/48	12/31/48	0.00	0.06	(0.06)	(0.01)
01/01/49	12/31/49	0.00	0.06	(0.06)	(0.01)
01/01/50	12/31/50	0.00	0.06	(0.06)	(0.01)
01/01/51	12/31/51	0.00	0.06	(0.06)	(0.01)
01/01/52	12/31/52	0.00	0.06	(0.06)	(0.01)
01/01/53	12/31/53	0.00	0.06	(0.06)	(0.01)
01/01/54	12/31/54	0.00	0.06	(0.06)	(0.01)
01/01/55	12/31/55	0.00	0.05	(0.05)	(0.01)
01/01/56	12/31/56	0.00	0.00	(0.00)	(0.00)
TOTAL		946.98	954.54	(7.56)	(1.59)

Notes:

(3) = Table C2\_1, (8)

(4) = Table C2\_5, (7)

(5) = (3) - (4)

(6) = 0.21 x (5), where 0.21 is the Federal income tax rate.

# VII 000047 STIP

**TABLE C2\_7: ADMITTED PREPAID TAX (DEFERRED TAX ASSET - DTA)**

TIME INTERVAL		AY 2020		AY 2021		AY 2022		DISCOUNT UNWOUND DURING PERIOD (9)	DTA ASSOCIATED WITH LOSS & LAE RESERVE (10)	UNEARNED PREMIUM RESERVE (11)	DTA ASSOCIATED WITH UNEARNED PREMIUM RESERVE (12)	ADMITTED PREPAID TAX (DTA) (13)
		CHANGE IN DISCOUNTED LOSS & LAE (3)	LOSS & LAE PAID DURING PERIOD (4)	CHANGE IN DISCOUNTED LOSS & LAE (5)	LOSS & LAE PAID DURING PERIOD (6)	CHANGE IN DISCOUNTED LOSS & LAE (7)	LOSS & LAE PAID DURING PERIOD (8)					
FROM (1)	TO (2)											
01/01/19	12/31/19							0.00	0.00			0.00
01/01/20	12/31/20							0.00	0.45	313.08	13.15	13.60
01/01/21	12/31/21	(21.76)	23.91					2.15	3.56	114.49	4.81	8.37
01/01/22	12/31/22	(16.96)	19.28	(137.60)	152.25			16.98	3.35	0.00	0.00	3.35
01/01/23	12/31/23	(10.74)	12.26	(89.79)	102.16	(19.58)	21.67	15.97	2.18	0.00	0.00	2.18
01/01/24	12/31/24	(5.38)	6.35	(54.87)	62.54	(12.47)	14.18	10.36	1.16	0.00	0.00	1.16
01/01/25	12/31/25	(2.48)	2.91	(23.71)	27.86	(7.16)	8.12	5.55	0.57	0.00	0.00	0.57
01/01/26	12/31/26	(1.15)	1.45	(11.35)	13.21	(3.12)	3.65	2.70	0.43	0.00	0.00	0.43
01/01/27	12/31/27	(0.74)	1.02	(5.41)	6.93	(1.53)	1.77	2.04	0.43	0.00	0.00	0.43
01/01/28	12/31/28	(0.53)	0.72	(4.33)	5.97	(0.82)	1.05	2.07	0.32	0.00	0.00	0.32
01/01/29	12/31/29	(0.21)	0.48	(2.63)	3.64	(0.59)	0.83	1.53	0.41	0.00	0.00	0.41
01/01/30	12/31/30	(0.31)	0.51	(1.03)	2.66	(0.38)	0.53	1.98	0.35	0.00	0.00	0.35
01/01/31	12/31/31	(0.33)	0.51	(2.12)	3.32	(0.20)	0.46	1.65	0.30	0.00	0.00	0.30
01/01/32	12/31/32	(0.23)	0.39	(1.95)	3.05	(0.33)	0.52	1.45	0.26	0.00	0.00	0.26
01/01/33	12/31/33	(0.15)	0.30	(1.14)	2.08	(0.27)	0.44	1.25	0.24	0.00	0.00	0.24
01/01/34	12/31/34	(0.13)	0.27	(0.84)	1.69	(0.17)	0.31	1.14	0.23	0.00	0.00	0.23
01/01/35	12/31/35	(0.16)	0.29	(0.81)	1.63	(0.13)	0.27	1.09	0.22	0.00	0.00	0.22
01/01/36	12/31/36	(0.14)	0.26	(1.02)	1.82	(0.14)	0.27	1.05	0.21	0.00	0.00	0.21
01/01/37	12/31/37	(0.21)	0.33	(0.76)	1.51	(0.15)	0.27	0.99	0.20	0.00	0.00	0.20
01/01/38	12/31/38	(0.23)	0.34	(1.51)	2.25	(0.16)	0.28	0.97	0.17	0.00	0.00	0.17
01/01/39	12/31/39	(0.24)	0.26	(1.39)	2.05	(0.23)	0.35	0.80	0.05	0.00	0.00	0.05
01/01/40	12/31/40	(0.21)	0.21	(1.26)	1.40	(0.19)	0.29	0.24	0.01	0.00	0.00	0.01
01/01/41	12/31/41	(0.36)	0.37	(1.21)	1.23	(0.19)	0.21	0.05	0.01	0.00	0.00	0.01
01/01/42	12/31/42	(0.45)	0.45	(2.73)	2.77	(0.28)	0.28	0.05	0.01	0.00	0.00	0.01
01/01/43	12/31/43	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/44	12/31/44	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/45	12/31/45	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/46	12/31/46	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/47	12/31/47	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/48	12/31/48	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/49	12/31/49	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/50	12/31/50	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/51	12/31/51	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/52	12/31/52	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/53	12/31/53	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/54	12/31/54	(0.45)	0.45	(2.74)	2.78	(0.44)	0.44	0.06	0.01	0.00	0.00	0.01
01/01/55	12/31/55	(0.15)	0.15	(2.74)	2.78	(0.44)	0.44	0.05	0.00	0.00	0.00	0.00
01/01/56	12/31/56	0.00	0.00	(0.02)	0.02	(0.29)	0.30	0.00	0.00	0.00	0.00	0.00

- Notes:
- (3) = Table C2\_2, (9), the initial value is not relevant in calculating the discount unwound during period.
  - (4) = Table C2\_2, (10)
  - (5) = Table C2\_3, (9), the initial value is not relevant in calculating the discount unwound during period.
  - (6) = Table C2\_3, (10)
  - (7) = Table C2\_4, (9), the initial value is not relevant in calculating the discount unwound during period.
  - (8) = Table C2\_4, (10)
  - (9) = (3) + (4) + (5) + (6) + (7) + (8)
  - (10) =  $0.21 \times (9)_{t-1}$ , where 0.21 is the Federal income tax rate.
  - (11) = Table C2\_1, (4)
  - (12) =  $0.2 \times 0.21 \times (11)$ , 0.21 is the Federal income tax rate and 20% of unearned premiums is taxable.
  - (13) = (10) + (12)

# VII 000048 STIP

TABLE C3: POLICYHOLDER SUPPLIED INVESTABLE FUNDS

TIME INTERVAL		UNEARNED PREMIUM RESERVES (3)	LOSS & LAE RESERVES (4)	ADMITTED PREMIUM RECEIVABLES (5)	ADMITTED PREPAID TAX (DTA) (6)	INVESTABLE RESERVES (7)	CUMULATIVE POST TAX CASH FLOW FROM UW (8)	POST TAX CASH FROM UW AVAILABLE TO INVESTORS (9)	POLICYHOLDER SUPPLIED INVESTABLE FUNDS (10)	RESERVES FUNDED BY INVESTORS (11)
FROM (1)	TO (2)									
07/01/19	09/30/19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/01/19	12/31/19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01/01/20	03/31/20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04/01/20	06/30/20	0.00	0.00	(5.42)	0.00	5.42	1.08	0.00	1.08	4.34
07/01/20	09/30/20	200.20	19.52	171.89	10.20	37.63	26.46	0.00	26.46	11.18
10/01/20	12/31/20	314.85	70.20	253.42	13.60	118.03	92.59	0.00	92.59	25.44
01/01/21	03/31/21	443.74	161.34	351.53	12.29	241.26	199.91	0.00	199.91	41.35
04/01/21	06/30/21	476.51	287.47	391.43	10.99	361.56	313.66	0.00	313.66	47.91
07/01/21	09/30/21	271.71	405.81	226.57	9.68	441.27	404.75	0.00	404.75	36.52
10/01/21	12/31/21	116.64	482.90	127.57	8.37	463.60	441.66	0.00	441.66	21.95
01/01/22	03/31/22	29.05	504.68	74.84	7.12	451.77	439.92	0.00	439.92	11.86
04/01/22	06/30/22	0.00	478.50	30.73	5.86	441.91	416.62	0.00	416.62	25.28
07/01/22	09/30/22	0.00	430.36	2.46	4.61	423.30	388.73	0.00	388.73	34.57
10/01/22	12/31/22	0.00	385.56	1.07	3.35	381.13	358.07	0.00	358.07	23.06
01/01/23	03/31/23	0.00	345.69	0.39	3.06	342.24	325.50	0.00	325.50	16.74
04/01/23	06/30/23	0.00	310.13	0.09	2.76	307.28	293.64	0.00	293.64	13.64
07/01/23	09/30/23	0.00	278.20	0.00	2.47	275.73	263.42	0.00	263.42	12.31
10/01/23	12/31/23	0.00	248.91	0.00	2.18	246.74	235.03	0.00	235.03	11.71
01/01/24	03/31/24	0.00	223.46	0.00	1.92	221.54	210.12	0.00	210.12	11.42
04/01/24	06/30/24	0.00	201.35	0.00	1.67	199.68	188.56	0.00	188.56	11.13
07/01/24	09/30/24	0.00	182.29	0.00	1.42	180.87	170.04	0.00	170.04	10.84
10/01/24	12/31/24	0.00	165.58	0.00	1.16	164.42	153.87	0.00	153.87	10.54
01/01/25	03/31/25	0.00	152.19	0.00	1.02	151.18	140.77	0.00	140.77	10.40
04/01/25	06/30/25	0.00	141.69	0.00	0.87	140.82	130.56	0.00	130.56	10.26
07/01/25	09/30/25	0.00	133.19	0.00	0.72	132.47	122.35	0.00	122.35	10.12
10/01/25	12/31/25	0.00	125.67	0.00	0.57	125.10	115.13	0.00	115.13	9.98
01/01/26	03/31/26	0.00	119.55	0.00	0.53	119.02	109.15	0.00	109.15	9.87
04/01/26	06/30/26	0.00	114.64	0.00	0.50	114.14	104.38	0.00	104.38	9.76
07/01/26	09/30/26	0.00	110.57	0.00	0.46	110.11	100.45	0.00	100.45	9.66
10/01/26	12/31/26	0.00	106.93	0.00	0.43	106.50	96.95	0.00	96.95	9.55
01/01/27	03/31/27	0.00	103.89	0.00	0.43	103.46	94.02	0.00	94.02	9.44
04/01/27	06/30/27	0.00	101.36	0.00	0.43	100.93	91.60	0.00	91.60	9.33
07/01/27	09/30/27	0.00	99.13	0.00	0.43	98.69	89.47	0.00	89.47	9.22
10/01/27	12/31/27	0.00	96.94	0.00	0.43	96.51	87.39	0.00	87.39	9.11
01/01/28	03/31/28	0.00	94.85	0.00	0.41	94.45	85.41	0.00	85.41	9.03
04/01/28	06/30/28	0.00	92.85	0.00	0.38	92.47	83.52	0.00	83.52	8.95
07/01/28	09/30/28	0.00	90.98	0.00	0.35	90.63	81.76	0.00	81.76	8.87
10/01/28	12/31/28	0.00	89.27	0.00	0.32	88.95	80.15	0.00	80.15	8.79
01/01/29	03/31/29	0.00	87.78	0.00	0.34	87.44	78.75	0.00	78.75	8.69
04/01/29	06/30/29	0.00	86.49	0.00	0.37	86.13	77.54	0.00	77.54	8.59
07/01/29	09/30/29	0.00	85.34	0.00	0.39	84.95	76.46	0.00	76.46	8.48
10/01/29	12/31/29	0.00	84.24	0.00	0.41	83.83	75.45	0.00	75.45	8.38
01/01/30	03/31/30	0.00	83.25	0.00	0.40	82.85	74.56	0.00	74.56	8.29
04/01/30	06/30/30	0.00	82.34	0.00	0.38	81.96	73.75	0.00	73.75	8.21
07/01/30	09/30/30	0.00	81.43	0.00	0.36	81.07	72.95	0.00	72.95	8.12
10/01/30	12/31/30	0.00	80.47	0.00	0.35	80.12	72.09	0.00	72.09	8.03
01/01/31	03/31/31	0.00	79.45	0.00	0.34	79.12	71.16	0.00	71.16	7.96
04/01/31	06/30/31	0.00	78.39	0.00	0.33	78.06	70.18	0.00	70.18	7.88
07/01/31	09/30/31	0.00	77.30	0.00	0.31	76.98	69.18	0.00	69.18	7.80
10/01/31	12/31/31	0.00	76.22	0.00	0.30	75.92	68.19	0.00	68.19	7.73
01/01/32	03/31/32	0.00	75.18	0.00	0.29	74.89	67.22	0.00	67.22	7.66
04/01/32	06/30/32	0.00	74.17	0.00	0.28	73.88	66.29	0.00	66.29	7.60
07/01/32	09/30/32	0.00	73.20	0.00	0.27	72.93	65.40	0.00	65.40	7.53
10/01/32	12/31/32	0.00	72.30	0.00	0.26	72.04	64.57	0.00	64.57	7.47
01/01/33	03/31/33	0.00	71.49	0.00	0.26	71.24	63.83	0.00	63.83	7.41
04/01/33	06/30/33	0.00	70.77	0.00	0.25	70.52	63.17	0.00	63.17	7.35
07/01/33	09/30/33	0.00	70.10	0.00	0.24	69.86	62.57	0.00	62.57	7.29
10/01/33	12/31/33	0.00	69.46	0.00	0.24	69.22	61.99	0.00	61.99	7.23
01/01/34	03/31/34	0.00	68.85	0.00	0.24	68.62	61.45	0.00	61.45	7.17
04/01/34	06/30/34	0.00	68.28	0.00	0.23	68.05	60.93	0.00	60.93	7.11
07/01/34	09/30/34	0.00	67.72	0.00	0.23	67.49	60.44	0.00	60.44	7.06
10/01/34	12/31/34	0.00	67.17	0.00	0.23	66.94	59.94	0.00	59.94	7.00
01/01/35	03/31/35	0.00	66.62	0.00	0.23	66.40	59.45	0.00	59.45	6.94
04/01/35	06/30/35	0.00	66.09	0.00	0.22	65.86	58.97	0.00	58.97	6.89
07/01/35	09/30/35	0.00	65.54	0.00	0.22	65.32	58.48	0.00	58.48	6.83
10/01/35	12/31/35	0.00	64.98	0.00	0.22	64.75	57.98	0.00	57.98	6.78
01/01/36	03/31/36	0.00	64.40	0.00	0.22	64.18	57.45	0.00	57.45	6.73
04/01/36	06/30/36	0.00	63.81	0.00	0.21	63.59	56.92	0.00	56.92	6.67
07/01/36	09/30/36	0.00	63.22	0.00	0.21	63.01	56.39	0.00	56.39	6.62
10/01/36	12/31/36	0.00	62.65	0.00	0.21	62.44	55.87	0.00	55.87	6.57
01/01/37	03/31/37	0.00	62.11	0.00	0.21	61.91	55.39	0.00	55.39	6.52
04/01/37	06/30/37	0.00	61.61	0.00	0.21	61.40	54.93	0.00	54.93	6.47
07/01/37	09/30/37	0.00	61.08	0.00	0.20	60.87	54.45	0.00	54.45	6.42
10/01/37	12/31/37	0.00	60.49	0.00	0.20	60.29	53.92	0.00	53.92	6.37
01/01/38	03/31/38	0.00	59.84	0.00	0.19	59.64	53.32	0.00	53.32	6.32
04/01/38	06/30/38	0.00	59.13	0.00	0.19	58.94	52.66	0.00	52.66	6.28
07/01/38	09/30/38	0.00	58.39	0.00	0.18	58.21	51.97	0.00	51.97	6.24
10/01/38	12/31/38	0.00	57.67	0.00	0.17	57.50	51.30	0.00	51.30	6.20
01/01/39	03/31/39	0.00	56.97	0.00	0.14	56.83	50.64	0.00	50.64	6.19
04/01/39	06/30/39	0.00	56.28	0.00	0.11	56.17	50.00	0.00	50.00	6.17
07/01/39	09/30/39	0.00	55.64	0.00	0.08	55.55	49.40	0.00	49.40	6.16
10/01/39	12/31/39	0.00	55.03	0.00	0.05	54.98	48.83	0.00	48.83	6.15

# VII 000049 STIP

TABLE C3: POLICYHOLDER SUPPLIED INVESTABLE FUNDS

TIME INTERVAL		UNEARNED PREMIUM RESERVES (3)	LOSS & LAE RESERVES (4)	ADMITTED PREMIUM RECEIVABLES (5)	ADMITTED PREPAID TAX (DTA) (6)	INVESTABLE RESERVES (7)	CUMULATIVE POST TAX CASH FLOW FROM UW (8)	POST TAX CASH FROM UW AVAILABLE TO INVESTORS (9)	POLICYHOLDER SUPPLIED INVESTABLE FUNDS (10)	RESERVES FUNDED BY INVESTORS (11)
FROM (1)	TO (2)									
01/01/40	03/31/40	0.00	54.49	0.00	0.04	54.45	48.30	0.00	48.30	6.14
04/01/40	06/30/40	0.00	54.00	0.00	0.03	53.97	47.83	0.00	47.83	6.14
07/01/40	09/30/40	0.00	53.55	0.00	0.02	53.53	47.39	0.00	47.39	6.14
10/01/40	12/31/40	0.00	53.10	0.00	0.01	53.09	46.96	0.00	46.96	6.14
01/01/41	03/31/41	0.00	52.68	0.00	0.01	52.67	46.53	0.00	46.53	6.13
04/01/41	06/30/41	0.00	52.26	0.00	0.01	52.25	46.12	0.00	46.12	6.13
07/01/41	09/30/41	0.00	51.79	0.00	0.01	51.78	45.65	0.00	45.65	6.13
10/01/41	12/31/41	0.00	51.20	0.00	0.01	51.19	45.06	0.00	45.06	6.13
01/01/42	03/31/42	0.00	50.47	0.00	0.01	50.46	44.34	0.00	44.34	6.12
04/01/42	06/30/42	0.00	49.62	0.00	0.01	49.61	43.49	0.00	43.49	6.12
07/01/42	09/30/42	0.00	48.70	0.00	0.01	48.69	42.57	0.00	42.57	6.12
10/01/42	12/31/42	0.00	47.78	0.00	0.01	47.77	41.65	0.00	41.65	6.11
01/01/43	03/31/43	0.00	46.86	0.00	0.01	46.85	40.74	0.00	40.74	6.11
04/01/43	06/30/43	0.00	45.95	0.00	0.01	45.93	39.82	0.00	39.82	6.11
07/01/43	09/30/43	0.00	45.03	0.00	0.01	45.01	38.91	0.00	38.91	6.11
10/01/43	12/31/43	0.00	44.10	0.00	0.01	44.09	37.99	0.00	37.99	6.10
01/01/44	03/31/44	0.00	43.18	0.00	0.01	43.17	37.07	0.00	37.07	6.10
04/01/44	06/30/44	0.00	42.27	0.00	0.01	42.26	36.16	0.00	36.16	6.10
07/01/44	09/30/44	0.00	41.35	0.00	0.01	41.34	35.25	0.00	35.25	6.09
10/01/44	12/31/44	0.00	40.43	0.00	0.01	40.42	34.33	0.00	34.33	6.09
01/01/45	03/31/45	0.00	39.51	0.00	0.01	39.50	33.41	0.00	33.41	6.09
04/01/45	06/30/45	0.00	38.60	0.00	0.01	38.58	32.50	0.00	32.50	6.08
07/01/45	09/30/45	0.00	37.68	0.00	0.01	37.67	31.58	0.00	31.58	6.08
10/01/45	12/31/45	0.00	36.75	0.00	0.01	36.74	30.66	0.00	30.66	6.08
01/01/46	03/31/46	0.00	35.83	0.00	0.01	35.82	29.75	0.00	29.75	6.08
04/01/46	06/30/46	0.00	34.92	0.00	0.01	34.91	28.84	0.00	28.84	6.07
07/01/46	09/30/46	0.00	34.00	0.00	0.01	33.99	27.92	0.00	27.92	6.07
10/01/46	12/31/46	0.00	33.08	0.00	0.01	33.07	27.00	0.00	27.00	6.07
01/01/47	03/31/47	0.00	32.16	0.00	0.01	32.15	26.08	0.00	26.08	6.06
04/01/47	06/30/47	0.00	31.25	0.00	0.01	31.23	25.17	0.00	25.17	6.06
07/01/47	09/30/47	0.00	30.33	0.00	0.01	30.32	24.26	0.00	24.26	6.06
10/01/47	12/31/47	0.00	29.40	0.00	0.01	29.39	23.34	0.00	23.34	6.05
01/01/48	03/31/48	0.00	28.49	0.00	0.01	28.47	22.42	0.00	22.42	6.05
04/01/48	06/30/48	0.00	27.57	0.00	0.01	27.56	21.51	0.00	21.51	6.05
07/01/48	09/30/48	0.00	26.65	0.00	0.01	26.64	20.60	0.00	20.60	6.05
10/01/48	12/31/48	0.00	25.73	0.00	0.01	25.72	19.67	0.00	19.67	6.04
01/01/49	03/31/49	0.00	24.81	0.00	0.01	24.80	18.76	0.00	18.76	6.04
04/01/49	06/30/49	0.00	23.90	0.00	0.01	23.89	17.85	0.00	17.85	6.04
07/01/49	09/30/49	0.00	22.98	0.00	0.01	22.97	16.93	0.00	16.93	6.03
10/01/49	12/31/49	0.00	22.05	0.00	0.01	22.04	16.01	0.00	16.01	6.03
01/01/50	03/31/50	0.00	21.14	0.00	0.01	21.12	15.10	0.00	15.10	6.03
04/01/50	06/30/50	0.00	20.22	0.00	0.01	20.21	14.19	0.00	14.19	6.03
07/01/50	09/30/50	0.00	19.30	0.00	0.01	19.29	13.27	0.00	13.27	6.02
10/01/50	12/31/50	0.00	18.38	0.00	0.01	18.37	12.35	0.00	12.35	6.02
01/01/51	03/31/51	0.00	17.46	0.00	0.01	17.45	11.43	0.00	11.43	6.02
04/01/51	06/30/51	0.00	16.55	0.00	0.01	16.54	10.52	0.00	10.52	6.01
07/01/51	09/30/51	0.00	15.63	0.00	0.01	15.62	9.61	0.00	9.61	6.01
10/01/51	12/31/51	0.00	14.71	0.00	0.01	14.69	8.69	0.00	8.69	6.01
01/01/52	03/31/52	0.00	13.79	0.00	0.01	13.77	7.77	0.00	7.77	6.00
04/01/52	06/30/52	0.00	12.87	0.00	0.01	12.86	6.86	0.00	6.86	6.00
07/01/52	09/30/52	0.00	11.95	0.00	0.01	11.94	5.94	0.00	5.94	6.00
10/01/52	12/31/52	0.00	11.03	0.00	0.01	11.02	5.02	0.00	5.02	6.00
01/01/53	03/31/53	0.00	10.11	0.00	0.01	10.10	4.11	0.00	4.11	5.99
04/01/53	06/30/53	0.00	9.20	0.00	0.01	9.19	3.20	0.00	3.20	5.99
07/01/53	09/30/53	0.00	8.28	0.00	0.01	8.27	2.28	0.00	2.28	5.99
10/01/53	12/31/53	0.00	7.36	0.00	0.01	7.34	1.36	0.00	1.36	5.98
01/01/54	03/31/54	0.00	6.44	0.00	0.01	6.43	0.44	0.00	0.44	5.98
04/01/54	06/30/54	0.00	5.52	0.00	0.01	5.51	(0.47)	(0.47)	0.00	5.51
07/01/54	09/30/54	0.00	4.61	0.00	0.01	4.59	(1.38)	(0.92)	0.00	4.59
10/01/54	12/31/54	0.00	3.68	0.00	0.01	3.67	(2.30)	(0.92)	0.00	3.67
01/01/55	03/31/55	0.00	2.76	0.00	0.01	2.75	(3.22)	(0.92)	0.00	2.75
04/01/55	06/30/55	0.00	1.85	0.00	0.01	1.84	(4.13)	(0.91)	0.00	1.84
07/01/55	09/30/55	0.00	1.05	0.00	0.00	1.05	(4.92)	(0.79)	0.00	1.05
10/01/55	12/31/55	0.00	0.45	0.00	0.00	0.45	(5.52)	(0.60)	0.00	0.45
01/01/56	03/31/56	0.00	0.11	0.00	0.00	0.11	(5.86)	(0.34)	0.00	0.11
04/01/56	06/30/56	0.00	(0.00)	0.00	0.00	(0.00)	(5.97)	(0.11)	(0.00)	0.00
TOTAL		1,852.69	11,847.53	1,626.55	122.76	11,950.91	10,701.85	(5.97)	10,735.62	1,215.29

Notes:

- (3) = Table A1, (1b) x [ Table C5\_2, (6) - Table C5\_2, (7) ]
- (4) = Table A1, (1a) x Table A1, (3) x [ Table C5\_2, (8) - Table C5\_1, (13) ]
- (5) = Table C4, (7)
- (6) = Table C2\_7, (13), DTA allocated to the model time periods.
- (7) = (3) + (4) - (5) - (6)
- (8) = Table C1, (14), cumulative
- (9) = [ (8) - (10) ] - (9)<sub>t-1</sub>, cumulative
- (10) = min [ max ( 0, (8) ), (7) ]
- (11) = (7) - (10)



**TABLE C4: ADMITTED PREMIUM RECEIVABLES**

TIME INTERVAL		CUMULATIVE		COLLECTED PREMIUM MINUS PRIOR PERIOD EARNED PREMIUM (5)	NONADMITTED PREMIUM RECEIVABLES (6)	ADMITTED PREMIUM RECEIVABLES (7)
		EARNED PREMIUM NET (3)	COLLECTED PREMIUM NET (4)			
FROM (1)	TO (2)					
07/01/19	09/30/19	0.00	0.00	0.00	0.00	0.00
10/01/19	12/31/19	0.00	0.00	0.00	0.00	0.00
01/01/20	03/31/20	0.00	0.00	0.00	0.00	0.00
04/01/20	06/30/20	0.00	5.42	5.42	0.00	(5.42)
07/01/20	09/30/20	31.94	60.26	60.26	0.00	171.89
10/01/20	12/31/20	114.90	176.32	144.38	0.00	253.42
01/01/21	03/31/21	264.05	356.26	241.36	0.00	351.53
04/01/21	06/30/21	470.48	555.56	291.51	0.00	391.43
07/01/21	09/30/21	675.28	720.42	249.94	0.00	226.57
10/01/21	12/31/21	830.35	819.42	144.14	0.00	127.57
01/01/22	03/31/22	917.94	872.15	41.80	0.00	74.84
04/01/22	06/30/22	946.98	900.55	(17.38)	15.70	30.73
07/01/22	09/30/22	946.98	921.59	(25.39)	22.94	2.46
10/01/22	12/31/22	946.98	935.89	(11.10)	10.02	1.07
01/01/23	03/31/23	946.98	942.98	(4.01)	3.62	0.39
04/01/23	06/30/23	946.98	946.08	(0.90)	0.81	0.09
07/01/23	09/30/23	946.98	946.98	0.00	0.00	0.00
10/01/23	12/31/23	946.98	946.98	0.00	0.00	0.00
01/01/24	03/31/24	946.98	946.98	0.00	0.00	0.00
04/01/24	06/30/24	946.98	946.98	0.00	0.00	0.00
07/01/24	09/30/24	946.98	946.98	0.00	0.00	0.00
10/01/24	12/31/24	946.98	946.98	0.00	0.00	0.00
01/01/25	03/31/25	946.98	946.98	0.00	0.00	0.00
04/01/25	06/30/25	946.98	946.98	0.00	0.00	0.00
07/01/25	09/30/25	946.98	946.98	0.00	0.00	0.00
10/01/25	12/31/25	946.98	946.98	0.00	0.00	0.00
01/01/26	03/31/26	946.98	946.98	0.00	0.00	0.00
04/01/26	06/30/26	946.98	946.98	0.00	0.00	0.00
07/01/26	09/30/26	946.98	946.98	0.00	0.00	0.00
10/01/26	12/31/26	946.98	946.98	0.00	0.00	0.00
01/01/27	03/31/27	946.98	946.98	0.00	0.00	0.00
04/01/27	06/30/27	946.98	946.98	0.00	0.00	0.00
07/01/27	09/30/27	946.98	946.98	0.00	0.00	0.00
10/01/27	12/31/27	946.98	946.98	0.00	0.00	0.00
01/01/28	03/31/28	946.98	946.98	0.00	0.00	0.00
04/01/28	06/30/28	946.98	946.98	0.00	0.00	0.00
07/01/28	09/30/28	946.98	946.98	0.00	0.00	0.00
10/01/28	12/31/28	946.98	946.98	0.00	0.00	0.00
01/01/29	03/31/29	946.98	946.98	0.00	0.00	0.00
04/01/29	06/30/29	946.98	946.98	0.00	0.00	0.00
07/01/29	09/30/29	946.98	946.98	0.00	0.00	0.00
10/01/29	12/31/29	946.98	946.98	0.00	0.00	0.00
01/01/30	03/31/30	946.98	946.98	0.00	0.00	0.00
04/01/30	06/30/30	946.98	946.98	0.00	0.00	0.00
07/01/30	09/30/30	946.98	946.98	0.00	0.00	0.00
10/01/30	12/31/30	946.98	946.98	0.00	0.00	0.00
01/01/31	03/31/31	946.98	946.98	0.00	0.00	0.00
04/01/31	06/30/31	946.98	946.98	0.00	0.00	0.00
07/01/31	09/30/31	946.98	946.98	0.00	0.00	0.00
10/01/31	12/31/31	946.98	946.98	0.00	0.00	0.00
01/01/32	03/31/32	946.98	946.98	0.00	0.00	0.00
04/01/32	06/30/32	946.98	946.98	0.00	0.00	0.00
07/01/32	09/30/32	946.98	946.98	0.00	0.00	0.00
10/01/32	12/31/32	946.98	946.98	0.00	0.00	0.00
01/01/33	03/31/33	946.98	946.98	0.00	0.00	0.00
04/01/33	06/30/33	946.98	946.98	0.00	0.00	0.00
07/01/33	09/30/33	946.98	946.98	0.00	0.00	0.00
10/01/33	12/31/33	946.98	946.98	0.00	0.00	0.00
01/01/34	03/31/34	946.98	946.98	0.00	0.00	0.00
04/01/34	06/30/34	946.98	946.98	0.00	0.00	0.00
07/01/34	09/30/34	946.98	946.98	0.00	0.00	0.00
10/01/34	12/31/34	946.98	946.98	0.00	0.00	0.00
01/01/35	03/31/35	946.98	946.98	0.00	0.00	0.00
04/01/35	06/30/35	946.98	946.98	0.00	0.00	0.00
07/01/35	09/30/35	946.98	946.98	0.00	0.00	0.00
10/01/35	12/31/35	946.98	946.98	0.00	0.00	0.00
01/01/36	03/31/36	946.98	946.98	0.00	0.00	0.00
04/01/36	06/30/36	946.98	946.98	0.00	0.00	0.00
07/01/36	09/30/36	946.98	946.98	0.00	0.00	0.00
10/01/36	12/31/36	946.98	946.98	0.00	0.00	0.00
01/01/37	03/31/37	946.98	946.98	0.00	0.00	0.00
04/01/37	06/30/37	946.98	946.98	0.00	0.00	0.00
07/01/37	09/30/37	946.98	946.98	0.00	0.00	0.00
10/01/37	12/31/37	946.98	946.98	0.00	0.00	0.00
01/01/38	03/31/38	946.98	946.98	0.00	0.00	0.00
04/01/38	06/30/38	946.98	946.98	0.00	0.00	0.00
07/01/38	09/30/38	946.98	946.98	0.00	0.00	0.00
10/01/38	12/31/38	946.98	946.98	0.00	0.00	0.00
01/01/39	03/31/39	946.98	946.98	0.00	0.00	0.00
04/01/39	06/30/39	946.98	946.98	0.00	0.00	0.00
07/01/39	09/30/39	946.98	946.98	0.00	0.00	0.00
10/01/39	12/31/39	946.98	946.98	0.00	0.00	0.00

**TABLE C4: ADMITTED PREMIUM RECEIVABLES**

TIME INTERVAL		CUMULATIVE		COLLECTED PREMIUM MINUS PRIOR PERIOD EARNED PREMIUM (5)	NONADMITTED PREMIUM RECEIVABLES (6)	ADMITTED PREMIUM RECEIVABLES (7)
		EARNED PREMIUM NET (3)	COLLECTED PREMIUM NET (4)			
FROM (1)	TO (2)					
01/01/40	03/31/40	946.98	946.98	0.00	0.00	0.00
04/01/40	06/30/40	946.98	946.98	0.00	0.00	0.00
07/01/40	09/30/40	946.98	946.98	0.00	0.00	0.00
10/01/40	12/31/40	946.98	946.98	0.00	0.00	0.00
01/01/41	03/31/41	946.98	946.98	0.00	0.00	0.00
04/01/41	06/30/41	946.98	946.98	0.00	0.00	0.00
07/01/41	09/30/41	946.98	946.98	0.00	0.00	0.00
10/01/41	12/31/41	946.98	946.98	0.00	0.00	0.00
01/01/42	03/31/42	946.98	946.98	0.00	0.00	0.00
04/01/42	06/30/42	946.98	946.98	0.00	0.00	0.00
07/01/42	09/30/42	946.98	946.98	0.00	0.00	0.00
10/01/42	12/31/42	946.98	946.98	0.00	0.00	0.00
01/01/43	03/31/43	946.98	946.98	0.00	0.00	0.00
04/01/43	06/30/43	946.98	946.98	0.00	0.00	0.00
07/01/43	09/30/43	946.98	946.98	0.00	0.00	0.00
10/01/43	12/31/43	946.98	946.98	0.00	0.00	0.00
01/01/44	03/31/44	946.98	946.98	0.00	0.00	0.00
04/01/44	06/30/44	946.98	946.98	0.00	0.00	0.00
07/01/44	09/30/44	946.98	946.98	0.00	0.00	0.00
10/01/44	12/31/44	946.98	946.98	0.00	0.00	0.00
01/01/45	03/31/45	946.98	946.98	0.00	0.00	0.00
04/01/45	06/30/45	946.98	946.98	0.00	0.00	0.00
07/01/45	09/30/45	946.98	946.98	0.00	0.00	0.00
10/01/45	12/31/45	946.98	946.98	0.00	0.00	0.00
01/01/46	03/31/46	946.98	946.98	0.00	0.00	0.00
04/01/46	06/30/46	946.98	946.98	0.00	0.00	0.00
07/01/46	09/30/46	946.98	946.98	0.00	0.00	0.00
10/01/46	12/31/46	946.98	946.98	0.00	0.00	0.00
01/01/47	03/31/47	946.98	946.98	0.00	0.00	0.00
04/01/47	06/30/47	946.98	946.98	0.00	0.00	0.00
07/01/47	09/30/47	946.98	946.98	0.00	0.00	0.00
10/01/47	12/31/47	946.98	946.98	0.00	0.00	0.00
01/01/48	03/31/48	946.98	946.98	0.00	0.00	0.00
04/01/48	06/30/48	946.98	946.98	0.00	0.00	0.00
07/01/48	09/30/48	946.98	946.98	0.00	0.00	0.00
10/01/48	12/31/48	946.98	946.98	0.00	0.00	0.00
01/01/49	03/31/49	946.98	946.98	0.00	0.00	0.00
04/01/49	06/30/49	946.98	946.98	0.00	0.00	0.00
07/01/49	09/30/49	946.98	946.98	0.00	0.00	0.00
10/01/49	12/31/49	946.98	946.98	0.00	0.00	0.00
01/01/50	03/31/50	946.98	946.98	0.00	0.00	0.00
04/01/50	06/30/50	946.98	946.98	0.00	0.00	0.00
07/01/50	09/30/50	946.98	946.98	0.00	0.00	0.00
10/01/50	12/31/50	946.98	946.98	0.00	0.00	0.00
01/01/51	03/31/51	946.98	946.98	0.00	0.00	0.00
04/01/51	06/30/51	946.98	946.98	0.00	0.00	0.00
07/01/51	09/30/51	946.98	946.98	0.00	0.00	0.00
10/01/51	12/31/51	946.98	946.98	0.00	0.00	0.00
01/01/52	03/31/52	946.98	946.98	0.00	0.00	0.00
04/01/52	06/30/52	946.98	946.98	0.00	0.00	0.00
07/01/52	09/30/52	946.98	946.98	0.00	0.00	0.00
10/01/52	12/31/52	946.98	946.98	0.00	0.00	0.00
01/01/53	03/31/53	946.98	946.98	0.00	0.00	0.00
04/01/53	06/30/53	946.98	946.98	0.00	0.00	0.00
07/01/53	09/30/53	946.98	946.98	0.00	0.00	0.00
10/01/53	12/31/53	946.98	946.98	0.00	0.00	0.00
01/01/54	03/31/54	946.98	946.98	0.00	0.00	0.00
04/01/54	06/30/54	946.98	946.98	0.00	0.00	0.00
07/01/54	09/30/54	946.98	946.98	0.00	0.00	0.00
10/01/54	12/31/54	946.98	946.98	0.00	0.00	0.00
01/01/55	03/31/55	946.98	946.98	0.00	0.00	0.00
04/01/55	06/30/55	946.98	946.98	0.00	0.00	0.00
07/01/55	09/30/55	946.98	946.98	0.00	0.00	0.00
10/01/55	12/31/55	946.98	946.98	0.00	0.00	0.00
01/01/56	03/31/56	946.98	946.98	0.00	0.00	0.00
04/01/56	06/30/56	946.98	946.98	0.00	0.00	0.00

Notes:

- (3) = Table A1, (1b) x Table C5\_2, (7)
- (4) = Table A1, (1b) x Table C5\_1, (12)
- (5) = (4) - (3)<sub>t-1</sub>, t-1 implies that is nonadmitted if not received in 90 days.
- (6) = max{ 0, -(5) x [ 1.0 - Table A1, (4) x Table A1, (1a) / Table A1, (1b) ] }
- (7) = Table A1, (1b) x [ Table C5\_2, (6) - Table C5\_1, (12) ] - (6)



# VII 00053 STIP

TABLE C5\_1: POLICYHOLDER SUPPLIED - UNDERWRITING CASH FLOW PATTERNS

TIME INTERVAL		COLLECTED PREMIUM (3)	LOSS & LAE PAYOUT (4)	COMMISS. & BROKER. (5)	GENERAL EXPENSES (6)	OTHER ACQ. EXPENSES (7)	PREMIUM TAXES (8)	MISC. AND OTHER TAXES (9)	REINS. EXPENSES (10)	PREMIUM DISCOUNT (11)	CUMULATIVE	
FROM (1)	TO (2)										COLLECTED PREMIUM (12)	LOSS & LAE PAYOUT (13)
01/01/41	03/31/41	0.00%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.04%
04/01/41	06/30/41	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.10%
07/01/41	09/30/41	0.00%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.16%
10/01/41	12/31/41	0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.24%
01/01/42	03/31/42	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.34%
04/01/42	06/30/42	0.00%	0.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.45%
07/01/42	09/30/42	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.57%
10/01/42	12/31/42	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.69%
01/01/43	03/31/43	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.81%
04/01/43	06/30/43	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	93.93%
07/01/43	09/30/43	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	94.05%
10/01/43	12/31/43	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	94.18%
01/01/44	03/31/44	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	94.30%
04/01/44	06/30/44	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	94.42%
07/01/44	09/30/44	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	94.54%
10/01/44	12/31/44	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	94.66%
01/01/45	03/31/45	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	94.78%
04/01/45	06/30/45	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	94.90%
07/01/45	09/30/45	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	95.02%
10/01/45	12/31/45	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	95.15%
01/01/46	03/31/46	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	95.27%
04/01/46	06/30/46	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	95.39%
07/01/46	09/30/46	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	95.51%
10/01/46	12/31/46	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	95.63%
01/01/47	03/31/47	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	95.75%
04/01/47	06/30/47	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	95.87%
07/01/47	09/30/47	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.00%
10/01/47	12/31/47	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.12%
01/01/48	03/31/48	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.24%
04/01/48	06/30/48	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.36%
07/01/48	09/30/48	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.48%
10/01/48	12/31/48	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.60%
01/01/49	03/31/49	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.72%
04/01/49	06/30/49	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.84%
07/01/49	09/30/49	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	96.97%
10/01/49	12/31/49	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	97.09%
01/01/50	03/31/50	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	97.21%
04/01/50	06/30/50	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	97.33%
07/01/50	09/30/50	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	97.45%
10/01/50	12/31/50	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	97.57%
01/01/51	03/31/51	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	97.69%
04/01/51	06/30/51	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	97.81%
07/01/51	09/30/51	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	97.94%
10/01/51	12/31/51	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	98.06%
01/01/52	03/31/52	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	98.18%
04/01/52	06/30/52	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	98.30%
07/01/52	09/30/52	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	98.42%
10/01/52	12/31/52	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	98.54%
01/01/53	03/31/53	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	98.66%
04/01/53	06/30/53	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	98.79%
07/01/53	09/30/53	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	98.91%
10/01/53	12/31/53	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.03%
01/01/54	03/31/54	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.15%
04/01/54	06/30/54	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.27%
07/01/54	09/30/54	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.39%
10/01/54	12/31/54	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.51%
01/01/55	03/31/55	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.64%
04/01/55	06/30/55	0.00%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.76%
07/01/55	09/30/55	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.86%
10/01/55	12/31/55	0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.94%
01/01/56	03/31/56	0.00%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	99.99%
04/01/56	06/30/56	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Notes:  
 (3): The premium collection pattern for a single policy from Section VII-G, Exhibit 1, converted to a full policy year basis.  
 (4): The loss & LAE payout pattern for a single policy from Section VII-I, Exhibit 1, converted to a full policy year basis.  
 (5), (11) = (3)  
 (6) = 0.5 x Table C5\_2, (3) + 0.5 x Table C5\_2, (4)  
 (7) = 1/6 x Table C5\_2, (3)<sub>t+1</sub> + 5/6 x Table C5\_2, (3)<sub>t</sub>  
 (8) = Table C5\_2, (3)<sub>t-1</sub>  
 (9), (10) = Table C5\_2, (3)  
 (12) = (3), cumulative  
 (13) = (4), cumulative

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TABLE C5.2: ADDITIONAL PREMIUM AND LOSS PATTERNS

TIME INTERVAL		WRITTEN PREMIUM (3)	EARNED PREMIUM (4)	LOSS & LAE INCURRED (5)	CUMULATIVE		
FROM (1)	TO (2)				WRITTEN PREMIUM (6)	EARNED PREMIUM (7)	LOSS & LAE INCURRED (8)
07/01/19	09/30/19		0.00%	0.00%	0.00%	0.00%	0.00%
10/01/19	12/31/19		0.00%	0.00%	0.00%	0.00%	0.00%
01/01/20	03/31/20		0.00%	0.00%	0.00%	0.00%	0.00%
04/01/20	06/30/20		0.00%	0.00%	0.00%	0.00%	0.00%
07/01/20	09/30/20	24.51%	3.37%	3.37%	24.51%	3.37%	3.37%
10/01/20	12/31/20	20.87%	8.76%	8.76%	45.38%	12.13%	12.13%
01/01/21	03/31/21	29.36%	15.75%	15.75%	74.74%	27.88%	27.88%
04/01/21	06/30/21	25.26%	21.80%	21.80%	100.00%	49.68%	49.68%
07/01/21	09/30/21		21.63%	21.63%	100.00%	71.31%	71.31%
10/01/21	12/31/21		16.37%	16.37%	100.00%	87.68%	87.68%
01/01/22	03/31/22		9.25%	9.25%	100.00%	96.93%	96.93%
04/01/22	06/30/22		3.07%	3.07%	100.00%	100.00%	100.00%
07/01/22	09/30/22		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/22	12/31/22		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/23	03/31/23		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/23	06/30/23		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/23	09/30/23		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/23	12/31/23		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/24	03/31/24		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/24	06/30/24		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/24	09/30/24		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/24	12/31/24		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/25	03/31/25		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/25	06/30/25		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/25	09/30/25		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/25	12/31/25		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/26	03/31/26		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/26	06/30/26		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/26	09/30/26		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/26	12/31/26		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/27	03/31/27		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/27	06/30/27		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/27	09/30/27		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/27	12/31/27		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/28	03/31/28		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/28	06/30/28		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/28	09/30/28		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/28	12/31/28		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/29	03/31/29		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/29	06/30/29		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/29	09/30/29		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/29	12/31/29		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/30	03/31/30		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/30	06/30/30		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/30	09/30/30		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/30	12/31/30		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/31	03/31/31		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/31	06/30/31		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/31	09/30/31		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/31	12/31/31		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/32	03/31/32		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/32	06/30/32		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/32	09/30/32		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/32	12/31/32		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/33	03/31/33		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/33	06/30/33		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/33	09/30/33		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/33	12/31/33		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/34	03/31/34		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/34	06/30/34		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/34	09/30/34		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/34	12/31/34		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/35	03/31/35		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/35	06/30/35		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/35	09/30/35		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/35	12/31/35		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/36	03/31/36		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/36	06/30/36		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/36	09/30/36		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/36	12/31/36		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/37	03/31/37		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/37	06/30/37		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/37	09/30/37		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/37	12/31/37		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/38	03/31/38		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/38	06/30/38		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/38	09/30/38		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/38	12/31/38		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/39	03/31/39		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/39	06/30/39		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/39	09/30/39		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/39	12/31/39		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/40	03/31/40		0.00%	0.00%	100.00%	100.00%	100.00%

# VII 00055 STIP

TABLE C5\_2: ADDITIONAL PREMIUM AND LOSS PATTERNS

TIME INTERVAL		WRITTEN PREMIUM (3)	EARNED PREMIUM (4)	LOSS & LAE INCURRED (5)	CUMULATIVE		
FROM (1)	TO (2)				WRITTEN PREMIUM (6)	EARNED PREMIUM (7)	LOSS & LAE INCURRED (8)
04/01/40	06/30/40		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/40	09/30/40		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/40	12/31/40		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/41	03/31/41		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/41	06/30/41		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/41	09/30/41		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/41	12/31/41		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/42	03/31/42		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/42	06/30/42		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/42	09/30/42		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/42	12/31/42		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/43	03/31/43		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/43	06/30/43		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/43	09/30/43		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/43	12/31/43		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/44	03/31/44		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/44	06/30/44		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/44	09/30/44		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/44	12/31/44		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/45	03/31/45		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/45	06/30/45		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/45	09/30/45		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/45	12/31/45		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/46	03/31/46		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/46	06/30/46		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/46	09/30/46		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/46	12/31/46		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/47	03/31/47		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/47	06/30/47		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/47	09/30/47		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/47	12/31/47		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/48	03/31/48		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/48	06/30/48		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/48	09/30/48		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/48	12/31/48		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/49	03/31/49		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/49	06/30/49		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/49	09/30/49		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/49	12/31/49		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/50	03/31/50		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/50	06/30/50		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/50	09/30/50		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/50	12/31/50		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/51	03/31/51		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/51	06/30/51		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/51	09/30/51		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/51	12/31/51		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/52	03/31/52		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/52	06/30/52		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/52	09/30/52		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/52	12/31/52		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/53	03/31/53		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/53	06/30/53		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/53	09/30/53		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/53	12/31/53		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/54	03/31/54		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/54	06/30/54		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/54	09/30/54		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/54	12/31/54		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/55	03/31/55		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/55	06/30/55		0.00%	0.00%	100.00%	100.00%	100.00%
07/01/55	09/30/55		0.00%	0.00%	100.00%	100.00%	100.00%
10/01/55	12/31/55		0.00%	0.00%	100.00%	100.00%	100.00%
01/01/56	03/31/56		0.00%	0.00%	100.00%	100.00%	100.00%
04/01/56	06/30/56		0.00%	0.00%	100.00%	100.00%	100.00%
TOTAL		100.00%	100.00%	100.00%			

Notes:

(3): Based on Unit Statistical Plan Data.

(4): Single policy earned premium is earned uniformly through the one year policy term and then converted to a policy year basis.

(5): We assume that the loss & LAE incurred pattern coincides with the earned premium pattern.

(6) = (3), cumulative

(7) = (4), cumulative

(8) = (5), cumulative

# VII 000056 STIP

TABLE D1: CAPITAL NEEDED FROM INVESTORS

TIME INTERVAL		UNEARNED PREMIUM RESERVES (3)	LOSS & LAE RESERVES (4)	TOTAL RESERVES (5)	RESERVES TO SURPLUS RATIO (6)	IMPLIED SURPLUS (7)	RESERVES FUNDED BY INVESTORS (8)	CAPITAL NEEDED FROM INVESTORS (9)
FROM (1)	TO (2)							
07/01/19	09/30/19	0.00	0.00	0.00	1.93	0.00	0.00	0.00
10/01/19	12/31/19	0.00	0.00	0.00	1.93	0.00	0.00	0.00
01/01/20	03/31/20	0.00	0.00	0.00	1.93	0.00	0.00	0.00
04/01/20	06/30/20	0.00	0.00	0.00	1.93	0.00	4.34	4.34
07/01/20	09/30/20	200.20	19.52	219.72	1.93	113.83	11.18	125.01
10/01/20	12/31/20	314.85	70.20	385.05	1.93	199.48	25.44	224.92
01/01/21	03/31/21	443.74	161.34	605.08	1.93	313.46	41.35	354.81
04/01/21	06/30/21	476.51	287.47	763.98	1.93	395.78	47.91	443.69
07/01/21	09/30/21	271.71	405.81	677.52	1.93	350.99	36.52	387.51
10/01/21	12/31/21	116.64	482.90	599.54	1.93	310.60	21.95	332.54
01/01/22	03/31/22	29.05	504.68	533.73	1.93	276.50	11.86	288.36
04/01/22	06/30/22	0.00	478.50	478.50	1.93	247.89	25.28	273.17
07/01/22	09/30/22	0.00	430.36	430.36	1.93	222.95	34.57	257.52
10/01/22	12/31/22	0.00	385.56	385.56	1.93	199.74	23.06	222.80
01/01/23	03/31/23	0.00	345.69	345.69	1.93	179.09	16.74	195.83
04/01/23	06/30/23	0.00	310.13	310.13	1.93	160.66	13.64	174.30
07/01/23	09/30/23	0.00	278.20	278.20	1.93	144.12	12.31	156.43
10/01/23	12/31/23	0.00	248.91	248.91	1.93	128.95	11.71	140.66
01/01/24	03/31/24	0.00	223.46	223.46	1.93	115.76	11.42	127.18
04/01/24	06/30/24	0.00	201.35	201.35	1.93	104.31	11.13	115.44
07/01/24	09/30/24	0.00	182.29	182.29	1.93	94.44	10.84	105.27
10/01/24	12/31/24	0.00	165.58	165.58	1.93	85.78	10.54	96.33
01/01/25	03/31/25	0.00	152.19	152.19	1.93	78.84	10.40	89.25
04/01/25	06/30/25	0.00	141.69	141.69	1.93	73.40	10.26	83.66
07/01/25	09/30/25	0.00	133.19	133.19	1.93	69.00	10.12	79.12
10/01/25	12/31/25	0.00	125.67	125.67	1.93	65.10	9.98	75.08
01/01/26	03/31/26	0.00	119.55	119.55	1.93	61.93	9.87	71.80
04/01/26	06/30/26	0.00	114.64	114.64	1.93	59.39	9.76	69.15
07/01/26	09/30/26	0.00	110.57	110.57	1.93	57.28	9.66	66.94
10/01/26	12/31/26	0.00	106.93	106.93	1.93	55.40	9.55	64.94
01/01/27	03/31/27	0.00	103.89	103.89	1.93	53.82	9.44	63.26
04/01/27	06/30/27	0.00	101.36	101.36	1.93	52.51	9.33	61.84
07/01/27	09/30/27	0.00	99.13	99.13	1.93	51.35	9.22	60.58
10/01/27	12/31/27	0.00	96.94	96.94	1.93	50.22	9.11	59.33
01/01/28	03/31/28	0.00	94.85	94.85	1.93	49.14	9.03	58.17
04/01/28	06/30/28	0.00	92.85	92.85	1.93	48.10	8.95	57.06
07/01/28	09/30/28	0.00	90.98	90.98	1.93	47.13	8.87	56.01
10/01/28	12/31/28	0.00	89.27	89.27	1.93	46.25	8.79	55.04
01/01/29	03/31/29	0.00	87.78	87.78	1.93	45.48	8.69	54.17
04/01/29	06/30/29	0.00	86.49	86.49	1.93	44.81	8.59	53.39
07/01/29	09/30/29	0.00	85.34	85.34	1.93	44.21	8.48	52.69
10/01/29	12/31/29	0.00	84.24	84.24	1.93	43.64	8.38	52.02
01/01/30	03/31/30	0.00	83.25	83.25	1.93	43.13	8.29	51.42
04/01/30	06/30/30	0.00	82.34	82.34	1.93	42.65	8.21	50.86
07/01/30	09/30/30	0.00	81.43	81.43	1.93	42.18	8.12	50.30
10/01/30	12/31/30	0.00	80.47	80.47	1.93	41.69	8.03	49.72
01/01/31	03/31/31	0.00	79.45	79.45	1.93	41.16	7.96	49.12
04/01/31	06/30/31	0.00	78.39	78.39	1.93	40.61	7.88	48.49
07/01/31	09/30/31	0.00	77.30	77.30	1.93	40.04	7.80	47.85
10/01/31	12/31/31	0.00	76.22	76.22	1.93	39.49	7.73	47.22
01/01/32	03/31/32	0.00	75.18	75.18	1.93	38.95	7.66	46.61
04/01/32	06/30/32	0.00	74.17	74.17	1.93	38.42	7.60	46.02
07/01/32	09/30/32	0.00	73.20	73.20	1.93	37.92	7.53	45.45
10/01/32	12/31/32	0.00	72.30	72.30	1.93	37.45	7.47	44.92
01/01/33	03/31/33	0.00	71.49	71.49	1.93	37.04	7.41	44.44
04/01/33	06/30/33	0.00	70.77	70.77	1.93	36.66	7.35	44.01
07/01/33	09/30/33	0.00	70.10	70.10	1.93	36.32	7.29	43.60
10/01/33	12/31/33	0.00	69.46	69.46	1.93	35.98	7.23	43.21
01/01/34	03/31/34	0.00	68.85	68.85	1.93	35.67	7.17	42.84
04/01/34	06/30/34	0.00	68.28	68.28	1.93	35.37	7.11	42.49
07/01/34	09/30/34	0.00	67.72	67.72	1.93	35.08	7.06	42.14
10/01/34	12/31/34	0.00	67.17	67.17	1.93	34.80	7.00	41.80
01/01/35	03/31/35	0.00	66.62	66.62	1.93	34.51	6.94	41.46
04/01/35	06/30/35	0.00	66.09	66.09	1.93	34.24	6.89	41.12
07/01/35	09/30/35	0.00	65.54	65.54	1.93	33.95	6.83	40.79
10/01/35	12/31/35	0.00	64.98	64.98	1.93	33.66	6.78	40.44
01/01/36	03/31/36	0.00	64.40	64.40	1.93	33.36	6.73	40.09
04/01/36	06/30/36	0.00	63.81	63.81	1.93	33.06	6.67	39.73
07/01/36	09/30/36	0.00	63.22	63.22	1.93	32.75	6.62	39.37
10/01/36	12/31/36	0.00	62.65	62.65	1.93	32.46	6.57	39.03
01/01/37	03/31/37	0.00	62.11	62.11	1.93	32.18	6.52	38.70
04/01/37	06/30/37	0.00	61.61	61.61	1.93	31.92	6.47	38.38
07/01/37	09/30/37	0.00	61.08	61.08	1.93	31.64	6.42	38.06
10/01/37	12/31/37	0.00	60.49	60.49	1.93	31.34	6.37	37.70
01/01/38	03/31/38	0.00	59.84	59.84	1.93	31.00	6.32	37.32
04/01/38	06/30/38	0.00	59.13	59.13	1.93	30.63	6.28	36.91
07/01/38	09/30/38	0.00	58.39	58.39	1.93	30.25	6.24	36.49
10/01/38	12/31/38	0.00	57.67	57.67	1.93	29.87	6.20	36.07
01/01/39	03/31/39	0.00	56.97	56.97	1.93	29.51	6.19	35.70
04/01/39	06/30/39	0.00	56.28	56.28	1.93	29.16	6.17	35.33
07/01/39	09/30/39	0.00	55.64	55.64	1.93	28.82	6.16	34.98
10/01/39	12/31/39	0.00	55.03	55.03	1.93	28.51	6.15	34.66
01/01/40	03/31/40	0.00	54.49	54.49	1.93	28.23	6.14	34.37

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**TABLE D1: CAPITAL NEEDED FROM INVESTORS**

TIME INTERVAL		UNEARNED PREMIUM RESERVES (3)	LOSS & LAE RESERVES (4)	TOTAL RESERVES (5)	RESERVES TO SURPLUS RATIO (6)	IMPLIED SURPLUS (7)	RESERVES FUNDED BY INVESTORS (8)	CAPITAL NEEDED FROM INVESTORS (9)
FROM (1)	TO (2)							
04/01/40	06/30/40	0.00	54.00	54.00	1.93	27.98	6.14	34.12
07/01/40	09/30/40	0.00	53.55	53.55	1.93	27.74	6.14	33.88
10/01/40	12/31/40	0.00	53.10	53.10	1.93	27.51	6.14	33.65
01/01/41	03/31/41	0.00	52.68	52.68	1.93	27.29	6.13	33.42
04/01/41	06/30/41	0.00	52.26	52.26	1.93	27.08	6.13	33.21
07/01/41	09/30/41	0.00	51.79	51.79	1.93	26.83	6.13	32.96
10/01/41	12/31/41	0.00	51.20	51.20	1.93	26.52	6.13	32.65
01/01/42	03/31/42	0.00	50.47	50.47	1.93	26.15	6.12	32.27
04/01/42	06/30/42	0.00	49.62	49.62	1.93	25.71	6.12	31.83
07/01/42	09/30/42	0.00	48.70	48.70	1.93	25.23	6.12	31.35
10/01/42	12/31/42	0.00	47.78	47.78	1.93	24.75	6.11	30.87
01/01/43	03/31/43	0.00	46.86	46.86	1.93	24.28	6.11	30.39
04/01/43	06/30/43	0.00	45.95	45.95	1.93	23.80	6.11	29.91
07/01/43	09/30/43	0.00	45.03	45.03	1.93	23.33	6.11	29.43
10/01/43	12/31/43	0.00	44.10	44.10	1.93	22.85	6.10	28.95
01/01/44	03/31/44	0.00	43.18	43.18	1.93	22.37	6.10	28.47
04/01/44	06/30/44	0.00	42.27	42.27	1.93	21.90	6.10	27.99
07/01/44	09/30/44	0.00	41.35	41.35	1.93	21.42	6.09	27.52
10/01/44	12/31/44	0.00	40.43	40.43	1.93	20.94	6.09	27.03
01/01/45	03/31/45	0.00	39.51	39.51	1.93	20.47	6.09	26.56
04/01/45	06/30/45	0.00	38.60	38.60	1.93	19.99	6.08	26.08
07/01/45	09/30/45	0.00	37.68	37.68	1.93	19.52	6.08	25.60
10/01/45	12/31/45	0.00	36.75	36.75	1.93	19.04	6.08	25.12
01/01/46	03/31/46	0.00	35.83	35.83	1.93	18.56	6.08	24.64
04/01/46	06/30/46	0.00	34.92	34.92	1.93	18.09	6.07	24.16
07/01/46	09/30/46	0.00	34.00	34.00	1.93	17.62	6.07	23.68
10/01/46	12/31/46	0.00	33.08	33.08	1.93	17.14	6.07	23.20
01/01/47	03/31/47	0.00	32.16	32.16	1.93	16.66	6.06	22.72
04/01/47	06/30/47	0.00	31.25	31.25	1.93	16.19	6.06	22.25
07/01/47	09/30/47	0.00	30.33	30.33	1.93	15.71	6.06	21.77
10/01/47	12/31/47	0.00	29.40	29.40	1.93	15.23	6.05	21.29
01/01/48	03/31/48	0.00	28.49	28.49	1.93	14.76	6.05	20.81
04/01/48	06/30/48	0.00	27.57	27.57	1.93	14.28	6.05	20.33
07/01/48	09/30/48	0.00	26.65	26.65	1.93	13.81	6.05	19.85
10/01/48	12/31/48	0.00	25.73	25.73	1.93	13.33	6.04	19.37
01/01/49	03/31/49	0.00	24.81	24.81	1.93	12.85	6.04	18.89
04/01/49	06/30/49	0.00	23.90	23.90	1.93	12.38	6.04	18.42
07/01/49	09/30/49	0.00	22.98	22.98	1.93	11.90	6.03	17.94
10/01/49	12/31/49	0.00	22.05	22.05	1.93	11.43	6.03	17.46
01/01/50	03/31/50	0.00	21.14	21.14	1.93	10.95	6.03	16.98
04/01/50	06/30/50	0.00	20.22	20.22	1.93	10.48	6.03	16.50
07/01/50	09/30/50	0.00	19.30	19.30	1.93	10.00	6.02	16.02
10/01/50	12/31/50	0.00	18.38	18.38	1.93	9.52	6.02	15.54
01/01/51	03/31/51	0.00	17.46	17.46	1.93	9.05	6.02	15.06
04/01/51	06/30/51	0.00	16.55	16.55	1.93	8.57	6.01	14.59
07/01/51	09/30/51	0.00	15.63	15.63	1.93	8.10	6.01	14.11
10/01/51	12/31/51	0.00	14.71	14.71	1.93	7.62	6.01	13.63
01/01/52	03/31/52	0.00	13.79	13.79	1.93	7.14	6.00	13.15
04/01/52	06/30/52	0.00	12.87	12.87	1.93	6.67	6.00	12.67
07/01/52	09/30/52	0.00	11.95	11.95	1.93	6.19	6.00	12.19
10/01/52	12/31/52	0.00	11.03	11.03	1.93	5.71	6.00	11.71
01/01/53	03/31/53	0.00	10.11	10.11	1.93	5.24	5.99	11.23
04/01/53	06/30/53	0.00	9.20	9.20	1.93	4.77	5.99	10.76
07/01/53	09/30/53	0.00	8.28	8.28	1.93	4.29	5.99	10.28
10/01/53	12/31/53	0.00	7.36	7.36	1.93	3.81	5.98	9.79
01/01/54	03/31/54	0.00	6.44	6.44	1.93	3.33	5.98	9.32
04/01/54	06/30/54	0.00	5.52	5.52	1.93	2.86	5.51	8.37
07/01/54	09/30/54	0.00	4.61	4.61	1.93	2.39	4.59	6.98
10/01/54	12/31/54	0.00	3.68	3.68	1.93	1.91	3.67	5.58
01/01/55	03/31/55	0.00	2.76	2.76	1.93	1.43	2.75	4.19
04/01/55	06/30/55	0.00	1.85	1.85	1.93	0.96	1.84	2.80
07/01/55	09/30/55	0.00	1.05	1.05	1.93	0.55	1.05	1.60
10/01/55	12/31/55	0.00	0.45	0.45	1.93	0.23	0.45	0.69
01/01/56	03/31/56	0.00	0.11	0.11	1.93	0.06	0.11	0.17
04/01/56	06/30/56	0.00	0.00	0.00	1.93	0.00	0.00	0.00
<b>TOTAL</b>		<b>1,852.69</b>	<b>11,847.53</b>	<b>13,700.22</b>		<b>7,097.48</b>	<b>1,215.29</b>	<b>8,312.77</b>

Notes:

- (3) = Table A1,(1b) x [ Table C5\_2, (6) - Table C5\_2, (7) ]
- (4) = Table A1, (1a) x Table A1, (3) x [ Table C5\_2, (8) - Table C5\_1, (13) ]
- (5) = (3) + (4)
- (6) = Table A1, (13)
- (7) = (5) / (6)
- (8) = Table C3, (11)
- (9) = (7) + (8)



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Section VII - Profit  
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Section VII - E  
Exhibit 1

## Cost of Capital: Summary Exhibit for Property-Casualty Insurance Companies

(1) Discounted Cash Flow	7.30%
(2) Capital Asset Pricing Model	8.61%
(3) Equity Capital Cost	7.95%
(4) Debt Capital Cost	2.56%
(5) Capital Structure	
(a) Equity Capital Share	85%
(b) Debt Capital Share	15%
(6) Weighted Average Cost of Capital (WACC)	7.15%

Notes:

(1): Exhibit 2, page 1

(2): Exhibit 3, page 1

(3) =  $[(1) + (2)] / 2.0$

(4): Average of three-horizons yields:

Short-Term = 2.14%, the average yield on 1-month Commercial Paper (line (1)' of Section VII-J, Exhibit 2, page 3)

Intermediate-Term = 2.27%, the average yield on 5-year HQM yield (line (15) of Section VII-J, Exhibit 2, page 3)

Long-Term = 3.28%, the average yield on 20-year industrial yield (Section VII-J, Exhibit 2, page 2)

(5): Exhibit 4

(6) =  $[(3) \times (5a)] + [(4) \times (5b)]$

# VII 000081 STIP

## Cost of Capital Estimate Using Discounted Cash Flow (DCF) Analysis

$$V_0 = D_0 \sum_{t=1}^{\infty} \left( \frac{1 + g_t}{1 + k} \right)^t = D_1 \sum_{t=1}^{\infty} \frac{(1 + g_t)^{t-1}}{(1 + k)^t}$$

$$\frac{1}{\frac{D_1}{V_0}} = \sum_{t=1}^5 \frac{(1 + g_{ST})^{t-1}}{(1 + k)^t} + (1 + g_{ST})^4 \sum_{t=6}^9 \frac{\prod_{i=1}^{t-5} (1 + g_{IT_i})}{(1 + k)^t}$$

$$+ (1 + g_{ST})^4 (1 + g_{IT_1})(1 + g_{IT_2})(1 + g_{IT_3})(1 + g_{IT_4}) \sum_{t=10}^{\infty} \frac{(1 + g_{LT})^{t-9}}{(1 + k)^t}$$

	Time (t) (1)	Dividend Growth Rate (g) (2)	Discounted Dividends (3)
Stage 1	1	7.98%	
	2	7.98%	
	3	7.98%	
	4	7.98%	
	5	7.98%	4.72
Stage 2	6	7.43%	0.96
	7	6.88%	0.95
	8	6.33%	0.94
	9	5.77%	0.93
Stage 3	≥10	5.22%	47.09
(4) Total Discounted Dividends			55.59

(5) Dividend Yield Rate ( $D_1/V_0$ )

1.80%

(6) Cost of Capital (k)

**7.30%**

### Notes:

(2): Stage 1 dividend growth rate is the short-term rate from Page 4.

Stage 2 dividend growth rate is a linear interpolation between dividend growth rate of stage 1 and stage 3.

Stage 3 dividend growth rate is the long-term rate from Page 2.

(3): Stage 1 =  $(1.0 - [(1.0 + g_{ST}) / (1.0 + k)]^5) / (k - g_{ST})$

Stage 2, Time 6 =  $[(1.0 + g_{ST})^4 \times (1.0 + g_{IT_1})] / (1.0 + k)^6$

Stage 2, Time 7 =  $[(1.0 + g_{ST})^4 \times (1.0 + g_{IT_1}) \times (1.0 + g_{IT_2})] / (1.0 + k)^7$

Stage 2, Time 8 =  $[(1.0 + g_{ST})^4 \times (1.0 + g_{IT_1}) \times (1.0 + g_{IT_2}) \times (1.0 + g_{IT_3})] / (1.0 + k)^8$

Stage 2, Time 9 =  $[(1.0 + g_{ST})^4 \times (1.0 + g_{IT_1}) \times (1.0 + g_{IT_2}) \times (1.0 + g_{IT_3}) \times (1.0 + g_{IT_4})] / (1.0 + k)^9$

Stage 3 =  $[(1.0 + g_{ST})^4 \times (1.0 + g_{IT_1}) \times (1.0 + g_{IT_2}) \times (1.0 + g_{IT_3}) \times (1.0 + g_{IT_4}) \times (1.0 + g_{LT})] / [(k - g_{LT}) \times (1.0 + k)^9]$

(5): Page 5

(6): Cost of Capital is calculated using excel function so that  $[1.0 / (5)] - (4) = 0$ .

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Section VII - E  
 Exhibit 2  
 Page 2

## Discounted Cash Flow (DCF) Analysis: Long-Term Dividend Growth Rate

Years (1)	Real Gross Domestic Product (2)	Real Gross Domestic Product Percent Change (3)
1929	1,109.4	
1930	1,015.1	-8.50%
1931	950.0	-6.41%
1932	827.5	-12.89%
1933	817.3	-1.23%
1934	905.6	10.80%
1935	986.2	8.90%
1936	1,113.3	12.89%
1937	1,170.3	5.12%
1938	1,131.6	-3.31%
1939	1,222.4	8.02%
1940	1,330.2	8.82%
1941	1,565.8	17.71%
1942	1,861.5	18.88%
1943	2,178.4	17.02%
1944	2,351.6	7.95%
1945	2,328.6	-0.98%
1946	2,058.4	-11.60%
1947	2,034.8	-1.15%
1948	2,118.5	4.11%
1949	2,106.6	-0.56%
1950	2,289.5	8.68%
1951	2,473.8	8.05%
1952	2,574.9	4.09%
1953	2,695.6	4.69%
1954	2,680.0	-0.58%
1955	2,871.2	7.13%
1956	2,932.4	2.13%
1957	2,994.1	2.10%
1958	2,972.0	-0.74%
1959	3,178.2	6.94%
1960	3,260.0	2.57%
1961	3,343.5	2.56%
1962	3,548.4	6.13%
1963	3,702.9	4.35%
1964	3,916.3	5.76%
1965	4,170.8	6.50%
1966	4,445.9	6.60%
1967	4,567.8	2.74%
1968	4,792.3	4.91%
1969	4,942.1	3.13%
1970	4,951.3	0.19%
1971	5,114.3	3.29%
1972	5,383.3	5.26%
1973	5,687.2	5.65%
1974	5,656.5	-0.54%
1975	5,644.8	-0.21%
1976	5,949.0	5.39%
1977	6,224.1	4.62%
1978	6,568.6	5.53%
1979	6,776.6	3.17%
1980	6,759.2	-0.26%

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Section VII - E  
 Exhibit 2  
 Page 2

## Discounted Cash Flow (DCF) Analysis: Long-Term Dividend Growth Rate

Years (1)	Real Gross Domestic Product (2)	Real Gross Domestic Product Percent Change (3)
1981	6,930.7	2.54%
1982	6,805.8	-1.80%
1983	7,117.7	4.58%
1984	7,632.8	7.24%
1985	7,951.1	4.17%
1986	8,226.4	3.46%
1987	8,511.0	3.46%
1988	8,866.5	4.18%
1989	9,192.1	3.67%
1990	9,365.5	1.89%
1991	9,355.4	-0.11%
1992	9,684.9	3.52%
1993	9,951.5	2.75%
1994	10,352.4	4.03%
1995	10,630.3	2.68%
1996	11,031.4	3.77%
1997	11,521.9	4.45%
1998	12,038.3	4.48%
1999	12,610.5	4.75%
2000	13,131.0	4.13%
2001	13,262.1	1.00%
2002	13,493.1	1.74%
2003	13,879.1	2.86%
2004	14,406.4	3.80%
2005	14,912.5	3.51%
2006	15,338.3	2.86%
2007	15,626.0	1.88%
2008	15,604.7	-0.14%
2009	15,208.8	-2.54%
2010	15,598.8	2.56%
2011	15,840.7	1.55%
2012	16,197.0	2.25%
2013	16,495.4	1.84%
2014	16,912.0	2.53%
2015	17,403.8	2.91%
2016	17,688.9	1.64%
2017	18,108.1	2.37%
2018	18,638.2	2.93%
(4) Average		3.34%
(5) Rate of Expected Inflation		1.83%
(6) Long-Term Dividend Growth Rate		<b>5.22%</b>

Notes:

(2): Bureau of Economic Analysis, Table 1.1.6.

(3) =  $[(2)_t / (2)_{t-1}] - 1.0$

(5): Page 3

(6) =  $\{ [1.0 + (4)] \times [1.0 + (5)] \} - 1.0$

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Section VII - E  
 Exhibit 2  
 Page 3

Discounted Cash Flow (DCF) Analysis: Long-Term Dividend Growth Rate  
 Rate of Expected Inflation

Time Period (1)	Market yield on U.S. Treasury Securities at 10-year Constant Maturity (2)	Inflation Indexed Market yield on U.S. Treasury Securities at 10-year Constant Maturity (3)	Rate of Expected Inflation (4) = (2) - (3)
2018-10	3.15	1.04	2.11
2018-11	3.12	1.11	2.01
2018-12	2.83	1.02	1.81
2019-01	2.71	0.92	1.79
2019-02	2.68	0.8	1.88
2019-03	2.57	0.66	1.91
2019-04	2.53	0.6	1.93
2019-05	2.4	0.57	1.83
2019-06	2.07	0.37	1.70
2019-07	2.06	0.31	1.75
2019-08	1.63	0.04	1.59
2019-09	1.7	0.11	1.59
Average			<b>1.83%</b>

Source: Federal Reserve Statistical Release, H.15.

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Page 4

## Discounted Cash Flow (DCF) Analysis: Short-Term Dividend Growth Rate

(1) Growth Forecast { = [ (a) + (b) ] / 2.0 }	7.76
(a) Dividend Component	8.31
(b) Earnings Component	7.20
(2) Fundamental Analysis [ = (a) + (b) ]	8.21
(a) Retention to book	8.20
(b) Stock issuance factor	0.01
(3) Short-Term Dividend Growth Rate { = [ (1) + (2) ] / 2.0 }	7.98

### Notes:

- (1a): Page 5, average of columns (3) through (5)
- (1b): Page 5, average of columns (6) through (8)
- (2a): Page 5, average of columns (9) through (11)
- (2b): Page 5, column (15)

Discounted Cash Flow (DCF) Analysis: Parameter Estimation

Property/Casualty Insurance Companies (1)	Dividend Yield (2)	Average Dividend Growth Rate			Average Earnings Growth Rate			Average Earnings Retention Rates Retained Earnings as a Percent of Common Equity			Stock Issuance Adjustment Factor			
		Annual Rate of Change			Annual Rate of Change						2019	2022 - 2024	2022 - 2024	Stock Issuance
		Past 10 Years (3)	Past 5 Years (4)	Forecast (5)	Past 10 Years (6)	Past 5 Years (7)	Forecast (8)	Past 10 Years (9)	Past 5 Years (10)	Forecast (11)	Shares (12)	Shares (13)	Market/ Book (14)	Adjustment Factor (15)
ALLEGHANY CORP	0.0	NA	NA	0.00	4.50	-1.50	24.50	5.26	4.12	6.50	14.00	14.00	1.18	0.00
ALLSTATE CORP	1.9	NA	11.50	7.00	1.00	11.50	10.50	8.00	9.35	10.50	330.00	320.00	1.90	-0.69
AMERICAN FINANCIAL GROUP INC	1.6	12.00	12.00	9.50	7.00	14.00	7.00	8.51	9.32	9.00	89.00	86.00	1.35	-0.30
AMERISAFE INC	1.6	NA	NA	NA	NA	14.50	10.00	7.53	3.60	NA	0.00	0.00	0.00	NA
ARCH CAPITAL GROUP LTD	0.0	NA	NA	0.00	6.00	3.50	15.00	11.85	9.00	10.50	405.00	400.00	1.36	-0.11
ATLAS FINANCIAL HOLDINGS INC	0.0	NA	NA	NA	NA	NA	NA	7.73	8.13	NA	0.00	0.00	0.00	NA
BERKLEY (W R) CORP	0.6	11.00	9.50	9.00	-0.50	5.00	12.00	8.08	7.72	8.00	182.00	180.00	1.45	-0.12
BERKSHIRE HATHAWAY	0.0	NA	NA	0.00	6.00	12.00	6.00	7.30	7.52	7.00	2475.00	2450.00	1.45	-0.11
CHUBB LTD	1.9	10.50	8.50	4.00	2.00	2.50	10.00	8.05	6.92	8.00	455.00	400.00	1.35	-1.11
CINCINNATI FINANCIAL CORP	2.0	5.50	7.00	3.00	NA	13.50	8.50	2.46	2.60	4.50	163.00	164.00	1.64	0.10
CNA FINANCIAL CORP	3.0	15.50	14.00	6.00	NA	3.00	11.00	5.01	4.16	8.50	270.00	270.00	1.75	0.00
DONEGAL GROUP INC	3.7	NA	3.00	NA	NA	-28.50	NA	1.94	1.87	NA	0.00	0.00	0.00	NA
EMPLOYERS HOLDINGS INC	2.2	NA	19.50	NA	NA	9.50	10.00	11.80	11.24	NA	0.00	0.00	0.00	NA
ERIE INDEMNITY CO -CL A	1.7	NA	NA	5.50	NA	NA	12.50	8.60	8.60	13.50	46.00	45.00	NA	NA
ESSENT GROUP LTD	1.4	NA	NA	NA	NA	39.50	10.41	14.75	15.88	NA	0.00	0.00	0.00	NA
FIRST AMERICAN FINANCIAL	2.9	NA	36.00	8.00	NA	14.00	7.50	6.71	6.92	8.50	112.00	112.00	1.68	0.00
GLOBAL INDEMNITY LTD	3.7	NA	NA	NA	NA	NA	10.00	6.89	6.20	NA	0.00	0.00	0.00	NA
HALLMARK FINANCIAL SERVICES	0.0	NA	NA	NA	NA	36.00	4.10	4.89	5.03	NA	0.00	0.00	0.00	NA
HANOVER INSURANCE GROUP INC	1.8	19.50	11.00	6.00	5.00	25.00	13.50	5.69	5.68	8.50	40.00	40.00	1.23	0.00
HCI GROUP INC	4.0	NA	12.50	NA	NA	-14.50	25.00	17.89	15.10	NA	0.00	0.00	0.00	NA
JAMES RIVER GROUP HLDGS LTD	2.5	NA	NA	NA	NA	NA	NA	5.55	5.55	NA	0.00	0.00	0.00	NA
MARKEL CORP	0.0	NA	NA	0.00	-3.50	-1.00	45.50	5.06	3.65	6.50	14.00	14.00	1.67	0.00
MERCURY GENERAL CORP	4.8	2.50	0.50	2.50	-7.50	-4.00	23.00	1.95	NA	8.00	55.00	55.00	2.12	0.00
NATIONAL GENERAL HOLDINGS CP	0.7	NA	NA	NA	NA	NA	NA	9.65	9.65	NA	0.00	0.00	0.00	NA
NMI HOLDINGS	0.0	NA	NA	0.00	NA	NA	23.00	11.17	11.17	14.00	66.50	67.00	1.70	0.13
OLD REPUBLIC INTL CORP	3.5	2.00	1.50	6.50	8.00	NA	14.50	4.08	4.02	8.50	304.00	310.00	1.95	0.47
PROASSURANCE CORP	3.3	NA	12.50	NA	NA	-16.50	27.30	8.55	3.40	NA	0.00	0.00	0.00	NA
PROGRESSIVE CORP-OHIO	0.5	31.50	20.00	-6.50	10.00	17.50	15.50	12.72	12.50	20.50	584.00	585.00	3.35	0.10
PROTECTIVE INSURANCE CORP	2.6	NA	1.50	NA	NA	-20.50	NA	3.29	2.40	NA	0.00	0.00	0.00	NA
RLI CORP	1.0	7.00	5.50	5.00	-3.00	-4.50	14.50	8.68	7.58	11.00	45.00	45.00	3.30	0.00
SAFETY INSURANCE GROUP INC	3.4	NA	6.50	NA	NA	9.50	15.00	3.69	3.33	NA	0.00	0.00	0.00	NA
SELECTIVE INS GROUP INC	1.0	3.50	3.50	7.50	2.50	30.50	8.50	6.47	8.66	10.00	59.00	65.00	1.61	1.49
STATE AUTO FINANCIAL CORP	1.2	NA	-5.00	NA	NA	NA	8.00	4.12	4.93	NA	0.00	0.00	0.00	NA
TRAVELERS COS INC	2.2	10.00	9.50	2.50	4.00	7.00	9.00	8.67	9.08	9.00	260.00	265.00	1.60	0.29
UNITED FIRE GROUP INC	3.0	NA	10.00	NA	NA	-3.50	10.00	4.61	4.25	NA	0.00	0.00	0.00	NA
UNITED INSURANCE HOLDINGS CO	2.0	NA	23.00	NA	NA	-28.50	20.00	9.31	7.15	NA	0.00	0.00	0.00	NA
UNIVERSAL INSURANCE HLDGS	2.5	NA	13.50	NA	NA	26.50	NA	17.62	22.58	NA	0.00	0.00	0.00	NA
WHITE MTNS INS GROUP LTD	0.1	NA	NA	NA	NA	-13.00	-7.70	6.37	6.15	NA	0.00	0.00	0.00	NA
Average	1.80	10.88	10.29	3.78	2.77	5.28	13.55	7.64	7.43	9.53				0.01

Notes:

Sources: Value Line Investment Survey, Part 3, The Ratings & Reports (VL), September 6, 2019  
 Value Line Investment Survey, Part 2, Small and Mid Cap Edition (VLSM), August 30, 2019  
<http://finance.yahoo.com> (data available in September 2019)

(2): The dividend yields needed for the DCF Analysis relate dividends at time 1, D<sub>1</sub>, to stock prices at time 0, P<sub>0</sub>. Dividend yields from VLIS, Small and Mid Cap Edition, must be adjusted because they are derived from the ratio of dividends at time 0, D<sub>0</sub>, to stock price at time zero, P<sub>0</sub>. D<sub>1</sub> is estimated from D<sub>0</sub> as follows:

$$D_1 = D_0 \times [ 1.0 + ( 0.5 \times \text{Dividend Growth Rate} ) ] \quad \text{where Dividend Growth Rate} = 7.98\% \text{ from Page 4.}$$

(11) - (14): Data available only at Value Line Investment Survey, Part 3.

(12), (13): in millions.

(15) =  $[ (14) - 1.0 ] \times [ (13) / (12) ]^{(t) - 1.0} \times 100$ , where t is 0.25 for the years between midyear 2020 and midyear 2024.

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Page 1

## Cost of Capital Estimate Using Capital Asset Pricing Model Analysis

$$\text{Cost of Capital: } K = r_f + (\beta \times r_d)$$

Time Horizon (1)	Risk-Free Yield ( $r_f$ ) (2)	Market Risk Premium ( $r_d$ ) (3)	Beta Coefficient ( $\beta$ ) (4)	Estimated Cost of Capital (K) (5)
Short-Term	2.07	8.50	0.88	9.51
Intermediate-Term	1.63	7.49	0.88	8.18
Long-Term	2.08	6.91	0.88	8.13
Average	1.93	7.64	0.88	<b>8.61</b>

### Notes:

(2): Section VII-J, Exhibit 2, page 3

Short-Term = average yield on 1-month U.S. Treasury Constant Maturities (line (2))

Intermediate-Term = average yield on 5-year U.S. Treasury (line (8))

Long-Term = average yield on 20-year U.S. Treasury (line (11))

(3): Section VII-J, Exhibit 4

Short-Term = S&P 500 total returns minus U.S. Treasury Bill total returns

Intermediate-Term = S&P 500 total returns minus Intermediate-Term Government Bonds income returns

Long-Term = S&P 500 total returns minus Long-Term Government Bonds income returns

(4): Average Beta Coefficient (Page 2).

(5) = (2) + [ (4) x (3) ]



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Page 2

## Capital Asset Pricing Model - Beta Coefficient

<u>Property/Casualty Insurance Companies</u>	<u>Beta Coefficients</u>
ALLEGHANY CORP	1.0
ALLSTATE CORP	0.9
AMERICAN FINANCIAL GROUP INC	0.9
AMERISAFE INC	0.8
ARCH CAPITAL GROUP LTD	0.8
ATLAS FINANCIAL HOLDINGS INC	1.2
BERKLEY (W R) CORP	0.9
BERKSHIRE HATHAWAY	1.0
CHUBB LTD	0.9
CINCINNATI FINANCIAL CORP	0.9
CNA FINANCIAL CORP	1.0
DONEGAL GROUP INC	0.5
EMPLOYERS HOLDINGS INC	1.0
ERIE INDEMNITY CO -CL A	0.8
ESSENT GROUP LTD	1.0
FIRST AMERICAN FINANCIAL	0.9
GLOBAL INDEMNITY LTD	0.8
HALLMARK FINANCIAL SERVICES	0.8
HANOVER INSURANCE GROUP INC	0.9
HCI GROUP INC	0.9
JAMES RIVER GROUP HLDGS LTD	0.8
MARKEL CORP	0.9
MERCURY GENERAL CORP	0.9
NATIONAL GENERAL HOLDINGS CP	1.0
NMI HOLDINGS	1.1
OLD REPUBLIC INTL CORP	1.0
PROASSURANCE CORP	0.7
PROGRESSIVE CORP-OHIO	0.9
PROTECTIVE INSURANCE CORP	0.6
RLI CORP	0.9
SAFETY INSURANCE GROUP INC	0.8
SELECTIVE INS GROUP INC	0.9
STATE AUTO FINANCIAL CORP	0.9
TRAVELERS COS INC	0.9
UNITED FIRE GROUP INC	0.8
UNITED INSURANCE HOLDINGS CO	1.1
UNIVERSAL INSURANCE HLDGS	1.2
WHITE MTNS INS GROUP LTD	0.7
Average	0.88

### Notes:

Sources: Value Line Investment Survey, Part 3, The Ratings & Reports (VL), September 6, 2019  
Value Line Investment Survey, Part 2, Small and Mid Cap Edition (VLSM), August 30, 2019  
If no information for a specific company in the above sources, use 'Yahoo Finance'.

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Exhibit 4

## Capital Structure Ratios of Property-Casualty Insurance Companies

Property/Casualty Insurance Companies (1)	Total Debt \$ in millions (2)	Preferred Stock \$ in millions (3)	Total Debt Capital =(2) + (3) (4)	Common Equity \$ in millions (5)
ALLEGHANY CORP	0.0	0.0	0.0	10,865.0
ALLSTATE CORP	6,628.0	1,930.0	8,558.0	34,012.1
AMERICAN FINANCIAL GROUP INC	1,423.0	0.0	1,423.0	9,081.4
AMERISAFE INC	0.0	0.0	0.0	1,394.1
ARCH CAPITAL GROUP LTD	2,224.9	780.0	3,004.9	16,083.6
ATLAS FINANCIAL HOLDINGS INC	0.0	0.0	0.0	4.8
BERKLEY (W R) CORP	2,781.7	0.0	2,781.7	13,145.1
BERKSHIRE HATHAWAY	93,117.0	0.0	93,117.0	491,510.9
CHUBB LTD	13,380.0	0.0	13,380.0	71,402.7
CINCINNATI FINANCIAL CORP	884.0	0.0	884.0	18,129.6
CNA FINANCIAL CORP	2,678.0	0.0	2,678.0	12,776.3
DONEGAL GROUP INC	5.0	0.0	5.0	373.4
EMPLOYERS HOLDINGS INC	20.0	0.0	20.0	1,400.5
ERIE INDEMNITY CO -CL A	0.0	0.0	0.0	10,045.6
ESSENT GROUP LTD	223.7	0.0	223.7	4,682.4
FIRST AMERICAN FINANCIAL	729.6	0.0	729.6	6,532.5
GLOBAL INDEMNITY LTD	288.6	0.0	288.6	377.2
HALLMARK FINANCIAL SERVICES	85.8	0.0	85.8	311.3
HANOVER INSURANCE GROUP INC	653.1	0.0	653.1	5,234.3
HCI GROUP INC	250.2	0.0	250.2	341.8
JAMES RIVER GROUP HLDGS LTD	222.4	0.0	222.4	1,478.3
MARKEL CORP	3,625.7	0.0	3,625.7	15,786.4
MERCURY GENERAL CORP	371.9	0.0	371.9	2,957.2
NATIONAL GENERAL HOLDINGS CP	675.4	450.0	1,125.4	2,672.0
NMI HOLDINGS	146.3	0.0	146.3	1,883.8
OLD REPUBLIC INTL CORP	975.4	0.0	975.4	6,865.2
PROASSURANCE CORP	287.8	0.0	287.8	2,076.4
PROGRESSIVE CORP-OHIO	4,406.0	0.0	4,406.0	44,798.3
PROTECTIVE INSURANCE CORP	0.0	0.0	0.0	238.0
RLI CORP	149.2	0.0	149.2	4,106.1
SAFETY INSURANCE GROUP INC	0.0	0.0	0.0	1,475.3
SELECTIVE INS GROUP INC	550.8	0.0	550.8	4,702.8
STATE AUTO FINANCIAL CORP	122.0	0.0	122.0	1,403.2
TRAVELERS COS INC	6,558.0	0.0	6,558.0	38,411.1
UNITED FIRE GROUP INC	0.0	0.0	0.0	1,142.6
UNITED INSURANCE HOLDINGS CO	160.1	0.0	160.1	525.9
UNIVERSAL INSURANCE HLDGS	11.4	0.0	11.4	923.5
WHITE MTNS INS GROUP LTD	0.0	0.0	0.0	3,410.8
<b>Total</b>	<b>143,635.0</b>	<b>3,160.0</b>	<b>146,795.0</b>	<b>842,561.5</b>
<b>Capital Structure Ratios</b>			<b>0.15</b>	<b>0.85</b>

**Notes:**

Sources: Value Line Investment Survey, Part 3, The Ratings & Reports (VL), September 6, 2019  
Value Line Investment Survey, Part 2, Small and Mid Cap Edition (VLSM), August 30, 2019  
If no information for a specific company in the above sources, use 'Yahoo Finance'.

(5) = (outstanding shares) \* (one month average share price)

One month (Aug 10, 2019 - Sep 9, 2019) average share price from 'Yahoo Finance' and outstanding shares from Value Line.

Value Line doesn't have debt information for Berkshire Hathaway. 'Yahoo Finance' used instead.

Loss & LAE and Unearned Premium Reserves to Surplus Ratio

Company	Loss & LAE and Unearned Premium Reserves (\$000)					Surplus (\$000)					Leverage Ratio				
	2018	2017	2016	2015	2014	2018	2017	2016	2015	2014	2018	2017	2016	2015	2014
(1)	(2)					(3)					(4) = (2) / (3)				
Travelers Group	51,786	50,125	48,359	47,493	47,904	20,207	19,903	20,249	19,970	20,312	2.56	2.52	2.39	2.38	2.36
A.I.M. Mutual Insurance Companies	336	332	325	313	300	258	237	215	194	181	1.30	1.40	1.51	1.61	1.66
Hartford Insurance Group	28,001	27,005	25,877	25,234	24,817	11,253	12,516	15,317	16,190	16,207	2.49	2.16	1.69	1.56	1.53
Liberty Mutual Insurance Companies	56,051	54,344	48,802	47,448	46,771	19,813	17,570	20,200	19,313	19,842	2.83	3.09	2.42	2.46	2.36
Chubb INA Group	34,027	30,970	32,596	34,547	33,946	18,647	17,691	17,837	19,347	21,516	1.82	1.75	1.83	1.79	1.58
American International Group	42,359	49,829	58,115	60,919	60,093	17,908	22,078	22,501	24,989	26,654	2.37	2.26	2.58	2.44	2.25
Berkshire Hathaway Insurance Group	78,905	72,444	61,701	57,789	54,295	160,938	171,554	137,180	124,827	130,750	0.49	0.42	0.45	0.46	0.42
Zurich Insurance US PC Group	17,696	18,429	18,558	18,738	18,591	6,873	7,272	7,872	8,509	8,673	2.57	2.53	2.36	2.20	2.14
Charter Insurance Group	107	117	124	122	120	69	68	65	60	59	1.56	1.74	1.92	2.04	2.03
W. R. Berkley Insurance Group	12,351	12,102	11,810	11,198	10,864	5,590	5,482	5,495	5,326	5,467	2.21	2.21	2.15	2.10	1.99
AmTrust Group	5,117	4,638	3,665	3,238	2,422	2,164	2,092	2,076	1,840	1,715	2.36	2.22	1.77	1.76	1.41
Old Republic Insurance Group	6,593	6,438	6,434	6,523	6,461	3,713	3,766	3,581	3,292	3,234	1.78	1.71	1.80	1.98	2.00
Hanover Insurance Grp Prop & Cas Cos	6,103	5,748	5,304	4,804	4,554	2,171	2,074	2,173	2,193	2,057	2.81	2.77	2.44	2.19	2.21
CNA Insurance Companies	32,209	32,250	32,449	32,212	32,026	10,392	10,700	10,748	10,723	11,155	3.10	3.01	3.02	3.00	2.87
Arbella Insurance Group	879	864	870	873	767	651	622	559	512	563	1.35	1.39	1.56	1.70	1.36
Fairfax Financial (USA) Group	13,105	12,179	11,793	11,935	12,084	6,670	6,942	6,853	7,206	7,294	1.96	1.75	1.72	1.66	1.66
Utica National Insurance Group	1,849	1,764	1,673	1,597	1,582	1,021	990	924	867	860	1.81	1.78	1.81	1.84	1.84
MEMIC Group	904	828	749	676	598	424	439	415	393	400	2.13	1.89	1.80	1.72	1.50
Norfolk & Dedham Group Pool	299	272	240	223	201	316	322	296	269	277	0.95	0.84	0.81	0.83	0.73
Sentry Insurance Group	4,510	4,271	4,109	3,924	3,793	5,450	5,174	4,752	4,441	4,211	0.83	0.83	0.86	0.88	0.90
Selective Insurance Group	4,610	4,364	4,179	3,981	3,841	1,768	1,673	1,584	1,426	1,308	2.61	2.61	2.64	2.79	2.94
AmeriTrust Group	1,231	1,261	1,273	1,147	1,140	580	564	508	488	511	2.12	2.24	2.50	2.35	2.23
Starr International Group	3,033	2,792	2,368	2,038	1,705	2,024	1,875	1,922	1,848	1,832	1.50	1.49	1.23	1.10	0.93
Markel Corporation Group	6,191	5,805	5,353	5,296	4,748	3,203	3,492	3,224	2,983	3,020	1.93	1.66	1.66	1.78	1.57
Arrow Mutual Liability Insurance Company	11	12	12	14	12	31	30	30	30	31	0.37	0.39	0.41	0.46	0.40
American National Prop & Cas Companies	1,532	1,433	1,352	1,285	1,266	1,184	1,163	1,075	1,034	984	1.29	1.23	1.26	1.24	1.29
American Family Insurance Group	11,519	10,200	9,684	8,918	8,445	7,739	8,490	8,755	8,247	7,590	1.49	1.20	1.11	1.08	1.11
EMC Insurance Companies	2,795	2,669	2,567	2,490	2,388	1,662	1,713	1,633	1,505	1,419	1.68	1.56	1.57	1.65	1.68
Arch Insurance Group	3,191	2,196	3,592	3,697	3,939	1,999	2,931	2,777	3,023	2,982	1.60	0.75	1.29	1.22	1.32
Federated Mutual Group	2,636	2,345	2,184	2,047	1,966	3,404	3,307	3,114	2,882	2,676	0.77	0.71	0.70	0.71	0.73
Tokio Marine US PC Group	15,402	14,342	13,213	12,155	11,286	8,129	7,624	7,349	6,842	7,030	1.89	1.88	1.80	1.78	1.61
Great American P & C Insurance Grp	8,038	7,646	7,050	6,731	6,476	2,865	2,725	2,941	2,634	2,426	2.81	2.81	2.40	2.56	2.67
Electric Insurance Company	828	874	873	899	889	405	491	534	546	538	2.05	1.78	1.63	1.65	1.65
QBE North America Insurance Group	3,128	2,831	2,822	3,270	3,710	1,741	1,640	1,844	1,859	1,824	1.80	1.73	1.53	1.76	2.03
AXA U.S. Group	6,984	5,718	4,777	4,439	4,431	2,512	2,480	2,480	2,505	2,712	2.78	2.31	1.93	1.77	1.63
Protective Insurance Corporation Group	540	410	338	323	327	395	420	398	389	397	1.37	0.97	0.85	0.83	0.82
Employers Insurance Group	2,017	2,031	2,016	2,015	1,997	928	892	829	706	635	2.17	2.28	2.43	2.85	3.14
ProSight Specialty Group	1,545	1,286	961	863	738	474	434	355	379	353	3.26	2.96	2.70	2.27	2.09
Argo Group	1,784	1,565	1,421	1,386	1,374	1,005	993	887	855	790	1.78	1.58	1.60	1.62	1.74
HDI/Talanx US PC Group	252	37	36	42	41	216	188	139	133	131	1.17	0.19	0.26	0.32	0.32
Merchants Insurance Group	420	408	393	393	389	225	203	190	173	162	1.87	2.00	2.06	2.27	2.40
Sompo Holdings US Group	3,187	2,340	2,030	1,876	1,809	1,941	1,681	1,581	1,422	1,390	1.64	1.39	1.28	1.32	1.30
Central Insurance Companies	863	790	756	744	719	809	822	743	706	640	1.07	0.96	1.02	1.05	1.12
Nationwide Group	23,992	24,855	24,183	23,063	21,865	14,478	14,741	15,538	15,095	14,869	1.66	1.69	1.56	1.53	1.47

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Loss & LAE and Unearned Premium Reserves to Surplus Ratio

Company	Loss & LAE and Unearned Premium Reserves (\$000)					Surplus (\$000)					Leverage Ratio				
	2018	2017	2016	2015	2014	2018	2017	2016	2015	2014	2018	2017	2016	2015	2014
(1)	(2)					(3)					(4) = (2) / (3)				
Everest Re U.S. Group	7,012	4,971	4,741	4,759	4,903	3,651	3,392	3,635	3,211	2,913	1.92	1.47	1.30	1.48	1.68
Work First Casualty Company	37	31	28	27	30	18	15	13	10	9	2.06	2.07	2.24	2.61	3.29
Church Mutual Insurance Group	1,118	947	887	886	844	619	704	695	642	583	1.80	1.35	1.28	1.38	1.45
OneBeacon Insurance Group	1,514	1,370	1,362	1,474	1,667	619	618	625	622	722	2.44	2.22	2.18	2.37	2.31
MS&AD US Insurance Group	729	713	698	677	636	559	545	498	484	480	1.30	1.31	1.40	1.40	1.32
Allianz of America Companies	5,833	6,134	6,599	7,815	9,118	3,094	2,669	2,751	2,716	3,082	1.89	2.30	2.40	2.88	2.96
Enstar Insurance Group	1,467	1,324	1,396	1,540	2,060	791	811	842	942	1,026	1.85	1.63	1.66	1.63	2.01
Farmers Insurance Group	14,687	14,631	15,373	15,491	15,274	5,697	5,567	5,558	5,951	6,344	2.58	2.63	2.77	2.60	2.41
AF Group	2,387	2,237	1,936	1,660	1,439	937	995	897	814	751	2.55	2.25	2.16	2.04	1.92
Amerisure Companies	1,787	1,754	1,691	1,610	1,554	984	983	938	875	843	1.82	1.79	1.80	1.84	1.84
Quincy Mutual Group	481	391	334	347	337	1,109	1,191	1,080	977	995	0.43	0.33	0.31	0.36	0.34
Pharmacists Mutual Insurance Group	167	159	159	147	145	138	131	115	106	98	1.22	1.21	1.38	1.39	1.48
HIIG Group	416	388	424	430	408	264	266	266	274	268	1.57	1.46	1.60	1.57	1.52
State Auto Insurance Companies	2,664	2,878	2,773	2,568	2,441	1,138	1,133	1,166	1,151	1,130	2.34	2.54	2.38	2.23	2.16
GuideOne Insurance Companies	870	963	914	874	851	433	442	516	562	538	2.01	2.18	1.77	1.55	1.58
IAT Insurance Group	1,007	860	750	691	655	730	909	753	683	725	1.38	0.95	1.00	1.01	0.90
Premier Group Insurance Company	17	17	17	16	16	40	39	35	35	34	0.43	0.43	0.48	0.47	0.48
The Cincinnati Insurance Companies	7,906	7,418	7,003	6,544	6,224	4,919	5,094	4,686	4,412	4,472	1.61	1.46	1.49	1.48	1.39
American Contractors Insurance Group	295	284	279	287	270	160	153	143	123	126	1.85	1.85	1.94	2.33	2.14
Brotherhood Mutual Insurance Company	397	314	294	264	240	241	266	245	229	189	1.65	1.18	1.20	1.15	1.27
James River Group	361	297	240	196	179	242	219	185	177	210	1.49	1.35	1.30	1.11	0.85
RLI Group	1,522	1,363	1,233	1,175	1,133	830	865	860	865	849	1.83	1.58	1.43	1.36	1.33
Cherokee Insurance Company	345	322	290	268	243	186	198	181	153	159	1.85	1.63	1.61	1.75	1.53
Munich-American Holding Corp Companies	11,496	9,933	8,203	8,091	8,257	5,001	5,247	6,191	6,393	6,574	2.30	1.89	1.32	1.27	1.26
AMERISAFE Insurance Group	840	844	827	821	797	384	382	394	371	378	2.19	2.21	2.10	2.21	2.11
WCF Insurance Group	1,142	1,117	1,095	1,062	1,039	946	935	882	852	794	1.21	1.20	1.24	1.25	1.31
ICW Pool	1,785	1,617	1,427	1,199	986	1,109	1,034	905	756	661	1.61	1.56	1.58	1.59	1.49
State Farm Group	65,541	66,480	62,613	59,550	58,517	100,778	97,027	87,591	82,660	80,019	0.65	0.69	0.71	0.72	0.73
Benchmark Insurance Group	114	96	79	68	61	123	107	96	73	62	0.93	0.89	0.83	0.93	0.98
Samsung F & M Insurance Co, Ltd USB	108	126	163	111	108	68	58	72	49	55	1.58	2.19	2.28	2.28	1.96
ProAssurance Group	1,931	1,880	1,891	1,949	2,025	1,031	1,165	1,393	1,496	1,682	1.87	1.61	1.36	1.30	1.20
Petroleum Casualty Company	7	9	10	10	8	24	23	24	23	23	0.30	0.40	0.40	0.43	0.34
Penn National Insurance Companies	1,056	1,043	1,007	979	963	591	587	624	581	567	1.79	1.78	1.61	1.69	1.70
Gray Insurance Group	189	178	172	182	181	128	119	113	105	111	1.47	1.50	1.52	1.73	1.63

	2018	2017	2016	2015	2014
(5): Premium Weighted Leverage Ratio	2.02	1.98	1.89	1.90	1.85
(6): Selected Leverage Ratio					<b>1.93</b>

Notes:  
Source: A.M. Best's Global Insurance Database for all Massachusetts Workers' Compensation Group Companies.  
(5): Premium Weighted Leverage Ratio use Direct Premiums Written from Section VII - J, Exhibit 5.  
(6): Selected Leverage Ratio is equal to five year average.

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Single Policy  
 Determination of Selected Premium Flow From Premium Collection Special Call

Time Interval		Net Premium Ranges									Weighted Average Selected Collection Pattern (12)
		0 - 9,999			10,000 - 199,999			200,000 +			
		Actual Premium Collection Pattern		Weight (5)	Actual Premium Collection Pattern		Weight (8)	Actual Premium Collection Pattern		Weight (11)	
From (1)	To (2)	Actual (3)	Selected (4)		Actual (6)	Selected (7)		Actual (9)	Selected (10)		
07/01/19	09/30/19	0.0%	0.0%	23.5%	0.1%	0.0%	49.9%	0.0%	0.0%	26.7%	0.0%
10/01/19	12/31/19	0.0%	0.0%	23.5%	0.0%	0.0%	49.9%	0.2%	0.0%	26.7%	0.0%
01/01/20	03/31/20	0.1%	0.0%	23.5%	0.1%	0.0%	49.9%	0.0%	0.0%	26.7%	0.0%
04/01/20	06/30/20	11.2%	11.2%	23.5%	2.7%	2.7%	49.9%	1.1%	1.0%	26.7%	4.2%
07/01/20	09/30/20	38.1%	38.1%	23.5%	34.5%	34.5%	49.9%	37.8%	37.8%	26.7%	36.2%
10/01/20	12/31/20	22.6%	22.6%	23.5%	26.0%	26.0%	49.9%	22.4%	22.4%	26.7%	24.2%
01/01/21	03/31/21	15.4%	15.4%	23.5%	20.5%	20.5%	49.9%	20.1%	20.1%	26.7%	19.2%
04/01/21	06/30/21	4.0%	4.0%	23.5%	5.7%	5.7%	49.9%	7.4%	7.5%	26.7%	5.8%
07/01/21	09/30/21	2.2%	2.2%	23.5%	1.8%	1.8%	49.9%	3.1%	3.0%	26.7%	2.2%
10/01/21	12/31/21	2.8%	2.8%	23.5%	4.0%	4.0%	49.9%	5.6%	5.6%	26.7%	4.1%
01/01/22	03/31/22	1.9%	1.9%	23.5%	2.2%	2.2%	49.9%	1.9%	1.9%	26.7%	2.0%
04/01/22	06/30/22	1.1%	1.1%	23.5%	1.2%	1.5%	49.9%	0.2%	0.5%	26.7%	1.1%
07/01/22	09/30/22	0.1%	0.7%	23.5%	0.2%	1.1%	49.9%	0.0%	0.2%	26.7%	0.8%
10/01/22	12/31/22	0.0%	0.0%	23.5%	0.1%	0.0%	49.9%	0.1%	0.0%	26.7%	0.0%
01/01/23	03/31/23	0.0%	0.0%	23.5%	0.0%	0.0%	49.9%	0.1%	0.0%	26.7%	0.0%
04/01/23	06/30/23	0.0%	0.0%	23.5%	0.0%	0.0%	49.9%	0.0%	0.0%	26.7%	0.0%
07/01/23	09/30/23	0.2%	0.0%	23.5%	0.2%	0.0%	49.9%	0.0%	0.0%	26.7%	0.0%
10/01/23	12/31/23	0.2%	0.0%	23.5%	0.4%	0.0%	49.9%	0.0%	0.0%	26.7%	0.0%
01/01/24	03/31/24	0.1%	0.0%	23.5%	0.3%	0.0%	49.9%	0.0%	0.0%	26.7%	0.0%
Total											100.0%

Notes:

(5), (8), (11) are calculated using Unit Statistical Plan data for PY 2017.

(3), (6), (9) are from the premium collection special call.

(12) = [(4) x (5)] + [(7) x (8)] + [(10) x (11)]

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# VII 000093 STIP

Section VII - Profit  
Subsection H - Expense Weights  
7/1/2020

Section VII - H  
Exhibit 1

## Cash Flow Weights

Item of Expense Allowance (% of Standard Premium plus ARAP)	Policy Year		Average
	2016	2017	
(1) Expected Losses	59.20%	59.69%	59.45%
(2) Expected Loss Adjustment Expense (LAE):	11.08%	11.17%	11.13%
(a) Defense and Cost Containment Expense	5.05%	5.09%	5.07%
(b) Adjusting and Other Expense	6.04%	6.09%	6.06%
(3) Expected Losses + Expected LAE [= (1) + (2) ]	70.28%	70.87%	70.58%
(4) Fixed Expenses	5.10%	5.00%	5.05%
(a) General Expenses	4.77%	4.67%	4.72%
(b) Miscellaneous and Other Taxes	0.33%	0.32%	0.33%
(5) Variable Expenses [= (5a) + (5b) + (5c) ]	19.62%	19.62%	19.62%
(a) Total Acquisition	12.16%	12.16%	12.16%
(i) Commissions	9.16%	9.16%	9.16%
(ii) Other Acquisition	2.00%	2.00%	2.00%
(iii) Reinsurance Expenses	1.00%	1.00%	1.00%
(iv) Incidental Income and Earned but Uncollected Premium	0.00%	0.00%	0.00%
(b) Premium Tax	2.16%	2.16%	2.16%
(c) Premium Discount	5.30%	5.30%	5.30%
(6) Total Expenses [= (4) + (5) ]	24.71%	24.61%	24.66%

### Notes:

- (1): Policy Year 2016 and Policy Year 2017 Expected Losses are based on the loss ratios projected to the prospective policy period adjusted by the factor to remove the residual market subsidy associated with large deductible policies from Section I-B, Exhibit 1.
- (2): Expected LAE = Expected Losses x 0.187 where 0.187 is the LAE ratio calculated in VI-H, Exhibit 1.
- (2a), (2b): Loss Adjustment Expense split between DCC and AO is  $0.455 = 0.085 / 0.187$  and  $0.545 = 1 - 0.455$  where 0.085 is three year average ratio of DCC to loss from Section VI-H, Exhibit 1, line (4) and LAE ratio = 0.187 from Section VI-H, Exhibit 1, line (6).
- (4): Section VI-B, Exhibit 1 times the factor to reflect the impact of large deductible policies, from Section I-D, Exhibit 1, Page 1.
- (4a), (4b): Policy Year 2016 Fixed Expenses split between General Expenses and Other Taxes based on \$34,082,817 General Expenses and \$2,350,596 Other Taxes. Policy Year 2017 General Expenses split based on \$35,676,753 General Expenses and \$2,460,525 Other Taxes. See VI-B, Exhibit 1, columns (12) & (13).
- (5a): Section VI-G, Exhibit 1.
- (5b), (5c): Section VI-A, Exhibit 1.

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Section VII - Profit  
 Subsection I - Loss & LAE Flow  
 7/1/2020

Section VII - I  
 Exhibit 1

## Single Policy Loss & Loss Adjustment Expense (LAE) Flow

Time Interval		Earned Premium (3)	Loss Flow (4)	DCC Flow (5) = (4)	AO Flow (6) = [(3) + (4)] / 2.0	Loss & LAE Payout (7)
From (1)	To (2)					
07/01/19	09/30/19	0.0000	0.0000	0.0000	0.0000	0.0000
10/01/19	12/31/19	0.0000	0.0000	0.0000	0.0000	0.0000
01/01/20	03/31/20	0.0000	0.0000	0.0000	0.0000	0.0000
04/01/20	06/30/20	0.0000	0.0000	0.0000	0.0000	0.0000
07/01/20	09/30/20	0.2500	0.0504	0.0504	0.1502	0.0590
10/01/20	12/31/20	0.2500	0.0504	0.0504	0.1502	0.0590
01/01/21	03/31/21	0.2500	0.0504	0.0504	0.1502	0.0590
04/01/21	06/30/21	0.2500	0.0504	0.0504	0.1502	0.0590
07/01/21	09/30/21	0.0000	0.0695	0.0695	0.0348	0.0665
10/01/21	12/31/21	0.0000	0.0695	0.0695	0.0348	0.0665
01/01/22	03/31/22	0.0000	0.0695	0.0695	0.0348	0.0665
04/01/22	06/30/22	0.0000	0.0695	0.0695	0.0348	0.0665
07/01/22	09/30/22	0.0000	0.0465	0.0465	0.0232	0.0445
10/01/22	12/31/22	0.0000	0.0465	0.0465	0.0232	0.0445
01/01/23	03/31/23	0.0000	0.0465	0.0465	0.0232	0.0445
04/01/23	06/30/23	0.0000	0.0465	0.0465	0.0232	0.0445
07/01/23	09/30/23	0.0000	0.0284	0.0284	0.0142	0.0272
10/01/23	12/31/23	0.0000	0.0284	0.0284	0.0142	0.0272
01/01/24	03/31/24	0.0000	0.0284	0.0284	0.0142	0.0272
04/01/24	06/30/24	0.0000	0.0284	0.0284	0.0142	0.0272
07/01/24	09/30/24	0.0000	0.0126	0.0126	0.0063	0.0121
10/01/24	12/31/24	0.0000	0.0126	0.0126	0.0063	0.0121
01/01/25	03/31/25	0.0000	0.0126	0.0126	0.0063	0.0121
04/01/25	06/30/25	0.0000	0.0126	0.0126	0.0063	0.0121
07/01/25	09/30/25	0.0000	0.0060	0.0060	0.0030	0.0057
10/01/25	12/31/25	0.0000	0.0060	0.0060	0.0030	0.0057
01/01/26	03/31/26	0.0000	0.0060	0.0060	0.0030	0.0057
04/01/26	06/30/26	0.0000	0.0060	0.0060	0.0030	0.0057
07/01/26	09/30/26	0.0000	0.0031	0.0031	0.0016	0.0030
10/01/26	12/31/26	0.0000	0.0031	0.0031	0.0016	0.0030
01/01/27	03/31/27	0.0000	0.0031	0.0031	0.0016	0.0030
04/01/27	06/30/27	0.0000	0.0031	0.0031	0.0016	0.0030
07/01/27	09/30/27	0.0000	0.0027	0.0027	0.0014	0.0026
10/01/27	12/31/27	0.0000	0.0027	0.0027	0.0014	0.0026
01/01/28	03/31/28	0.0000	0.0027	0.0027	0.0014	0.0026
04/01/28	06/30/28	0.0000	0.0027	0.0027	0.0014	0.0026
07/01/28	09/30/28	0.0000	0.0017	0.0017	0.0008	0.0016
10/01/28	12/31/28	0.0000	0.0017	0.0017	0.0008	0.0016
01/01/29	03/31/29	0.0000	0.0017	0.0017	0.0008	0.0016
04/01/29	06/30/29	0.0000	0.0017	0.0017	0.0008	0.0016
07/01/29	09/30/29	0.0000	0.0012	0.0012	0.0006	0.0012
10/01/29	12/31/29	0.0000	0.0012	0.0012	0.0006	0.0012
01/01/30	03/31/30	0.0000	0.0012	0.0012	0.0006	0.0012
04/01/30	06/30/30	0.0000	0.0012	0.0012	0.0006	0.0012
07/01/30	09/30/30	0.0000	0.0015	0.0015	0.0008	0.0015
10/01/30	12/31/30	0.0000	0.0015	0.0015	0.0008	0.0015
01/01/31	03/31/31	0.0000	0.0015	0.0015	0.0008	0.0015
04/01/31	06/30/31	0.0000	0.0015	0.0015	0.0008	0.0015
07/01/31	09/30/31	0.0000	0.0014	0.0014	0.0007	0.0013
10/01/31	12/31/31	0.0000	0.0014	0.0014	0.0007	0.0013
01/01/32	03/31/32	0.0000	0.0014	0.0014	0.0007	0.0013
04/01/32	06/30/32	0.0000	0.0014	0.0014	0.0007	0.0013
07/01/32	09/30/32	0.0000	0.0009	0.0009	0.0005	0.0009
10/01/32	12/31/32	0.0000	0.0009	0.0009	0.0005	0.0009
01/01/33	03/31/33	0.0000	0.0009	0.0009	0.0005	0.0009
04/01/33	06/30/33	0.0000	0.0009	0.0009	0.0005	0.0009
07/01/33	09/30/33	0.0000	0.0008	0.0008	0.0004	0.0007
10/01/33	12/31/33	0.0000	0.0008	0.0008	0.0004	0.0007
01/01/34	03/31/34	0.0000	0.0008	0.0008	0.0004	0.0007
04/01/34	06/30/34	0.0000	0.0008	0.0008	0.0004	0.0007
07/01/34	09/30/34	0.0000	0.0007	0.0007	0.0004	0.0007
10/01/34	12/31/34	0.0000	0.0007	0.0007	0.0004	0.0007
01/01/35	03/31/35	0.0000	0.0007	0.0007	0.0004	0.0007
04/01/35	06/30/35	0.0000	0.0007	0.0007	0.0004	0.0007
07/01/35	09/30/35	0.0000	0.0008	0.0008	0.0004	0.0008
10/01/35	12/31/35	0.0000	0.0008	0.0008	0.0004	0.0008
01/01/36	03/31/36	0.0000	0.0008	0.0008	0.0004	0.0008
04/01/36	06/30/36	0.0000	0.0008	0.0008	0.0004	0.0008
07/01/36	09/30/36	0.0000	0.0007	0.0007	0.0003	0.0007
10/01/36	12/31/36	0.0000	0.0007	0.0007	0.0003	0.0007
01/01/37	03/31/37	0.0000	0.0007	0.0007	0.0003	0.0007
04/01/37	06/30/37	0.0000	0.0007	0.0007	0.0003	0.0007
07/01/37	09/30/37	0.0000	0.0010	0.0010	0.0005	0.0010
10/01/37	12/31/37	0.0000	0.0010	0.0010	0.0005	0.0010
01/01/38	03/31/38	0.0000	0.0010	0.0010	0.0005	0.0010
04/01/38	06/30/38	0.0000	0.0010	0.0010	0.0005	0.0010
07/01/38	09/30/38	0.0000	0.0009	0.0009	0.0005	0.0009
10/01/38	12/31/38	0.0000	0.0009	0.0009	0.0005	0.0009
01/01/39	03/31/39	0.0000	0.0009	0.0009	0.0005	0.0009
04/01/39	06/30/39	0.0000	0.0009	0.0009	0.0005	0.0009
07/01/39	09/30/39	0.0000	0.0006	0.0006	0.0003	0.0006

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Section VII - Profit  
 Subsection I - Loss & LAE Flow  
 7/1/2020

Section VII - I  
 Exhibit 1

## Single Policy Loss & Loss Adjustment Expense (LAE) Flow

Time Interval		Earned Premium (3)	Loss Flow (4)	DCC Flow (5) = (4)	AO Flow (6) = [(3) + (4)] / 2.0	Loss & LAE Payout (7)
From (1)	To (2)					
10/01/39	12/31/39	0.0000	0.0006	0.0006	0.0003	0.0006
01/01/40	03/31/40	0.0000	0.0006	0.0006	0.0003	0.0006
04/01/40	06/30/40	0.0000	0.0006	0.0006	0.0003	0.0006
07/01/40	09/30/40	0.0000	0.0006	0.0006	0.0003	0.0005
10/01/40	12/31/40	0.0000	0.0006	0.0006	0.0003	0.0005
01/01/41	03/31/41	0.0000	0.0006	0.0006	0.0003	0.0005
04/01/41	06/30/41	0.0000	0.0006	0.0006	0.0003	0.0005
07/01/41	09/30/41	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/41	12/31/41	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/42	03/31/42	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/42	06/30/42	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/42	09/30/42	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/42	12/31/42	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/43	03/31/43	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/43	06/30/43	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/43	09/30/43	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/43	12/31/43	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/44	03/31/44	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/44	06/30/44	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/44	09/30/44	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/44	12/31/44	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/45	03/31/45	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/45	06/30/45	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/45	09/30/45	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/45	12/31/45	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/46	03/31/46	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/46	06/30/46	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/46	09/30/46	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/46	12/31/46	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/47	03/31/47	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/47	06/30/47	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/47	09/30/47	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/47	12/31/47	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/48	03/31/48	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/48	06/30/48	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/48	09/30/48	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/48	12/31/48	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/49	03/31/49	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/49	06/30/49	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/49	09/30/49	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/49	12/31/49	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/50	03/31/50	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/50	06/30/50	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/50	09/30/50	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/50	12/31/50	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/51	03/31/51	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/51	06/30/51	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/51	09/30/51	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/51	12/31/51	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/52	03/31/52	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/52	06/30/52	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/52	09/30/52	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/52	12/31/52	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/53	03/31/53	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/53	06/30/53	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/53	09/30/53	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/53	12/31/53	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/54	03/31/54	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/54	06/30/54	0.0000	0.0013	0.0013	0.0006	0.0012
07/01/54	09/30/54	0.0000	0.0013	0.0013	0.0006	0.0012
10/01/54	12/31/54	0.0000	0.0013	0.0013	0.0006	0.0012
01/01/55	03/31/55	0.0000	0.0013	0.0013	0.0006	0.0012
04/01/55	06/30/55	0.0000	0.0013	0.0013	0.0006	0.0012
<b>(8) Relative Weights</b>			1.0000	0.0852	0.1020	

**Notes:**

- (3): Single policy earned premium is earned uniformly through the one year policy term.
- (4): Exhibit 2, (8). Annual values divided by 4.0.
- (7): Loss & LAE Payout = ( 1.000 x (4) + 0.0852 x (5) + 0.102 x (6) ) / ( 1.000 + 0.0852 + 0.102 )
- (8): DCC relative weight = 1.000 x 0.187 x 0.455; AO relative weight = 1.000 x 0.187 x 0.545  
 where 0.187 is the LAE factor calculated in Section VI-H, Exhibit 1 and 0.455, 0.545 are the DCC and AO relative weights from Section VI-H, Exhibit 1.



# VII 000096 STIP

Section VII - Profit  
 Subsection I - Loss & LAE Flow  
 7/1/2020

Section VII - I  
 Exhibit 2

## Loss Payment Pattern

Age In Months  (1)	Indemnity Unadjusted LDF to Ult  (2)	Indemnity % Paid =1.0 / (2)  (3)	Indemnity Incremental % Paid (3) - 1st Diff  (4)	Medical LDF to Ult  (5)	Medical %Paid =1.0 / (5)  (6)	Medical Incremental % Paid (6) - 1st Diff  (7)	Indemnity & Medical Incremental % Paid  (8)
12	7.517	13.30%	13.30%	2.928	34.16%	34.16%	20.16%
24	2.545	39.29%	25.99%	1.522	65.69%	31.53%	27.81%
36	1.603	62.38%	23.10%	1.332	75.10%	9.41%	18.60%
48	1.296	77.16%	14.77%	1.257	79.55%	4.45%	11.38%
60	1.194	83.76%	6.61%	1.228	81.42%	1.87%	5.05%
72	1.151	86.87%	3.11%	1.214	82.36%	0.94%	2.40%
84	1.132	88.36%	1.49%	1.203	83.15%	0.79%	1.26%
96	1.118	89.44%	1.08%	1.187	84.26%	1.11%	1.09%
108	1.110	90.05%	0.61%	1.176	85.02%	0.76%	0.66%
120	1.104	90.55%	0.49%	1.170	85.49%	0.46%	0.48%
132	1.098	91.05%	0.50%	1.159	86.31%	0.82%	0.61%
144	1.093	91.46%	0.41%	1.147	87.17%	0.86%	0.56%
156	1.090	91.71%	0.25%	1.139	87.80%	0.63%	0.38%
168	1.088	91.91%	0.20%	1.132	88.34%	0.53%	0.31%
180	1.086	92.05%	0.15%	1.124	88.94%	0.61%	0.30%
192	1.085	92.18%	0.12%	1.115	89.70%	0.76%	0.33%
204	1.084	92.29%	0.12%	1.107	90.30%	0.60%	0.27%
216	1.081	92.55%	0.25%	1.098	91.03%	0.73%	0.41%
228	1.078	92.72%	0.18%	1.089	91.81%	0.78%	0.37%
240	1.077	92.86%	0.13%	1.083	92.31%	0.50%	0.25%
252	1.075	92.99%	0.13%	1.079	92.72%	0.41%	0.22%
264			0.50%			0.52%	0.51%
276			0.50%			0.52%	0.51%
288			0.50%			0.52%	0.51%
300			0.50%			0.52%	0.51%
312			0.50%			0.52%	0.51%
324			0.50%			0.52%	0.51%
336			0.50%			0.52%	0.51%
348			0.50%			0.52%	0.51%
360			0.50%			0.52%	0.51%
372			0.50%			0.52%	0.51%
384			0.50%			0.52%	0.51%
396			0.50%			0.52%	0.51%
408			0.50%			0.52%	0.51%
420			0.50%			0.52%	0.51%
Total			100.00%			100.00%	100.00%

Notes:

(2), (5): Section II - E, Exhibit 1, Page 1.

(8) = (4) x 67.12% + (7) x 32.88%, where 67.12% and 32.88% are indemnity and medical estimated ultimate losses respectively, from Section II - A, Exhibit 1, Page 2.

# VII 000097 STIP

Section VII - Profit  
 Subsection J - Portfolio Rate of Return  
 7/1/2020

Section VII - J  
 Exhibit 1  
 Page 1

## Calculation of Portfolio Rate of Return

Asset Class (1)	Proportion (2)	Pre-tax Return (3)	Tax Rate (4)	After-tax Return (5)
Cash and Short-term Investments	3.67%	2.07%	21.00%	1.64%
Governments	12.01%	1.83%	21.00%	1.45%
States & Territories	7.81%	1.25%	5.25%	1.18%
Special Revenue	20.55%	1.52%	5.25%	1.44%
Industrials	36.03%	2.37%	21.00%	1.87%
Common Stocks	11.50%	16.13%	14.89%	13.73%
Real Estate	0.91%	5.96%	21.00%	4.71%
Preferred Stocks	0.22%	5.17%	13.13%	4.49%
Other Invested Assets	7.29%	5.17%	13.13%	4.49%
(6) Total	100.00%	3.85%	15.60%	3.25%
(7) Investment Expenses		0.21%	21.00%	0.16%
(8) Portfolio Rate of Return		3.65%		3.09%

Notes:

(2): Page 2

(3): Pretax bond returns are from Exhibit 2, page 1.

Cash and short term investments: using short horizon CAPM with beta=0.00. Exhibit 2, Page 3, line (2).

Pretax return for Common Stock has been hardcoded to derive a rate change of -6.8% as stipulated.

The original calculated value as filed was 9.56%.

Pretax return for Real Estate: 3 month treasury rate, 2.02% Exhibit 2, page 3, line (3) plus the real estate differential, 3.94% from Ibbotson and Siegel, "Real Estate Returns: A Comparison with Other Investments".

Pretax return for Preferred Stock: calculated using data from yahoo finance.

Pretax return for Other Assets: equal to the pretax return for Preferred Stock.

(4): Governments and Other taxable bonds taxed at Federal Tax Rate of 0.21.

Tax rate for Tax Exempt Bonds =  $0.25 \times 0.21$

Tax rate for Preferred stock =  $(0.50 \times 0.21) + (0.50 \times 0.25 \times 0.21)$

Tax rate for Common Stocks from Exhibit 6, page 1.

Tax rate for Other Assets = Tax rate for Preferred stock =  $(0.50 \times 0.21) + (0.50 \times 0.25 \times 0.21)$

(5) = (3) x [ 1.0 - (4) ]

(7): Exhibit 5, page 1.

(8) = (6) - (7)

# VII 000098 STIP

Section VII - Profit  
Subsection J - Portfolio Rate of Return  
7/1/2020

Section VII - J  
Exhibit 1  
Page 2

## Asset Distribution for MA Workers' Compensation Group Companies

Asset Class (1)	Proportion (2)
Cash and Short Term Investments	3.67%
Bonds:	76.41%
Governments	12.01%
States & Territories	7.81%
Special Revenue	20.55%
Industrials	36.03%
Common Stocks	11.50%
Real Estate	0.91%
Preferred Stocks	0.22%
Other Invested Assets	7.29%

(3) Total 100.00%

### Notes:

Proportion of each asset class is from page 3. The Bond share in total is 76.41%.

This is allocated to the following subcategories:

Governments, States & Territories, Special Revenue and Industrials

by multiplying 76.41% by the adjusted bond weights from Exhibit 3, page 1.

Asset Distribution for MA Workers' Compensation Group Companies

Companies	Bonds	Preferred Stocks	Common Stocks	Real Estate	Cash and Short Term Investments	Other Invested Assets	Total Cash and Invested Assets	% Bonds	% Preferred Stocks	% Common Stocks	% Real Estate	% Cash and Short Term Investments	% Other Invested Assets
(1)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	= (2) / (8)	= (3) / (8)	= (4) / (8)	= (5) / (8)	= (6) / (8)	= (7) / (8)
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
Travelers Group	58,873	58	1,459	1,145	1,871	3,178	66,585	88.42%	0.09%	2.19%	1.72%	2.81%	4.77%
A.I.M. Mutual Insurance Companies	519	0	58	0	5	2	585	88.70%	0.00%	9.96%	0.00%	0.92%	0.42%
Hartford Insurance Group	26,956	257	1,135	332	672	3,914	33,266	81.03%	0.77%	3.41%	1.00%	2.02%	11.77%
Liberty Mutual Insurance Companies	43,771	68	8,988	281	696	9,507	63,311	69.14%	0.11%	14.20%	0.44%	1.10%	15.02%
Chubb INA Group	47,418	35	607	214	1,353	1,775	51,402	92.25%	0.07%	1.18%	0.42%	2.63%	3.45%
American International Group	44,374	56	1,188	0	410	7,343	53,371	83.14%	0.11%	2.23%	0.00%	0.77%	13.76%
Berkshire Hathaway Insurance Group	10,994	196	175,337	169	49,543	57,753	293,993	3.74%	0.07%	59.64%	0.06%	16.85%	19.64%
Zurich Insurance US PC Group	19,135	0	1,164	1,373	90	1,113	22,875	83.65%	0.00%	5.09%	6.00%	0.39%	4.87%
Charter Insurance Group	106	0	42	0	15	0	164	64.78%	0.00%	25.88%	0.00%	9.34%	0.00%
W. R. Berkley Insurance Group	10,948	105	1,740	505	763	2,522	16,583	66.02%	0.63%	10.49%	3.04%	4.60%	15.21%
AmTrust Group	4,259	30	115	5	164	296	4,870	87.46%	0.11%	2.37%	0.11%	3.38%	6.07%
Old Republic Insurance Group	7,629	1	2,175	0	212	6	10,024	76.11%	0.01%	21.70%	0.00%	2.12%	0.06%
Hanover Insurance Grp Prop & Cas Cos	5,886	3	543	48	40	617	7,138	82.47%	0.05%	7.61%	0.68%	0.56%	8.64%
CNA Insurance Companies	35,125	630	817	0	679	1,993	39,244	89.50%	1.61%	2.08%	0.00%	1.73%	5.08%
Arbella Insurance Group	1,168	0	155	0	21	3	1,346	86.72%	0.00%	11.54%	0.00%	1.54%	0.19%
Fairfax Financial (USA) Group	9,323	59	3,546	268	2,176	2,199	17,571	53.06%	0.34%	20.18%	1.53%	12.38%	12.51%
Utica National Insurance Group	2,200	0	293	14	24	8	2,539	86.64%	0.00%	11.56%	0.57%	0.93%	0.31%
MEMIC Group	959	0	216	0	29	25	1,229	78.02%	0.00%	17.61%	0.00%	2.35%	2.02%
Norfolk & Dedham Group Pool	424	0	128	2	26	29	608	69.68%	0.00%	20.99%	0.32%	4.32%	4.70%
Sentry Insurance Group	6,673	0	1,507	164	56	1,262	9,662	69.06%	0.00%	15.60%	1.70%	0.58%	13.06%
Selective Insurance Group	5,173	18	150	0	266	218	5,825	88.81%	0.31%	2.58%	0.00%	4.56%	3.75%
AmeriTrust Group	1,397	0	99	7	76	34	1,613	86.59%	0.00%	6.16%	0.43%	4.69%	2.13%
Starr International Group	2,497	17	1,463	0	479	187	4,643	53.78%	0.36%	31.50%	0.00%	10.32%	4.04%
Markel Corporation Group	5,364	0	2,615	15	719	435	9,148	58.64%	0.00%	28.59%	0.16%	7.86%	4.75%
Arrow Mutual Liability Insurance Company	33	0	9	0	2	0	45	74.55%	0.00%	20.11%	0.04%	4.94%	0.35%
American National Prop & Cas Companies	2,355	2	281	14	13	7	2,672	88.14%	0.08%	10.50%	0.52%	0.48%	0.27%
American Family Insurance Group	13,338	0	3,219	271	438	1,276	18,543	71.93%	0.00%	17.36%	1.46%	2.36%	6.88%
EMC Insurance Companies	2,695	76	775	142	134	78	3,899	69.11%	1.95%	19.88%	3.64%	3.43%	2.00%
Arch Insurance Group	6,747	0	147	1	324	21	7,241	93.18%	0.00%	2.03%	0.02%	4.47%	0.29%
Federated Mutual Group	4,006	2	1,123	63	152	288	5,634	71.10%	0.04%	19.93%	1.12%	2.71%	5.11%
Tokio Marine US PC Group	18,522	299	903	37	446	560	20,767	89.19%	1.44%	4.35%	0.18%	2.15%	2.69%
Great American P & C Insurance Grp	7,581	438	611	98	661	615	10,005	75.78%	4.38%	6.11%	0.98%	6.60%	6.15%
Electric Insurance Company	794	0	21	14	9	5	842	94.30%	0.00%	2.47%	1.68%	1.02%	0.54%
QBE North America Insurance Group	2,428	0	252	50	76	565	3,371	72.04%	0.00%	7.47%	1.48%	2.25%	16.76%
AXA U.S. Group	7,408	0	43	3	980	349	8,783	84.35%	0.00%	0.49%	0.03%	11.16%	3.97%
Protective Insurance Corporation Group	556	2	65	28	131	55	836	66.46%	0.23%	7.81%	3.32%	15.62%	6.55%
Employers Insurance Group	2,484	0	168	0	63	1	2,716	91.49%	0.00%	6.17%	0.00%	2.32%	0.02%
ProSight Specialty Group	1,726	0	0	0	64	69	1,859	92.83%	0.00%	0.00%	0.00%	3.45%	3.72%
Argo Group	2,347	3	360	0	264	212	3,185	73.68%	0.00%	11.29%	0.01%	8.29%	6.65%
HDI/Talanx US PC Group	318	0	26	0	178	0	522	60.85%	0.00%	5.05%	0.05%	34.01%	0.04%
Merchants Insurance Group	513	10	34	0	33	0	591	86.78%	1.77%	5.77%	0.00%	5.66%	0.03%
Sompo Holdings US Group	3,692	0	21	14	839	47	4,613	80.04%	0.00%	0.45%	0.30%	18.19%	1.02%
Central Insurance Companies	988	0	293	39	143	0	1,463	67.51%	0.00%	20.00%	2.70%	9.79%	0.00%
Nationwide Group	20,598	6	5,911	561	567	4,380	32,024	64.32%	0.02%	18.46%	1.75%	1.77%	13.68%
Everest Re U.S. Group	6,143	0	187	0	416	2,139	8,885	69.14%	0.00%	2.11%	0.00%	4.68%	24.07%
Work First Casualty Company	41	0	0	3	8	3	55	73.74%	0.00%	5.51%	5.51%	14.54%	6.21%
Church Mutual Insurance Group	1,206	11	219	13	53	112	1,614	74.71%	0.70%	13.60%	0.79%	3.29%	6.92%

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Asset Distribution for MA Workers' Compensation Group Companies

Companies	Bonds	Preferred Stocks	Common Stocks	Real Estate	Cash and Short Term Investments	Other Invested Assets	Total Cash and Invested Assets	% Bonds	% Preferred Stocks	% Common Stocks	% Real Estate	% Cash and Short Term Investments	% Other Invested Assets
(1)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	= (2) / (8)	= (3) / (8)	= (4) / (8)	= (5) / (8)	= (6) / (8)	= (7) / (8)
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
OneBeacon Insurance Group	1,335	0	549	0	73	36	1,993	66.98%	0.00%	27.57%	0.00%	3.64%	1.80%
MS&AD US Insurance Group	961	0	114	20	80	0	1,176	81.75%	0.02%	9.72%	1.69%	6.82%	0.00%
Allianz of America Companies	8,476	0	115	0	828	456	9,875	85.83%	0.00%	1.17%	0.00%	8.38%	4.62%
Enstar Insurance Group	2,280	0	0	0	177	109	2,566	88.87%	0.00%	0.01%	0.00%	6.88%	4.24%
Farmers Insurance Group	16,642	0	390	797	649	41	18,518	89.87%	0.00%	2.11%	4.30%	3.51%	0.22%
AF Group	2,418	1	223	0	177	73	2,892	83.61%	0.03%	7.71%	0.00%	6.11%	2.54%
Amerisure Companies	1,907	19	151	12	120	265	2,475	77.07%	0.79%	6.12%	0.48%	4.85%	10.69%
Quincy Mutual Group	691	5	523	20	57	230	1,525	45.33%	0.35%	34.26%	1.28%	3.73%	15.05%
Pharmacists Mutual Insurance Group	215	0	29	6	5	0	255	84.16%	0.00%	11.31%	2.39%	2.15%	0.00%
HIIG Group	280	0	55	0	129	55	519	53.98%	0.00%	10.66%	0.00%	24.80%	10.56%
State Auto Insurance Companies	2,870	0	445	20	118	188	3,641	78.82%	0.00%	12.23%	0.55%	3.25%	5.15%
GuideOne Insurance Companies	914	0	48	13	50	41	1,066	85.74%	0.00%	4.49%	1.23%	4.66%	3.88%
IAT Insurance Group	650	80	829	0	114	21	1,695	38.38%	4.73%	48.92%	0.00%	6.71%	1.27%
Premier Group Insurance Company	52	0	0	0	6	0	58	89.45%	0.00%	0.00%	0.00%	10.55%	0.00%
The Cincinnati Insurance Companies	7,150	167	3,679	9	537	165	11,706	61.08%	1.43%	31.43%	0.07%	4.59%	1.41%
American Contractors Insurance Group	287	0	55	0	40	84	466	61.49%	0.00%	11.87%	0.00%	8.64%	18.01%
Brotherhood Mutual Insurance Company	231	0	163	25	42	46	507	45.52%	0.07%	32.16%	4.90%	8.36%	9.00%
James River Group	253	54	16	0	152	26	502	50.41%	10.83%	3.15%	0.00%	30.39%	5.22%
RLI Group	1,712	0	517	30	32	35	2,326	73.61%	0.00%	22.24%	1.28%	1.36%	1.50%
Cherokee Insurance Company	233	59	134	0	-4	32	454	51.29%	13.04%	29.58%	0.00%	-0.86%	6.95%
Munich-American Holding Corp Companies	13,788	5	188	191	1,043	609	15,824	87.13%	0.03%	1.19%	1.21%	6.59%	3.85%
AMERISAFE Insurance Group	1,094	0	9	5	49	0	1,156	94.61%	0.00%	0.77%	0.41%	4.22%	0.00%
WCF Insurance Group	1,439	0	163	60	124	110	1,895	75.92%	0.00%	8.58%	3.15%	6.57%	5.78%
ICW Pool	2,250	22	548	0	92	29	2,941	76.51%	0.76%	18.62%	0.00%	3.12%	0.99%
State Farm Group	99,468	329	67,779	436	3,861	2,806	174,680	56.94%	0.19%	38.80%	0.25%	2.21%	1.61%
Benchmark Insurance Group	314	0	0	6	44	0	365	86.01%	0.09%	0.00%	1.77%	12.13%	0.00%
Samsung F & M Insurance Co, Ltd USB	71	0	0	0	18	0	89	79.86%	0.00%	0.00%	0.00%	20.14%	0.00%
ProAssurance Group	1,838	6	353	-2	193	370	2,759	66.63%	0.20%	12.80%	-0.07%	7.01%	13.42%
Petroleum Casualty Company	0	0	0	0	17	0	17	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
Penn National Insurance Companies	1,277	1	137	0	45	0	1,460	87.47%	0.05%	9.40%	0.00%	3.08%	0.00%
Gray Insurance Group	104	0	89	21	26	36	276	37.84%	0.00%	32.13%	7.56%	9.51%	12.96%

VII 000100 STTP

	% Bonds	% Preferred Stocks	% Common Stocks	% Real Estate	% Cash and Short Term Investments	% Other Invested Assets
(15): Premium Weighted Asset Distribution	76.41%	0.22%	11.50%	0.91%	3.67%	7.29%

Notes:  
 Source: A.M. Best's Global Insurance Database for all Massachusetts Workers' Compensation Group Companies, 2018 Exhibit of Assets.  
 (5): Real estate is sum of: properties occupied by the company, properties held for the production of income and properties held for sale.  
 (8) = (2) + (3) + (4) + (5) + (6) + (7)  
 (15): Premium Weighted Asset Distribution use Direct Premiums Written from Exhibit 5, page 2.

# VII 000101 STIP

Section VII - Profit  
 Subsection J - Portfolio Rate of Return  
 7/1/2020

Section VII - J  
 Exhibit 2  
 Page 1

## Calculation of Pretax Returns on Bonds

% of Bonds (adjusted for removal of Other Bonds category) by Class, by Maturity				
Term to Maturity in years	Governments	States and Territories	Special Revenue	Industrials
0.5	7.50%	0.66%	2.21%	4.28%
3	5.34%	3.08%	8.47%	22.50%
7	1.80%	3.26%	8.85%	17.57%
15	0.56%	3.02%	5.17%	1.87%
25	0.52%	0.21%	2.21%	0.94%
Total	15.71%	10.23%	26.90%	47.16%

As of	Term to Maturity in years	Yield Data			
		Governments	States and Territories	Special Revenue	Industrials
Jul-19	0.5	2.08%	1.24%	1.23%	2.21%
	3	1.80%	1.05%	1.12%	2.31%
	7	1.93%	1.32%	1.53%	2.72%
	15	2.21%	1.74%	2.37%	3.32%
	25	2.47%	2.07%	3.32%	3.64%
Aug-19	0.5	1.93%	1.07%	1.06%	2.06%
	3	1.51%	0.78%	0.83%	2.07%
	7	1.55%	1.02%	1.19%	2.42%
	15	1.77%	1.43%	2.03%	2.96%
	25	2.02%	1.74%	3.06%	3.27%
Sep-19	0.5	1.89%	1.23%	1.22%	2.04%
	3	1.59%	1.03%	1.06%	2.12%
	7	1.64%	1.24%	1.34%	2.50%
	15	1.84%	1.57%	1.99%	3.04%
	25	2.07%	1.85%	2.79%	3.33%
Jul-19 Aug-19 Sep-19 Average	All	1.99%	1.37%	1.68%	2.52%
	All	1.74%	1.09%	1.38%	2.26%
	All	1.76%	1.28%	1.49%	2.31%
	Average	<b>1.83%</b>	<b>1.25%</b>	<b>1.52%</b>	<b>2.37%</b>

**Notes:**

% of Bonds by Class and by Maturity for MA WC Group Companies are from Exhibit 3, page 1.

Yield Data are from Page 2.

Example of Weighted Yield calculation for Jul-19, States and Territories:

$$1.37 = (1.24 \times 0.66 + 1.05 \times 3.08 + 1.32 \times 3.26 + 1.74 \times 3.02 + 2.07 \times 0.21) / 10.23$$

# VII 000102 STIP

Section VII - Profit  
 Subsection J - Portfolio Rate of Return  
 7/1/2020

Section VII - J  
 Exhibit 2  
 Page 2

## Calculation of Yield Data

Term to Maturity in Years	Jul-19	Aug-19	Sep-19	Formulas used to derive the yields (reference to data on page 3)
<b>Governments</b>				
0.5	2.08%	1.93%	1.89%	=(4)
3	1.80%	1.51%	1.59%	=(7)
7	1.93%	1.55%	1.64%	=(9)
10	2.06%	1.63%	1.70%	=(10)
20	2.36%	1.91%	1.97%	=(11)
30	2.57%	2.12%	2.16%	=(12)
<b>States and Territories</b>				
0.5	1.24%	1.07%	1.23%	=(4) + 9.5/9.0 x [ (20) - (5) ] - 0.5/9.0 x [ (21) - (10) ]
3	1.05%	0.78%	1.03%	=(7) + 7.0/9.0 x [ (20) - (5) ] + 2.0/9.0 x [ (21) - (10) ]
7	1.32%	1.02%	1.24%	=(9) + 1.0/3.0 x [ (20) - (5) ] + 2.0/3.0 x [ (21) - (10) ]
10	1.55%	1.26%	1.41%	=(21)
20	1.93%	1.60%	1.73%	=(11) + 0.5 x [ (21) - (10) ] + 0.5 x [ (22) - (12) ]
30	2.22%	1.87%	1.97%	=(22)
<b>Special Revenue</b>				
0.5	1.23%	1.06%	1.22%	=(4) + 29.5/29.0 x [ (20) - (5) ] - 0.5/29.0 x [ (19) - (12) ]
3	1.12%	0.83%	1.06%	=(7) + 27.0/29.0 x [ (20) - (5) ] + 2.0/29.0 x [ (19) - (12) ]
7	1.53%	1.19%	1.34%	=(9) + 23.0/29.0 x [ (20) - (5) ] + 6.0/29.0 x [ (19) - (12) ]
10	1.87%	1.50%	1.57%	=(10) + 20.0/29.0 x [ (20) - (5) ] + 9.0/29.0 x [ (19) - (12) ]
20	2.87%	2.56%	2.41%	=(11) + 10.0/29.0 x [ (20) - (5) ] + 19.0/29.0 x [ (19) - (12) ]
30	3.77%	3.55%	3.17%	=(19)
<b>Industrial</b>				
0.5	2.21%	2.06%	2.04%	=(4) + 18.0/21.0 x [ (1) - (3) ] + 3.0/21.0 x [ (14) - (6) ]
3	2.31%	2.07%	2.12%	=(7) + 2.0/3.0 x [ (14) - (6) ] + 1.0/3.0 x [ (15) - (8) ]
7	2.72%	2.42%	2.50%	=(9) + 3.0/5.0 x [ (15) - (8) ] + 2.0/5.0 x [ (16) - (10) ]
10	3.14%	2.79%	2.87%	=(16)
20	3.51%	3.14%	3.21%	=(11) + 1.0/2.0 x [ (16) - (10) ] + 1.0/2.0 x [ (17) - (12) ]
30	3.78%	3.41%	3.46%	=(17)

# VII 000103 STIP

Section VII - Profit  
 Subsection J - Portfolio Rate of Return  
 7/1/2020

Section VII - J  
 Exhibit 2  
 Page 3

## Yield Data

	Jul-19	Aug-19	Sep-19	Average
<b>FEDERAL RESERVE STATISTICAL RELEASE</b>				
Commercial Paper				
(1) 1-month	2.30%	2.09%	2.02%	2.14%
(1) 3-month	2.22%	2.06%	2.03%	2.10%
U.S. Govt Securities - Secondary Market				
Treasury Constant Maturities				
(2) 1-month	2.15%	2.07%	1.99%	2.07%
(3) 3-month	2.15%	1.99%	1.93%	2.02%
(4) 6-month	2.08%	1.93%	1.89%	1.97%
(5) 1-year	1.96%	1.77%	1.80%	1.84%
(6) 2-year	1.84%	1.57%	1.65%	1.69%
(7) 3-year	1.80%	1.51%	1.59%	1.63%
(8) 5-year	1.83%	1.49%	1.57%	1.63%
(9) 7-year	1.93%	1.55%	1.64%	1.71%
(10) 10-year	2.06%	1.63%	1.70%	1.80%
(11) 20-year	2.36%	1.91%	1.97%	2.08%
(12) 30-year	2.57%	2.12%	2.16%	2.28%
<b>YAHOO</b>				
(13) Preferred Stock	5.30%	5.13%	5.08%	5.17%
<b>US DEPARTMENT OF THE TREASURY</b>				
HQM Corporate Bond Yield Curve Par Yields				
(14) 2-year	2.31%	2.08%	2.11%	2.17%
(15) 5-year	2.43%	2.16%	2.23%	2.27%
(16) 10-year	3.14%	2.79%	2.87%	2.93%
(17) 30-year	3.78%	3.41%	3.46%	3.55%
<b>VALUE LINE INVESTMENT SURVEY (Part II)</b>				
Bond Buyer Indexes				
(18) 20-Bond Index (GOs)	3.47%	3.20%	2.89%	3.19%
(19) Calculated 30-Bond Index (= (18) x [ (12) / (11) ] )	3.77%	3.55%	3.17%	3.50%
General Obligation Bonds (GOs)				
(20) 1-year Aaa	1.14%	0.94%	1.16%	1.08%
(21) 10-year Aaa	1.55%	1.26%	1.41%	1.41%
(22) 25/30-year Aaa	2.22%	1.87%	1.97%	2.02%

Note:

Sources: Federal Reserve Statistical Release, H.15, Yahoo Finance, US Department of the Treasury and various issues of Value Line Investment Survey, Part II.



# VII 000104 STIP

Section VII - Profit  
 Subsection J - Portfolio Rate of Return  
 7/1/2020

Section VII - J  
 Exhibit 3  
 Page 1

Premium Weighted Bond Distribution for MA Workers' Compensation Group Companies by Class and by Maturity

Term to Maturity in Years	Governments	States & Territories	Special Revenue	Industrials	Other Bonds	Total Bonds
0.5	7.43%	0.65%	2.19%	4.24%	0.02%	14.52%
3	5.29%	3.05%	8.39%	22.29%	0.57%	39.59%
7.5	1.78%	3.23%	8.76%	17.40%	0.21%	31.38%
15	0.55%	2.99%	5.12%	1.85%	0.01%	10.53%
25	0.51%	0.20%	2.18%	0.93%	0.13%	3.96%
Total	15.57%	10.13%	26.65%	46.72%	0.94%	100.00%

% of Bonds (adjusted for removal of Other Bonds category) by Class, by Maturity

Term to Maturity in Years	Governments	States & Territories	Special Revenue	Industrials	Total Bonds
0.5	7.50%	0.66%	2.21%	4.28%	14.64%
3	5.34%	3.08%	8.47%	22.50%	39.39%
7.5	1.80%	3.26%	8.85%	17.57%	31.47%
15	0.56%	3.02%	5.17%	1.87%	10.62%
25	0.52%	0.21%	2.21%	0.94%	3.87%
Total	15.71%	10.23%	26.90%	47.16%	100.00%

Notes:

- Bond Distribution from pages 2 and 3.
- Premium Weighted Bond Distribution use Direct Premiums Written from Exhibit 5, page 2.

Bond Distribution for MA Workers' Compensation Group Companies by Class and by Maturity

Companies  (1)	Governments					States & Territories					Special Revenue				
	0.5	3	7.5	15	25	0.5	3	7.5	15	25	0.5	3	7.5	15	25
	(2)					(3)					(4)				
Travelers Group	1.48%	3.86%	1.22%	0.42%	0.04%	1.48%	2.69%	3.83%	19.56%	0.44%	1.36%	2.45%	2.68%	12.17%	1.05%
A.I.M. Mutual Insurance Companies	0.26%	2.24%	0.19%	0.18%	0.01%	0.20%	2.66%	2.81%	0.00%	0.00%	2.77%	15.04%	16.74%	3.55%	1.25%
Hartford Insurance Group	1.31%	3.33%	1.82%	1.09%	3.36%	0.14%	1.02%	1.26%	1.51%	0.62%	0.98%	3.69%	4.65%	9.38%	12.25%
Liberty Mutual Insurance Companies	2.45%	12.93%	4.07%	2.39%	0.54%	0.36%	2.03%	6.29%	1.02%	0.32%	0.36%	2.63%	8.30%	6.70%	1.87%
Chubb INA Group	0.72%	3.45%	1.55%	0.77%	0.17%	0.80%	5.18%	3.90%	0.04%	0.06%	5.07%	16.93%	15.17%	4.17%	1.58%
American International Group	0.56%	2.66%	1.42%	0.24%	0.34%	0.83%	2.77%	2.07%	0.63%	0.00%	1.92%	7.67%	8.24%	2.27%	0.66%
Berkshire Hathaway Insurance Group	85.27%	1.96%	0.17%	0.03%	0.10%	0.02%	0.06%	0.00%	0.00%	0.00%	0.08%	0.17%	0.09%	0.09%	0.04%
Zurich Insurance US PC Group	5.96%	18.37%	6.29%	0.15%	0.85%	0.01%	1.05%	2.57%	0.24%	0.35%	1.61%	6.38%	8.75%	3.76%	3.65%
Charter Insurance Group	4.75%	1.09%	0.05%	0.00%	0.00%	2.51%	19.40%	7.23%	0.47%	0.00%	8.20%	22.27%	7.49%	2.78%	0.00%
W. R. Berkley Insurance Group	0.80%	4.37%	0.58%	0.09%	0.01%	0.23%	1.46%	2.62%	0.83%	0.00%	4.65%	17.35%	13.03%	2.22%	0.90%
AmTrust Group	4.46%	2.08%	0.89%	0.29%	0.00%	0.32%	1.49%	0.47%	0.61%	0.00%	1.92%	5.97%	10.25%	4.72%	0.62%
Old Republic Insurance Group	1.04%	4.23%	5.18%	0.00%	0.00%	0.00%	1.41%	6.99%	0.00%	0.00%	0.46%	3.82%	5.61%	0.00%	0.00%
Hanover Insurance Grp Prop & Cas Cos	0.25%	1.15%	1.07%	0.03%	0.27%	0.94%	2.54%	2.11%	0.55%	0.04%	1.68%	6.45%	9.59%	3.57%	0.82%
CNA Insurance Companies	0.41%	0.24%	0.59%	0.02%	0.09%	0.38%	2.19%	2.07%	1.49%	1.34%	2.69%	12.76%	8.82%	4.86%	2.60%
Arbella Insurance Group	0.36%	3.92%	1.03%	0.71%	0.00%	0.26%	0.98%	1.87%	0.00%	0.00%	2.19%	7.66%	21.22%	0.15%	0.00%
Fairfax Financial (USA) Group	47.22%	19.51%	0.58%	0.01%	3.54%	0.00%	0.00%	0.00%	0.00%	0.17%	0.18%	0.15%	0.00%	1.75%	0.73%
Utica National Insurance Group	0.48%	3.18%	1.17%	0.17%	0.05%	0.04%	0.66%	1.46%	0.00%	0.00%	3.01%	10.41%	12.38%	5.96%	1.17%
MEMIC Group	0.32%	3.26%	2.55%	0.66%	0.10%	0.57%	1.90%	5.77%	0.53%	0.26%	2.90%	16.42%	14.72%	5.88%	2.18%
Norfolk & Dedham Group Pool	2.86%	4.07%	1.26%	0.10%	0.03%	0.63%	0.50%	0.47%	0.00%	0.00%	2.38%	22.84%	24.79%	3.52%	0.60%
Sentry Insurance Group	1.58%	7.01%	4.23%	6.09%	0.28%	0.81%	1.94%	3.14%	0.35%	0.02%	1.12%	7.02%	11.29%	4.27%	0.39%
Selective Insurance Group	0.90%	1.53%	0.35%	0.06%	0.09%	0.34%	2.28%	2.62%	0.01%	0.00%	2.11%	12.46%	18.39%	4.55%	1.19%
AmeriTrust Group	0.26%	2.81%	0.05%	0.03%	0.00%	0.57%	1.45%	1.67%	0.00%	0.00%	1.78%	3.90%	1.22%	0.52%	0.06%
Starr International Group	5.71%	0.72%	0.98%	0.00%	0.00%	2.36%	5.76%	4.10%	0.00%	0.00%	1.08%	17.08%	10.87%	0.29%	0.00%
Markel Corporation Group	5.47%	4.56%	4.89%	0.16%	0.00%	4.19%	7.34%	19.07%	1.68%	1.20%	1.74%	6.05%	21.42%	4.21%	3.45%
Arrow Mutual Liability Insurance Company	5.98%	62.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
American National Prop & Cas Companies	0.00%	0.57%	0.00%	0.00%	0.00%	0.20%	2.77%	14.24%	4.94%	0.01%	0.33%	1.12%	5.39%	1.20%	0.00%
American Family Insurance Group	1.33%	5.87%	3.83%	0.22%	0.33%	1.42%	5.54%	6.52%	0.74%	0.07%	3.41%	16.46%	16.01%	3.65%	0.53%
EMC Insurance Companies	0.67%	3.94%	1.49%	0.72%	0.03%	1.99%	3.71%	5.70%	0.20%	0.00%	3.47%	7.52%	8.63%	17.78%	0.63%
Arch Insurance Group	0.72%	12.80%	5.83%	0.07%	0.00%	0.09%	1.29%	3.18%	0.00%	0.00%	0.53%	3.72%	6.35%	0.85%	0.16%
Federated Mutual Group	0.31%	1.57%	1.26%	0.55%	0.00%	2.84%	10.32%	4.91%	0.42%	0.25%	1.85%	13.63%	10.57%	1.63%	0.01%
Tokio Marine US PC Group	0.34%	1.15%	0.55%	0.85%	0.81%	0.35%	2.27%	3.13%	2.66%	1.54%	1.44%	11.10%	12.10%	10.27%	9.09%
Great American P & C Insurance Grp	2.12%	1.98%	0.07%	0.02%	0.00%	0.12%	0.68%	1.02%	1.34%	0.08%	2.22%	9.76%	7.06%	10.82%	2.99%
Electric Insurance Company	1.06%	2.18%	0.38%	0.00%	0.00%	0.00%	3.43%	0.01%	0.00%	0.00%	1.35%	6.68%	5.02%	2.21%	0.60%
QBE North America Insurance Group	2.32%	11.46%	18.74%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.55%	0.00%	0.00%	0.00%
AXA U.S. Group	7.24%	16.60%	3.24%	0.57%	0.07%	0.41%	1.37%	1.18%	0.20%	0.06%	3.36%	11.07%	9.24%	6.17%	2.24%
Protective Insurance Corporation Group	2.20%	23.97%	7.73%	0.00%	0.00%	0.40%	1.83%	0.52%	0.00%	0.00%	1.70%	4.78%	2.84%	1.21%	0.43%
Employers Insurance Group	0.92%	3.55%	0.34%	0.02%	0.00%	1.19%	3.47%	3.82%	0.00%	0.00%	3.56%	10.36%	13.75%	4.52%	1.08%
ProSight Specialty Group	3.02%	2.18%	1.92%	0.00%	0.03%	0.00%	0.16%	0.00%	0.19%	0.00%	0.20%	0.84%	0.66%	0.06%	0.01%
Argo Group	2.65%	3.15%	2.30%	0.22%	0.54%	0.69%	1.98%	1.30%	0.00%	0.00%	1.55%	7.76%	6.02%	2.33%	0.45%
HDI/Talanx US PC Group	19.55%	15.73%	1.70%	0.69%	0.17%	0.00%	0.47%	3.98%	0.19%	0.00%	0.64%	2.69%	13.07%	1.72%	0.28%
Merchants Insurance Group	1.38%	4.92%	3.61%	0.67%	0.18%	1.05%	7.88%	0.21%	0.00%	0.00%	1.38%	25.79%	5.73%	13.03%	5.71%
Sompo Holdings US Group	2.01%	9.79%	3.77%	0.29%	0.07%	0.01%	0.29%	0.74%	0.08%	0.00%	3.39%	11.05%	11.02%	5.07%	1.15%

VII 000105 STIP

Bond Distribution for MA Workers' Compensation Group Companies by Class and by Maturity

Companies  (1)	Governments					States & Territories					Special Revenue				
	0.5	3	7.5	15	25	0.5	3	7.5	15	25	0.5	3	7.5	15	25
	(2)					(3)					(4)				
Central Insurance Companies	0.45%	1.19%	0.74%	0.00%	0.00%	1.69%	5.11%	10.44%	0.13%	0.00%	5.34%	11.24%	13.29%	0.78%	0.26%
Nationwide Group	1.11%	3.77%	8.21%	0.01%	1.79%	1.19%	1.80%	1.98%	0.58%	0.00%	2.31%	4.63%	7.35%	3.18%	0.93%
Everest Re U.S. Group	4.09%	42.43%	3.89%	0.07%	0.00%	0.02%	0.25%	0.35%	0.03%	0.01%	0.40%	3.66%	3.32%	1.30%	1.10%
Work First Casualty Company	1.27%	1.52%	0.00%	0.00%	1.81%	0.82%	2.78%	0.00%	0.00%	0.00%	0.86%	2.32%	2.07%	0.87%	0.00%
Church Mutual Insurance Group	5.14%	11.19%	5.99%	0.77%	0.51%	0.29%	3.55%	2.82%	0.27%	0.00%	2.38%	15.43%	13.07%	3.40%	0.99%
OneBeacon Insurance Group	4.06%	9.28%	12.11%	2.06%	0.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.69%	2.93%	2.90%	0.30%	0.05%
MS&AD US Insurance Group	3.78%	22.43%	8.12%	2.04%	0.00%	0.37%	1.80%	3.19%	0.00%	0.07%	0.73%	4.57%	4.46%	0.45%	0.25%
Allianz of America Companies	0.95%	12.70%	2.57%	0.14%	0.27%	0.20%	1.28%	0.58%	0.06%	0.06%	1.08%	6.93%	7.71%	3.03%	2.45%
Enstar Insurance Group	1.49%	4.25%	1.24%	0.11%	0.02%	0.02%	0.01%	0.62%	0.00%	0.03%	2.99%	10.17%	3.39%	0.44%	0.14%
Farmers Insurance Group	6.49%	22.54%	2.54%	0.47%	0.29%	0.33%	1.55%	2.51%	0.46%	0.66%	2.14%	7.78%	8.73%	3.19%	3.24%
AF Group	2.42%	15.46%	12.20%	0.41%	5.18%	0.00%	0.00%	0.00%	0.00%	0.00%	2.12%	6.58%	5.75%	6.70%	4.64%
Amerisure Companies	0.81%	4.32%	6.90%	2.05%	2.63%	0.00%	0.42%	4.41%	0.00%	0.00%	1.62%	5.61%	6.87%	1.02%	0.08%
Quincy Mutual Group	0.13%	5.48%	6.76%	0.26%	2.04%	0.36%	0.60%	1.52%	0.00%	0.00%	3.38%	10.68%	15.45%	4.23%	0.81%
Pharmacists Mutual Insurance Group	0.69%	1.25%	0.91%	2.46%	0.00%	1.85%	5.46%	3.49%	0.00%	0.00%	3.38%	14.11%	25.03%	4.43%	0.62%
Hilig Group	18.25%	22.76%	4.43%	3.20%	0.65%	0.26%	0.76%	0.24%	0.00%	1.20%	1.87%	8.49%	7.38%	3.88%	3.45%
State Auto Insurance Companies	4.07%	7.99%	5.36%	3.04%	7.16%	0.54%	2.81%	2.11%	0.17%	0.00%	4.72%	19.09%	10.44%	5.43%	3.19%
GuideOne Insurance Companies	1.38%	3.12%	0.81%	0.01%	0.00%	0.60%	1.33%	2.95%	0.00%	0.00%	2.31%	4.11%	9.95%	0.03%	0.05%
IAT Insurance Group	2.49%	4.88%	0.09%	0.16%	0.03%	0.02%	0.06%	0.00%	0.00%	0.00%	0.27%	2.54%	1.67%	0.24%	0.02%
Premier Group Insurance Company	2.58%	5.78%	3.84%	0.00%	0.00%	0.00%	0.00%	4.23%	0.00%	0.00%	0.84%	6.82%	6.55%	2.10%	0.40%
The Cincinnati Insurance Companies	0.01%	0.68%	0.38%	0.00%	0.00%	1.48%	9.31%	15.70%	5.32%	0.01%	1.23%	3.77%	14.03%	4.08%	0.08%
American Contractors Insurance Group	0.28%	3.94%	0.37%	0.12%	0.01%	0.35%	2.11%	2.41%	0.00%	0.00%	2.86%	15.79%	16.66%	1.62%	0.28%
Brotherhood Mutual Insurance Company	0.00%	2.02%	0.00%	0.00%	0.00%	1.49%	14.44%	13.31%	0.25%	0.00%	4.74%	22.57%	29.35%	0.79%	0.56%
James River Group	21.98%	15.38%	0.78%	0.38%	0.07%	0.00%	0.98%	3.83%	0.18%	0.00%	1.19%	5.74%	9.72%	6.00%	2.29%
RLI Group	1.58%	7.18%	7.69%	1.90%	0.67%	0.36%	3.27%	2.22%	0.29%	0.00%	1.08%	7.25%	7.89%	3.13%	8.47%
Cherokee Insurance Company	0.00%	1.90%	1.22%	0.00%	0.00%	1.95%	3.41%	2.09%	3.76%	0.31%	2.36%	28.41%	7.90%	12.81%	7.39%
Munich-American Holding Corp Companies	5.74%	26.54%	15.05%	0.77%	3.85%	0.01%	0.07%	0.00%	0.00%	0.00%	1.11%	3.30%	2.21%	0.76%	0.19%
AMERISAFE Insurance Group	0.13%	5.46%	0.94%	0.08%	0.00%	3.26%	10.60%	9.02%	1.54%	0.22%	4.43%	15.40%	20.84%	2.78%	0.03%
WCF Insurance Group	3.36%	11.83%	8.32%	4.75%	0.39%	1.01%	5.38%	6.89%	6.65%	0.00%	3.43%	11.14%	8.81%	3.61%	0.00%
ICW Pool	13.22%	31.13%	0.70%	1.56%	0.07%	0.10%	2.76%	6.86%	20.00%	8.57%	0.00%	0.42%	1.40%	0.19%	0.00%
State Farm Group	2.30%	7.89%	5.66%	0.28%	0.00%	1.00%	10.47%	24.50%	1.36%	0.02%	0.98%	6.86%	18.09%	0.79%	0.13%
Benchmark Insurance Group	1.44%	6.03%	1.02%	0.37%	0.06%	1.25%	4.35%	4.15%	0.30%	0.14%	2.65%	9.87%	12.13%	3.04%	0.22%
Samsung F & M Insurance Co, Ltd USB	3.08%	27.29%	0.63%	0.00%	0.00%	0.03%	0.17%	0.00%	0.00%	0.00%	0.54%	4.05%	0.43%	0.00%	0.00%
ProAssurance Group	1.71%	4.73%	1.70%	0.24%	0.02%	0.44%	1.25%	2.19%	0.07%	0.00%	2.37%	10.99%	7.28%	1.84%	0.31%
Petroleum Casualty Company	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Penn National Insurance Companies	0.05%	1.46%	0.32%	0.02%	0.00%	1.57%	0.33%	0.99%	0.32%	0.00%	5.78%	10.54%	8.65%	6.36%	1.52%
Gray Insurance Group	28.60%	13.49%	0.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.73%	1.88%	3.31%	34.87%	0.32%

VII 000106 STIP

Notes:  
 Source: A.M. Best's Global Insurance Database for all Massachusetts Workers' Compensation Group Companies, 2018 Schedule D, Part 1A.

Bond Distribution for MA Workers' Compensation Group Companies by Class and by Maturity

Companies  (1)	Industrials					Other Bonds				
	0.5	3	7.5	15	25	0.5	3	7.5	15	25
	(2)					(3)				
Travelers Group	6.76%	17.17%	20.34%	0.86%	0.16%	0.00%	0.00%	0.00%	0.00%	0.00%
A.I.M. Mutual Insurance Companies	1.81%	24.95%	22.37%	2.57%	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%
Hartford Insurance Group	6.23%	19.57%	18.22%	4.40%	4.58%	0.02%	0.18%	0.34%	0.00%	0.05%
Liberty Mutual Insurance Companies	2.90%	27.52%	15.57%	1.00%	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%
Chubb INA Group	2.53%	22.72%	13.59%	1.00%	0.51%	0.00%	0.00%	0.00%	0.00%	0.11%
American International Group	10.64%	33.21%	18.07%	2.54%	1.11%	0.01%	1.89%	0.11%	0.04%	0.11%
Berkshire Hathaway Insurance Group	0.89%	3.11%	0.21%	0.62%	0.05%	0.00%	5.11%	1.91%	0.00%	0.01%
Zurich Insurance US PC Group	3.16%	16.91%	17.03%	2.20%	0.60%	0.00%	0.00%	0.00%	0.06%	0.04%
Charter Insurance Group	1.77%	19.82%	0.63%	0.00%	0.00%	0.22%	1.12%	0.00%	0.00%	0.19%
W. R. Berkley Insurance Group	6.77%	23.74%	13.28%	3.10%	0.17%	0.18%	0.77%	0.88%	0.00%	1.99%
AmTrust Group	0.86%	20.03%	44.61%	0.39%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%
Old Republic Insurance Group	5.48%	42.02%	22.96%	0.60%	0.00%	0.00%	0.19%	0.00%	0.00%	0.00%
Hanover Insurance Grp Prop & Cas Cos	2.84%	27.83%	37.36%	0.33%	0.56%	0.00%	0.03%	0.00%	0.00%	0.00%
CNA Insurance Companies	3.92%	14.61%	26.56%	8.21%	4.90%	0.00%	0.04%	0.11%	0.30%	0.80%
Arbella Insurance Group	5.85%	33.75%	20.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Fairfax Financial (USA) Group	1.62%	19.41%	1.03%	0.17%	1.45%	0.00%	1.41%	1.09%	0.00%	0.00%
Utica National Insurance Group	4.82%	26.53%	25.05%	3.24%	0.23%	0.00%	0.00%	0.00%	0.00%	0.00%
MEMIC Group	2.89%	17.89%	16.25%	2.57%	2.39%	0.00%	0.00%	0.00%	0.00%	0.00%
Norfolk & Dedham Group Pool	1.37%	16.82%	17.52%	0.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sentry Insurance Group	2.60%	26.69%	19.20%	1.86%	0.11%	0.00%	0.00%	0.00%	0.00%	0.00%
Selective Insurance Group	5.54%	27.91%	17.41%	0.73%	0.18%	0.00%	0.00%	0.02%	0.00%	1.33%
AmeriTrust Group	4.99%	43.58%	35.45%	1.06%	0.61%	0.00%	0.00%	0.00%	0.00%	0.00%
Starr International Group	6.83%	8.35%	32.38%	2.26%	0.98%	0.00%	0.05%	0.00%	0.00%	0.22%
Markel Corporation Group	0.84%	3.24%	8.57%	1.01%	0.93%	0.00%	0.01%	0.00%	0.00%	0.00%
Arrow Mutual Liability Insurance Company	3.29%	25.08%	3.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
American National Prop & Cas Companies	1.34%	33.63%	33.01%	0.72%	0.54%	0.00%	0.00%	0.00%	0.00%	0.00%
American Family Insurance Group	6.31%	16.74%	9.94%	0.63%	0.44%	0.00%	0.00%	0.01%	0.00%	0.00%
EMC Insurance Companies	2.38%	19.05%	20.77%	1.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Arch Insurance Group	2.65%	47.79%	12.89%	0.42%	0.66%	0.00%	0.00%	0.00%	0.00%	0.00%
Federated Mutual Group	3.17%	14.04%	15.40%	15.82%	1.44%	0.00%	0.00%	0.00%	0.00%	0.00%

VII 000107 STIP

Bond Distribution for MA Workers' Compensation Group Companies by Class and by Maturity

Companies  (1)	Industrials					Other Bonds				
	0.5	3	7.5	15	25	0.5	3	7.5	15	25
	(2)					(3)				
Tokio Marine US PC Group	1.50%	13.69%	20.47%	2.73%	2.29%	0.13%	0.13%	0.47%	0.09%	0.85%
Great American P & C Insurance Grp	6.73%	32.66%	17.74%	2.21%	0.24%	0.00%	0.00%	0.00%	0.00%	0.15%
Electric Insurance Company	4.71%	39.34%	33.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
QBE North America Insurance Group	1.59%	60.28%	5.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
AXA U.S. Group	1.25%	23.65%	11.36%	0.27%	0.42%	0.00%	0.00%	0.00%	0.01%	0.00%
Protective Insurance Corporation Group	9.46%	26.36%	16.46%	0.09%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
Employers Insurance Group	4.10%	28.12%	20.32%	0.60%	0.28%	0.00%	0.00%	0.00%	0.00%	0.00%
ProSight Specialty Group	7.11%	45.99%	31.30%	2.34%	3.99%	0.00%	0.00%	0.00%	0.00%	0.00%
Argo Group	7.80%	41.07%	18.42%	1.20%	0.46%	0.00%	0.11%	0.00%	0.00%	0.00%
HDI/Talanx US PC Group	2.13%	18.44%	17.31%	0.75%	0.00%	0.21%	0.28%	0.00%	0.00%	0.00%
Merchants Insurance Group	4.54%	15.07%	5.72%	0.41%	0.67%	0.00%	0.23%	1.67%	0.00%	0.14%
Sompo Holdings US Group	7.74%	32.02%	11.18%	0.31%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%
Central Insurance Companies	1.65%	15.25%	21.15%	3.04%	8.25%	0.00%	0.00%	0.00%	0.00%	0.00%
Nationwide Group	4.82%	27.73%	24.05%	2.92%	1.62%	0.00%	0.00%	0.00%	0.00%	0.01%
Everest Re U.S. Group	4.53%	23.96%	8.58%	1.32%	0.38%	0.00%	0.00%	0.00%	0.00%	0.29%
Work First Casualty Company	0.61%	51.84%	18.56%	9.53%	5.14%	0.00%	0.00%	0.00%	0.00%	0.00%
Church Mutual Insurance Group	3.85%	20.71%	8.48%	0.95%	0.22%	0.00%	0.00%	0.00%	0.00%	0.00%
OneBeacon Insurance Group	5.18%	34.14%	12.78%	9.72%	3.49%	0.00%	0.00%	0.00%	0.00%	0.00%
MS&AD US Insurance Group	5.03%	25.24%	17.35%	0.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Allianz of America Companies	3.06%	30.72%	20.55%	1.67%	3.95%	0.00%	0.00%	0.00%	0.04%	0.00%
Enstar Insurance Group	6.72%	30.57%	32.94%	1.79%	3.07%	0.00%	0.00%	0.00%	0.00%	0.00%
Farmers Insurance Group	2.25%	18.69%	14.78%	0.92%	0.43%	0.00%	0.00%	0.00%	0.00%	0.00%
AF Group	5.28%	14.96%	12.85%	1.48%	3.96%	0.00%	0.00%	0.03%	0.00%	0.00%
Amerisure Companies	6.97%	26.82%	19.30%	9.64%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%
Quincy Mutual Group	2.12%	26.11%	16.45%	0.54%	2.35%	0.00%	0.14%	0.00%	0.59%	0.00%
Pharmacists Mutual Insurance Group	0.50%	11.39%	16.32%	2.77%	5.33%	0.00%	0.00%	0.00%	0.00%	0.00%
HIIG Group	3.30%	12.41%	7.15%	0.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.02%
State Auto Insurance Companies	2.98%	17.39%	2.68%	0.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
GuideOne Insurance Companies	6.80%	29.11%	37.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
IAT Insurance Group	6.49%	25.54%	39.17%	11.91%	3.38%	0.00%	0.00%	0.00%	0.29%	0.76%

VII 000108 STIP

Bond Distribution for MA Workers' Compensation Group Companies by Class and by Maturity

Companies  (1)	Industrials					Other Bonds				
	0.5	3	7.5	15	25	0.5	3	7.5	15	25
	(2)					(3)				
Premier Group Insurance Company	7.11%	40.21%	18.83%	0.71%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
The Cincinnati Insurance Companies	3.99%	20.82%	18.40%	0.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
American Contractors Insurance Group	12.02%	31.66%	9.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Brotherhood Mutual Insurance Company	1.00%	6.48%	3.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
James River Group	1.04%	17.97%	8.06%	0.00%	0.00%	3.12%	1.28%	0.00%	0.00%	0.00%
RLI Group	1.10%	19.75%	21.68%	2.82%	1.67%	0.00%	0.00%	0.00%	0.00%	0.00%
Cherokee Insurance Company	3.32%	19.66%	2.87%	0.40%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%
Munich-American Holding Corp Companies	2.84%	22.55%	10.76%	1.92%	1.82%	0.00%	0.03%	0.22%	0.00%	0.29%
AMERISAFE Insurance Group	8.16%	14.38%	2.64%	0.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
WCF Insurance Group	0.10%	9.67%	8.98%	1.76%	3.91%	0.00%	0.00%	0.00%	0.00%	0.00%
ICW Pool	0.50%	6.11%	4.73%	0.58%	1.08%	0.00%	0.00%	0.00%	0.00%	0.00%
State Farm Group	0.39%	5.99%	13.21%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Benchmark Insurance Group	6.90%	34.74%	11.14%	0.09%	0.00%	0.08%	0.00%	0.03%	0.00%	0.00%
Samsung F & M Insurance Co, Ltd USB	24.77%	19.31%	18.45%	0.00%	1.26%	0.00%	0.00%	0.00%	0.00%	0.00%
ProAssurance Group	8.33%	39.88%	15.62%	0.80%	0.21%	0.00%	0.00%	0.00%	0.00%	0.02%
Petroleum Casualty Company	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Penn National Insurance Companies	3.15%	26.41%	30.43%	1.87%	0.18%	0.00%	0.08%	0.00%	0.00%	0.00%
Gray Insurance Group	1.67%	14.42%	0.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Notes:

Source: A.M. Best's Global Insurance Database for all Massachusetts Workers' Compensation Group Companies, 2018 Schedule D, Part 1A.

VII 000109 STIP

Market Risk Premium

Year (1)	Large Company Stocks Total Returns (2)	Long-Term Government Bonds Income Returns (3)	Intermediate-Term Government Bonds Income Returns (4)	Short-Term Total Returns (5)	Long-Term Market Risk Premium = (2) - (3) (6)	Intermediate-Term Market Risk Premium = (2) - (4) (7)	Short-Term Market Risk Premium = (2) - (5) (8)
1926	11.62	3.73	3.78	3.27	7.89	7.84	8.35
1927	37.49	3.41	3.49	3.12	34.08	34.00	34.37
1928	43.61	3.22	3.64	3.56	40.39	39.97	40.05
1929	-8.42	3.47	4.07	4.75	-11.89	-12.49	-13.17
1930	-24.90	3.32	3.30	2.41	-28.22	-28.20	-27.31
1931	-43.34	3.33	3.16	1.07	-46.67	-46.50	-44.41
1932	-8.19	3.69	3.63	0.96	-11.88	-11.82	-9.15
1933	53.99	3.12	2.83	0.30	50.87	51.16	53.69
1934	-1.44	3.18	2.93	0.16	-4.62	-4.37	-1.60
1935	47.67	2.81	2.02	0.17	44.86	45.65	47.50
1936	33.92	2.77	1.44	0.18	31.15	32.48	33.74
1937	-35.03	2.66	1.48	0.31	-37.69	-36.51	-35.34
1938	31.12	2.64	1.82	-0.02	28.48	29.30	31.14
1939	-0.41	2.40	1.31	0.02	-2.81	-1.72	-0.43
1940	-9.78	2.23	0.90	0.00	-12.01	-10.68	-9.78
1941	-11.59	1.94	0.67	0.06	-13.53	-12.26	-11.65
1942	20.34	2.46	0.76	0.27	17.88	19.58	20.07
1943	25.90	2.44	1.56	0.35	23.46	24.34	25.55
1944	19.75	2.46	1.44	0.33	17.29	18.31	19.42
1945	36.44	2.34	1.19	0.33	34.10	35.25	36.11
1946	-8.07	2.04	1.08	0.35	-10.11	-9.15	-8.42
1947	5.71	2.13	1.21	0.50	3.58	4.50	5.21
1948	5.50	2.40	1.56	0.81	3.10	3.94	4.69
1949	18.79	2.25	1.36	1.10	16.54	17.43	17.69
1950	31.71	2.12	1.39	1.20	29.59	30.32	30.51
1951	24.02	2.38	1.98	1.49	21.64	22.04	22.53
1952	18.37	2.66	2.19	1.66	15.71	16.18	16.71
1953	-0.99	2.84	2.55	1.82	-3.83	-3.54	-2.81
1954	52.62	2.79	1.60	0.86	49.83	51.02	51.76
1955	31.56	2.75	2.45	1.57	28.81	29.11	29.99
1956	6.56	2.99	3.05	2.46	3.57	3.51	4.10
1957	-10.78	3.44	3.59	3.14	-14.22	-14.37	-13.92
1958	43.36	3.27	2.93	1.54	40.09	40.43	41.82
1959	11.96	4.01	4.18	2.95	7.95	7.78	9.01
1960	0.47	4.26	4.15	2.66	-3.79	-3.68	-2.19
1961	26.89	3.83	3.54	2.13	23.06	23.35	24.76
1962	-8.73	4.00	3.73	2.73	-12.73	-12.46	-11.46
1963	22.80	3.89	3.71	3.12	18.91	19.09	19.68
1964	16.48	4.15	4.00	3.54	12.33	12.48	12.94
1965	12.45	4.20	4.15	3.93	8.25	8.30	8.52
1966	-10.06	4.49	4.93	4.76	-14.55	-14.99	-14.82
1967	23.98	4.59	4.88	4.21	19.39	19.10	19.77
1968	11.06	5.50	5.49	5.21	5.56	5.57	5.85
1969	-8.50	5.95	6.65	6.58	-14.45	-15.15	-15.08
1970	3.86	6.74	7.49	6.52	-2.88	-3.63	-2.66
1971	14.30	6.32	5.75	4.39	7.98	8.55	9.91
1972	18.99	5.87	5.75	3.84	13.12	13.24	15.15
1973	-14.69	6.51	6.58	6.93	-21.20	-21.27	-21.62
1974	-26.47	7.27	7.24	8.00	-33.74	-33.71	-34.47
1975	37.23	7.99	7.35	5.80	29.24	29.88	31.43
1976	23.93	7.89	7.10	5.08	16.04	16.83	18.85

VII 000110 STIP

Market Risk Premium

Year (1)	Large Company Stocks Total Returns (2)	Long-Term Government Bonds Income Returns (3)	Intermediate-Term Government Bonds Income Returns (4)	Short-Term Total Returns (5)	Long-Term Market Risk Premium = (2) - (3) (6)	Intermediate-Term Market Risk Premium = (2) - (4) (7)	Short-Term Market Risk Premium = (2) - (5) (8)
1977	-7.16	7.14	6.49	5.12	-14.30	-13.65	-12.28
1978	6.57	7.90	7.83	7.18	-1.33	-1.26	-0.61
1979	18.61	8.86	9.04	10.38	9.75	9.57	8.23
1980	32.50	9.97	10.55	11.24	22.53	21.95	21.26
1981	-4.92	11.55	12.97	14.71	-16.47	-17.89	-19.63
1982	21.55	13.50	12.81	10.54	8.05	8.74	11.01
1983	22.56	10.38	10.35	8.80	12.18	12.21	13.76
1984	6.27	11.74	11.68	9.85	-5.47	-5.41	-3.58
1985	31.73	11.25	10.29	7.72	20.48	21.44	24.01
1986	18.67	8.98	7.72	6.16	9.69	10.95	12.51
1987	5.25	7.92	7.47	5.47	-2.67	-2.22	-0.22
1988	16.61	8.97	8.24	6.35	7.64	8.37	10.26
1989	31.69	8.81	8.46	8.37	22.88	23.23	23.32
1990	-3.10	8.19	8.15	7.81	-11.29	-11.25	-10.91
1991	30.47	8.22	7.43	5.60	22.25	23.04	24.87
1992	7.62	7.26	6.27	3.51	0.36	1.35	4.11
1993	10.08	7.17	5.53	2.90	2.91	4.55	7.18
1994	1.32	6.59	6.07	3.90	-5.27	-4.75	-2.58
1995	37.58	7.60	6.69	5.60	29.98	30.89	31.98
1996	22.96	6.18	5.82	5.21	16.78	17.14	17.75
1997	33.36	6.64	6.14	5.26	26.72	27.22	28.10
1998	28.58	5.83	5.29	4.86	22.75	23.29	23.72
1999	21.04	5.57	5.30	4.68	15.47	15.74	16.36
2000	-9.10	6.50	6.19	5.89	-15.60	-15.29	-14.99
2001	-11.89	5.53	4.27	3.83	-17.42	-16.16	-15.72
2002	-22.10	5.59	3.98	1.65	-27.69	-26.08	-23.75
2003	28.68	4.80	2.85	1.02	23.88	25.83	27.66
2004	10.88	5.02	3.28	1.20	5.86	7.60	9.68
2005	4.91	4.69	3.92	2.98	0.22	0.99	1.93
2006	15.79	4.68	4.54	4.80	11.11	11.25	10.99
2007	5.49	4.86	4.44	4.66	0.63	1.05	0.83
2008	-37.00	4.45	2.96	1.60	-41.45	-39.96	-38.60
2009	26.46	3.47	2.01	0.10	22.99	24.45	26.36
2010	15.06	4.25	1.92	0.12	10.81	13.14	14.94
2011	2.11	3.82	1.64	0.04	-1.71	0.47	2.07
2012	16.00	2.46	0.73	0.06	13.54	15.27	15.94
2013	32.39	2.88	1.02	0.02	29.51	31.37	32.37
2014	13.69	3.41	1.63	0.02	10.28	12.06	13.67
2015	1.38	2.47	1.51	0.02	-1.09	-0.13	1.36
2016	11.96	2.30	1.36	0.20	9.66	10.60	11.76
2017	21.83	2.67	1.93	0.80	19.16	19.90	21.03
2018	-4.38	2.82	2.65	1.81	-7.20	-7.03	-6.19
Average	11.88	4.97	4.39	3.38	6.91	7.49	8.50

Notes:

Source: 2019 SBBI Yearbook.

(2): Appendix A-1: Large-Capitalization Stocks, Total Returns.

(3): Appendix A-7: Long Term Government Bonds: Income Returns.

(4): Appendix A-11: Intermediate Term Government Bonds: Income Returns.

(5): Appendix A-14: U.S. Treasury Bills, Total Returns.



Investment Expense to Invested Assets Ratio

Companies	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Travelers Group	0.23%	0.22%	0.22%	0.23%	0.22%	0.23%	0.20%	0.21%	0.23%	0.19%
A.I.M. Mutual Insurance Companies	0.14%	0.13%	0.14%	0.15%	0.16%	0.16%	0.16%	0.23%	0.16%	0.17%
Hartford Insurance Group	0.25%	0.24%	0.20%	0.19%	0.19%	0.18%	0.19%	0.19%	0.17%	0.17%
Liberty Mutual Insurance Companies	0.29%	0.27%	0.25%	0.26%	0.26%	0.26%	0.25%	0.31%	0.43%	0.34%
Chubb INA Group	0.13%	0.13%	0.16%	0.16%	0.18%	0.17%	0.14%	0.15%	0.15%	0.15%
American International Group	0.17%	0.19%	0.15%	0.16%	0.13%	0.15%	0.16%	0.16%	0.10%	0.10%
Berkshire Hathaway Insurance Group	0.13%	0.09%	0.12%	0.12%	0.12%	0.06%	0.08%	0.08%	0.09%	0.12%
Zurich Insurance US PC Group	0.30%	0.25%	0.24%	0.14%	0.15%	0.09%	0.09%	0.10%	0.09%	0.03%
Charter Insurance Group	0.28%	0.27%	0.24%	0.26%	0.25%	0.25%	0.26%	0.22%	0.23%	0.15%
W. R. Berkley Insurance Group	0.23%	0.25%	0.29%	0.30%	0.26%	0.26%	0.28%	0.30%	0.32%	0.35%
AmTrust Group	0.11%	0.25%	0.18%	0.16%	0.16%	0.19%	0.23%	0.25%	0.25%	0.23%
Old Republic Insurance Group	0.08%	0.07%	0.09%	0.12%	0.12%	0.13%	0.15%	0.18%	0.18%	0.17%
Hanover Insurance Grp Prop & Cas Cos	0.21%	0.24%	0.25%	0.26%	0.15%	0.15%	0.16%	0.14%	0.15%	0.15%
CNA Insurance Companies	0.14%	0.14%	0.15%	0.23%	0.20%	0.19%	0.20%	0.19%	0.19%	0.10%
Arbella Insurance Group	0.11%	0.11%	0.11%	0.10%	0.11%	0.24%	0.23%	0.21%	0.23%	0.22%
Fairfax Financial (USA) Group	0.46%	0.40%	0.62%	0.62%	0.77%	0.97%	1.10%	0.97%	0.79%	0.43%
Utica National Insurance Group	0.27%	0.27%	0.26%	0.29%	0.30%	0.28%	0.30%	0.29%	0.27%	0.27%
MEMIC Group	0.18%	0.19%	0.19%	0.19%	0.22%	0.22%	0.23%	0.23%	0.24%	0.32%
Norfolk & Dedham Group Pool	0.63%	0.58%	0.60%	0.58%	0.61%	0.50%	0.54%	0.52%	0.50%	0.67%
Sentry Insurance Group	0.29%	0.25%	0.25%	0.25%	0.25%	0.25%	0.27%	0.26%	0.27%	0.28%
Selective Insurance Group	0.20%	0.22%	0.18%	0.19%	0.19%	0.18%	0.20%	0.19%	0.21%	0.16%
AmeriTrust Group	0.29%	0.12%	0.14%	0.16%	0.13%	0.12%	0.11%	0.12%	0.11%	0.11%
Starr International Group	0.12%	0.14%	0.13%	0.13%	0.11%	0.10%	0.14%	0.48%	0.32%	0.44%
Markel Corporation Group	0.47%	0.43%	0.42%	0.43%	0.39%	0.37%	0.36%	0.31%	0.31%	0.27%
Arrow Mutual Liability Insurance Company	0.31%	0.33%	0.31%	0.31%	0.41%	0.32%	0.31%	0.36%	0.35%	0.36%
American National Prop & Cas Companies	0.13%	0.14%	0.15%	0.13%	0.13%	0.15%	0.13%	0.14%	0.14%	0.15%
American Family Insurance Group	0.56%	0.54%	0.49%	0.48%	0.46%	0.46%	0.59%	0.63%	0.73%	0.69%
EMC Insurance Companies	0.79%	0.67%	0.69%	0.63%	0.58%	0.56%	0.52%	0.51%	0.44%	0.46%
Arch Insurance Group	0.22%	0.22%	0.15%	0.14%	0.11%	0.11%	0.11%	0.10%	0.09%	0.08%
Federated Mutual Group	0.23%	0.21%	0.20%	0.18%	0.18%	0.20%	0.19%	0.18%	0.21%	0.21%
Tokio Marine US PC Group	0.40%	0.41%	0.30%	0.25%	0.19%	0.17%	0.16%	0.17%	0.19%	0.22%
Great American P & C Insurance Grp	0.30%	0.29%	0.32%	0.32%	0.34%	0.41%	0.39%	0.40%	0.35%	0.39%
Electric Insurance Company	0.43%	0.44%	0.38%	0.38%	0.36%	0.35%	0.34%	0.32%	0.30%	0.35%

VII 000112 STTP

Investment Expense to Invested Assets Ratio

Companies	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
QBE North America Insurance Group	0.28%	0.29%	0.25%	0.33%	0.29%	0.29%	0.30%	0.32%	0.39%	0.37%
AXA U.S. Group	0.22%	0.24%	0.23%	0.25%	0.25%	0.25%	0.25%	0.25%	0.21%	0.15%
Protective Insurance Corporation Group	0.53%	0.51%	0.56%	0.62%	0.54%	0.46%	0.29%	0.27%	0.26%	0.22%
Employers Insurance Group	0.10%	0.10%	0.10%	0.10%	0.10%	0.11%	0.11%	0.12%	0.12%	0.11%
ProSight Specialty Group	0.12%	0.12%	0.14%	0.14%	0.14%	0.16%	0.13%	0.11%	0.27%	0.36%
Argo Group	0.51%	0.49%	0.39%	0.41%	0.42%	0.37%	0.36%	0.34%	0.27%	0.15%
HDI/Talanx US PC Group	0.10%	0.12%	0.14%	0.11%	0.12%	0.13%	0.09%	0.10%	0.10%	0.09%
Merchants Insurance Group	0.15%	0.12%	0.12%	0.14%	0.14%	0.13%	0.15%	0.16%	0.16%	0.17%
Sompo Holdings US Group	0.12%	0.12%	0.13%	0.17%	0.15%	0.17%	0.17%	0.17%	0.19%	0.14%
Central Insurance Companies	0.38%	0.28%	0.26%	0.27%	0.28%	0.29%	0.28%	0.28%	0.25%	0.27%
Nationwide Group	0.37%	0.35%	0.35%	0.25%	0.35%	0.37%	0.33%	0.41%	0.40%	0.37%
Everest Re U.S. Group	0.09%	0.11%	0.10%	0.09%	0.10%	0.11%	0.09%	0.07%	0.06%	0.05%
Work First Casualty Company	0.48%	0.54%	0.82%	0.42%	0.44%	0.53%	0.57%	0.65%	0.60%	0.53%
Church Mutual Insurance Group	0.27%	0.31%	0.32%	0.28%	0.29%	0.30%	0.33%	0.36%	0.36%	0.33%
OneBeacon Insurance Group	0.34%	0.19%	0.20%	0.21%	0.40%	0.42%	0.04%	0.17%	0.28%	0.18%
MS&AD US Insurance Group	0.35%	0.35%	0.41%	0.36%	0.36%	0.35%	0.35%	0.37%	0.35%	0.35%
Allianz of America Companies	0.08%	0.09%	0.09%	0.06%	0.07%	0.06%	0.06%	0.08%	0.09%	0.13%
Enstar Insurance Group	0.16%	0.17%	0.20%	0.13%	0.17%	0.22%	0.20%	0.22%	0.29%	0.18%
Farmers Insurance Group	0.18%	0.19%	0.13%	0.11%	0.12%	0.16%	0.15%	0.09%	0.08%	0.14%
AF Group	0.20%	0.12%	0.12%	0.15%	0.13%	0.12%	0.12%	0.16%	0.15%	0.32%
Amerisure Companies	0.14%	0.15%	0.15%	0.14%	0.16%	0.17%	0.19%	0.18%	0.33%	0.34%
Quincy Mutual Group	0.44%	0.91%	0.70%	0.39%	0.54%	0.43%	0.41%	0.40%	0.39%	0.39%
Pharmacists Mutual Insurance Group	0.52%	0.52%	0.45%	0.54%	0.66%	0.66%	0.61%	0.62%	0.63%	0.64%
HIIG Group	0.66%	0.39%	0.24%	0.17%	0.13%	0.19%	0.24%	0.16%	0.25%	0.28%
State Auto Insurance Companies	0.40%	0.40%	0.42%	0.49%	0.48%	0.49%	0.73%	0.74%	0.64%	0.68%
GuideOne Insurance Companies	0.69%	0.63%	0.56%	0.53%	0.53%	0.49%	0.55%	0.56%	0.58%	0.59%
IAT Insurance Group	0.42%	0.32%	0.34%	0.39%	0.34%	0.34%	0.34%	0.37%	0.35%	0.43%
Premier Group Insurance Company	0.26%	0.29%	0.29%	0.29%	0.32%	0.26%	0.31%	0.31%	0.29%	0.32%
The Cincinnati Insurance Companies	0.06%	0.06%	0.05%	0.07%	0.06%	0.07%	0.06%	0.06%	0.06%	0.06%
American Contractors Insurance Group	0.22%	0.27%	0.29%	0.33%	0.33%	0.33%	0.44%	0.41%	0.44%	0.43%
Brotherhood Mutual Insurance Company	0.77%	0.78%	0.83%	0.90%	0.98%	0.82%	0.86%	0.93%	0.81%	0.75%
James River Group	0.30%	0.31%	0.37%	0.41%	0.39%	0.36%	0.33%	0.29%	0.28%	0.37%
RLI Group	0.30%	0.31%	0.32%	0.32%	0.33%	0.32%	0.32%	0.22%	0.21%	0.19%

VII 000113 STIP

Investment Expense to Invested Assets Ratio

Companies	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Cherokee Insurance Company	0.07%	0.07%	0.07%	0.08%	0.09%	0.08%	0.11%	0.11%	0.08%	0.06%
Munich-American Holding Corp Companies	0.24%	0.25%	0.24%	0.24%	0.24%	0.17%	0.18%	0.19%	0.17%	0.22%
AMERISAFE Insurance Group	0.14%	0.14%	0.16%	0.16%	0.19%	0.20%	0.21%	0.24%	0.23%	0.26%
WCF Insurance Group	0.31%	0.31%	0.30%	0.27%	0.28%	0.26%	0.24%	0.31%	0.20%	0.16%
ICW Pool	0.50%	0.80%	0.65%	0.69%	0.30%	0.24%	0.37%	0.35%	0.21%	0.15%
State Farm Group	0.14%	0.15%	0.20%	0.28%	0.19%	0.24%	0.28%	0.27%	0.29%	0.31%
Benchmark Insurance Group	0.93%	0.55%	0.65%	0.77%	0.82%	0.76%	0.68%	0.43%	0.33%	0.57%
Samsung F & M Insurance Co, Ltd USB	0.33%	0.57%	0.18%	0.31%	0.25%	0.34%	0.39%	0.49%	0.19%	0.19%
ProAssurance Group	0.29%	0.29%	0.26%	0.26%	0.31%	0.27%	0.28%	0.25%	0.25%	0.28%
Petroleum Casualty Company	0.07%	0.08%	0.08%	0.09%	0.11%	0.10%	0.10%	0.11%	0.13%	0.20%
Penn National Insurance Companies	0.19%	0.18%	0.17%	0.18%	0.20%	0.21%	0.19%	0.18%	0.19%	0.21%
Gray Insurance Group	0.58%	0.53%	0.45%	0.46%	0.37%	0.11%	0.11%	0.10%	0.09%	0.07%

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Premium Weighted Investment Expense to Asset Ratio	0.22%	0.21%	0.21%	0.20%	0.20%	0.20%	0.20%	0.22%	0.22%	0.20%

Selected Ratio	<b>0.21%</b>
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Notes:

Source: A.M. Best's Global Insurance Database for all Massachusetts Workers' Compensation Group Companies.

- Investment Expenses is the sum of Total Investment Expenses Incurred and Investment Tax, Licences & Fees and Aggregate Write Ins, from Exhibit of Net Investment Income.
- Total Cash and Invested Assets from Exhibit of Assets.
- Premium Weighted Investment Expense to Asset Ratio use Direct Premiums Written from page 2.
- Selected Ratio is equal to ten year average.

VII 000114 STIP

Direct Premiums Written for MA Workers' Compensation Group Companies

Companies	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Travelers Group	165,699	165,917	170,238	159,479	151,076	142,948	124,857	106,025	90,462	84,286
A.I.M. Mutual Insurance Companies	155,688	158,179	156,921	149,530	144,469	138,172	122,474	104,109	81,952	84,258
Hartford Insurance Group	116,964	115,136	106,794	100,625	95,680	93,792	92,384	86,307	77,079	78,197
Liberty Mutual Insurance Companies	106,490	100,744	93,621	96,358	93,316	108,341	109,499	105,520	108,375	112,336
Chubb INA Group	93,797	88,015	85,214	70,148	62,298	56,332	43,831	64,397	51,134	37,038
American International Group	93,630	84,054	91,871	106,329	105,983	99,753	192,817	155,996	144,199	129,955
Berkshire Hathaway Insurance Group	79,674	77,020	75,380	66,402	53,226	39,037	36,961	30,976	23,973	22,310
Zurich Insurance US PC Group	61,930	60,851	63,002	61,220	53,484	43,096	39,237	32,940	35,079	40,945
Charter Insurance Group	60,790	64,004	61,617	58,394	57,349	53,707	48,975	43,363	40,843	40,757
W. R. Berkley Insurance Group	42,470	46,425	41,191	35,083	33,183	30,140	33,958	27,722	21,486	18,539
AmTrust Group	32,669	36,819	40,042	36,955	30,874	28,174	23,387	21,076	10,242	9,533
Old Republic Insurance Group	25,785	26,755	21,483	19,474	21,366	20,020	13,221	9,924	7,652	5,756
Hanover Insurance Grp Prop & Cas Cos	21,394	20,360	17,429	16,309	12,945	12,871	12,258	11,761	8,325	7,987
CNA Insurance Companies	21,127	20,840	18,238	16,003	15,858	15,740	16,328	19,077	18,794	21,164
Arbella Insurance Group	14,367	15,091	14,935	13,905	13,389	13,312	10,894	10,856	10,852	12,900
Fairfax Financial (USA) Group	12,424	11,527	10,596	9,840	7,808	5,967	7,094	5,561	5,197	6,458
Utica National Insurance Group	11,778	10,704	9,921	9,731	9,239	8,962	7,759	7,410	6,246	5,880
MEMIC Group	11,239	9,658	8,147	6,500	6,470	6,535	6,472	6,273	4,998	4,411
Norfolk & Dedham Group Pool	8,552	8,692	8,848	7,859	7,323	7,235	7,207	6,888	6,795	6,772
Sentry Insurance Group	8,263	7,293	7,197	5,974	7,166	7,496	7,191	6,979	5,731	7,039
Selective Insurance Group	8,189	7,060	6,254	5,646	5,225	4,938	5,061	3,777	3,080	2,500
AmeriTrust Group	7,717	9,674	12,187	9,267	9,227	12,037	12,170	7,452	5,639	6,555
Starr International Group	7,458	4,833	4,455	4,196	2,914	1,759	102	0	0	0
Markel Corporation Group	7,294	5,507	1,455	1,319	1,314	1,074	1,734	2,126	2,588	2,523
Arrow Mutual Liability Insurance Company	6,671	5,757	5,180	5,589	5,414	5,419	4,588	4,999	2,949	3,662
American National Prop & Cas Companies	6,612	6,545	6,400	6,034	5,677	5,296	5,299	5,384	4,901	4,838
American Family Insurance Group	6,426	6,652	7,607	6,649	5,855	5,874	5,970	5,614	5,310	5,229
EMC Insurance Companies	6,326	4,285	4,012	3,246	1,095	593	495	237	267	191
Arch Insurance Group	6,148	5,889	6,417	4,136	5,364	5,021	4,588	2,717	2,428	1,675
Federated Mutual Group	6,117	5,898	5,082	3,335	3,071	2,381	2,182	2,125	1,594	1,806
Tokio Marine US PC Group	5,089	4,708	4,273	3,783	2,686	2,518	2,395	1,950	1,940	1,890

VII 000115 STIP

Direct Premiums Written for MA Workers' Compensation Group Companies

Companies	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Great American P & C Insurance Grp	4,819	5,786	4,303	3,896	3,493	2,674	3,247	3,825	4,319	3,957
Electric Insurance Company	4,451	3,278	4,408	4,164	3,850	4,097	4,240	4,131	5,450	3,812
QBE North America Insurance Group	4,218	6,333	5,862	3,483	2,990	2,924	1,987	1,445	861	282
AXA U.S. Group	3,765	4,457	3,265	1,356	1,304	2,650	1,178	1,520	903	1,126
Protective Insurance Corporation Group	3,499	3,560	2,387	2,337	2,074	1,341	1,493	1,266	706	508
Employers Insurance Group	3,125	1,583	110	0	0	0	0	0	0	0
ProSight Specialty Group	2,976	2,056	1,681	1,047	730	387	171	63	0	0
Argo Group	2,766	2,854	2,870	2,732	3,120	3,328	3,107	5,286	7,969	5,869
HDI/Talanx US PC Group	2,716	5,579	8,710	6,821	5,300	4,242	2,161	1,099	0	0
Merchants Insurance Group	2,603	2,602	2,345	2,058	1,946	1,560	1,460	1,248	1,137	1,207
Sompo Holdings US Group	2,301	1,406	899	585	579	415	578	555	375	389
Central Insurance Companies	2,116	1,914	2,029	2,334	2,006	1,819	2,009	2,630	4,015	5,583
Nationwide Group	2,072	2,462	2,506	3,402	3,282	3,222	2,304	2,138	2,480	2,883
Everest Re U.S. Group	1,727	1,759	616	489	799	709	422	345	218	241
Work First Casualty Company	1,414	900	0	0	0	0	0	0	0	0
Church Mutual Insurance Group	1,363	1,287	1,175	1,006	925	919	806	660	703	724
OneBeacon Insurance Group	1,298	1,306	1,352	1,515	1,632	1,903	226	0	0	4
MS&AD US Insurance Group	1,284	1,315	2,075	1,706	1,628	1,999	1,860	1,157	981	855
Allianz of America Companies	1,065	1,034	581	397	457	446	1,210	1,623	1,411	1,520
Enstar Insurance Group	997	641	0	0	0	0	-66	0	0	-1
Farmers Insurance Group	987	2,205	2,660	2,671	3,310	1,187	41	32	22	29
AF Group	980	421	361	179	111	139	161	132	108	96
Amerisure Companies	804	708	777	1,059	550	306	494	245	88	22
Quincy Mutual Group	690	731	735	785	770	810	765	756	708	595
Pharmacists Mutual Insurance Group	650	573	536	342	409	364	570	549	509	644
HIIG Group	634	195	34	41	62	11	3	41	57	0
State Auto Insurance Companies	612	663	623	505	321	198	195	32	-9	0
GuideOne Insurance Companies	477	557	509	316	59	49	51	58	47	43
IAT Insurance Group	430	414	496	345	335	479	470	356	379	596
Premier Group Insurance Company	367	382	347	322	317	384	341	358	363	340
The Cincinnati Insurance Companies	367	252	227	294	313	279	271	170	180	201

VII 000116 STIP

Direct Premiums Written for MA Workers' Compensation Group Companies

Companies	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
American Contractors Insurance Group	187	80	47	3	-10	-12	63	30	26	-14
Brotherhood Mutual Insurance Company	139	66	36	5	0	0	0	0	0	0
James River Group	126	4	0	0	0	0	0	0	0	0
RLI Group	114	111	88	62	45	19	0	0	0	0
Cherokee Insurance Company	109	118	117	99	81	79	91	81	77	104
Munich-American Holding Corp Companies	92	679	134	72	698	1,636	1,151	127	77	-86
AMERISAFE Insurance Group	60	103	125	45	50	111	91	53	70	9
WCF Insurance Group	55	65	30	25	18	18	23	88	65	11
ICW Pool	44	329	490	65	2	0	0	0	0	0
State Farm Group	35	35	24	50	19	30	43	41	37	41
Benchmark Insurance Group	26	92	31	0	0	0	0	0	0	0
Samsung F & M Insurance Co, Ltd USB	16	36	31	42	17	14	0	0	0	0
ProAssurance Group	12	0	0	0	0	0	0	0	0	0
Petroleum Casualty Company	6	4	-24	21	3	3	-8	5	64	28
Penn National Insurance Companies	2	3	1	6	3	2	1	7	3	0
Gray Insurance Group	1	0	0	0	0	0	0	0	0	0

Notes:

Source: A.M. Best's Global Insurance Database for all Massachusetts Workers' Compensation Group Companies.

VII 000117 STIP

# VII 000118 STIP

## Calculation of Common Stock Total Return Tax Rate

Year (1)	Income Returns (2)	Capital Appreciation Returns (3)
1926	5.41	5.72
1927	5.71	30.91
1928	4.81	37.88
1929	3.98	-11.91
1930	4.57	-28.48
1931	5.35	-47.07
1932	6.16	-15.15
1933	6.39	46.59
1934	4.46	-5.94
1935	4.95	41.37
1936	5.36	27.92
1937	4.66	-38.59
1938	4.83	25.21
1939	4.69	-5.45
1940	5.36	-15.29
1941	6.71	-17.86
1942	6.79	12.43
1943	6.24	19.45
1944	5.48	13.80
1945	4.97	30.72
1946	4.09	-11.87
1947	5.49	0.00
1948	6.08	-0.65
1949	7.50	10.26
1950	8.77	21.78
1951	6.91	16.46
1952	5.93	11.78
1953	5.46	-6.62
1954	6.21	45.02
1955	4.56	26.40
1956	3.83	2.62
1957	3.84	-14.31
1958	4.38	38.06
1959	3.31	8.48
1960	3.26	-2.97
1961	3.48	23.13
1962	2.98	-11.81
1963	3.61	18.89
1964	3.33	12.97
1965	3.21	9.06
1966	3.11	-13.09
1967	3.64	20.09
1968	3.18	7.66
1969	2.98	-11.36
1970	3.33	0.10
1971	3.49	10.63
1972	2.95	15.79
1973	2.86	-17.37
1974	3.69	-29.72
1975	5.37	31.55
1976	4.49	19.15
1977	4.35	-11.50
1978	5.33	1.06
1979	5.89	12.31
1980	5.74	25.77
1981	4.88	-9.73
1982	5.61	14.76
1983	5.04	17.27
1984	4.57	1.40
1985	4.72	26.33

## VII 000119 STIP

### Calculation of Common Stock Total Return Tax Rate

Year (1)	Income Returns (2)	Capital Appreciation Returns (3)
1986	3.92	14.62
1987	3.64	2.03
1988	3.99	12.40
1989	4.03	27.25
1990	3.43	-6.56
1991	3.76	26.31
1992	2.98	4.46
1993	2.91	7.06
1994	2.83	-1.54
1995	3.04	34.11
1996	2.43	20.26
1997	2.10	31.01
1998	1.67	26.67
1999	1.36	19.53
2000	1.11	-10.14
2001	1.18	-13.04
2002	1.39	-23.37
2003	1.99	26.38
2004	1.76	8.99
2005	1.84	3.00
2006	2.01	13.62
2007	1.96	3.53
2008	1.92	-38.49
2009	2.48	23.45
2010	2.02	12.78
2011	2.13	0.00
2012	2.50	13.41
2013	2.48	29.60
2014	2.16	11.39
2015	2.10	-0.73
2016	2.26	9.54
2017	2.21	19.42
2018	2.01	-6.24
Average	3.96	7.69

	Dividend	Capital Gains
(4) Weights	33.98%	66.02%
(5) Tax Rate	13.13%	15.80%
(6) Common Stock Tax Rate		<b>14.89%</b>

Notes:

Source: 2019 SBBI Yearbook.

(2): Appendix A-2: Large-Capitalization Stocks, Income Returns.

(3): Appendix A-3: Large-Capitalization Stocks, Capital Appreciation Returns.

(5) = Dividend Tax Rate =  $0.5 \times 0.21 + 0.5 \times 0.21 \times 0.25$

Capital Gains Tax Rate is from page 2.



Calculation of Capital Gains Tax Rate

(1) Turnover Rate	36.00%
(2) Weighted Average Cost of Capital	7.15%
(3) Marginal Tax Rate	21.00%
(4) Annual Expected Capital Gains Rate	7.69%

Year (5)	Investment Basis (6) <sub>t-1</sub> x [1.0 - (1)] (6)	Investment Value		Investment Sold (8) x (1) (9)	Realized Capital Gains [(8) - (6)] x (1) (10)	Taxes Paid (10) x (3) (11)	Present Value of the Taxes (12)
		Beg of Year (8) <sub>t-1</sub> - (9) <sub>t-1</sub> (7)	End of Year (7) x [1.0 + (4)] (8)				
0	1,000,000.00	1,000,000.00	1,076,854.84	387,667.74	27,667.74	5,810.23	5,612.90
1	640,000.00	689,187.10	742,154.46	267,175.61	36,775.61	7,722.88	6,962.45
2	409,600.00	474,978.85	511,483.28	184,133.98	36,677.98	7,702.38	6,480.32
3	262,144.00	327,349.30	352,507.68	126,902.76	32,530.92	6,831.49	5,363.84
4	167,772.16	225,604.91	242,943.74	87,459.75	27,061.77	5,682.97	4,164.13
5	107,374.18	155,483.99	167,433.69	60,276.13	21,621.42	4,540.50	3,104.86
6	68,719.48	107,157.56	115,393.14	41,541.53	16,802.52	3,528.53	2,251.75
7	43,980.47	73,851.61	79,527.46	28,629.89	12,796.92	2,687.35	1,600.44
8	28,147.50	50,897.58	54,809.30	19,731.35	9,598.25	2,015.63	1,120.25
9	18,014.40	35,077.95	37,773.86	13,598.59	7,113.41	1,493.82	774.80
10	11,529.22	24,175.27	26,033.26	9,371.97	5,221.46	1,096.51	530.75
11	7,378.70	16,661.29	17,941.79	6,459.04	3,802.71	798.57	360.73
12	4,722.37	11,482.74	12,365.25	4,451.49	2,751.44	577.80	243.58
13	3,022.31	7,913.76	8,521.97	3,067.91	1,979.88	415.77	163.57
14	1,934.28	5,454.06	5,873.23	2,114.36	1,418.02	297.78	109.33
15	1,237.94	3,758.87	4,047.76	1,457.19	1,011.53	212.42	72.78
16	792.28	2,590.56	2,789.66	1,004.28	719.06	151.00	48.28
17	507.06	1,785.38	1,922.60	692.14	509.59	107.01	31.93
18	324.52	1,230.46	1,325.03	477.01	360.18	75.64	21.06
19	207.69	848.02	913.19	328.75	253.98	53.34	13.86
20	132.92	584.44	629.36	629.36	496.44	104.25	25.28
Total					247,170.83	51,905.87	39,056.92

(13) Implied Tax Rate on Capital Gains 15.80%

Notes:

- (1): Turnover Rate is based on AIB Stock Turnover Study of 1988 transactions. (2001 AIB Profit Filing, R2000-10, 100H-3, Exhibits 15 and 16)
- (2): Interest Rate is the weighted average cost of capital, Section VII - E, Exhibit 1.
- (4): Page 1.
- (10) Year 20 : All remaining capital gains are assumed realized in year 20.
- (12) = (11) x { [ 1.0 + (2) ]<sup>n</sup> - [ (5) + 0.5 ] }
- (13) = (12) Total / (10) Total

VII 000120 STIP

Calculation of Common Stock Tax Rate for Different Discount Rates and Turnover Rates

		Discount Rate											
		4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
Turnover Rate	0.10	12.39%	11.45%	10.64%	9.96%	9.37%	8.87%	8.43%	8.06%	7.73%	7.44%	7.19%	6.97%
	0.15	13.37%	12.53%	11.80%	11.17%	10.61%	10.12%	9.69%	9.31%	8.97%	8.66%	8.39%	8.15%
	0.20	14.28%	13.55%	12.91%	12.33%	11.82%	11.36%	10.94%	10.56%	10.22%	9.92%	9.63%	9.38%
	0.25	15.04%	14.42%	13.85%	13.34%	12.88%	12.45%	12.06%	11.71%	11.38%	11.08%	10.80%	10.54%
	0.30	15.64%	15.11%	14.62%	14.17%	13.76%	13.37%	13.01%	12.68%	12.37%	12.08%	11.82%	11.56%
	0.35	16.11%	15.65%	15.23%	14.83%	14.46%	14.12%	13.80%	13.49%	13.21%	12.94%	12.68%	12.44%
	0.40	16.47%	16.08%	15.71%	15.36%	15.04%	14.73%	14.44%	14.16%	13.90%	13.65%	13.42%	13.19%
	0.45	16.76%	16.42%	16.10%	15.79%	15.50%	15.23%	14.97%	14.72%	14.48%	14.26%	14.04%	13.83%
	0.50	16.99%	16.70%	16.42%	16.15%	15.89%	15.65%	15.42%	15.19%	14.98%	14.77%	14.58%	14.39%
	0.55	17.18%	16.92%	16.68%	16.44%	16.22%	16.00%	15.79%	15.59%	15.40%	15.22%	15.04%	14.87%
	0.60	17.34%	17.12%	16.90%	16.70%	16.50%	16.31%	16.12%	15.94%	15.77%	15.60%	15.44%	15.29%
	0.65	17.48%	17.28%	17.09%	16.91%	16.74%	16.57%	16.40%	16.25%	16.09%	15.94%	15.80%	15.66%
	0.70	17.59%	17.42%	17.26%	17.10%	16.95%	16.80%	16.65%	16.51%	16.38%	16.24%	16.11%	15.99%

# VIII 000009 STIP

Section VIII - F-Class Recommendation  
Subsection A - Indicated Rate Change  
7/1/2020

Section VIII-A  
Exhibit 1

## F-Class Rate Review Overall Indicated Rate Change

(1)	5-Year Adjusted Standard Plus ARAP Earned Premium	7,685,005
(2)	5-Year Adjusted Losses, LAE, and LBA	3,824,290
(3)	5-Year Adjusted Loss, LAE, and LBA Ratio = (2) / (1)	49.8%
(4)	Fixed Expense Ratio	5.1%
(5)	Indicated Policy Year 7/1/2020 Loss, LAE, Fixed Expense Ratio = (3) + (4)	54.8%
(6)	Variable Expense Ratio	19.6%
(7)	Profit and Contingencies	-0.8%
(8)	Permissible Loss, LAE, LBA, and Fixed Expense Ratio = 1.000 - [ (6) + (7) ]	81.1%
(9)	Indicated Average Rate Change = [ (5) / (8) ] - 1.000	-32.4%
(10)	Rate Changed based on Trended On-Level Expected Loss Ratio	-4.2%
(11)	5-Year Total Claim Count	162
(12)	Credibility of the Indicated Average Rate Change = [ (11) / 4,000 ] <sup>0.5</sup>	20.1%
(13)	Credibility Weighted Average Rate Change = [ (9) x (12) ] + { (10) x [100% - (12)] }	-9.9%

### Notes:

- (1): Section VIII-B, Exhibit 1.
- (2): Section VIII-C, Exhibit 1, Page 2 and 4.
- (4), (6): Section VI-A, Exhibit 1.
- (7): Section VII-A, Exhibit 1.
- (10): Exhibit 2.
- (11): Unit Statistical Plan Data.

# VIII 000010 STIP

Section VIII - F-Class Recommendation  
 Subsection A - Indicated Rate Change  
 7/1/2020

Section VIII-A  
 Exhibit 2

## F-Class Rate Review Complement of Credibility based on Trended On-Level Expected Loss Ratio

(1)	State Class Expected Loss and LAE Ratio from Prior Revision		76.6%
(2)	Loss Adjustment Expense Ratio from Prior Revision		0.185
(3)	Special Fund Assessment Rate as a % of Federal Indemnity Losses from Prior Revision		11.9%
		<u>Indemnity</u>	<u>Medical</u>
(4)	Federal Indemnity/Medical Losses as % of Total Federal Losses	57.6%	42.4%
(5)	F-Class Expected Loss Ratio from Prior Revision		61.1%
	= (1) / {(4) for Indemnity x [ 1.000 + (2) + (3) ] + (4) for Medical x [ 1.000 + (2) ] }		
(6)	Benefit Level Change Factor	1.009	1.000
(7)	Net Indemnity/Medical Trend	-2.7%	-3.3%
(8)	Years since Prior Revision	2.0	2.0
(9)	Trended On-Level Loss Ratio	33.6%	24.2%
	= (4) x (5) x (6) x [ 1.000 + (7) ] ^ (8)		
(10)	Special Fund Assessment Rate as a % of Federal Indemnity Losses		12.0%
(11)	Loss Adjustment Expense Factor		1.187
(12)	Trended Loss, LAE and LBA Ratio		72.6%
	= [ (9) for indemnity x (10) ] + [ (9) Total x (11) ]		
(13)	Fixed Expense Ratio		5.1%
(14)	Trended Loss, LAE and Fixed Expense Ratio		77.7%
	= (12) + (13)		
(15)	Variable Expense Ratio		19.6%
(16)	Underwriting Profit Provision		-0.8%
(17)	Permissible Loss, LAE, LBA, and Fixed Expense Ratio		81.1%
	= 1.000 - [ (15) + (16) ]		
(18)	Rate Changed based on Trended On-Level Expected Loss Ratio from Prior Revision		-4.2%
	= [ (14) / (17) ] - 1.000		

### Notes:

- (1): Section VI-J, Exhibit 1 of 07/01/2018 Stipulation.  
 (2), (3), (4): Section VIII-J, Exhibit 1 of 07/01/2018 Stipulation.  
 (6): Section VIII-F, Exhibit 2.  
 (7): Section V-A, Exhibit 1.  
 (10): Section VIII-E, Exhibit 1, Page 2.  
 (11), (15),(16): Section VI-J, Exhibit 1.  
 (13): Section VI-A, Exhibit 1.

# VIII 000011 STIP

Section VIII - F-Class Recommendation  
Subsection B - Adjusted Premium  
7/1/2020

Section VIII-B  
Exhibit 1

## 5 Year Adjusted Standard Plus ARAP Earned Premium

Policy Year (1)	Manual Premium (2)	Premium Development Factor (3)	Experience & Merit Rating Adjustment (4)	ARAP Adjustment (5)	Total Adj Standard Plus ARAP Premium (6)
2013	1,414,597	1.000	0.997	1.051	1,482,281
2014	1,309,738	1.000	0.997	1.051	1,372,005
2015	1,644,170	1.000	0.997	1.051	1,722,116
2016	1,580,814	0.999	0.997	1.051	1,655,451
2017	1,387,870	0.999	0.997	1.051	1,453,153
Total	7,337,188				7,685,005

Notes:

(2): Section VIII-F, Exhibit 1, Page 3.

(3): Section V-E, Exhibit 1.

(4): The offset for Merit Rating and Average Experience Modification from the 07/01/2018 Stipulation.

(5): The offset for ARAP from the 07/01/2018 Stipulation.

(6) = (2) x (3) x (4) x (5)

# VIII 00012 STIP

Section VIII - F-Class Recommendation  
 Subsection C - Adjusted Losses  
 7/1/2020

Section VIII-C  
 Exhibit 1  
 Page 1

## Calculation of Adjusted Indemnity and Medical Losses Federal Losses

### (A). Unit Statistical Plan Limited Reported Losses

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	143,946	442,086	203,890	112,273	7,003
Temporary Total	154,123	62,061	99,040	31,076	62,632
<b>Medical</b>					
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	226,668	169,359	113,136	67,193	36,613
Temporary Total	75,956	94,556	126,899	63,066	86,733
Medical Only	17,342	29,814	21,360	28,610	14,838

### (B). Unit Statistical Plan Converted Unlimited Losses

Converted unlimited Losses are Limited Losses after the application of Primary, Excess and Secondary Conversion Factors.

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	209,872	623,691	370,090	202,451	21,123
Temporary Total	231,482	93,335	170,678	57,479	168,811
<b>Medical</b>					
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	329,102	263,203	220,873	113,146	63,349
Temporary Total	120,305	136,634	206,045	100,142	153,143
Medical Only	18,713	36,106	27,206	39,574	22,105

Note:

(B): Section VIII-G.

# VIII 00013 STIP

Section VIII - F-Class Recommendation  
 Subsection C - Adjusted Losses  
 7/1/2020

Section VIII-C  
 Exhibit 1  
 Page 2

## Calculation of Adjusted Indemnity and Medical Losses Federal Losses

### (C). Investment Income Offset Factor

The impact from this factor needs to be removed from the Federal Conversion Factors.

Indemnity	Investment Income Offset Factor
Fatal	0.799
Permanent Total	0.744
Permanent Partial	1.041
Temporary Total	1.051
<b>Medical</b>	
Fatal	1.000
Permanent Total	0.749
Permanent Partial	1.047
Temporary Total	1.057
Medical Only	1.000

### (D). Adjusted Losses

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	201,656	599,276	355,602	194,526	20,296
Temporary Total	220,278	88,818	162,417	54,697	160,641
<b>Medical</b>					
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	314,253	251,327	210,907	108,041	60,490
Temporary Total	113,771	129,212	194,853	94,702	144,824
Medical Only	18,713	36,106	27,206	39,574	22,105
Adjusted Losses, LAE, LBA	3,824,290				

### Notes:

(C): Section IX-B, Exhibit 4.

(D) = (B) / (C)

# VIII 000014 STIP

Section VIII - F-Class Recommendation  
 Subsection C - Adjusted Losses  
 7/1/2020

Section VIII-C  
 Exhibit 1  
 Page 3

## Calculation of Adjusted Indemnity and Medical Losses State Losses

### (A). Unit Statistical Plan Limited Reported Losses

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	0	0	0	0	0
Temporary Total	0	0	0	0	0
<b>Medical</b>					
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	0	0	0	0	0
Temporary Total	0	0	0	0	0
Medical Only	0	0	0	0	0

### (B). Unit Statistical Plan Converted Unlimited Losses

Unlimited Losses are Limited Losses after the application of Primary, Excess and Secondary Conversion Factors.

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	0	0	0	0	0
Temporary Total	0	0	0	0	0
<b>Medical</b>					
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	0	0	0	0	0
Temporary Total	0	0	0	0	0
Medical Only	0	0	0	0	0

Notes:

(B): Section VIII-G.



# VIII 00015 STIP

Section VIII - F-Class Recommendation  
 Subsection C - Adjusted Losses  
 7/1/2020

Section VIII-C  
 Exhibit 1  
 Page 4

## Calculation of Adjusted Indemnity and Medical Losses State Losses

### (C). Investment Income Offset Factor

The impact from this factor needs to be removed from the State Conversion Factors.

Indemnity	Investment Income Offset Factor
Fatal	0.799
Permanent Total	0.744
Permanent Partial	1.041
Temporary Total	1.051
<b>Medical</b>	
Fatal	1.000
Permanent Total	0.749
Permanent Partial	1.047
Temporary Total	1.057
Medical Only	1.000

### (D). Adjusted Losses

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	0	0	0	0	0
Temporary Total	0	0	0	0	0
<b>Medical</b>					
Fatal	0	0	0	0	0
Permanent Total	0	0	0	0	0
Permanent Partial	0	0	0	0	0
Temporary Total	0	0	0	0	0
Medical Only	0	0	0	0	0
Adjusted Losses, LAE	0				

Notes:

(C): Section IX-B, Exhibit 4.

(D) = (B) / (C)

# VIII 000016 STIP

Section VIII - F-Class Recommendation  
Subsection D - Proposed Rates  
7/1/2020

Section VIII-D  
Exhibit 1

## Proposed Rates and Rating Values to be Effective 7/1/2020

Class Code (1)	Manual Rate (2)	Minimum Premium (3)	Loss Constant (4)	Expected Loss Rate (5)	D-Ratio (6)
6801	6.81	488	0	2.96	0.15
6824	10.30	500	0	4.12	0.17
6826	5.74	451	0	2.50	0.16
6843	10.05	500	0	3.66	0.16
6872	14.08	500	0	5.13	0.16
6874	15.39	500	0	5.60	0.15
7309	10.52	500	0	3.83	0.16
7313	12.75	500	0	4.64	0.13
7317	16.69	500	0	6.08	0.16
7327	23.78	500	0	8.66	0.16
7350	19.75	500	0	7.90	0.14
8709	4.93	332	0	1.80	0.16
8726	4.25	308	0	1.85	0.18
9077	5.45	350	0	2.51	0.20

Notes:

(2),(3): Calculated as per Section VIII-I, Exhibit 4.

(4): F-Classes have no loss constant.

(5),(6): Calculated as per Section X.

# VIII 000017 STIP

Section VIII - F-Class Recommendation  
 Subsection E - Conversion/Excess Loss Factors  
 7/1/2020

Section VIII-E  
 Exhibit 1  
 Page 1

## Calculation of Indemnity and Medical Conversion Factors Federal Losses

### (A). Benefit Level Adjustment Factors

The following factors are used to bring MA Unit Statistical Plan losses to the benefit level of the proposed effective policy year period.

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal	1.036	1.032	1.028	1.024	1.019
Permanent Total	1.029	1.026	1.022	1.019	1.015
Permanent Partial	1.013	1.012	1.010	1.009	1.008
Temporary Total	1.029	1.026	1.022	1.019	1.015

Medical	2013	2014	2015	2016	2017
All Injury Types	1.000	1.000	1.000	1.000	1.000

### (B). Loss Development Factors

The following factors are used to bring MA Unit Statistical Plan losses from first through fifth report to an ultimate basis.

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Likely	1.096	1.141	1.329	1.528	2.480
Not Likely	1.034	1.045	1.095	1.241	1.785

Medical	2013	2014	2015	2016	2017
Likely	1.192	1.237	1.288	1.435	1.703
Not Likely	1.025	1.020	1.044	1.071	1.136

### (C). Trend Factors

The following factors trend the MA Unit Statistical Plan losses from the reported period to the proposed effective period for new rates.

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
All Injury Types	0.856	0.810	0.883	0.901	0.907

Medical	2013	2014	2015	2016	2017
Lost Time Medical	0.851	0.796	0.874	0.908	0.897
Medical Only	0.702	0.775	0.813	0.855	0.830

### (D). Primary Conversion Factors (PCF)

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal - LD	0.972	0.955	1.207	1.411	2.293
Fatal - NLD	0.917	0.874	0.995	1.146	1.650
Permanent Total	0.965	0.948	1.200	1.404	2.284
Permanent Partial - LD	0.950	0.936	1.186	1.390	2.267
Permanent Partial - NLD	0.897	0.857	0.977	1.129	1.631
Temporary Total - LD	0.965	0.948	1.200	1.404	2.284
Temporary Total - NLD	0.911	0.869	0.989	1.140	1.644

Medical	2013	2014	2015	2016	2017
Lost Time Medical -LD	1.014	0.985	1.126	1.303	1.528
Lost Time Medical -NLD	0.872	0.812	0.913	0.972	1.019
Medical - NLD	0.720	0.790	0.849	0.915	0.942

#### Notes:

- (A): Section IV-F, Exhibit 1.
- (B): NCCI.
- (C): Section IX-B, Exhibit 1, Page 1.
- (D) = (A) x (B) x (C)

# VIII 00018 STIP

Section VIII - F-Class Recommendation  
 Subsection E - Conversion/Excess Loss Factors  
 7/1/2020

Section VIII-E  
 Exhibit 1  
 Page 2

## Calculation of Indemnity and Medical Conversion Factors Federal Losses

### (A). Loss Adjustment Expense Factor

The following factor is applied to include the proposed loss adjustment expense.

	Indemnity	Medical
Loss Adjustment Expense Factor	1.187	1.187

### (B). Loss Based Assessments (Special Fund Assessment)

	Indemnity	Medical
Loss Based Assessments	0.120	0.000

### (C). Investment Income Offset Factor

The following factor is applied to adjust for investment income.

	Investment Income Offset Factor
<b>Indemnity</b>	
Fatal	0.799
Permanent Total	0.744
Permanent Partial	1.041
Temporary Total	1.051
<b>Medical</b>	
Fatal	1.000
Permanent Total	0.749
Permanent Partial	1.047
Temporary Total	1.057
Medical Only	1.000

### (D). Secondary Conversion Factors (SCF)

<b>Indemnity</b>	
Fatal	1.045
Permanent Total	0.973
Permanent Partial	1.360
Temporary Total	1.374
<b>Medical</b>	
Fatal	1.187
Permanent Total	0.889
Permanent Partial	1.243
Temporary Total	1.255
Medical Only	1.187

#### Notes:

(A): 1.000 + Loss Adjustment Expense (as a percent of losses) from Section VI-A, Exhibit 1.

(B): NCCI Tax and Assessment Directory.

(C): Section IX-B, Exhibit 4.

(D) = [(A) + (B)] x (C)

# VIII 00019 STIP

Section VIII - F-Class Recommendation  
 Subsection E - Conversion/Excess Loss Factors  
 7/1/2020

Section VIII-E  
 Exhibit 1  
 Page 3

## Calculation of Indemnity and Medical Conversion Factors State Losses

The MA Indicated Pure Premium Relativities are calculated from exposure and loss data for the latest available 5 policy years of Unit Statistical Plan data.

Below are adjustment factors used to put the losses at the level proposed in this filing.

### (A). Primary State Conversion Factors

Remainder of Industry	Policy Year				
	2013	2014	2015	2016	2017
<b>Indemnity</b>					
Fatal - LD	0.925	0.886	1.010	1.173	1.756
Fatal - NLD	0.921	0.885	1.003	1.145	1.543
Permanent Total	0.926	0.888	1.018	1.181	1.766
Permanent Partial - LD	0.953	0.912	1.041	1.203	1.791
Permanent Partial - NLD	0.949	0.911	1.033	1.174	1.574
Temporary Total - LD	0.909	0.873	1.004	1.167	1.749
Temporary Total - NLD	0.905	0.873	0.996	1.139	1.536
<b>Medical</b>					
Lost Time Medical - LD	0.800	0.744	0.822	0.886	0.935
Lost Time Medical - NLD	0.843	0.785	0.865	0.900	0.911
Medical - NLD	0.695	0.763	0.805	0.847	0.843

### (B). Secondary State Conversion Factors

<b>Indemnity</b>	
Fatal	0.949
Permanent Total	0.883
Permanent Partial	1.235
Temporary Total	1.247
<b>Medical</b>	
Fatal	1.187
Permanent Total	0.889
Permanent Partial	1.243
Temporary Total	1.255
Medical Only	1.187

#### Notes:

(A): Section IX-B, Exhibit 1, Page 2.

(B): Section IX-B, Exhibit 1, Page 3.

Calculation of Converted Limited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Federal Industry Group  
 All Classes

Policy Year (1)	Injury Type (2)	Limited Losses					Converted Limited Losses				
		Indemnity		Medical		Total (7)	Indemnity		Medical		Total (12)
		Likely (3)	Not Likely (4)	Likely (5)	Not Likely (6)		Likely (8)	Not Likely (9)	Likely (10)	Not Likely (11)	
2013	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0
	9	0	143,946	0	226,668	370,614	0	129,075	0	197,694	326,769
	5	0	154,123	0	75,956	230,079	0	140,376	0	66,247	206,623
	6	0	0	0	17,342	17,342	0	0	0	12,482	12,482
2014	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0
	9	0	442,086	0	169,359	611,445	0	378,805	0	137,580	516,385
	5	23,610	38,451	16,251	78,305	156,617	22,393	33,401	16,010	63,612	135,416
	6	0	0	0	29,814	29,814	0	0	0	23,563	23,563
2015	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0
	9	60,230	143,660	14,627	98,509	317,026	71,444	140,403	16,470	89,910	318,227
	5	22,912	76,128	14,400	112,499	225,939	27,496	75,274	16,215	102,679	221,664
	6	0	0	0	21,360	21,360	0	0	0	18,133	18,133
2016	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0
	9	0	112,273	0	67,193	179,466	0	126,768	0	65,328	192,096
	5	0	31,076	0	63,066	94,142	0	35,430	0	61,316	96,746
	6	0	0	0	28,610	28,610	0	0	0	26,190	26,190
2017	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0
	9	2,500	4,503	2,500	34,113	43,616	5,667	7,347	3,821	34,777	51,612
	5	0	62,632	0	86,733	149,365	0	102,963	0	88,421	191,384
	6	0	0	0	14,838	14,838	0	0	0	13,983	13,983
All Years, All Injury		109,252	1,208,878	47,778	1,124,365	2,490,273	127,000	1,169,842	52,516	1,001,915	2,351,273

Notes:  
 (3),(4),(5),(6): Unit Statistical Plan data, excluding Large Deductibles.  
 (8), (9), (10), (11): Limited Incurred Losses x Primary Conversion Factors from Section VIII-E, Exhibit 1, Page 1.  
 (12) = (8) + (9) + (10) + (11)

VIII 000020 STIP

Calculation of Converted Unlimited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Federal Industry Group  
 All Classes

Policy Year (1)	Injury Type (2)	Adjusted Excess Losses					Converted Unlimited Losses					Exposure (13)
		Indemnity		Medical		Total	Indemnity		Medical		Total	
		Likely (3)	Not Likely (4)	Likely (5)	Not Likely (6)	(7)	Likely (8)	Not Likely (9)	Likely (10)	Not Likely (11)	(12)	
2013	1	0	0	0	0	0	0	0	0	0	0	172,600
	2	0	0	0	0	0	0	0	0	0	0	
	9	0	25,193	0	67,012	92,205	0	209,872	0	329,102	538,974	
	5	0	28,138	0	29,586	57,724	0	231,482	0	120,305	351,787	
	6	0	0	0	3,281	3,281	0	0	0	18,713	18,713	
2014	1	0	0	0	0	0	0	0	0	0	0	166,923
	2	0	0	0	0	0	0	0	0	0	0	
	9	0	79,645	0	74,121	153,766	0	623,691	0	263,203	886,894	
	5	3,894	8,257	5,647	23,571	41,369	36,111	57,224	27,187	109,447	229,969	
	6	0	0	0	6,850	6,850	0	0	0	36,106	36,106	
2015	1	0	0	0	0	0	0	0	0	0	0	196,085
	2	0	0	0	0	0	0	0	0	0	0	
	9	12,425	47,766	9,417	61,857	131,465	114,098	255,992	32,185	188,688	590,963	
	5	6,605	14,874	11,136	34,101	66,716	46,844	123,834	34,336	171,710	376,724	
	6	0	0	0	4,783	4,783	0	0	0	27,206	27,206	
2016	1	0	0	0	0	0	0	0	0	0	0	193,244
	2	0	0	0	0	0	0	0	0	0	0	
	9	0	22,046	0	25,678	47,724	0	202,451	0	113,146	315,597	
	5	0	6,414	0	18,455	24,869	0	57,479	0	100,142	157,621	
	6	0	0	0	7,145	7,145	0	0	0	39,574	39,574	
2017	1	0	0	0	0	0	0	0	0	0	0	171,754
	2	0	0	0	0	0	0	0	0	0	0	
	9	986	1,527	1,372	10,984	14,869	9,050	12,073	6,455	56,893	84,471	
	5	0	19,928	0	33,570	53,498	0	168,811	0	153,143	321,954	
	6	0	0	0	4,636	4,636	0	0	0	22,105	22,105	
(14) All Years and Injury Types		23,910	253,788	27,572	405,630	710,900	206,103	1,942,909	100,163	1,749,483	3,998,658	900,606
(15) Pure Premium							0.229	2.157	0.111	1.943	4.440	

Notes:  
 (3), (4) = 0.7 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Indemnity Converted Limited Losses from Page 1, Columns (8) and (9).  
 (5), (6) = [ Excess Factor - 1.0 ] x Medical Converted Limited Losses + 0.3 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Medical Converted Limited Losses from Page 1, Columns (10) and (11).  
 (7) = (3) + (4) + (5) + (6)  
 (8), (9), (10), (11): (Converted Limited Losses from Page 1 + Adjusted Excess Losses) x Secondary Conversion Factors from Section VIII-E, Exhibit 1, Page 2.  
 (12) = (8) + (9) + (10) + (11)  
 (13): From Page 3.  
 (15): Pure Premium calculated as the All Years, All Injury Types Adjusted Converted Losses divided by the All Years, All Injury Types Exposure.

VIII 000021 STIP

Calculation of Manual Premium by Extension of Exposures  
 Federal Industry Group  
 All Classes

Class Code	Exposure By Policy Year						Current Rate	Manual Premium					
	2013	2014	2015	2016	2017	Total		2013	2014	2015	2016	2017	Total
	(2)	(3)	(4)	(5)	(6)	(7)		= (2) x (8)	= (3) x (8)	= (4) x (8)	= (5) x (8)	= (6) x (8)	= (7) x (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
6801	0	0	0	0	0	0	6.25	0	0	0	0	0	0
6824	49,827	51,022	52,497	45,902	36,701	235,949	9.70	483,322	494,913	509,221	445,249	356,000	2,288,705
6826	612	100	0	19,475	0	20,187	7.47	4,572	747	0	145,478	0	150,797
6843	6,561	100	18,335	6,497	7,410	38,903	12.46	81,750	1,246	228,454	80,953	92,329	484,731
6872	7,712	7,107	7,445	8,885	11,081	42,230	16.38	126,323	116,413	121,949	145,536	181,507	691,727
6874	383	94	10	10	0	497	15.00	5,745	1,410	150	150	0	7,455
7309	13,835	7,342	12,589	13,523	11,782	59,071	14.69	203,236	107,854	184,932	198,653	173,078	867,753
7313	0	0	0	0	0	0	15.48	0	0	0	0	0	0
7317	1,559	5,260	4,441	4,059	3,162	18,481	15.31	23,868	80,531	67,992	62,143	48,410	282,944
7327	113	126	88	157	91	575	27.64	3,123	3,483	2,432	4,339	2,515	15,893
7350	0	0	0	0	0	0	18.12	0	0	0	0	0	0
8709	3,682	1,820	1,581	0	0	7,083	4.92	18,115	8,954	7,779	0	0	34,848
8726	88,316	93,952	99,099	94,736	101,527	477,630	5.26	464,542	494,188	521,261	498,311	534,032	2,512,334
9077	0	0	0	0	0	0	5.00	0	0	0	0	0	0
Total	172,600	166,923	196,085	193,244	171,754	900,606		1,414,597	1,309,738	1,644,170	1,580,814	1,387,870	7,337,188

Notes:  
 (2) - (7): Unit Statistical Plan data.  
 (8): Section VIII-D, Exhibit 1 of the 7/1/2018 Stipulation.

VIII 000022 STIP



Calculation of Pure Premium Underlying Present Rate Factor

Industry Group (1)	Injury Type (2)	Uncapped Rate Level Factor (3)	Industry Group Pure Premium From Previous Revision (4)	Percent of Pure Premium = $(4) / [\text{Total of (4)}]$ (5)	Expected Loss and LAE Ratio (6)	Loss Based Assessment Change Factor (7)	Federal Losses as a % of Total Losses (8)	Benefit Level Change Factor (9)	Trend (10)	Pure Premium Underlying Present Rate Factor = $(3) \times (5) \times (6) \times (7) \times (9) \times (10)$ (11)
Federal	Indemnity	8.848	2.846	0.607	0.766	0.997	1.000	1.009	0.946	3.913
	Medical	8.848	1.841	0.393	0.766	0.997	1.000	1.000	0.935	2.481
	Total		4.687							

Notes:

- (3): Section VIII-H, Exhibit 1 of the 7/1/2018 Stipulation.
- (4): Section VIII-G of the 7/1/2018 Stipulation.
- (6): Section VI-J, Exhibit 1 of the 7/1/2018 Stipulation.
- (7): Change in load from Section VIII-K, Exhibit 1 and the 7/1/2018 Stipulation.
- (8): Based on ratio of Federal losses to sum of Federal and State losses from Section VIII-C, Exhibit 1, Pages 1 & 3.
- (9): Weighted average of Section IV-A, Exhibit 1 and Section IV-F, Exhibit 1, using weights from Column (8).
- (10): Section V-A, Exhibit 1.

# VIII 00024 STIP

Section VIII - F-Class Recommendation  
 Subsection F - Proposed Pure Premium Relativities  
 7/1/2020

Section VIII-F  
 Exhibit 3

## Calculation of Pure Premiums Underlying Present Rate Federal Industry Group

Class Code	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity	Medical	Indemnity	Medical	Total = (4) + (5)
(1)	(2)	(3)	(4)	(5)	(6)
6801	0.657	0.766	2.571	1.900	4.471
6824	1.148	1.201	4.494	2.979	7.473
6826	0.986	0.769	3.857	1.908	5.765
6843	1.695	1.205	6.633	2.989	9.621
6872	1.944	2.023	7.605	5.019	12.624
6874	2.128	1.312	8.328	3.254	11.582
7309	1.181	0.934	4.620	2.318	6.938
7313	2.596	0.738	10.160	1.831	11.991
7317	2.878	2.050	11.262	5.087	16.349
7327	3.560	2.979	13.930	7.390	21.320
7350	3.426	1.993	13.406	4.944	18.350
8709	0.607	0.571	2.376	1.415	3.792
8726	0.577	0.722	2.258	1.792	4.050
9077	0.891	1.927	3.488	4.781	8.269

Notes:

(2), (3): Section VIII-H, Exhibit 2 of the 07/01/2018 Stipulation.

(4), (5) = (2),(3) x Pure Premium Underlying Present Rate Factors from Exhibit 2.

# VIII 00025 STIP

Section VIII - F-Class Recommendation  
 Subsection G - Class Relativities  
 7/1/2020

Section VIII - G  
 Exhibit 1

## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Federal Class Codes		
6801 BOAT BUILDING - WOOD - NOC & DRIVERS: US ACT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
MA Total:	0	0	0	0	0	0	0	0			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.000	0.000	.
(15) Countrywide Pure Premium:	9.898	1.018	10.916
(16) Countrywide Indicated Relativity:	5.044	0.700	.
(17) Countrywide Credibility:	0.140	0.140	.
(18) Countrywide Lost-Time Claims:	8.000	.	.
(19) Pure Premium Underlying Present Rate:	2.571	1.900	4.471
(20) Relativity to Underlying Present Rate:	0.700	0.788	.
(21) Credibility to Underlying Relativity:	0.860	0.860	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	1.308	0.776	.
(24) Balanced Formula Relativity:	1.224	0.733	0.997

Class(es):		Effective: 7/1/2020							Federal Class Codes		
6824 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	49.827	0	7	0	289.085	0	276.941	566.026	5.802	5.558	11.360
2014	51.022	0	7	0	500.046	0	232.792	732.837	9.801	4.563	14.363
2015	52.497	0	6	0	60.375	0	73.334	133.709	1.150	1.397	2.547
2016	45.902	0	5	0	4.260	0	24.204	28.464	0.093	0.527	0.620
2017	36.701	0	7	0	110.721	0	172.717	283.438	3.017	4.706	7.723
MA Total:	235.949	0	32	0	964.487	0	779.987	1,744.474	4.088	3.306	7.393

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.713	1.610	.
(14) Massachusetts Credibility:	0.270	0.420	.
(15) Countrywide Pure Premium:	2.746	2.852	5.598
(16) Countrywide Indicated Relativity:	1.399	1.961	.
(17) Countrywide Credibility:	0.340	0.290	.
(18) Countrywide Lost-Time Claims:	75.000	.	.
(19) Pure Premium Underlying Present Rate:	4.494	2.979	7.473
(20) Relativity to Underlying Present Rate:	1.224	1.235	.
(21) Credibility to Underlying Relativity:	0.390	0.290	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	1.416	1.603	.
(24) Balanced Formula Relativity:	1.325	1.515	1.413

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Section VIII - F-Class Recommendation  
 Subsection G - Class Relativities  
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Section VIII - G  
 Exhibit 2

## Calculation of Class Relativities

Class(es): 6826 MARINA & DRIVERS: US ACT		Effective: 7/1/2020							Federal Class Codes		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	612	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	100	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	19,475	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>20,187</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.100	0.130	.
(15) Countrywide Pure Premium:	2.014	1.382	3.396
(16) Countrywide Indicated Relativity:	1.026	0.951	.
(17) Countrywide Credibility:	0.190	0.200	.
(18) Countrywide Lost-Time Claims:	19.000	.	.
(19) Pure Premium Underlying Present Rate:	3.857	1.908	5.765
(20) Relativity to Underlying Present Rate:	1.051	0.791	.
(21) Credibility to Underlying Relativity:	0.710	0.670	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	0.941	0.720	.
(24) Balanced Formula Relativity:	0.881	0.680	0.788

Class(es): 6843 SHIP BUILDING-IRON OR STEEL-NOC & DRIVERS: US ACT		Effective: 7/1/2020							Federal Class Codes		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	6,561	0	3	0	5,138	0	4,507	9,645	0.783	0.687	1.470
2014	100	0	9	0	41,956	0	16,756	58,712	419.56	167.56	587.12
2015	18,335	1	3	17,986	5,387	31,955	2,762	58,091	1.275	1.894	3.168
2016	6,497	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	7,410	0	3	0	0	0	906	906	0.000	0.122	0.122
<b>MA Total:</b>	<b>38,903</b>	<b>1</b>	<b>18</b>	<b>17,986</b>	<b>52,481</b>	<b>31,955</b>	<b>24,932</b>	<b>127,355</b>	<b>1.811</b>	<b>1.462</b>	<b>3.274</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.759	0.712	.
(14) Massachusetts Credibility:	0.160	0.210	.
(15) Countrywide Pure Premium:	3.926	1.976	5.902
(16) Countrywide Indicated Relativity:	2.000	1.359	.
(17) Countrywide Credibility:	0.420	0.400	.
(18) Countrywide Lost-Time Claims:	152.00	.	.
(19) Pure Premium Underlying Present Rate:	6.633	2.989	9.621
(20) Relativity to Underlying Present Rate:	1.807	1.239	.
(21) Credibility to Underlying Relativity:	0.420	0.390	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	1.721	1.176	.
(24) Balanced Formula Relativity:	1.610	1.112	1.380

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 Subsection G - Class Relativities  
 7/1/2020

Section VIII - G  
 Exhibit 3

## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Federal Class Codes		
6872 SHIP REPAIR CONVERSION- ALL OP & DR: US ACT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	7.712	0	1	0	0	0	174	174	0.000	0.023	0.023
2014	7.107	0	4	0	11.543	0	19.549	31.092	1.624	2.751	4.375
2015	7.445	0	1	0	0	0	282	282	0.000	0.038	0.038
2016	8.885	0	1	0	782	0	998	1.780	0.088	0.112	0.200
2017	11.081	0	3	0	0	0	4.679	4.679	0.000	0.422	0.422
MA Total:	42.230	0	10	0	12.325	0	25.682	38.007	0.292	0.608	0.900

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.122	0.296	.
(14) Massachusetts Credibility:	0.170	0.260	.
(15) Countrywide Pure Premium:	6.930	3.405	10.335
(16) Countrywide Indicated Relativity:	3.532	2.341	.
(17) Countrywide Credibility:	0.420	0.370	.
(18) Countrywide Lost-Time Claims:	200.00	.	.
(19) Pure Premium Underlying Present Rate:	7.605	5.019	12.624
(20) Relativity to Underlying Present Rate:	2.072	2.081	.
(21) Credibility to Underlying Relativity:	0.410	0.370	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	2.354	1.713	.
(24) Balanced Formula Relativity:	2.202	1.619	1.933

Class(es):		Effective: 7/1/2020							Federal Class Codes		
6874 PAINTING: SHIP HULLS - US ACT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	383	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	94	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	10	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	10	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
MA Total:	496	0	0	0	0	0	0	0	0.000	0.000	0.000

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.030	0.040	.
(15) Countrywide Pure Premium:	10.677	3.854	14.531
(16) Countrywide Indicated Relativity:	5.441	2.650	.
(17) Countrywide Credibility:	0.200	0.210	.
(18) Countrywide Lost-Time Claims:	21.000	.	.
(19) Pure Premium Underlying Present Rate:	8.328	3.254	11.582
(20) Relativity to Underlying Present Rate:	2.269	1.349	.
(21) Credibility to Underlying Relativity:	0.770	0.750	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	2.835	1.568	.
(24) Balanced Formula Relativity:	2.653	1.482	2.112

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Section VIII - F-Class Recommendation  
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 7/1/2020

Section VIII - G  
 Exhibit 4

## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Federal Class Codes		
7309 STEVEDORING: NOC - US ACT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	13.835	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	7.342	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	12.589	0	2	0	50,349	0	30,097	80,447	3,999	2,391	6,390
2016	13.523	0	1	0	844	0	1,728	2,572	0.062	0.128	0.190
2017	11.782	0	1	0	0	0	772	772	0.000	0.066	0.066
MA Total:	59,071	0	4	0	51,193	0	32,597	83,790	0.867	0.552	1.418

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.363	0.269	.
(14) Massachusetts Credibility:	0.160	0.220	.
(15) Countrywide Pure Premium:	5.687	2.957	8.644
(16) Countrywide Indicated Relativity:	2.898	2.033	.
(17) Countrywide Credibility:	0.420	0.390	.
(18) Countrywide Lost-Time Claims:	137.00	.	.
(19) Pure Premium Underlying Present Rate:	4.620	2.318	6.938
(20) Relativity to Underlying Present Rate:	1.259	0.961	.
(21) Credibility to Underlying Relativity:	0.420	0.390	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	1.804	1.227	.
(24) Balanced Formula Relativity:	1.688	1.160	1.444

Class(es):		Effective: 7/1/2020							Federal Class Codes		
7313 COAL DOCK OPERATION & STEVEDORING: US ACT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
MA Total:	0	0	0	0	0	0	0	0			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.000	0.000	.
(15) Countrywide Pure Premium:	4.765	1.963	6.728
(16) Countrywide Indicated Relativity:	2.428	1.350	.
(17) Countrywide Credibility:	0.240	0.260	.
(18) Countrywide Lost-Time Claims:	34.000	.	.
(19) Pure Premium Underlying Present Rate:	10.160	1.831	11.991
(20) Relativity to Underlying Present Rate:	2.768	0.759	.
(21) Credibility to Underlying Relativity:	0.760	0.740	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	2.686	0.913	.
(24) Balanced Formula Relativity:	2.514	0.863	1.750

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Section VIII - G  
 Exhibit 5

## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Federal Class Codes			
7317 STEVEDORING: BY HAND OR HAND TRUCKS: US ACT												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	1,559	0	0	0	0	0	0	0	0.000	0.000	0.000	
2014	5,260	0	1	0	4,067	0	4,746	8,813	0.773	0.902	1.675	
2015	4,441	0	1	0	177,749	0	126,817	304,566	40.023	28.555	68.578	
2016	4,059	0	0	0	0	0	0	0	0.000	0.000	0.000	
2017	3,162	0	0	0	0	0	0	0	0.000	0.000	0.000	
MA Total:	18,481	0	2	0	181,816	0	131,562	313,379	9.838	7.119	16.957	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.123	3.466	.
(14) Massachusetts Credibility:	0.140	0.190	.
(15) Countrywide Pure Premium:	5.097	1.928	7.025
(16) Countrywide Indicated Relativity:	2.598	1.325	.
(17) Countrywide Credibility:	0.390	0.410	.
(18) Countrywide Lost-Time Claims:	112.00	.	.
(19) Pure Premium Underlying Present Rate:	11.262	5.087	16.349
(20) Relativity to Underlying Present Rate:	3.068	2.109	.
(21) Credibility to Underlying Relativity:	0.470	0.400	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	3.032	2.046	.
(24) Balanced Formula Relativity:	2.838	1.933	2.419

Class(es):		Effective: 7/1/2020							Federal Class Codes			
7327 STEVEDORING: CONTAINERIZED FREIGHT & DRIVERS: US ACT												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	113	0	0	0	0	0	0	0	0.000	0.000	0.000	
2014	126	0	0	0	0	0	0	0	0.000	0.000	0.000	
2015	88	0	0	0	0	0	0	0	0.000	0.000	0.000	
2016	157	0	0	0	0	0	0	0	0.000	0.000	0.000	
2017	91	0	0	0	0	0	0	0	0.000	0.000	0.000	
MA Total:	575	0	0	0	0	0	0	0	0.000	0.000	0.000	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.040	0.050	.
(15) Countrywide Pure Premium:	11.209	4.526	15.735
(16) Countrywide Indicated Relativity:	5.712	3.112	.
(17) Countrywide Credibility:	0.160	0.170	.
(18) Countrywide Lost-Time Claims:	12.000	.	.
(19) Pure Premium Underlying Present Rate:	13.930	7.390	21.320
(20) Relativity to Underlying Present Rate:	3.795	3.064	.
(21) Credibility to Underlying Relativity:	0.800	0.780	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	3.950	2.919	.
(24) Balanced Formula Relativity:	3.696	2.759	3.263

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Section VIII - G  
 Exhibit 6

## Calculation of Class Relativities

Class(es): 7350 FREIGHT HANDLING NOC: US ACT		Effective: 7/1/2020							Federal Class Codes		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
MA Total:	0	0	0	0	0	0	0	0			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.000	0.000	.
(15) Countrywide Pure Premium:	8.460	2.047	10.506
(16) Countrywide Indicated Relativity:	4.311	1.407	.
(17) Countrywide Credibility:	0.340	0.360	.
(18) Countrywide Lost-Time Claims:	76.000	.	.
(19) Pure Premium Underlying Present Rate:	13.406	4.944	18.350
(20) Relativity to Underlying Present Rate:	3.652	2.050	.
(21) Credibility to Underlying Relativity:	0.660	0.640	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	3.876	1.818	.
(24) Balanced Formula Relativity:	3.627	1.719	2.744

Class(es): 8709 STEVEDORING:TALLIERS & CHECKING CLERKS: US ACT		Effective: 7/1/2020							Federal Class Codes		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3,682	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	1,820	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	1,581	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
MA Total:	7,083	0	0	0	0	0	0	0	0.000	0.000	0.000

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.050	0.080	.
(15) Countrywide Pure Premium:	3.417	1.554	4.970
(16) Countrywide Indicated Relativity:	1.741	1.068	.
(17) Countrywide Credibility:	0.170	0.180	.
(18) Countrywide Lost-Time Claims:	14.000	.	.
(19) Pure Premium Underlying Present Rate:	2.376	1.415	3.792
(20) Relativity to Underlying Present Rate:	0.647	0.587	.
(21) Credibility to Underlying Relativity:	0.780	0.740	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	0.801	0.627	.
(24) Balanced Formula Relativity:	0.750	0.592	0.677



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Section VIII - G  
 Exhibit 7

## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Federal Class Codes			
8726 STEAMSHIP LINE OR AGENCY-PORT EMP: SPRVSRs, CAPTNS, ENGRS, STWR												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	88.316	0	25	0	147.131	0	186.500	333.631	1.666	2.112	3.778	
2014	93.952	1	24	36.111	123.304	27.187	134.914	321.515	1.697	1.725	3.422	
2015	99.099	2	17	142.956	85.966	34.565	154.312	417.798	2.310	1.906	4.216	
2016	94.736	0	14	0	254.044	0	225.933	479.977	2.682	2.385	5.066	
2017	101.527	1	11	9.050	70.163	6.455	53.066	138.734	0.780	0.586	1.366	
<b>MA Total:</b>	<b>477.631</b>	<b>4</b>	<b>91</b>	<b>188.117</b>	<b>680.607</b>	<b>68.208</b>	<b>754.724</b>	<b>1,691.656</b>	<b>1.819</b>	<b>1.723</b>	<b>3.542</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.762	0.839	.
(14) Massachusetts Credibility:	0.270	0.460	.
(15) Countrywide Pure Premium:	0.350	0.340	0.690
(16) Countrywide Indicated Relativity:	0.178	0.234	.
(17) Countrywide Credibility:	0.200	0.210	.
(18) Countrywide Lost-Time Claims:	20.000	.	.
(19) Pure Premium Underlying Present Rate:	2.258	1.792	4.050
(20) Relativity to Underlying Present Rate:	0.615	0.743	.
(21) Credibility to Underlying Relativity:	0.530	0.330	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	0.568	0.680	.
(24) Balanced Formula Relativity:	0.531	0.643	0.583

Class(es):		Effective: 7/1/2020							Federal Class Codes			
9077 UNITED STATES ARMED SERVICE RISK-ALL EMPLOYEES & DRIVERS												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000	
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000	
2015	0	0	0	0	0	0	0	0	0.000	0.000	0.000	
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000	
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000	
<b>MA Total:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.000	0.000	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	0.950	1.982	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	3.488	4.781	8.269
(20) Relativity to Underlying Present Rate:	0.950	1.982	.
(21) Credibility to Underlying Relativity:	1.000	1.000	.
(22) Industry Group Converted Pure Premium:	2.386	2.054	4.440
(23) Formula Relativity:	0.950	1.982	.
(24) Balanced Formula Relativity:	0.889	1.874	1.344

# VIII 000032 STIP

Section VIII - F-Class Recommendation  
Subsection H - Proposed Rates  
7/1/2020

Section VIII-H  
Exhibit 1

## Calculation of Federal Industry Group Rate Change and Limits

(1) Industry Group Differential	1.000
(2) Experience and Benefit Level Change - Overall	-9.9%
(3) Target Rate Change = (1) x [ 1.000 + (2) ] - 1.000	-9.9%
(4) Maximum Rate Change = (3) + 20.0%	10.1%
(5) Minimum Rate Change = (3) - 20.0%	-29.9%
(6) Present Average Rate	8.514
(7) Uncapped Rate Level Factor = [ 1.000 + (3) ] x (6)	7.672
(8) Capped Rate Level Factor	7.692

In addition, the WCRIBMA is limiting the increase in average rates for any class to \$15 and no average rate shall exceed \$90 per \$100 of payroll.

### Notes:

- (1): Federal Industry Group is the only group being evaluated.
- (2): Selected Rate Change, from Section VIII-A, Exhibit 1.
- (6): Rates by class consistent with the 07/01/18 stipulation, weighted by five years of exposure.
- (8): Proposed average uncapped rates are capped by an iterative process using rate levels to determine if the required change is achieved.

# VIII 00033 STIP

Section VIII - F-Class Recommendation  
 Subsection H - Proposed Rates  
 7/1/2020

Section VIII-H  
 Exhibit 2

## Calculation of Average Uncapped Rates

Class Code	Balanced Formula Relativity			Uncapped Rate Level Factor	Proposed Average Uncapped Rate = (4) x (5)
	Indemnity	Medical	Total		
(1)	(2)	(3)	(4)	(5)	(6)
6801	1.224	0.733	0.997	7.672	7.65
6824	1.325	1.515	1.413	7.672	10.84
6826	0.881	0.680	0.788	7.672	6.05
6843	1.610	1.112	1.380	7.672	10.58
6872	2.202	1.619	1.933	7.672	14.83
6874	2.653	1.482	2.112	7.672	16.20
7309	1.688	1.160	1.444	7.672	11.07
7313	2.514	0.863	1.750	7.672	13.43
7317	2.838	1.933	2.419	7.672	18.56
7327	3.696	2.759	3.263	7.672	25.03
7350	3.627	1.719	2.744	7.672	21.05
8709	0.750	0.592	0.677	7.672	5.19
8726	0.531	0.643	0.583	7.672	4.47
9077	0.889	1.874	1.344	7.672	10.31

Notes:

(2),(3),(4): Section VIII-G.

(5): Exhibit 1.

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Section VIII - F-Class Recommendation  
Subsection H - Proposed Rates  
7/1/2020

Section VIII-H  
Exhibit 3

## Comparison of Average Rates

Class Code (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
6801	6.53	7.65	7.19
6824	10.13	10.84	10.87
6826	7.81	6.05	6.06
6843	13.03	10.58	10.61
6872	17.12	14.83	14.87
6874	15.67	16.20	16.24
7309	15.36	11.07	11.10
7313	16.18	13.43	13.46
7317	16.00	18.56	17.61
7327	28.89	25.03	25.10
7350	18.94	21.05	20.85
8709	5.14	5.19	5.21
8726	5.50	4.47	4.48
9077	5.22	10.31	5.75

Notes:

(2): from Section VIII-H, Exhibit 3 of the 07/01/18 Stipulation.

(3): Exhibit 2.

(4) = Total Balanced Formula Relativity (Section VIII-G) x Capped Rate Level Factor Subject to maximum and minimum caps (Exhibit 1).

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Section VIII - F-Class Recommendation  
Subsection H - Proposed Rates  
7/1/2020

Section VIII-H  
Exhibit 4

## Summary of Proposed Premium Change

Industry Group (1)	Present Premium (2)	Proposed Premium (3)	Proposed Change (4)	Target Change (5)	Capped Rate Level Factor (6)
Federal	7,668,190	6,909,042	-9.9%	-9.9%	7.69

Notes:

- (2): Exposure x Present Average Rates, from Exhibit 3.
- (3): Exposure x Proposed Average Rates, from Exhibit 3.
- (4) = [(3) - (2)] / (2)
- (5), (6): Exhibit 1.

# VIII 00036 STIP

## Pricing Example for Class 6824 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT

Calculation of MA Indicated Relativity:

		(A). Federal Benefits - Limited Losses (Unit Statistical Plan data, Excluding Large Deductibles)							
Policy Year		Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	90,071	0	103,465	
	2014	0	0	0	0	352,860	0	2,218	
	2015	0	0	0	0	0	0	36,799	
	2016	0	0	0	0	0	0	2,252	
	2017	0	0	0	0	4,503	0	36,165	
Medical	2013	0	0	0	0	167,573	0	13,922	1,807
	2014	0	0	0	0	147,140	0	2,059	2,965
	2015	0	0	0	0	0	0	44,617	2,263
	2016	0	0	0	0	0	0	2,322	14,360
	2017	0	0	0	0	34,113	0	61,834	4,503

		(B). Federal Benefits Primary Conversion Factors (Section VIII-E, Exhibit 1, Page 1)							
Policy Year		Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0.972	0.917	0.965	0.950	0.897	0.965	0.911	
	2014	0.955	0.874	0.948	0.936	0.857	0.948	0.869	
	2015	1.207	0.995	1.200	1.186	0.977	1.200	0.989	
	2016	1.411	1.146	1.404	1.390	1.129	1.404	1.140	
	2017	2.293	1.650	2.284	2.267	1.631	2.284	1.644	
Medical	2013	1.014	0.872	1.014	1.014	0.872	1.014	0.872	0.720
	2014	0.985	0.812	0.985	0.985	0.812	0.985	0.812	0.790
	2015	1.126	0.913	1.126	1.126	0.913	1.126	0.913	0.849
	2016	1.303	0.972	1.303	1.303	0.972	1.303	0.972	0.915
	2017	1.528	1.019	1.528	1.528	1.019	1.528	1.019	0.942

		(C). Federal Converted Limited Losses [ (A) x (B) ]							
Policy Year		Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	80,766	0	94,237	
	2014	0	0	0	0	302,351	0	1,927	
	2015	0	0	0	0	0	0	36,386	
	2016	0	0	0	0	0	0	2,567	
	2017	0	0	0	0	7,347	0	59,453	
Medical	2013	0	0	0	0	146,153	0	12,142	1,301
	2014	0	0	0	0	119,531	0	1,673	2,343
	2015	0	0	0	0	0	0	40,722	1,921
	2016	0	0	0	0	0	0	2,258	13,145
	2017	0	0	0	0	34,777	0	63,037	4,244

# VIII 000037 STIP

Section VIII - F-Class Recommendation  
 Subsection I - Pricing Example  
 7/1/2020

Section VIII-I  
 Exhibit 1  
 Page 2

## Pricing Example for Class 6824 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT

Calculation of MA Indicated Relativity (cont.):

		(D). Federal Unadjusted Excess Losses [ (Excess Factor - 1.0) x (C) ]							
Policy Year		Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	23,989	0	27,990	
	2014	0	0	0	0	89,803	0	572	
	2015	0	0	0	0	0	0	10,807	
	2016	0	0	0	0	0	0	763	
	2017	0	0	0	0	2,182	0	17,659	
Medical	2013	0	0	0	0	43,410	0	3,606	386
	2014	0	0	0	0	35,503	0	497	696
	2015	0	0	0	0	0	0	12,095	571
	2016	0	0	0	0	0	0	671	3,904
	2017	0	0	0	0	10,329	0	18,723	1,260

		(E). Federal Adjusted Excess Losses							
Policy Year		Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	16,792	0	19,593	
	2014	0	0	0	0	62,862	0	401	
	2015	0	0	0	0	0	0	7,565	
	2016	0	0	0	0	0	0	534	
	2017	0	0	0	0	1,527	0	12,361	
Medical	2013	0	0	0	0	50,606	0	12,003	386
	2014	0	0	0	0	62,444	0	668	696
	2015	0	0	0	0	0	0	15,337	571
	2016	0	0	0	0	0	0	899	3,904
	2017	0	0	0	0	10,984	0	24,021	1,260

		(F). Federal Secondary Conversion Factors				
		Fatal	Permanent Total	Permanent Partial	Temporary Total	Medical Only
Indemnity		1.045	0.973	1.360	1.374	
Medical		1.187	0.889	1.243	1.255	1.187

		(G). Federal Converted Unlimited Losses							
Policy Year		Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	132,721	0	156,364	
	2014	0	0	0	0	496,849	0	3,197	
	2015	0	0	0	0	0	0	60,375	
	2016	0	0	0	0	0	0	4,260	
	2017	0	0	0	0	12,073	0	98,649	
Medical	2013	0	0	0	0	244,626	0	30,312	2,003
	2014	0	0	0	0	226,244	0	2,939	3,608
	2015	0	0	0	0	0	0	70,376	2,958
	2016	0	0	0	0	0	0	3,963	20,241
	2017	0	0	0	0	56,893	0	109,290	6,534

		(H). Total Federal Converted Unlimited Losses			
Policy Year		Indemnity		Medical	
		LD	NLD	LD	NLD
	2013	0	289,085	0	276,941
	2014	0	500,046	0	232,791
	2015	0	60,375	0	73,334
	2016	0	4,260	0	24,204
	2017	0	110,721	0	172,717
	Total	0	964,487	0	779,987

Notes:

(E): Indemnity Adjusted Excess Losses = Indemnity Unadjusted Excess Losses x 0.7

Medical Adjusted Excess Losses = Medical Unadjusted Excess Losses + 0.3 x Indemnity Unadjusted Excess Losses

(F): Section VIII-E, Exhibit 1, Page 2.

(G) = [ (C) + (E) ] x (F)





# VIII 00039 STIP

Section VIII - F-Class Recommendation  
 Subsection I - Pricing Example  
 7/1/2020

Section VIII-I  
 Exhibit 1  
 Page 4

Pricing Example for Class 6824  
 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT

Calculation of MA Indicated Relativity (cont.):

(D). State Unadjusted Excess Losses [ (Excess Factor -1.0) x (C) ]									
Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only	
	LD	NLD		LD	NLD	LD	NLD		
Indemnity	2013	0	0	0	0	0	0		
	2014	0	0	0	0	0	0		
	2015	0	0	0	0	0	0		
	2016	0	0	0	0	0	0		
	2017	0	0	0	0	0	0		
Medical	2013	0	0	0	0	0	0	0	
	2014	0	0	0	0	0	0	0	
	2015	0	0	0	0	0	0	0	
	2016	0	0	0	0	0	0	0	
	2017	0	0	0	0	0	0	0	

(E). State Adjusted Excess Losses									
Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only	
	LD	NLD		LD	NLD	LD	NLD		
Indemnity	2013	0	0	0	0	0	0		
	2014	0	0	0	0	0	0		
	2015	0	0	0	0	0	0		
	2016	0	0	0	0	0	0		
	2017	0	0	0	0	0	0		
Medical	2013	0	0	0	0	0	0	0	
	2014	0	0	0	0	0	0	0	
	2015	0	0	0	0	0	0	0	
	2016	0	0	0	0	0	0	0	
	2017	0	0	0	0	0	0	0	

(F). State Secondary Conversion Factors					
	Fatal	Permanent Total	Permanent Partial	Temporary Total	Medical Only
Indemnity	0.949	0.883	1.235	1.247	
Medical	1.187	0.889	1.243	1.255	1.187

(G). State Converted Unlimited Losses									
Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only	
	LD	NLD		LD	NLD	LD	NLD		
Indemnity	2013	0	0	0	0	0	0		
	2014	0	0	0	0	0	0		
	2015	0	0	0	0	0	0		
	2016	0	0	0	0	0	0		
	2017	0	0	0	0	0	0		
Medical	2013	0	0	0	0	0	0	0	
	2014	0	0	0	0	0	0	0	
	2015	0	0	0	0	0	0	0	
	2016	0	0	0	0	0	0	0	
	2017	0	0	0	0	0	0	0	

(H). Total State Converted Unlimited Losses				
Policy Year	Indemnity		Medical	
	LD	NLD	LD	NLD
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0
2017	0	0	0	0
Total	0	0	0	0

Notes:

(E): Indemnity Adjusted Excess Losses = Indemnity Unadjusted Excess Losses x 0.7

Medical Adjusted Excess Losses = Medical Unadjusted Excess Losses + 0.3 x Indemnity Unadjusted Excess Losses

(F): Section IX-B, Exhibit 1, Page 3.

(G) = [ (C) + (E) ] x (F)

# VIII 000040 STIP

Section VIII - F-Class Recommendation  
Subsection I - Pricing Example  
7/1/2020

Section VIII-I  
Exhibit 1  
Page 5

## Pricing Example for Class 6824 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT

Calculation of MA Indicated Relativity (cont.):

Exposure, Converted Unlimited Losses (Both Federal & State)			
Policy Year (1)	Exposure (2)	Indemnity (3)	Medical (4)
2013	49,827	289,085	276,941
2014	51,022	500,046	232,791
2015	52,497	60,375	73,334
2016	45,902	4,260	24,204
2017	36,701	110,721	172,717
Total	235,949	964,487	779,987
(5)	Indicated Pure Premium	4.088	3.306
(6)	Federal Class Codes Industry Group Pure Premium	2.386	2.054
(7)	MA Indicated Relativity	1.713	1.610

Notes:

- (2): Unit Statistical Plan data, excluding Large Deductibles
- (3), (4): Converted Unlimited Losses from Pages 2 & 4.
- (5): Totals of (3) and (4), divided by Total of (2), respectively.
- (6): Section VIII-F, Exhibit 1, Page 2.
- (7) = (5) / (6)

# VIII 00041 STIP

## Pricing Example for Class 6824 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT

Calculation of Countrywide Relativity

State (1)	State Code (2)	Losses				Lost-Time Claims		Payroll (9)
		Indemnity		Medical		Likely (7)	Not Likely (8)	
		Likely (3)	Not Likely (4)	Likely (5)	Not Likely (6)			
Alabama	1	0	8,376	0	38,558	0	1	2,564,500
Arizona	2	0	0	0	0	0	0	163,299
Arkansas	3	0	0	0	0	0	0	85,415
Colorado	5	0	0	0	0	0	0	4,829
Connecticut	6	0	69,370	0	56,476	0	1	1,001,648
D.C.	8	0	0	0	0	0	0	0
Florida	9	56,040	273,422	51,899	507,516	4	12	14,004,304
Georgia	10	0	0	0	0	0	0	264,047
Idaho	11	0	0	0	0	0	0	1,506
Illinois	12	0	0	0	2,073	0	0	698,080
Indiana	13	0	0	0	0	0	0	2,093
Iowa	14	0	0	0	9,886	0	0	1,281,931
Kansas	15	0	0	0	0	0	0	0
Kentucky	16	0	0	0	0	0	0	694,765
Louisiana	17	195,137	73,915	526,781	219,607	1	9	6,653,114
Maine	18	0	6,766	0	36,726	0	5	13,063,476
Maryland	19	0	0	0	1,543	0	0	561,054
Michigan	21	0	0	0	0	0	0	0
Minnesota	22	0	0	0	0	0	0	0
Mississippi	23	398,995	148,646	319,201	570,972	3	10	23,351,152
Missouri	24	0	0	0	0	0	0	281,256
Montana	25	0	0	0	0	0	0	0
Nebraska	26	0	0	0	0	0	0	0
Nevada	27	0	0	0	0	0	0	0
New Hampshire	28	0	0	0	10,033	0	0	1,232,322
New Mexico	30	0	0	0	0	0	0	0
North Carolina	32	0	118,807	0	127,823	0	2	5,097,779
Oklahoma	35	35,465	0	41,364	630	2	0	736,518
Oregon	36	0	99,660	0	141,550	0	7	7,806,846
Rhode Island	38	0	1,210	0	5,713	0	1	3,416,262
South Carolina	39	0	46,504	0	82,630	0	2	1,904,133
South Dakota	40	0	0	0	0	0	0	0
Tennessee	41	0	0	0	0	0	0	197,278
Utah	43	0	0	0	0	0	0	0
Vermont	44	0	0	0	0	0	0	31,200
Virginia	45	0	44,486	0	207,403	0	2	12,478,201
West Virginia	47	0	0	0	0	0	0	0
Wisconsin	48	0	0	0	0	0	0	0
Hawaii	52	0	0	0	0	0	0	2,695,335
Alaska	54	449,795	203,208	477,557	864,078	1	12	12,285,499
<b>Total</b>		<b>1,135,432</b>	<b>1,094,370</b>	<b>1,416,802</b>	<b>2,883,217</b>	<b>11</b>	<b>64</b>	<b>112,557,842</b>

Notes:  
 (3) - (9): Data are total for latest three policy years. See Section IX-D, Exhibit 3.  
 (7), (8): Used in calculating countrywide credibilities.

# VIII 00042 STIP

Pricing Example for Class 6824  
 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT

Calculation of Countrywide Relativity

State (1)	State Code (2)	Federal Class Codes Pitch Factors		Pure Premiums, on MA Level		Total (7)
		Indemnity (3)	Medical (4)	Indemnity (5)	Medical (6)	
Alabama	1	2.355	0.979	0.769	1.471	
Arizona	2	0.000	0.000	0.000	0.000	
Arkansas	3	5.950	1.153	0.000	0.000	
Colorado	5	0.000	0.000	0.000	0.000	
Connecticut	6	0.799	0.597	5.535	3.368	
D.C.	8	0.000	0.000	0.000	0.000	
Florida	9	1.487	0.969	3.498	3.872	
Georgia	10	0.142	0.187	0.000	0.000	
Idaho	11	0.000	0.000	0.000	0.000	
Illinois	12	5.117	1.624	0.000	0.482	
Indiana	13	1.954	0.887	0.000	0.000	
Iowa	14	2.838	1.571	0.000	1.212	
Kansas	15	0.000	0.000	0.000	0.000	
Kentucky	16	4.065	1.736	0.000	0.000	
Louisiana	17	1.393	0.538	5.634	6.040	
Maine	18	2.596	1.328	0.134	0.373	
Maryland	19	1.244	0.870	0.000	0.239	
Michigan	21	0.000	0.000	0.000	0.000	
Minnesota	22	0.000	0.000	0.000	0.000	
Mississippi	23	1.375	0.758	3.224	2.891	
Missouri	24	0.475	0.220	0.000	0.000	
Montana	25	0.000	0.000	0.000	0.000	
Nebraska	26	0.000	0.000	0.000	0.000	
Nevada	27	0.000	0.000	0.000	0.000	
New Hampshire	28	0.000	3.960	0.000	3.224	
New Mexico	30	0.000	0.000	0.000	0.000	
North Carolina	32	1.834	1.370	4.274	3.436	
Oklahoma	35	1.068	0.682	5.145	3.886	
Oregon	36	2.108	1.393	2.691	2.525	
Rhode Island	38	29.540	3.530	1.046	0.590	
South Carolina	39	1.517	0.715	3.705	3.103	
South Dakota	40	0.000	0.000	0.000	0.000	
Tennessee	41	1.374	0.765	0.000	0.000	
Utah	43	0.000	0.000	0.000	0.000	
Vermont	44	0.000	0.000	0.000	0.000	
Virginia	45	3.812	1.442	1.359	2.397	
West Virginia	47	1.759	0.454	0.000	0.000	
Wisconsin	48	0.000	0.000	0.000	0.000	
Hawaii	52	0.236	0.021	0.000	0.000	
Alaska	54	0.979	0.471	5.203	5.139	
(8)				2.746	2.852	5.598
(9)				1.962	1.454	3.417
(10)				1.399	1.961	1.638
(11)				1.399	1.961	

Notes:

(3), (4) = (MA Total Federal Class Code Limited Losses) / [( Federal Class Code Pure Premium by State) x (MA Total Federal Class Code Exposure)].

(5) = 100 x [ State Indemnity Losses / State Payroll ] x (3), where State Indemnity Losses and State Payroll from page 1.

(6) = 100 x [ State Medical Losses / State Payroll ] x (4), where State Medical Losses and State Payroll from page 1.

(9) = (8) weighted by MA five year Federal Class Codes Exposure

(11): Relativities balanced to unity (weighted by MA exposure) over Federal Class Codes Industry Group.

# VIII 000043 STIP

Section VIII - F-Class Recommendation  
 Subsection I - Pricing Example  
 7/1/2020

Section VIII-I  
 Exhibit 3

## Pricing Example for Class 6824 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT

Calculation of Credibility and Balanced Formula Relativity:

- (1) MA Indicated Relativity
- (2) Countrywide Indicated Relativity
- (3) Relativity to Underlying Present Rate

Injury Type	
Indemnity	Medical
1.713	1.610
1.399	1.961
1.224	1.235

Calculation of MA Credibility:

The MA Credibilities are calculated using the formula  $Z=(E / F)^{0.4}$  where E are expected losses for that injury type.

- (4) Adopted Relativity
- (5) Industry Group Pure Premium Underlying Present Rate Factor
- (6) Pure Premium Underlying Present Rate = (4) x (5)
- (7) Expected Losses = (6) x [(Total Exposure from Exhibit 1, Page 5)]
- (8) Full Credibility Standards
- (9) MA Credibility = Minimum of {100%, [(7) / (8)]<sup>0.4</sup>}

Injury Type	
Indemnity	Medical
1.148	1.201
3.913	2.481
4.494	2.979
1,060,279	702,855
27,200,000	6,000,000
27%	42%

Calculation of Countrywide Credibility

The Countrywide Credibilities are calculated using the formula  $Z=(E / F)^{0.4}$  where E are the countrywide claim counts for that injury type. The countrywide credibility is limited to no more than half of the complement of the credibility assigned to the Massachusetts data.

- (10) Countrywide Lost-Time Claims
- (11) Countrywide Claim Count Standard
- (12) Countrywide Credibility = Minimum of { [(10) / (11)]<sup>0.4</sup>, 0.5 x [100% - (9)] }
- (13) Credibility to Underlying = 100% - (9) - (12)
- (14) Formula Relativity = [(1) x (9)] + [(2) x (12)] + [(3) x (13)]
- (15) Off Balance Factor

Injury Type	
Indemnity	Medical
75	75
1,150	1,000
34%	29%
39%	29%
1.416	1.603
1.069	1.058

- (16) Balanced Formula Relativity

Injury Type		
Indemnity	Medical	Total
1.325	1.515	1.413

Notes:

- (1): Exhibit 1, Page 5.
- (2): Exhibit 2, Page 2.
- (3): Relativity of (6) to Industry Group average, using 5 year Schedule Z exposure as weights.
- (4): Section VIII-F, Exhibit 3.
- (5): Section VIII-F, Exhibit 2.
- (8), (11): Section IX-D, Exhibit 1, Page 1.
- (10): Exhibit 2, Page 1.
- (15): Factor to balance Formula relativities across industry group to unity using 5 year Schedule Z exposure by injury type.
- (16) = (14) / (15), Total Balanced Formula Relativity is the weighted average of Partial Relativities using the MA Industry Group Pure Premium as weights.

# VIII 00044 STIP

Section VIII - F-Class Recommendation  
Subsection I - Pricing Example  
7/1/2020

Section VIII-I  
Exhibit 4

## Pricing Example for Class 6824 BOAT BUILDING OR REPAIRING & DRIVERS: US ACT

Calculation of Proposed Average Rate and Proposed Manual Rate:

(1) Present Average Rate	10.13
(2) Total Balanced Formula Relativity	1.413
(3) Capped Rate Level Factor	7.692
(4) Maximum Average Rate	11.16
(5) Minimum Average Rate	7.10
(6) Proposed Average Capped Rate = (2) x (3), Subject to Caps (4), (5)	10.87
(7) Offset for Merit Rating	0.997
(8) Offset for ARAP	1.053
(9) Offset for Construction Classification Premium Adjustment Program	1.000
(10) Provision for Insolvency Fund Assessment Recoupment	-0.0054
(11) Proposed Manual Rate = { (6) / [ (7) x (8) x (9) ] } x { 1.000 / [ 1.000 - (10) ] }	10.30
(12) Minimum Premium	500
(13) Loss Constant	0
(14) Expected Loss Rate	4.12
(15) D-Ratio	0.17

### Notes:

(1): Section VIII-H, Exhibit 3.

(2): Exhibit 3.

(3): Section VIII-H, Exhibit 1. Proposed average uncapped rates are capped by an iterative process using rate levels to determine if the required change is achieved. Class 6824 is in the Federal Class Codes Industry Group.

(4): Multiple caps apply including the maximum increase for any class within the industry group, a maximum absolute dollar change of \$15, and a maximum absolute average rate of \$90.

(5): Based on the minimum decrease for any class within the industry group.

(7), (8), (9), (10): Section IX - K, Exhibit 1. Class 6824 is not eligible for the Construction Credit prog

(12) = { [ (11) x 35.0 ] + (13) + Expense Constant } subject to a maximum of \$500

Where Expense Constant = 159 if (11) x 35 + (13) < 200,

= 250 if (11) x 35 + (13) >= 200 and < 1000

or = 338 if (11) x 35 + (13) >= 1000.

(13): No loss constant for Federal classes.

(14) = (6) x Ratio of Experience Rating ELR to Average Rate, from Section X-C, Exhibit 1.

Class 6824 is in Hazard Group F.

(15): See text of Section X for an explanation of the calculation of D-Ratios.

# VIII 00045 STIP

Section VIII - F-Class Recommendation  
Subsection J - U.S.L.H. & H.W. Coverage Percentage  
7/1/2020

Section VIII-J  
Exhibit 1

## Calculation of USLH & HW Compensation Coverage Percentage

(1)	Benefits Differential Underlying Current USLH & HW Coverage Percentage	1.171
(2)	State Benefit Level Adjustments Since Last Approval	1.014
(3)	Federal Benefit Level Adjustments Since Last Approval	1.007
(4)	Revised Benefits Differential = (1) x [ (3) / (2) ]	1.162
(5)	Federal Indemnity Losses as % of Total Federal Losses	52.9%
(6)	Expected Loss Ratio for State Classes	63.8%
(7)	Fixed Expense Ratio	5.1%
(8)	Special Fund Assessment Rate as % of Federal Indemnity Losses	0.120
(9)	Loss Adjustment Expense Factor (Applies to Losses)	1.187
(10)	USLH & HW Coverage Percentage for Manual Rates	1.210
(11)	USLH & HW Coverage Percentage for Expected Loss Rates	1.152

### Notes:

(1): Section VIII-J, Exhibit 1 of 7/1/2018 Stipulation.

(2): Total Benefit Level Changes from Prior Effective Period to Prospective Period from Section IV-A, Exhibit 1

(3): Total Benefit Level Changes from Prior Effective Period to Prospective Period from Section IV-F, Exhibit 1

(5): Based on ratio of indemnity losses to total losses from Section VIII-C, Exhibit 1, Page 1.

(6): Section VI-J, Exhibit 1.

(7): Average of Fixed Expense Ratios for 2 PYs from Section VI-B, Exhibit 1.

(8): NCCI's Tax & Assessment Directory.

(9): Section VIII-E, Exhibit 1, Page 2.

(10) = { [ (6) x (4) x (9) ] + [ (6) x (4) x (5) x (8) ] + (7) } / { [ (6) x (9) ] + (7) }

(11) = { [ (6) x (4) x (9) ] + (7) } / { [ (6) x (9) ] + (7) }

# VIII 000046 STIP

Section VIII - F-Class Recommendation  
Subsection K - Federal Tax Multiplier  
7/1/2020

Section VIII-K  
Exhibit 1

## Calculation of Federal Tax Multiplier

(1)	State Tax Multiplier	1.024
(2)	Loading for Taxes and Residual Market Subsidy = $1.0 - [ 1.0 / (1) ]$	2.3%
(3)	Expected Loss Ratio (no LAE)	63.9%
(4)	Federal Special Funds Assessment	12.0%
(5)	Federal Indemnity Losses as % of Total Losses	52.9%
(6)	Loading for Federal Funds Assessment = $(3) \times (4) \times (5)$	4.1%
(7)	Federal Tax Multiplier = $1.0 / [ 1.0 - (2) - (6) ]$	1.068

### Notes:

(1),(3): Section XII-A, Exhibit 4.

(4): NCCI Tax and Assessment Directory.

(5): Based on ratio of federal indemnity losses to state and federal total losses from Section VIII-C, Exhibit 1, Pages 1 and 3.



# IX 000018 STIP

**MASSACHUSETTS WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE MANUAL** **RATES**

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## RATES

**LEGEND**

- |  |   |
|--|---|
| (a) Rate for each individual risk must be obtained by Home Office from the MA Bureau.<br>D Supplement Disease Loading. Refer to Section IV of the Manual Supplement - - Treatment of Disease Coverage. | F Rate provides for coverage under the United States Longshore and Harbor Workers' Compensation Act.<br>M Risks are subject to Admiralty Law or Federal Employers Liability Act (FELA). |
|--|---|

CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST
0005	2.05	251.	20.	1924	1.98	228.	--	2501	1.72	219.	--	3082D	4.33	311.	--
0008	2.26	258.	20.	1925	5.13	339.	--	2503	1.04	195.	--	3085D	3.91	296.	--
0016	3.10	288.	20.	2003	3.20	271.	--	2570	4.06	301.	--	3110	7.02	496.	--
0034	2.72	274.	20.	2014	3.32	275.	--	2576	1.82	223.	--	3111	1.63	216.	--
0035	1.64	236.	20.	2021	2.08	232.	--	2585	2.42	244.	--	3113	1.38	207.	--
0036	2.72	274.	20.	2039	3.16	270.	--	2586	1.68	218.	--	3114	2.67	252.	--
0042	3.14	289.	20.	2041	2.13	234.	--	2587	2.49	266.	20.	3118	1.44	209.	--
0046	1.87	244.	20.	2070	3.13	269.	--	2623	4.27	308.	--	3119	0.66	182.	--
0050	3.63	336.	50.	2081	2.38	242.	--	2651	1.34	206.	--	3120	1.11	198.	--
0059D	0.23	.	.	2089	2.35	241.	--	2660	1.85	224.	--	3122	2.01	229.	--
0065D	0.10	.	.	2095	2.61	250.	--	2683	1.83	223.	--	3127	1.05	196.	--
0066D	0.08	.	.	2101	2.35	241.	--	2688	1.63	216.	--	3131	1.23	202.	--
0067D	0.08	.	.	2105	(a)	(a)	(a)	2702	10.97	500.	20.	3132	2.23	237.	--
0079	2.37	262.	20.	2111	1.90	226.	--	2710	5.32	345.	--	3145	1.42	209.	--
0083	3.07	286.	20.	2114	2.35	241.	--	2731	2.63	251.	--	3146	1.94	227.	--
0106	8.71	500.	20.	2115	4.50	317.	--	2747	4.82	328.	--	3169	2.37	242.	--
0113	2.72	274.	20.	2121	1.24	202.	--	2790	1.45	210.	--	3179	1.00	194.	--
0170	2.72	274.	20.	2130	1.27	203.	--	2802	3.20	271.	--	3180	1.96	228.	--
0771b	0.62	.	.	2131	2.53	248.	--	2835	1.30	205.	--	3188	2.03	230.	--
0908	71.00	135.	--	2143	1.92	226.	--	2836	1.80	222.	--	3200	1.77	221.	--
0909	162.00	226.	--	2150	3.39	278.	--	2841	3.30	275.	--	3220	2.60	250.	--
0912	323.00	387.	--	2156	3.77	291.	--	2883	2.87	259.	--	3223	(a)	(a)	(a)
0913	141.00	205.	--	2157	3.47	280.	--	2923	1.41	208.	--	3255	1.71	219.	--
0917	2.23	257.	20.	2172	1.53	213.	--	2942	1.49	211.	--	3257	1.94	227.	--
0918	0.42	194.	20.	2211	5.20	341.	--	3018	2.21	236.	--	3270	2.03	230.	--
1430	4.80	327.	--	2220	1.96	228.	--	3022	3.04	265.	--	3300	2.91	261.	--
1438	2.93	262.	--	2260	4.71	324.	--	3027	3.71	289.	--	3305	(a)	(a)	(a)
1463	9.62	500.	--	2288	3.02	265.	--	3028	2.49	246.	--	3315	2.49	246.	--
1624D	3.29	294.	20.	2305	2.93	262.	--	3030	5.20	341.	--	3336	2.65	252.	--
1655	2.60	270.	20.	2362	1.42	209.	--	3040	4.08	302.	--	3365	4.43	455.	50.
1701	1.98	228.	--	2380	1.85	224.	--	3041	2.61	250.	--	3372	1.77	221.	--
1710D	3.29	294.	20.	2402	1.95	227.	--	3042	4.12	303.	--	3373	3.17	270.	--
1747	2.56	249.	--	2413	2.89	260.	--	3066	2.00	229.	--	3381	1.77	221.	--
1748	2.69	253.	--	2416	2.17	235.	--	3076	1.81	222.	--	3383	1.43	209.	--
1853	1.17	200.	--	2417	1.98	228.	--	3081D	4.33	311.	--	3385	0.59	180.	--

Non-Ratable Code and Rate to be used with the following classifications:

b 4771

# IX 00019 STIP

Section IX - Classification Pricing  
 Subsection A - Summary  
 7/1/2020

Section IX - A  
 Exhibit 1  
 Page 2

**MASSACHUSETTS WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE MANUAL** **RATES**

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RATES															
CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST
3400	2.37	242.	--	4150	0.64	181.	--	4771c	4.14	326.	--	5507	5.20	482.	50.
3507	2.34	241.	--	4239	1.81	222.	--	4777	2.27	238.	--	5508D	3.75	340.	50.
3515	2.45	245.	--	4243	2.51	247.	--	4825	0.41	173.	--	5509	4.15	354.	50.
3558	0.69	183.	--	4244	2.20	236.	--	4828	0.82	188.	--	5538	3.89	345.	50.
3571	0.63	181.	--	4250	1.51	212.	--	4829	0.82	188.	--	5545	37.71	500.	50.
3574	1.43	209.	--	4251	1.78	221.	--	4902	1.49	211.	--	5547	10.00	500.	50.
3612	1.22	202.	--	4273	2.61	250.	--	4923	0.54	178.	--	5606	1.22	252.	50.
3620	3.33	276.	--	4279	1.85	224.	--	5020	4.06	351.	50.	5610	4.19	356.	50.
3629	1.43	209.	--	4283	1.50	212.	--	5022	8.93	500.	50.	5645	6.35	500.	50.
3632	1.43	209.	--	4299	1.54	213.	--	5037	15.33	500.	50.	5701	18.63	500.	50.
3634	1.21	201.	--	4304	3.87	294.	--	5040	19.85	500.	50.	5703	10.77	500.	50.
3635	2.55	248.	--	4307	1.34	206.	--	5057	20.97	500.	50.	5705	9.47	500.	50.
3638	1.43	209.	--	4308	1.42	209.	--	5059	18.13	500.	50.	6003	7.82	500.	50.
3642	0.96	193.	--	4351	0.78	186.	--	5102	6.12	500.	50.	6005	3.75	340.	50.
3643	1.31	205.	--	4352	1.12	198.	--	5146	6.50	500.	50.	6204	4.79	468.	50.
3647	1.84	223.	--	4360	0.54	178.	--	5160	2.27	288.	50.	6217	3.96	348.	50.
3648	1.04	195.	--	4361	0.62	201.	20.	5183	2.82	308.	50.	6229	3.56	334.	50.
3681	0.59	180.	--	4362	0.45	195.	20.	5188	3.65	337.	50.	6233	2.13	284.	50.
3685	0.56	179.	--	4410	2.57	249.	--	5190	2.05	281.	50.	6251D	4.13	354.	50.
3724	4.60	461.	50.	4432	0.63	181.	--	5191	0.70	204.	20.	6252D	6.12	500.	50.
3726	6.22	500.	50.	4439	3.64	286.	--	5192	2.33	261.	20.	6306	6.71	500.	50.
3807	2.37	242.	--	4452	2.31	240.	--	5213	10.42	500.	50.	6319	2.81	307.	50.
3808	2.80	257.	--	4459	2.36	242.	--	5215	3.76	341.	50.	6325	2.56	299.	50.
3821	4.43	334.	20.	4470	1.77	221.	--	5221	6.12	500.	50.	6400	4.42	455.	50.
3826	3.60	285.	--	4484	1.74	220.	--	5222	9.21	500.	50.	6504	2.35	241.	--
3830	1.43	209.	--	4493	1.65	217.	--	5223	3.65	337.	50.	6702M	(a)	.	--
3841	1.21	201.	--	4511	0.24	187.	20.	5348	3.85	344.	50.	6703M	(a)	.	--
4000	4.55	338.	20.	4512	0.08	182.	20.	5402	5.48	492.	50.	6704M	(a)	.	--
4021	3.10	268.	--	4557	1.47	210.	--	5403	7.77	500.	50.	6801F	6.81	488.	--
4024	2.85	259.	--	4558	1.30	205.	--	5437	3.84	343.	50.	6811	5.63	467.	20.
4034	4.79	327.	--	4583	2.27	238.	--	5443	3.29	324.	50.	6824F	10.30	500.	--
4036	1.76	221.	--	4611	0.66	182.	--	5445	5.60	496.	50.	6826F	5.74	451.	--
4038	2.62	251.	--	4635	4.24	307.	--	5462	5.19	482.	50.	6834	2.20	256.	20.
4053	1.94	227.	--	4653	1.49	211.	--	5472	7.50	500.	50.	6836	3.23	292.	20.
4062	1.58	214.	--	4665	7.56	500.	--	5473	9.31	500.	50.	6843F	10.05	500.	--
4112	0.35	171.	--	4692	0.44	174.	--	5474	3.71	339.	50.	6854	8.31	500.	20.
4113	1.94	227.	--	4693	0.73	185.	--	5478	3.63	336.	50.	6872F	14.08	500.	--
4114	2.18	235.	--	4720	1.50	212.	--	5479	5.12	479.	50.	6874F	15.39	500.	--
4130	2.56	249.	--	4740	0.83	188.	--	5480	4.38	453.	50.	6882	11.64	500.	20.
4133	1.25	203.	--	4741	1.84	223.	--	5506	4.33	452.	50.	6884	12.72	500.	20.

For Non-Ratable portion of Rate, refer to:

c 0771

# IX 00020 STIP

Section IX - Classification Pricing  
 Subsection A - Summary  
 7/1/2020

Section IX - A  
 Exhibit 1  
 Page 3

**MASSACHUSETTS WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE MANUAL** **RATES**

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### RATES

CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST
7016M	1.88	.	--	7502	1.64	236.	20.	8232	5.10	358.	20.	8829	1.92	246.	20.
7024M	2.35	.	--	7515	2.50	267.	20.	8233	5.01	354.	20.	8831	0.89	210.	20.
7038M	3.55	.	--	7520	2.64	271.	20.	8235	3.56	304.	20.	8832	0.25	188.	20.
7046M	5.06	.	--	7538	5.83	500.	50.	8263	3.99	319.	20.	8833	1.01	214.	20.
7047M	2.95	.	--	7539	1.10	218.	20.	8264	4.30	330.	20.	8835	1.63	236.	20.
7050M	5.57	.	--	7580	2.88	280.	20.	8265	5.01	354.	20.	8837	(a)	(a)	(a)
7090M	4.44	.	--	7590	3.83	313.	20.	8279	3.54	303.	20.	8868	0.64	201.	20.
7098M	5.95	.	--	7600	3.18	290.	20.	8291	3.43	299.	20.	8901	0.06	181.	20.
7099M	7.46	.	--	7601	5.25	484.	50.	8292	3.16	290.	20.	9014	2.01	249.	20.
7133	(a)	(a)	(a)	7610	0.26	188.	20.	8293	7.14	500.	20.	9015	2.70	274.	20.
7151M	8.26	.	--	7704	2.65	272.	20.	8350	5.83	474.	20.	9016	1.60	235.	20.
7152M	12.95	.	--	7720	1.29	224.	20.	8380	2.33	261.	20.	9019	2.82	278.	20.
7153M	10.33	.	--	7855	3.26	323.	50.	8381	1.61	235.	20.	9033	2.23	257.	20.
7219	7.58	500.	20.	8001	1.47	230.	20.	8385	2.76	276.	20.	9040	2.56	269.	20.
7230	8.46	500.	20.	8002	1.48	231.	20.	8392	1.33	226.	20.	9044	1.20	221.	20.
7231	9.31	500.	20.	8006	1.08	217.	20.	8393	1.20	221.	20.	9052	1.33	226.	20.
7309F	10.52	500.	--	8008	0.65	202.	20.	8500	5.01	354.	20.	9058	1.26	223.	20.
7313F	12.75	500.	--	8010	1.49	231.	20.	8601	0.19	186.	20.	9060	0.90	211.	20.
7317F	16.69	500.	--	8013	0.31	190.	20.	8709F	4.93	332.	--	9061	0.85	209.	20.
7327F	23.78	500.	--	8017	0.84	208.	20.	8710	2.81	277.	20.	9062	0.85	209.	20.
7333M	7.53	.	--	8018	3.16	290.	20.	8719	2.81	277.	20.	9063	0.53	198.	20.
7335M	8.85	.	--	8021	3.01	284.	20.	8720	0.71	204.	20.	9077F	5.45	350.	--
7337M	11.10	.	--	8031	1.55	233.	20.	8721	0.24	187.	20.	9079	0.92	211.	20.
7350F	19.75	500.	--	8032	1.08	217.	20.	8726F	4.25	308.	--	9089	0.73	205.	20.
7360	3.49	301.	20.	8033	1.35	226.	20.	8734M	0.44	.	--	9093	1.02	215.	20.
7370	3.44	299.	20.	8034	2.62	271.	20.	8737M	0.35	.	--	9101	3.12	288.	20.
7380	5.32	456.	20.	8039	1.13	219.	20.	8738M	0.55	.	--	9102	2.02	250.	20.
7382	3.26	293.	20.	8044	2.53	268.	20.	8742	0.10	183.	20.	9154	1.29	224.	20.
7394M	9.68	.	--	8046	1.79	242.	20.	8745	4.88	350.	20.	9156	1.55	233.	20.
7395M	12.37	.	--	8048	2.31	260.	20.	8747	0.68	203.	20.	9178	12.34	500.	20.
7398M	15.51	.	--	8058	2.00	249.	20.	8748	0.59	200.	20.	9179	31.19	500.	20.
7403	3.64	306.	20.	8103	2.21	256.	20.	8800	0.90	211.	20.	9180	4.01	319.	20.
7405d	0.80	216.	20.	8105	6.04	481.	20.	8803	0.04	180.	20.	9182	2.85	279.	20.
7420	6.97	500.	20.	8106	4.98	353.	20.	8805M	0.18	.	--	9186	4.01	319.	20.
7421	1.09	217.	20.	8107	2.46	265.	20.	8810	0.06	181.	20.	9220	2.86	279.	20.
7422	1.09	217.	20.	8111	2.52	267.	20.	8814M	0.14	.	--	9402	3.61	305.	20.
7425	2.18	255.	20.	8203	5.49	462.	20.	8815M	0.23	.	--	9403	8.78	500.	20.
7431e	0.82	217.	20.	8204	4.92	351.	20.	8820	0.07	181.	20.	9410	2.86	279.	20.
7445f	0.27	.	.	8215	3.18	290.	20.	8824	1.63	236.	20.	9501	1.82	223.	--
7453g	0.27	.	.	8227	4.26	358.	50.	8826	1.29	224.	20.	9505	1.82	223.	--

For Non-Ratable portion of Rate, refer to:

d 7445

e 7453

Non-Ratable Code and Rate to be used with:

f 7405

g 7431

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Section IX - Classification Pricing  
 Subsection A - Summary  
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**MASSACHUSETTS WORKERS COMPENSATION  
 AND EMPLOYERS LIABILITY INSURANCE MANUAL**

**RATES**

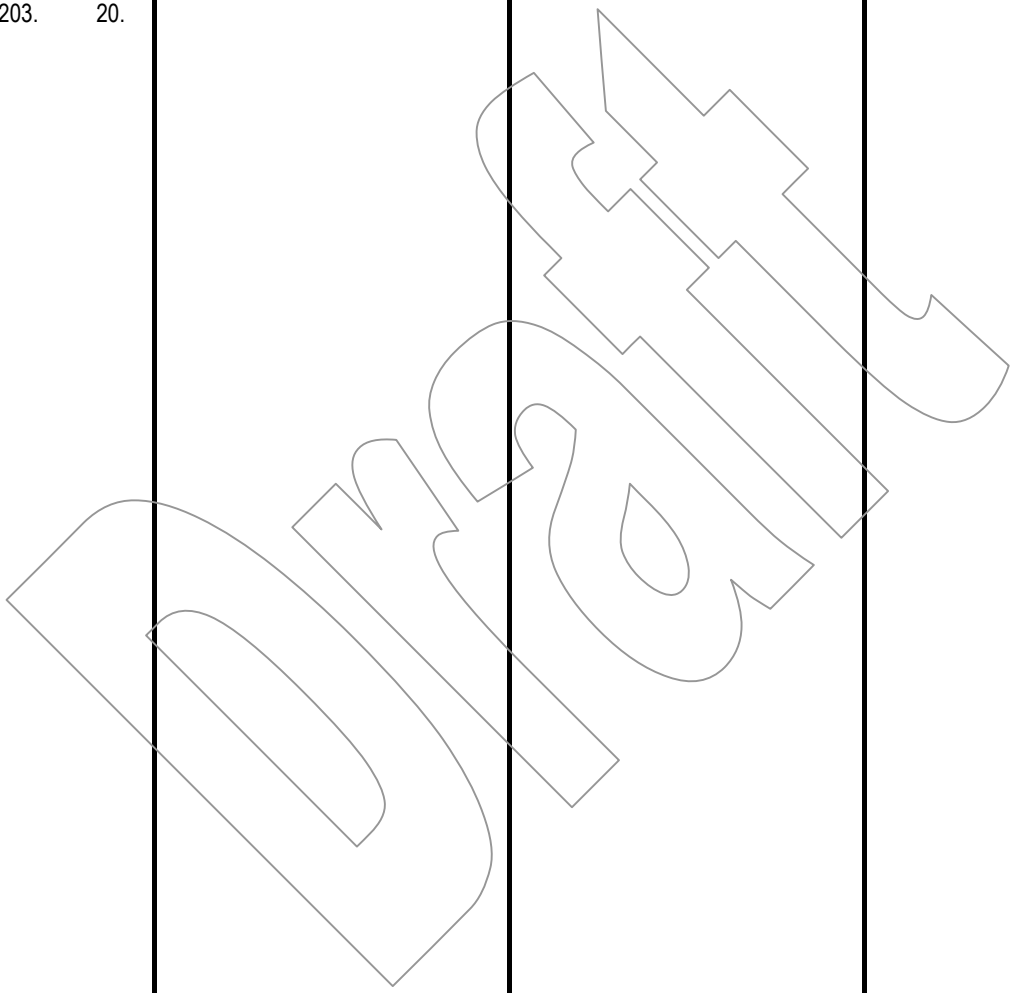
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*Proposed Effective July 1, 2020*

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**RATES**

CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST	CLASS CODE	RATE	MIN PREM	LOSS CONST
9519	2.52	267.	20.												
9521	2.65	252.	--												
9522	1.43	209.	--												
9533	12.56	500.	50.												
9534	4.98	474.	50.												
9549	3.87	344.	50.												
9552	6.67	500.	50.												
9586	0.27	188.	20.												
9620	0.68	203.	20.												



Calculation of Pure Premium Underlying Proposed Rate Factor

Industry Group (1)	Injury Type (2)	Uncapped Rate Level Factor (3)	Industry Group Pure Premium (4)	Percent of Pure Premium =(4) / [Total of (4)] (5)	Expected Loss and LAE Ratio (6)	Pure Premium Underlying Proposed Rate Factor = (3) x (5) x (6) (7)
Manufacturing	Indemnity	1.707	0.971	0.655	0.757	0.846
	Medical	1.707	0.512	0.345	0.757	0.446
	Total		1.482			
Construction	Indemnity	4.370	2.604	0.687	0.757	2.272
	Medical	4.370	1.187	0.313	0.757	1.036
	Total		3.791			
Office and Clerical	Indemnity	0.130	0.069	0.620	0.757	0.061
	Medical	0.130	0.043	0.380	0.757	0.038
	Total		0.112			
Goods and Services	Indemnity	1.492	0.825	0.639	0.757	0.722
	Medical	1.492	0.466	0.361	0.757	0.408
	Total		1.291			
Miscellaneous	Indemnity	4.201	2.408	0.660	0.757	2.099
	Medical	4.201	1.241	0.340	0.757	1.082
	Total		3.650			

Notes:

- (3): Section IX - H, Exhibit 1.
- (4): Section IX - C, Exhibits 1-5, page 2.
- (6): Section VI - J, Exhibit 1.

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Section IX - Classification Pricing  
 Subsection B - Conversion/Excess Loss Factors  
 7/1/2020

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 Exhibit 1  
 Page 1

## Calculation of Indemnity and Medical Conversion Factors

**(A). Benefit Level Adjustment Factors**

The following factors are used to bring MA Unit Statistical Plan losses to the benefit level of the proposed effective policy year period.

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal	1.053	1.047	1.036	1.030	1.023
Permanent Total	1.054	1.050	1.043	1.037	1.029
Permanent Partial	1.085	1.078	1.067	1.056	1.044
Temporary Total	1.034	1.032	1.029	1.024	1.019
<b>Medical</b>					
All Injury Types	1.000	1.000	1.000	1.000	1.000

**(B). Loss Development Factors**

The following factors are used to bring MA Unit Statistical Plan losses from first through fifth report to an ultimate basis.

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Likely	1.027	1.044	1.105	1.264	1.892
Not Likely	1.022	1.043	1.096	1.234	1.662
<b>Medical</b>					
Likely	0.941	0.934	0.940	0.976	1.042
Not Likely	0.990	0.985	0.989	0.991	1.016

**(C). Trend Factors**

The following factors trend the reported pure premiums from the reported period to the proposed effective period for new rates.

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
All Injury Types	0.856	0.810	0.883	0.901	0.907
<b>Medical</b>					
Lost Time Medical	0.851	0.796	0.874	0.908	0.897
Medical Only	0.702	0.775	0.813	0.855	0.830

Notes:

- (A): Section IV - A, Exhibit 1.
- (B): Development to 10th report (Exhibit 2, Page 1) x Development from 10th to ultimate. The 10th to ultimate development factor was calculated using data from Financial Aggregate Policy Year Call (Call 2) and Large Loss & Catastrophe Call (Call 7).
- (C): Exhibit 3. Frequency x Severity Trends / Wage Trends

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Section IX - Classification Pricing  
Subsection B - Conversion/Excess Loss Factors  
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Exhibit 1  
Page 2

## Calculation of Indemnity and Medical Conversion Factors

### (D). Primary Conversion Factors (PCF)

Indemnity	Policy Year				
	2013	2014	2015	2016	2017
Fatal - LD	0.925	0.886	1.010	1.173	1.756
Fatal - NLD	0.921	0.885	1.003	1.145	1.543
Permanent Total	0.926	0.888	1.018	1.181	1.766
Permanent Partial - LD	0.953	0.912	1.041	1.203	1.791
Permanent Partial - NLD	0.949	0.911	1.033	1.174	1.574
Temporary Total - LD	0.909	0.873	1.004	1.167	1.749
Temporary Total - NLD	0.905	0.873	0.996	1.139	1.536
<b>Medical</b>					
Lost Time Medical -LD	0.800	0.744	0.822	0.886	0.935
Lost Time Medical -NLD	0.843	0.785	0.865	0.900	0.911
Medical - NLD	0.695	0.763	0.805	0.847	0.843

Notes:

$$(D) = (A) \times (B) \times (C)$$

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Section IX - Classification Pricing  
Subsection B - Conversion/Excess Loss Factors  
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Exhibit 1  
Page 3

## Calculation of Indemnity and Medical Conversion Factors

### (A). Loss Adjustment Expense Factor

The following factor is applied to include the proposed loss adjustment expense.

	Indemnity	Medical
Loss Adjustment Expense	1.187	1.187

### (B). Investment Income Offset Factor

The following factor is applied to adjust for investment income.

	Investment Income Offset Factor
<b>Indemnity</b>	
Fatal	0.799
Permanent Total	0.744
Permanent Partial	1.041
Temporary Total	1.051
<b>Medical</b>	
Fatal	1.000
Permanent Total	0.749
Permanent Partial	1.047
Temporary Total	1.057
Medical Only	1.000

### (C). Secondary Conversion Factors

The factors above are combined multiplicatively, resulting in the following conversion factors.

<b>Indemnity</b>	
Fatal	0.949
Permanent Total	0.883
Permanent Partial	1.235
Temporary Total	1.247
<b>Medical</b>	
Fatal	1.187
Permanent Total	0.889
Permanent Partial	1.243
Temporary Total	1.255
Medical Only	1.187

#### Notes:

(A): 1.000 + Loss Adjustment Expense (as a percent of losses) from Section VI-A, Exhibit 1.

(B): Exhibit 4.

(C) = (A) x (B)



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Section IX - Classification Pricing  
 Subsection B - Conversion/Excess Loss Factors  
 7/1/2020

Section IX - B  
 Exhibit 2  
 Page 1

## Summary of Development Factors

		Likely to Develop								
		Development Factors From:								
		18-30	30-42	42-54	54-66	66-78	78-90	90-102	102-114	114-126
		<u>(1) Indemnity Losses</u>								
5Yr Weighted Average		1.497	1.144	1.058	1.017	1.005	1.001	1.001	1.003	1.001
Cumulative		1.864	1.246	1.088	1.029	1.012	1.007	1.006	1.005	1.001
		<u>(2) Medical Losses</u>								
5Yr Weighted Average		1.067	1.039	1.006	0.993	0.988	0.995	0.992	0.994	0.997
Cumulative		1.071	1.004	0.966	0.961	0.967	0.978	0.983	0.991	0.997
		<u>(3) Claim Counts</u>								
2Yr Weighted Average		1.012	1.009	1.005	1.002	1.002	1.000	0.999	1.002	1.001
Cumulative		1.031	1.019	1.010	1.005	1.003	1.001	1.001	1.002	1.001
		Not-Likely to Develop								
		Development Factors From:								
		18-30	30-42	42-54	54-66	66-78	78-90	90-102	102-114	114-126
		<u>(4) Indemnity Losses</u>								
5Yr Weighted Average		1.347	1.125	1.051	1.021	1.011	1.002	1.003	1.000	1.002
Cumulative		1.656	1.229	1.092	1.040	1.018	1.008	1.006	1.003	1.002
		<u>(5) Medical Losses</u>								
5Yr Weighted Average		1.025	1.002	1.004	0.995	0.996	0.999	0.999	1.000	1.000
Cumulative		1.020	0.995	0.994	0.989	0.995	0.998	0.999	1.000	1.000
		<u>(6) Claim Counts</u>								
2Yr Weighted Average		1.015	1.005	1.003	1.001	1.000	1.000	1.000	1.000	1.000
Cumulative		1.026	1.011	1.005	1.003	1.001	1.001	1.001	1.001	1.000

Notes:  
 (1), (2), (3): Page 3.  
 (4), (5), (6): Page 5.

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Section IX - Classification Pricing  
 Subsection B - Conversion/Excess Loss Factors  
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 Exhibit 2  
 Page 2

Calculation of Likely to Develop Development Factors

Policy Year	Likely to Develop								
	Indemnity Losses			Medical Losses			Claim Counts		
	Evaluated at month	Link	Ratio	Evaluated at month	Link	Ratio	Evaluated at month	Link	Ratio
18	30	18		30	18		30		
2012	69,437,461	104,273,604	1.502	43,976,785	50,268,357	1.143	1,569	1,611	1.027
2013	69,309,357	102,093,156	1.473	42,723,810	44,591,629	1.044	1,539	1,561	1.014
2014	81,235,037	120,529,255	1.484	54,262,050	55,597,278	1.025	1,627	1,661	1.021
2015	78,126,580	117,253,379	1.501	48,556,960	51,803,141	1.067	1,543	1,557	1.009
2016	74,232,422	113,119,206	1.524	46,344,876	49,428,214	1.067	1,498	1,520	1.015
	5yr Weighted Average		1.497	5yr Weighted Average		1.067	2yr Weighted Average		1.012
	30	42		30	42		30	42	
2011	106,030,842	124,431,773	1.174	50,301,923	55,284,412	1.099	1,667	1,687	1.012
2012	109,859,529	124,763,361	1.136	51,979,501	52,500,556	1.010	1,663	1,663	1.000
2013	108,929,528	122,244,106	1.122	46,563,895	47,367,047	1.017	1,619	1,635	1.010
2014	128,995,426	148,035,020	1.148	58,849,726	60,276,709	1.024	1,742	1,748	1.003
2015	122,562,197	140,119,842	1.143	53,379,811	55,764,002	1.045	1,600	1,623	1.014
	5yr Weighted Average		1.144	5yr Weighted Average		1.039	2yr Weighted Average		1.009
	42	54		42	54		42	54	
2010	121,447,612	126,916,880	1.045	51,567,420	52,484,379	1.018	1,766	1,782	1.009
2011	129,140,611	138,671,017	1.074	56,847,267	57,300,444	1.008	1,714	1,725	1.006
2012	132,187,346	139,916,716	1.058	55,124,124	55,778,005	1.012	1,699	1,710	1.006
2013	128,231,457	136,255,297	1.063	49,068,257	48,679,231	0.992	1,668	1,675	1.004
2014	154,621,374	162,195,725	1.049	62,634,401	62,665,708	1.000	1,782	1,793	1.006
	5yr Weighted Average		1.058	5yr Weighted Average		1.006	2yr Weighted Average		1.005
	54	66		54	66		54	66	
2009	130,042,053	132,771,120	1.021	53,207,371	53,166,202	0.999	1,573	1,575	1.001
2010	130,027,271	133,366,013	1.026	53,624,711	52,865,942	0.986	1,800	1,801	1.001
2011	144,619,420	146,071,863	1.010	59,938,760	58,721,468	0.980	1,751	1,759	1.005
2012	147,633,044	151,048,677	1.023	57,822,929	57,725,069	0.998	1,741	1,745	1.002
2013	142,509,897	143,607,658	1.008	50,311,862	50,588,559	1.005	1,698	1,702	1.002
	5yr Weighted Average		1.017	5yr Weighted Average		0.993	2yr Weighted Average		1.002
	66	78		66	78		66	78	
2008	136,346,471	137,636,446	1.009	54,601,834	53,449,942	0.979	1,721	1,721	1.000
2009	133,826,285	134,480,068	1.005	53,464,643	52,484,692	0.982	1,582	1,582	1.000
2010	134,838,147	133,609,523	0.991	53,350,569	53,399,824	1.001	1,807	1,812	1.003
2011	148,854,606	150,271,162	1.010	59,916,231	61,442,436	1.025	1,772	1,777	1.003
2012	157,597,649	158,902,885	1.008	59,368,142	56,643,025	0.954	1,770	1,771	1.001
	5yr Weighted Average		1.005	5yr Weighted Average		0.988	2yr Weighted Average		1.002
	78	90		78	90		78	90	
2007	152,351,751	152,753,595	1.003	61,129,808	60,827,537	0.995	2,002	2,003	1.000
2008	138,835,094	138,685,765	0.999	53,762,704	53,561,084	0.996	1,727	1,723	0.998
2009	135,761,401	135,361,898	0.997	52,841,459	53,125,439	1.005	1,592	1,593	1.001
2010	135,675,142	135,617,824	1.000	53,910,680	53,897,415	1.000	1,821	1,823	1.001
2011	151,787,766	152,767,091	1.006	61,728,693	60,610,013	0.982	1,783	1,780	0.998
	5yr Weighted Average		1.001	5yr Weighted Average		0.995	2yr Weighted Average		1.000
	90	102		90	102		90	102	
2006	162,457,536	162,872,594	1.003	68,275,014	68,055,983	0.997	2,241	2,240	1.000
2007	153,063,595	153,045,131	1.000	61,011,756	60,583,473	0.993	2,005	2,008	1.001
2008	139,337,626	139,310,614	1.000	53,948,922	52,857,869	0.980	1,728	1,728	1.000
2009	138,721,910	138,736,716	1.000	53,850,935	53,535,439	0.994	1,605	1,603	0.999
2010	135,434,510	135,810,306	1.003	53,591,194	53,195,932	0.993	1,823	1,822	0.999
	5yr Weighted Average		1.001	5yr Weighted Average		0.992	2yr Weighted Average		0.999
	102	114		102	114		102	114	
2005	165,687,225	166,308,356	1.004	71,576,269	71,088,329	0.993	2,437	2,443	1.002
2006	163,972,076	164,512,037	1.003	68,346,050	68,909,481	1.008	2,243	2,250	1.003
2007	153,382,793	154,002,727	1.004	60,604,380	60,393,949	0.997	2,009	2,019	1.005
2008	138,950,462	139,328,204	1.003	52,583,369	52,082,398	0.990	1,728	1,731	1.002
2009	138,907,436	139,342,843	1.003	53,479,822	52,407,760	0.980	1,604	1,607	1.002
	5yr Weighted Average		1.003	5yr Weighted Average		0.994	2yr Weighted Average		1.002
	114	126		114	126		114	126	
2004	178,627,918	178,719,924	1.001	72,032,401	72,133,817	1.001	2,694	2,696	1.001
2005	166,308,356	166,306,920	1.000	71,088,329	71,335,711	1.003	2,443	2,444	1.000
2006	163,781,853	164,071,230	1.002	68,677,665	67,780,098	0.987	2,248	2,249	1.000
2007	154,002,727	154,130,843	1.001	60,393,949	59,952,045	0.993	2,019	2,017	0.999
2008	139,588,204	140,044,115	1.003	52,107,398	52,137,270	1.001	1,732	1,736	1.002
	5yr Weighted Average		1.001	5yr Weighted Average		0.997	2yr Weighted Average		1.001

Note:  
 Unit Statistical Plan data, excluding Large Deductibles.

# IX 00028 STIP

Section IX - Classification Pricing  
 Subsection B - Conversion/Excess Loss Factors  
 7/1/2020

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 Exhibit 2  
 Page 3

Calculation of Not-Likely to Develop Development Factors

Policy Year	Not-Likely to Develop								
	Indemnity Losses			Medical Losses			Claim Counts		
	Evaluated at month	Link	Ratio	Evaluated at month	Link	Ratio	Evaluated at month	Link	Ratio
18	30	18		30	18		30		
2012	135,106,186	183,123,712	1.355	126,889,768	131,734,307	1.038	12,646	12,858	1.017
2013	148,411,265	194,499,075	1.311	134,703,826	137,352,691	1.020	12,884	13,125	1.019
2014	155,371,898	209,655,233	1.349	139,400,462	141,763,772	1.017	13,183	13,421	1.018
2015	162,561,884	218,419,661	1.344	137,556,110	141,060,186	1.025	13,316	13,517	1.015
2016	161,276,536	221,996,028	1.376	141,629,459	145,029,352	1.024	13,146	13,336	1.014
	5yr Weighted Average		1.347	5yr Weighted Average		1.025	2yr Weighted Average		1.015
	30	42		30	42		30	42	
2011	181,000,527	203,907,162	1.127	131,776,373	132,146,481	1.003	13,029	13,103	1.006
2012	177,537,787	199,964,007	1.126	130,023,163	130,727,379	1.005	12,806	12,876	1.005
2013	187,662,703	210,288,981	1.121	135,380,425	134,653,623	0.995	13,067	13,127	1.005
2014	201,189,062	226,958,540	1.128	138,511,324	139,042,065	1.004	13,340	13,418	1.006
2015	213,110,842	239,773,271	1.125	139,483,517	139,899,256	1.003	13,474	13,534	1.004
	5yr Weighted Average		1.125	5yr Weighted Average		1.002	2yr Weighted Average		1.005
	42	54		42	54		42	54	
2010	185,018,347	194,646,186	1.052	125,487,708	126,053,785	1.005	12,969	13,002	1.003
2011	199,198,325	209,058,649	1.050	130,583,625	131,540,578	1.007	13,076	13,105	1.002
2012	192,540,022	202,765,142	1.053	128,103,811	128,282,278	1.001	12,840	12,859	1.001
2013	204,301,630	214,540,509	1.050	132,952,413	133,539,928	1.004	13,094	13,137	1.003
2014	220,372,186	231,040,024	1.048	136,684,373	137,112,866	1.003	13,384	13,409	1.002
	5yr Weighted Average		1.051	5yr Weighted Average		1.004	2yr Weighted Average		1.003
	54	66		54	66		54	66	
2009	174,449,980	177,038,472	1.015	118,767,663	118,051,022	0.994	11,737	11,747	1.001
2010	191,535,795	195,269,010	1.019	124,913,453	124,685,445	0.998	12,984	13,009	1.002
2011	203,110,246	207,955,439	1.024	128,902,262	128,525,563	0.997	13,079	13,107	1.002
2012	195,048,814	200,131,853	1.026	126,237,354	124,071,826	0.983	12,828	12,849	1.002
2013	208,285,909	212,407,687	1.020	131,907,297	132,171,471	1.002	13,114	13,130	1.001
	5yr Weighted Average		1.021	5yr Weighted Average		0.995	2yr Weighted Average		1.001
	66	78		66	78		66	78	
2008	183,663,021	185,274,812	1.009	117,049,959	115,577,156	0.987	12,639	12,652	1.001
2009	175,983,307	178,838,879	1.016	117,752,581	118,084,020	1.003	11,740	11,750	1.001
2010	193,750,826	195,946,000	1.011	124,142,285	123,463,876	0.995	13,002	13,013	1.001
2011	205,172,696	206,076,701	1.004	127,330,800	126,735,858	0.995	13,094	13,102	1.001
2012	193,582,882	196,067,311	1.013	122,428,752	122,431,690	1.000	12,824	12,826	1.000
	5yr Weighted Average		1.011	5yr Weighted Average		0.996	2yr Weighted Average		1.000
	78	90		78	90		78	90	
2007	174,690,816	175,414,763	1.004	119,610,986	119,160,843	0.996	13,736	13,739	1.000
2008	184,076,164	183,908,795	0.999	115,264,394	115,497,299	1.002	12,646	12,652	1.000
2009	177,557,546	178,437,540	1.005	117,727,253	117,565,245	0.999	11,740	11,746	1.001
2010	193,880,381	193,191,523	0.996	122,953,020	122,740,990	0.998	13,004	13,006	1.000
2011	204,560,097	205,502,241	1.005	126,449,601	126,491,430	1.000	13,096	13,099	1.000
	5yr Weighted Average		1.002	5yr Weighted Average		0.999	2yr Weighted Average		1.000
	90	102		90	102		90	102	
2006	166,332,007	167,339,898	1.006	111,829,647	111,543,343	0.997	13,715	13,716	1.000
2007	175,104,763	175,894,499	1.005	118,976,624	119,090,351	1.001	13,737	13,741	1.000
2008	183,256,934	183,491,033	1.001	115,109,461	114,634,132	0.996	12,647	12,654	1.001
2009	175,077,528	175,289,694	1.001	116,839,749	116,924,297	1.001	11,734	11,738	1.000
2010	193,374,837	194,177,059	1.004	123,047,211	123,038,023	1.000	13,006	13,006	1.000
	5yr Weighted Average		1.003	5yr Weighted Average		0.999	2yr Weighted Average		1.000
	102	114		102	114		102	114	
2005	169,888,407	169,866,675	1.000	111,840,772	111,960,222	1.001	14,801	14,807	1.000
2006	166,240,416	166,222,192	1.000	111,253,276	111,384,351	1.001	13,713	13,725	1.001
2007	175,556,837	175,638,522	1.000	119,069,444	118,748,284	0.997	13,740	13,742	1.000
2008	183,851,185	184,177,810	1.002	114,908,632	115,152,372	1.002	12,654	12,658	1.000
2009	175,118,974	174,958,753	0.999	116,979,914	116,920,104	0.999	11,737	11,744	1.001
	5yr Weighted Average		1.000	5yr Weighted Average		1.000	2yr Weighted Average		1.000
	114	126		114	126		114	126	
2004	170,265,182	170,926,690	1.004	111,201,658	111,346,254	1.001	15,194	15,194	1.000
2005	169,866,675	170,008,512	1.001	111,960,222	112,084,942	1.001	14,807	14,813	1.000
2006	166,952,376	167,607,085	1.004	111,616,167	111,537,875	0.999	13,727	13,732	1.000
2007	175,638,522	176,056,330	1.002	118,748,284	118,649,937	0.999	13,742	13,748	1.000
2008	183,917,810	184,034,222	1.001	115,127,372	115,122,644	1.000	12,657	12,659	1.000
	5yr Weighted Average		1.002	5yr Weighted Average		1.000	2yr Weighted Average		1.000

Note:  
 Unit Statistical Plan data, excluding Large Deductibles.

# IX 00029 STIP

Section IX - Classification Pricing  
 Subsection B - Conversion/Excess Loss Factors  
 7/1/2020

Section IX - B  
 Exhibit 3

### Trend Factors

Policy Year	Statewide Average Weekly Wage	Indemnity Severity	Lost Time Medical Severity	Medical Only Severity	Lost Time Claim Frequency	Medical Only Claim Frequency
(1) Historical Values						
2013	1,225.60	27,410	10,532	866	179.16	353.54
2014	1,265.09	30,203	11,742	850	177.22	336.97
2015	1,303.66	29,773	11,494	887	169.96	317.22
2016	1,349.36	30,644	11,625	906	167.50	305.91
2017	1,395.56	30,789	11,890	949	171.34	311.10

(2) Trend to PY 2017						
2013	1.139	1.123	1.129	1.095	0.956	0.880
2014	1.103	1.019	1.013	1.116	0.967	0.923
2015	1.070	1.034	1.034	1.070	1.008	0.981
2016	1.034	1.005	1.023	1.048	1.023	1.017
2017	1.000	1.000	1.000	1.000	1.000	1.000

(3) Projected Trend from PY 2017 to Prospective Effective Period						
Selected Annual Trend	3.4%	2.6%	2.3%	2.3%	-2.0%	-4.2%
Trend Factor	1.122	1.093	1.081	1.082	0.932	0.860

(4) Trend Factors from PY 2017 to Prospective Effective Period						
Policy Year	Statewide Average Weekly Wage	Indemnity Severity	Lost Time Medical Severity	Medical Only Severity	Lost Time Claim Frequency	Medical Only Claim Frequency
2013	1.278	1.228	1.221	1.185	0.891	0.757
2014	1.238	1.114	1.095	1.208	0.901	0.794
2015	1.201	1.130	1.118	1.158	0.939	0.844
2016	1.161	1.098	1.106	1.134	0.953	0.875
2017	1.122	1.093	1.081	1.082	0.932	0.860

**Notes:**

(1): Weekly Wage from Section V-G, Exhibit 2.

Indemnity Severity from Section V-C, Exhibit 1, Page 1.

Lost Time Medical Severity from Section V-D, Exhibit 1, Page 1.

Medical Only Severity from Section V-D, Exhibit 2, Page 1.

Lost Time Claim Frequency from Section V-B, Exhibit 1, Page 1.

Medical Only Claim Frequency from Section V-B, Exhibit 2, Page 1.

(2) = (1) / (1) for Policy Year 2017

(3): Selected Annual Trend from Section I-D, Exhibit 1, Page 1.

Trend Factor =  $(1.0 + \text{Selected Annual Trend})^{\text{Trend Period}}$ , where Trend Period extends from the midpoint of PY 2017 to midpoint of policy effective period 7/1/2020 - 6/30/2021, which is 3.5 years.

(4) = (2) x (3)

# IX 00030 STIP

Section IX - Classification Pricing  
 Subsection B - Conversion/Excess Loss Factors  
 7/1/2020

Section IX - B  
 Exhibit 4

## Calculation of Investment Income Offset Factor

### Indemnity

Injury Type (1)	Loss Flow Discounted at 1.54% Post-Chapter 398 (2)	Injury Type Weights At Ultimate (3)	Investment Income Offset Factor (4)
Fatal	0.742	1.50%	0.799
Permanent Total	0.691	8.44%	0.744
Permanent Partial	0.967	37.87%	1.041
Temporary Total	0.976	18.06%	1.051
Total Indemnity			0.929

### Medical

Injury Type (5)	Loss Flow Discounted at 1.54% Post-Chapter 398 (6)	Injury Type Weights At Ultimate (7)	Investment Income Offset Factor (8)
Fatal	0.742	0.10%	1.000
Permanent Total	0.691	5.11%	0.749
Permanent Partial	0.967	13.56%	1.047
Temporary Total	0.976	11.21%	1.057
Medical Only		4.14%	1.000
Total Medical			0.923

**Notes:**

(2), (6): Loss Flows are from the 8/1/99 rate filing, Section VIII - E, Exhibits 12 and 16. The discount rate is calculated by multiplying the pre-tax rate of return on governments (Section VII-J, Exhibit 1, Page 1) times the complement of the federal tax rate on investment income (Section VII-J, Exhibit 1, Page 1) [1.83% x (1.000 - 15.60%)] = 1.54%

(3): Section IV - E, Exhibit 2, Page 1.

(4)= (2) / 0.929, which is the weighted average of (2) and (3).

(7): Section IV - E, Exhibit 2, Page 2.

(8)= (6) / 0.923, which is the weighted average of (6) and (7). This weighted average excludes Fatal and Medical Only injury types as it is assumed that they generate no investment income.

# IX 000031 STIP

Section IX - Classification Pricing  
Subsection B - Conversion/Excess Loss Factors  
7/1/2020

Section IX - B  
Exhibit 5

## Calculation of Excess Loss Factors

Hazard Group (1)	Excess Ratio (2)	Excess Factor (3) = [ 1.0 / (1.0 - (2)) ]
A	0.100	1.111
B	0.113	1.127
C	0.140	1.163
D	0.182	1.222
E	0.199	1.248
F	0.229	1.297
G	0.342	1.520

**Note:**

(2) = Excess Ratio for Accident Limit of \$500,000 x 0.985, where Excess Ratio from Section XII-F, Exhibit 3, Page 1 and 0.985 is the factor to convert the per occurrence claims to per claim basis.

Calculation of Converted Limited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Manufacturing Industry Group, Industry Code 1  
 All Classes

Policy Year (1)	Injury Type (2)	Limited Losses					Converted Limited Losses				
		Indemnity		Medical		Total (7)	Indemnity		Medical		Total (12)
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)			Likely (8)	Not-Likely (9)	Likely (10)	
2013	Fatal	8,000	1,000,000	0	0	1,008,000	7,398	920,555	0	0	927,953
	Permanent Total	2,749,197	0	684,427	0	3,433,624	2,545,160	0	547,836	0	3,092,996
	Permanent Partial	7,227,153	16,739,365	3,001,159	6,303,288	33,270,965	6,888,335	15,881,961	2,402,218	5,311,559	30,484,073
	Temporary Total	4,034,517	12,495,195	1,494,595	8,878,332	26,902,639	3,666,462	11,303,602	1,196,319	7,481,458	23,647,841
	Medical Only	0	0	0	3,932,159	3,932,159	0	0	0	2,734,377	2,734,377
2014	Fatal	0	350,790	0	0	350,790	0	310,577	0	0	310,577
	Permanent Total	5,567,769	0	2,512,494	0	8,080,263	4,946,609	0	1,869,750	0	6,816,359
	Permanent Partial	8,803,169	15,251,056	3,528,859	5,523,631	33,106,715	8,029,444	13,896,699	2,626,110	4,334,348	28,886,601
	Temporary Total	5,454,193	12,998,023	1,506,745	9,489,339	29,448,300	4,763,991	11,341,825	1,121,291	7,446,206	24,673,313
	Medical Only	0	0	0	3,089,931	3,089,931	0	0	0	2,358,897	2,358,897
2015	Fatal	0	469,098	0	30,902	500,000	0	470,375	0	26,729	497,104
	Permanent Total	3,645,668	0	1,432,822	0	5,078,490	3,711,830	0	1,177,542	0	4,889,372
	Permanent Partial	9,204,230	16,566,343	2,814,035	6,141,334	34,725,942	9,580,881	17,112,452	2,312,669	5,311,870	34,317,872
	Temporary Total	4,098,593	14,246,379	1,293,749	10,016,403	29,655,124	4,113,441	14,188,699	1,063,247	8,663,563	28,028,950
	Medical Only	0	0	0	3,159,919	3,159,919	0	0	0	2,542,187	2,542,187
2016	Fatal	0	500,000	0	0	500,000	0	572,441	0	0	572,441
	Permanent Total	1,575,044	0	387,818	0	1,962,862	1,860,476	0	343,780	0	2,204,256
	Permanent Partial	6,157,954	16,600,323	3,100,903	6,685,324	32,544,504	7,408,790	19,489,904	2,748,783	6,015,809	35,663,286
	Temporary Total	4,636,235	12,173,173	2,184,381	9,301,879	28,295,668	5,411,293	13,865,059	1,936,335	8,370,323	29,583,010
	Medical Only	0	0	0	2,991,014	2,991,014	0	0	0	2,534,115	2,534,115
2017	Fatal	0	632,210	0	41,885	674,095	0	975,268	0	38,177	1,013,445
	Permanent Total	0	0	0	0	0	0	0	0	0	0
	Permanent Partial	1,888,280	8,277,559	1,287,776	4,654,881	16,108,496	3,382,102	13,024,923	1,204,194	4,242,824	21,854,043
	Temporary Total	3,836,570	11,342,886	2,337,470	9,631,055	27,147,981	6,709,967	17,428,236	2,185,759	8,778,500	35,102,462
	Medical Only	0	0	0	3,200,325	3,200,325	0	0	0	2,696,564	2,696,564
(13) All Years, All Injury Types		68,886,572	139,642,400	27,567,233	93,071,601	329,167,806	73,026,179	150,782,576	22,735,833	78,887,506	325,432,094

Notes:  
 (3), (4), (5), (6): From Unit Statistical Plan data, excluding Large Deductibles.  
 (7)= (3) + (4) + (5) + (6)  
 (8)= (3) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (9)= (4) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (10)= (5) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (11)= (6) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (12)= (8) + (9) + (10) +(11)

IX 000032 STIP

Calculation of Converted Unlimited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Manufacturing Industry Group, Industry Code 1  
 All Classes

Policy Year (1)	Injury Type (2)	Adjusted Excess Losses					Converted Unlimited Losses					Exposure (13)
		Indemnity		Medical		Total	Indemnity		Medical		Total	
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	(7)	Likely (8)	Not-Likely (9)	Likely (10)	Not-Likely (11)	(12)	
2013	Fatal	660	121,092	283	51,897	173,932	7,646	988,440	336	61,601	1,058,023	60,232,926
	Permanent Total	282,322	0	206,347	0	488,669	2,497,655	0	670,376	0	3,168,031	
	Permanent Partial	788,793	1,952,421	717,109	1,808,937	5,267,260	9,484,018	22,031,884	3,877,606	8,851,420	44,244,928	
	Temporary Total	455,246	1,314,435	401,056	1,854,861	4,025,598	5,141,316	15,739,423	2,004,994	11,718,764	34,604,497	
	Medical Only	0	0	0	459,909	459,909	0	0	0	3,791,618	3,791,618	
2014	Fatal	0	35,391	0	15,168	50,559	0	328,297	0	18,004	346,301	61,795,808
	Permanent Total	590,307	0	592,896	0	1,183,203	4,891,033	0	2,188,989	0	7,080,022	
	Permanent Partial	1,005,672	1,681,363	910,951	1,464,381	5,062,367	11,161,623	19,244,516	4,396,886	7,208,344	42,011,369	
	Temporary Total	545,246	1,345,264	423,198	1,857,970	4,171,678	6,622,608	15,825,557	1,938,611	11,678,419	36,065,195	
	Medical Only	0	0	0	396,542	396,542	0	0	0	3,270,706	3,270,706	
2015	Fatal	0	73,259	0	37,344	110,603	0	515,866	0	76,054	591,920	64,407,242
	Permanent Total	491,828	0	399,397	0	891,225	3,713,299	0	1,401,705	0	5,115,004	
	Permanent Partial	1,118,456	2,190,136	861,131	1,931,710	6,101,433	13,217,535	23,845,646	3,945,320	9,004,424	50,012,925	
	Temporary Total	477,337	1,610,085	380,359	2,136,015	4,603,796	5,726,421	19,707,007	1,811,986	13,555,418	40,800,832	
	Medical Only	0	0	0	423,157	423,157	0	0	0	3,519,863	3,519,863	
2016	Fatal	0	51,049	0	21,878	72,927	0	591,642	0	25,969	617,611	64,152,211
	Permanent Total	241,247	0	156,711	0	397,958	1,856,556	0	444,875	0	2,301,431	
	Permanent Partial	991,062	2,266,435	1,035,185	1,992,038	6,284,720	10,376,841	26,876,913	4,703,814	9,954,478	51,912,046	
	Temporary Total	628,205	1,677,313	600,392	2,173,418	5,079,328	7,533,518	19,387,166	3,184,050	13,234,297	43,339,031	
	Medical Only	0	0	0	432,476	432,476	0	0	0	3,521,344	3,521,344	
2017	Fatal	0	115,952	0	54,721	170,673	0	1,035,481	0	110,270	1,145,751	63,352,307
	Permanent Total	0	0	0	0	0	0	0	0	0	0	
	Permanent Partial	383,253	1,592,030	380,457	1,476,974	3,832,714	4,651,569	18,057,200	1,969,864	7,110,227	31,788,860	
	Temporary Total	773,373	2,103,994	700,118	2,386,228	5,963,713	9,334,531	24,364,014	3,622,297	14,013,749	51,334,591	
	Medical Only	0	0	0	455,988	455,988	0	0	0	3,742,079	3,742,079	
(14) All Years, All Injury Types		8,773,007	18,130,219	7,765,590	21,431,612	56,100,428	96,216,169	208,539,052	36,161,709	124,467,048	465,383,978	313,940,494
(15) Pure Premium							0.306	0.664	0.115	0.396	1.482	

Notes:  
 (3) , (4) = 0.7 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Indemnity Converted Limited Losses from Page 1, Columns (8) and (9).  
 (5), (6) = [ Excess Factor - 1.0 ] x Medical Converted Limited Losses + 0.3 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Medical Converted Limited Losses from Page 1, Columns (10) and (11).  
 (7) = (3) + (4) + (5) + (6)  
 (8), (9), (10), (11): (Converted Limited Losses from Page 1 + Adjusted Excess Losses) x Secondary Conversion Factors from Section IX - B, Exhibit 1, Page 3.  
 (12) = (8) + (9) + (10) + (11)  
 (13): Unit Statistical Plan data, excluding Large Deductibles.  
 (15): Pure Premium calculated as the All Years, All Injury Types Converted Unlimited Losses divided by the All Years, All Injury Types Exposure.

IX 000033 STIP



Calculation of Converted Limited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Construction Industry Group, Industry Code 2  
 All Classes

Policy Year (1)	Injury Type (2)	Limited Losses				Converted Limited Losses					
		Indemnity		Medical		Total (7)	Indemnity		Medical		Total (12)
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)		Likely (8)	Not-Likely (9)	Likely (10)	Not-Likely (11)	
2013	Fatal	0	2,516,752	0	227,604	2,744,356	0	2,316,809	0	191,794	2,508,603
	Permanent Total	20,180,410	0	5,825,305	0	26,005,715	18,682,677	0	4,662,751	0	23,345,428
	Permanent Partial	17,641,909	39,874,908	5,934,569	12,427,640	75,879,026	16,814,833	37,832,482	4,750,209	10,472,335	69,869,859
	Temporary Total	6,612,225	21,404,412	2,291,739	13,364,905	43,673,281	6,009,015	19,363,200	1,834,377	11,262,134	38,468,726
	Medical Only	0	0	0	3,303,047	3,303,047	0	0	0	2,296,900	2,296,900
2014	Fatal	901,514	463,733	12,897	56,018	1,434,162	798,969	410,573	9,598	43,957	1,263,097
	Permanent Total	21,188,802	0	8,265,965	0	29,454,767	18,824,904	0	6,151,373	0	24,976,277
	Permanent Partial	31,280,410	49,428,755	9,838,227	14,800,414	105,347,806	28,531,126	45,039,277	7,321,420	11,613,763	92,505,586
	Temporary Total	9,486,365	19,742,133	3,526,866	12,150,809	44,906,173	8,285,910	17,226,605	2,624,626	9,534,640	37,671,781
	Medical Only	0	0	0	3,801,786	3,801,786	0	0	0	2,902,337	2,902,337
2015	Fatal	475,714	5,728,518	0	298,455	6,502,687	480,684	5,744,121	0	258,145	6,482,950
	Permanent Total	13,141,659	0	5,792,455	0	18,934,114	13,380,156	0	4,760,435	0	18,140,591
	Permanent Partial	30,416,682	46,590,066	9,196,888	13,998,485	100,202,121	31,661,381	48,125,906	7,558,313	12,107,815	99,453,415
	Temporary Total	9,517,849	22,290,450	3,728,045	14,984,956	50,521,300	9,552,330	22,200,202	3,063,833	12,961,050	47,777,415
	Medical Only	0	0	0	3,590,285	3,590,285	0	0	0	2,888,421	2,888,421
2016	Fatal	130,094	3,511,522	0	86,759	3,728,375	152,629	4,020,279	0	78,071	4,250,979
	Permanent Total	7,204,292	0	2,755,306	0	9,959,598	8,509,863	0	2,442,430	0	10,952,293
	Permanent Partial	21,736,711	43,446,269	8,777,405	15,377,295	89,337,680	26,151,985	51,008,865	7,780,695	13,837,305	98,778,850
	Temporary Total	10,625,173	26,549,067	4,934,813	16,526,991	58,636,044	12,401,425	30,238,984	4,374,445	14,871,862	61,886,716
	Medical Only	0	0	0	3,601,100	3,601,100	0	0	0	3,051,006	3,051,006
2017	Fatal	0	2,575,729	0	613,366	3,189,095	0	3,973,405	0	559,070	4,532,475
	Permanent Total	1,909,328	0	1,744,975	0	3,654,303	3,370,984	0	1,631,720	0	5,002,704
	Permanent Partial	11,921,531	25,675,222	6,518,528	11,817,704	55,932,985	21,352,675	40,400,533	6,095,450	10,771,584	78,620,242
	Temporary Total	10,392,439	29,174,272	7,797,205	21,169,474	68,533,390	18,175,849	44,825,990	7,291,136	19,295,522	89,588,497
	Medical Only	0	0	0	3,838,194	3,838,194	0	0	0	3,234,027	3,234,027
(13) All Years, All Injury Types		224,763,107	338,971,808	86,941,188	166,035,287	816,711,390	243,137,395	372,727,231	72,352,811	142,231,738	830,449,175

Notes:

(3), (4), (5), (6): From Unit Statistical Plan data, excluding Large Deductibles.

(7)= (3) + (4) + (5) + (6)

(8)= (3) x Primary Conversion Factors from Section IX - B, Exhibit 1

(9)= (4) x Primary Conversion Factors from Section IX - B, Exhibit 1

(10)= (5) x Primary Conversion Factors from Section IX - B, Exhibit 1

(11)= (6) x Primary Conversion Factors from Section IX - B, Exhibit 1

(12)= (8) + (9) + (10) +(11)

IX 000034 STIP

Calculation of Converted Unlimited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Construction Industry Group, Industry Code 2  
 All Classes

Policy Year (1)	Injury Type (2)	Adjusted Excess Losses				Converted Unlimited Losses						Exposure (13)
		Indemnity		Medical		Indemnity		Medical		Total		
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Total (7)	Likely (8)	Not-Likely (9)	Likely (10)	Not-Likely (11)	Total (12)	
2013	Fatal	0	576,530	0	333,182	909,712	0	2,745,548	0	623,147	3,368,695	55,922,767
	Permanent Total	4,121,263	0	3,146,502	0	7,267,765	20,143,850	0	6,941,466	0	27,085,316	
	Permanent Partial	3,504,197	8,066,762	2,903,530	6,689,471	21,163,960	25,101,319	56,702,094	9,514,289	21,333,674	112,651,376	
	Temporary Total	1,179,676	3,961,570	1,020,242	5,007,311	11,168,799	8,966,994	29,094,734	3,583,062	20,421,089	62,065,879	
	Medical Only	0	0	0	673,177	673,177	0	0	0	3,525,481	3,525,481	
2014	Fatal	153,626	78,612	68,691	46,503	347,432	903,937	464,197	92,928	107,376	1,568,438	63,096,796
	Permanent Total	3,981,560	0	3,732,889	0	7,714,449	20,146,080	0	8,785,894	0	28,931,974	
	Permanent Partial	6,276,625	9,389,809	5,008,417	7,525,265	28,200,116	43,000,107	67,239,519	15,327,101	23,791,541	149,358,268	
	Temporary Total	1,659,623	3,522,249	1,536,522	4,345,657	11,064,051	12,405,808	25,881,601	5,222,992	17,422,277	60,932,678	
	Medical Only	0	0	0	843,826	843,826	0	0	0	4,446,695	4,446,695	
2015	Fatal	174,887	1,297,857	74,952	634,500	2,182,196	622,085	6,682,275	88,968	1,059,570	8,452,898	70,034,565
	Permanent Total	2,932,135	0	2,968,418	0	5,900,553	14,409,455	0	6,870,001	0	21,279,456	
	Permanent Partial	7,088,304	10,387,263	5,539,121	8,202,465	31,217,153	47,869,813	72,284,832	16,281,294	25,247,513	161,683,452	
	Temporary Total	2,077,274	4,525,751	1,909,445	5,698,397	14,210,867	14,506,477	33,337,285	6,242,362	23,420,973	77,507,097	
	Medical Only	0	0	0	828,739	828,739	0	0	0	4,412,268	4,412,268	
2016	Fatal	33,477	995,344	14,347	449,094	1,492,262	176,600	4,759,426	17,030	625,744	5,578,800	73,996,939
	Permanent Total	1,901,997	0	1,657,091	0	3,559,088	9,197,313	0	3,643,970	0	12,841,283	
	Permanent Partial	5,397,738	11,017,518	4,692,733	8,901,020	30,009,009	38,975,268	76,624,917	15,505,597	28,265,791	159,371,573	
	Temporary Total	2,633,633	6,394,180	2,463,324	7,234,027	18,725,164	18,754,354	45,695,291	8,582,634	27,746,878	100,779,157	
	Medical Only	0	0	0	879,488	879,488	0	0	0	4,665,497	4,665,497	
2017	Fatal	0	864,380	0	528,219	1,392,599	0	4,590,672	0	1,290,612	5,881,284	79,732,807
	Permanent Total	740,537	0	790,522	0	1,531,059	3,631,910	0	2,153,075	0	5,784,985	
	Permanent Partial	4,823,955	8,558,652	3,992,461	6,997,068	24,372,136	32,337,564	60,482,223	12,540,185	22,088,040	127,448,012	
	Temporary Total	3,795,816	9,196,509	3,841,794	9,541,882	26,376,001	27,406,905	67,386,313	13,973,836	36,196,144	144,963,198	
	Medical Only	0	0	0	930,055	930,055	0	0	0	4,942,765	4,942,765	
(14) All Years, All Injury Types		52,476,323	78,832,986	45,361,001	76,289,346	252,959,656	338,555,839	553,970,927	135,366,684	271,633,075	1,299,526,525	342,783,873
(15) Pure Premium							0.988	1.616	0.395	0.792	3.791	

Notes:  
 (3) , (4) = 0.7 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Indemnity Converted Limited Losses from Page 1, Columns (8) and (9).  
 (5), (6) = [ Excess Factor - 1.0 ] x Medical Converted Limited Losses + 0.3 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Medical Converted Limited Losses from Page 1, Columns (10) and (11).  
 (7) = (3) + (4) + (5) + (6)  
 (8), (9), (10), (11): (Converted Limited Losses from Page 1 + Adjusted Excess Losses) x Secondary Conversion Factors from Section IX - B, Exhibit 1, Page 3.  
 (12) = (8) + (9) + (10) + (11)  
 (13): Unit Statistical Plan data, excluding Large Deductibles.  
 (15): Pure Premium calculated as the All Years, All Injury Types Converted Unlimited Losses divided by the All Years, All Injury Types Exposure.

IX 000035 STIP

Calculation of Converted Limited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Office and Clerical Industry Group, Industry Code 3  
 All Classes

Policy Year (1)	Injury Type (2)	Limited Losses					Converted Limited Losses				
		Indemnity		Medical		Total (7)	Indemnity		Medical		Total (12)
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)			Likely (8)	Not-Likely (9)	Likely (10)	
2013	Fatal	742,170	844,618	266	9,804	1,596,858	686,333	777,518	213	8,261	1,472,325
	Permanent Total	3,736,660	0	1,071,284	0	4,807,944	3,459,335	0	857,488	0	4,316,823
	Permanent Partial	7,320,341	11,623,345	3,148,903	5,440,118	27,532,707	6,977,154	11,027,988	2,520,477	4,584,196	25,109,815
	Temporary Total	5,414,112	9,518,099	2,386,226	8,456,884	25,775,321	4,920,202	8,610,414	1,910,008	7,126,318	22,566,942
	Medical Only	0	0	0	5,623,632	5,623,632	0	0	0	3,910,608	3,910,608
2014	Fatal	53,753	614,406	41,145	2,244	711,548	47,639	543,974	30,619	1,761	623,993
	Permanent Total	2,919,476	0	792,510	0	3,711,986	2,593,769	0	589,771	0	3,183,540
	Permanent Partial	10,874,494	12,682,831	3,445,326	5,781,960	32,784,611	9,918,718	11,556,543	2,563,945	4,537,056	28,576,262
	Temporary Total	6,778,201	11,308,341	3,696,330	9,096,638	30,879,510	5,920,452	9,867,441	2,750,738	7,138,057	25,676,688
	Medical Only	0	0	0	5,381,909	5,381,909	0	0	0	4,108,625	4,108,625
2015	Fatal	250,000	374,064	0	51,137	675,201	252,612	375,083	0	44,230	671,925
	Permanent Total	3,057,487	0	1,440,341	0	4,497,828	3,112,975	0	1,183,721	0	4,296,696
	Permanent Partial	8,724,382	13,069,741	3,366,172	5,787,199	30,947,494	9,081,397	13,500,584	2,766,434	5,005,566	30,353,981
	Temporary Total	4,008,858	10,394,710	2,367,377	8,324,470	25,095,415	4,023,381	10,352,624	1,945,590	7,200,146	23,521,741
	Medical Only	0	0	0	5,590,530	5,590,530	0	0	0	4,497,638	4,497,638
2016	Fatal	0	644,530	0	20,345	664,875	0	737,911	0	18,308	756,219
	Permanent Total	680,912	0	639,785	0	1,320,697	804,307	0	567,135	0	1,371,442
	Permanent Partial	7,402,610	10,859,948	2,819,174	4,472,093	25,553,825	8,906,267	12,750,315	2,499,045	4,024,226	28,179,853
	Temporary Total	7,203,431	11,230,551	2,931,995	8,802,028	30,168,005	8,407,657	12,791,427	2,599,055	7,920,531	31,718,670
	Medical Only	0	0	0	5,811,899	5,811,899	0	0	0	4,924,089	4,924,089
2017	Fatal	0	503,108	0	85,000	588,108	0	776,111	0	77,476	853,587
	Permanent Total	0	0	0	0	0	0	0	0	0	0
	Permanent Partial	3,061,287	6,468,445	1,794,832	3,362,404	14,686,968	5,483,077	10,178,242	1,678,340	3,064,759	20,404,418
	Temporary Total	6,190,194	11,669,259	3,547,049	11,259,443	32,665,945	10,826,336	17,929,705	3,316,832	10,262,741	42,335,614
	Medical Only	0	0	0	6,895,834	6,895,834	0	0	0	5,810,365	5,810,365
(13) All Years, All Injury Types		78,418,368	111,805,996	33,488,715	100,255,571	323,968,650	85,421,611	121,775,880	27,779,411	84,264,957	319,241,859

Notes:  
 (3), (4), (5), (6): From Unit Statistical Plan data, excluding Large Deductibles.  
 (7)= (3) + (4) + (5) + (6)  
 (8)= (3) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (9)= (4) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (10)= (5) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (11)= (6) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (12)= (8) + (9) + (10) + (11)

IX 000036 STIP

Calculation of Converted Unlimited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Office and Clerical Industry Group, Industry Code 3  
 All Classes

Policy Year (1)	Injury Type (2)	Adjusted Excess Losses				Converted Unlimited Losses						Exposure (13)
		Indemnity		Medical		Indemnity		Medical		Total		
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Total (7)	Likely (8)	Not-Likely (9)	Likely (10)	Not-Likely (11)	Total (12)	
2013	Fatal	105,932	93,869	45,434	41,574	286,809	751,796	826,876	54,183	59,155	1,692,010	732,755,741
	Permanent Total	361,462	0	278,288	0	639,750	3,375,100	0	1,009,565	0	4,384,665	
	Permanent Partial	845,449	1,337,503	800,016	1,346,685	4,329,653	9,663,732	15,275,834	4,127,673	7,372,620	36,439,859	
	Temporary Total	633,733	1,002,102	585,271	1,573,061	3,794,167	6,927,840	11,990,411	3,132,025	10,919,291	32,969,567	
	Medical Only	0	0	0	640,704	640,704	0	0	0	5,402,407	5,402,407	
2014	Fatal	4,248	56,223	5,721	24,533	90,725	49,237	569,539	43,137	31,211	693,124	769,793,466
	Permanent Total	299,390	0	218,845	0	518,235	2,555,671	0	718,760	0	3,274,431	
	Permanent Partial	1,227,882	1,464,647	1,005,523	1,432,955	5,131,007	13,770,066	16,085,858	4,437,172	7,421,264	41,714,360	
	Temporary Total	742,484	1,151,724	814,202	1,664,201	4,372,611	8,311,180	13,745,030	4,474,642	11,048,421	37,579,273	
	Medical Only	0	0	0	679,892	679,892	0	0	0	5,683,969	5,683,969	
2015	Fatal	28,786	39,871	12,337	22,722	103,716	267,024	393,758	14,644	79,473	754,899	823,889,380
	Permanent Total	370,606	0	357,539	0	728,145	3,077,220	0	1,369,990	0	4,447,210	
	Permanent Partial	1,047,766	1,705,410	917,403	1,636,462	5,307,041	12,513,164	18,784,878	4,579,342	8,256,640	44,134,024	
	Temporary Total	471,073	1,224,065	530,140	1,684,152	3,909,430	5,606,270	14,440,473	3,107,489	11,151,397	34,305,629	
	Medical Only	0	0	0	752,065	752,065	0	0	0	6,231,397	6,231,397	
2016	Fatal	0	106,740	0	49,728	156,468	0	801,506	0	80,758	882,264	852,080,851
	Permanent Total	86,964	0	115,340	0	202,304	787,304	0	606,637	0	1,393,941	
	Permanent Partial	983,076	1,536,096	810,441	1,334,973	4,664,586	12,216,899	17,648,862	4,113,991	6,661,969	40,641,721	
	Temporary Total	988,917	1,532,630	856,568	1,971,437	5,349,552	11,721,052	17,867,471	4,337,430	12,416,205	46,342,158	
	Medical Only	0	0	0	822,265	822,265	0	0	0	6,820,922	6,820,922	
2017	Fatal	0	120,876	0	69,042	189,918	0	851,169	0	173,916	1,025,085	892,880,238
	Permanent Total	0	0	0	0	0	0	0	0	0	0	
	Permanent Partial	612,476	1,123,378	534,196	972,989	3,243,039	7,530,204	13,961,571	2,750,382	5,019,286	29,261,443	
	Temporary Total	1,239,843	2,039,321	1,071,555	2,550,524	6,901,243	15,051,049	24,908,863	5,508,216	16,082,960	61,551,088	
	Medical Only	0	0	0	966,303	966,303	0	0	0	8,043,906	8,043,906	
(14) All Years, All Injury Types		10,050,087	14,534,455	8,958,819	20,236,267	53,779,628	114,174,808	168,152,099	44,385,278	128,957,167	455,669,352	4,071,399,675
(15) Pure Premium							0.028	0.041	0.011	0.032	0.112	

Notes:  
 (3), (4) = 0.7 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Indemnity Converted Limited Losses from Page 1, Columns (8) and (9).  
 (5), (6) = [ Excess Factor - 1.0 ] x Medical Converted Limited Losses + 0.3 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Medical Converted Limited Losses from Page 1, Columns (10) and (11).  
 (7) = (3) + (4) + (5) + (6)  
 (8), (9), (10), (11): (Converted Limited Losses from Page 1 + Adjusted Excess Losses) x Secondary Conversion Factors from Section IX - B, Exhibit 1, Page 3.  
 (12) = (8) + (9) + (10) + (11)  
 (13): Unit Statistical Plan data, excluding Large Deductibles.  
 (15): Pure Premium calculated as the All Years, All Injury Types Converted Unlimited Losses divided by the All Years, All Injury Types Exposure.

IX 000037 STIP

Calculation of Converted Limited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Goods and Services Industry Group, Industry Code 9  
 All Classes

Policy Year (1)	Injury Type (2)	Limited Losses					Converted Limited Losses				
		Indemnity		Medical		Total (7)	Indemnity		Medical		Total (12)
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)			Likely (8)	Not-Likely (9)	Likely (10)	
2013	Fatal	513,995	1,276,969	277,046	51,855	2,119,865	475,325	1,175,520	221,756	43,697	1,916,298
	Permanent Total	10,694,207	0	3,903,454	0	14,597,661	9,900,513	0	3,124,443	0	13,024,956
	Permanent Partial	22,763,713	32,887,893	8,075,792	13,909,335	77,636,733	21,696,521	31,203,348	6,464,109	11,720,907	71,084,885
	Temporary Total	10,815,579	27,814,932	4,369,009	21,085,655	64,085,175	9,828,912	25,162,386	3,497,087	17,768,139	56,256,524
	Medical Only	0	0	0	10,146,527	10,146,527	0	0	0	7,055,776	7,055,776
2014	Fatal	946,884	805,897	31,728	19,797	1,804,306	839,178	713,514	23,612	15,534	1,591,838
	Permanent Total	9,100,017	0	3,082,848	0	12,182,865	8,084,787	0	2,294,197	0	10,378,984
	Permanent Partial	23,412,753	40,882,308	10,163,355	17,162,543	91,620,959	21,354,970	37,251,790	7,563,373	13,467,306	79,637,439
	Temporary Total	14,535,190	30,309,749	6,769,315	23,110,709	74,724,963	12,695,829	26,447,704	5,037,595	18,134,784	62,315,912
	Medical Only	0	0	0	9,679,922	9,679,922	0	0	0	7,389,788	7,389,788
2015	Fatal	3,076	795,786	0	6,725	805,587	3,108	797,954	0	5,817	806,879
	Permanent Total	4,739,539	0	1,727,712	0	6,467,251	4,825,553	0	1,419,892	0	6,245,445
	Permanent Partial	23,821,409	41,350,382	10,473,458	16,460,251	92,105,500	24,796,218	42,713,496	8,607,442	14,237,089	90,354,245
	Temporary Total	14,246,776	29,098,519	6,256,183	21,956,476	71,557,954	14,298,389	28,980,707	5,141,543	18,990,980	67,411,619
	Medical Only	0	0	0	10,100,430	10,100,430	0	0	0	8,125,898	8,125,898
2016	Fatal	0	1,928,198	0	185,484	2,113,682	0	2,207,560	0	166,909	2,374,469
	Permanent Total	1,874,119	0	694,464	0	2,568,583	2,213,749	0	615,605	0	2,829,354
	Permanent Partial	19,513,045	31,619,177	6,933,764	15,477,149	73,543,135	23,476,636	37,123,057	6,146,407	13,927,159	80,673,259
	Temporary Total	12,093,800	28,342,936	6,121,864	23,762,669	70,321,269	14,115,568	32,292,071	5,426,701	21,382,947	73,217,287
	Medical Only	0	0	0	9,791,572	9,791,572	0	0	0	8,295,838	8,295,838
2017	Fatal	0	549,297	0	11,763	561,060	0	847,363	0	10,722	858,085
	Permanent Total	296,428	0	347,938	0	644,366	523,354	0	325,356	0	848,710
	Permanent Partial	11,931,534	22,891,933	6,738,770	14,107,818	55,670,055	21,370,592	36,020,967	6,301,398	12,858,974	76,551,931
	Temporary Total	11,915,251	32,284,612	8,384,254	28,277,962	80,862,079	20,839,172	49,604,997	7,840,083	25,774,757	104,059,009
	Medical Only	0	0	0	10,704,154	10,704,154	0	0	0	9,019,220	9,019,220
(13) All Years, All Injury Types		193,217,315	322,838,588	84,350,954	246,008,796	846,415,653	211,338,374	352,542,434	70,050,599	208,392,241	842,323,648

Notes:  
 (3), (4), (5), (6): From Unit Statistical Plan data, excluding Large Deductibles.  
 (7)= (3) + (4) + (5) + (6)  
 (8)= (3) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (9)= (4) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (10)= (5) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (11)= (6) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (12)= (8) + (9) + (10) + (11)

IX 000038 STIP

Calculation of Converted Unlimited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Goods and Services Industry Group, Industry Code 9  
 All Classes

Policy Year (1)	Injury Type (2)	Indemnity		Adjusted Excess Losses Medical		Total (7)	Indemnity		Converted Unlimited Losses Medical		Total (12)	Exposure (13)
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)		Likely (8)	Not-Likely (9)	Likely (10)	Not-Likely (11)		
2013	Fatal	82,428	136,287	84,665	67,365	370,745	529,263	1,244,801	363,722	131,830	2,269,616	166,677,740
	Permanent Total	1,152,408	0	990,797	0	2,143,205	9,763,593	0	3,657,943	0	13,421,536	
	Permanent Partial	2,594,293	3,702,459	2,232,589	3,578,679	12,108,020	30,007,901	43,121,240	10,810,781	19,018,768	102,958,690	
	Temporary Total	1,216,253	3,011,926	1,131,176	4,333,408	9,692,763	13,777,462	35,143,931	5,809,305	27,741,429	82,472,127	
	Medical Only	0	0	0	1,106,802	1,106,802	0	0	0	9,688,980	9,688,980	
2014	Fatal	121,058	81,307	55,726	37,375	295,466	911,187	754,222	94,173	62,803	1,822,385	178,774,787
	Permanent Total	1,040,333	0	850,099	0	1,890,432	8,060,670	0	2,794,893	0	10,855,563	
	Permanent Partial	2,523,433	4,400,522	2,317,942	4,116,496	13,358,393	29,498,426	51,455,604	12,283,368	21,858,254	115,095,652	
	Temporary Total	1,517,096	3,237,170	1,497,766	4,466,764	10,718,796	17,728,847	37,028,168	8,203,056	28,369,020	91,329,091	
	Medical Only	0	0	0	1,157,781	1,157,781	0	0	0	10,145,965	10,145,965	
2015	Fatal	484	83,987	207	36,893	121,571	3,409	836,891	246	50,696	891,242	188,176,300
	Permanent Total	642,829	0	548,233	0	1,191,062	4,830,492	0	1,749,421	0	6,579,913	
	Permanent Partial	3,163,040	5,166,259	2,897,334	4,633,207	15,859,840	34,539,752	59,148,738	14,301,475	23,457,482	131,447,447	
	Temporary Total	1,818,873	3,350,780	1,624,278	4,545,924	11,339,855	20,104,269	40,329,486	8,492,326	29,543,060	98,469,141	
	Medical Only	0	0	0	1,274,815	1,274,815	0	0	0	11,158,647	11,158,647	
2016	Fatal	0	279,324	0	150,190	429,514	0	2,359,853	0	376,396	2,736,249	194,558,544
	Permanent Total	308,006	0	264,931	0	572,937	2,227,592	0	782,688	0	3,010,280	
	Permanent Partial	3,015,468	4,428,422	2,429,479	4,261,710	14,135,079	32,727,287	51,331,039	10,660,601	22,610,407	117,329,334	
	Temporary Total	1,575,267	3,699,558	1,588,779	5,065,211	11,928,815	19,572,356	44,895,057	8,805,694	33,197,209	106,470,316	
	Medical Only	0	0	0	1,315,698	1,315,698	0	0	0	11,408,893	11,408,893	
2017	Fatal	0	99,291	0	44,567	143,858	0	898,299	0	65,628	963,927	206,202,618
	Permanent Total	88,482	0	133,262	0	221,744	540,465	0	407,655	0	948,120	
	Permanent Partial	2,558,474	4,326,796	2,185,597	4,065,144	13,136,011	29,561,012	49,844,015	10,550,101	21,038,206	110,993,334	
	Temporary Total	2,427,212	5,795,885	2,372,701	6,761,301	17,357,099	29,021,905	69,105,673	12,818,886	40,838,622	151,785,086	
	Medical Only	0	0	0	1,427,520	1,427,520	0	0	0	12,400,280	12,400,280	
(14) All Years, All Injury Types		25,845,437	41,799,973	23,205,561	52,446,850	143,297,821	283,405,888	487,497,017	112,586,334	323,162,575	1,206,651,814	934,389,988
(15) Pure Premium							0.303	0.522	0.120	0.346	1.291	

Notes:  
 (3) , (4) = 0.7 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Indemnity Converted Limited Losses from Page 1, Columns (8) and (9).  
 (5), (6) = [ Excess Factor - 1.0 ] x Medical Converted Limited Losses + 0.3 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Medical Converted Limited Losses from Page 1, Columns (10) and (11).  
 (7) = (3) + (4) + (5) + (6)  
 (8), (9), (10), (11): (Converted Limited Losses from Page 1 + Adjusted Excess Losses) x Secondary Conversion Factors from Section IX - B, Exhibit 1, Page 3.  
 (12) = (8) + (9) + (10) + (11)  
 (13): Unit Statistical Plan data, excluding Large Deductibles.  
 (15): Pure Premium calculated as the All Years, All Injury Types Converted Unlimited Losses divided by the All Years, All Injury Types Exposure.

IX 000039 STIP

Calculation of Converted Limited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Miscellaneous Industry Group, Industry Code 0  
 All Classes

Policy Year (1)	Injury Type (2)	Limited Losses					Converted Limited Losses				
		Indemnity		Medical		Total	Indemnity		Medical		Total
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	(7)	Likely (8)	Not-Likely (9)	Likely (10)	Not-Likely (11)	(12)
2013	Fatal	0	811,931	0	71,227	883,158	0	747,427	0	60,020	807,447
	Permanent Total	7,091,646	0	2,095,951	0	9,187,597	6,565,324	0	1,677,663	0	8,242,987
	Permanent Partial	14,761,842	19,793,749	4,935,644	8,114,989	47,606,224	14,069,788	18,779,897	3,950,639	6,838,216	43,638,540
	Temporary Total	4,456,136	10,308,652	2,206,760	6,682,632	23,654,180	4,049,618	9,325,577	1,766,358	5,631,219	20,772,772
	Medical Only	0	0	0	2,594,191	2,594,191	0	0	0	1,803,970	1,803,970
2014	Fatal	103,800	512,777	152,618	125,247	894,442	91,993	453,995	113,575	98,280	757,843
	Permanent Total	3,666,254	0	1,471,210	0	5,137,464	3,257,234	0	1,094,846	0	4,352,080
	Permanent Partial	10,178,649	15,533,188	3,565,341	5,726,734	35,003,912	9,284,032	14,153,777	2,653,258	4,493,721	30,584,788
	Temporary Total	4,930,213	11,419,293	2,175,918	7,054,329	25,579,753	4,306,318	9,964,255	1,619,276	5,535,474	21,425,323
	Medical Only	0	0	0	2,671,770	2,671,770	0	0	0	2,039,667	2,039,667
2015	Fatal	262,617	2,355,969	137,161	335,972	3,091,719	265,361	2,362,387	112,724	290,595	3,031,067
	Permanent Total	2,121,222	0	961,026	0	3,082,248	2,159,718	0	789,804	0	2,949,522
	Permanent Partial	12,527,591	18,044,361	5,659,277	6,860,033	43,091,262	13,040,239	18,639,193	4,650,985	5,933,500	42,263,917
	Temporary Total	3,913,518	9,936,520	1,542,843	6,422,561	21,815,442	3,927,696	9,896,290	1,267,961	5,555,114	20,647,061
	Medical Only	0	0	0	2,902,763	2,902,763	0	0	0	2,335,302	2,335,302
2016	Fatal	0	557,162	0	2,188	559,350	0	637,885	0	1,969	639,854
	Permanent Total	331,326	0	1,168,674	0	1,500,000	391,369	0	1,035,966	0	1,427,335
	Permanent Partial	10,241,506	11,134,259	4,257,605	6,095,315	31,728,685	12,321,813	13,072,374	3,774,137	5,484,888	34,653,212
	Temporary Total	8,814,675	15,281,344	5,063,532	9,449,142	38,608,693	10,288,259	17,405,219	4,488,547	8,502,838	40,684,863
	Medical Only	0	0	0	2,906,637	2,906,637	0	0	0	2,462,627	2,462,627
2017	Fatal	0	601,553	0	6,029	607,582	0	927,976	0	5,495	933,471
	Permanent Total	230,872	0	31,418	0	262,290	407,613	0	29,379	0	436,992
	Permanent Partial	4,473,997	8,326,520	2,198,145	4,607,385	19,606,047	8,013,384	13,101,964	2,055,477	4,199,533	27,370,358
	Temporary Total	6,207,742	16,138,424	4,151,312	11,363,494	37,860,972	10,857,027	24,796,534	3,881,876	10,357,581	49,893,018
	Medical Only	0	0	0	3,078,298	3,078,298	0	0	0	2,593,745	2,593,745
(13) All Years, All Injury Types		94,313,606	140,755,702	41,774,435	87,070,936	363,914,679	103,296,786	154,264,750	34,962,471	74,223,754	366,747,761

Notes:  
 (3), (4), (5), (6): From Unit Statistical Plan data, excluding Large Deductibles.  
 (7)= (3) + (4) + (5) + (6)  
 (8)= (3) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (9)= (4) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (10)= (5) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (11)= (6) x Primary Conversion Factors from Section IX - B, Exhibit 1  
 (12)= (8) + (9) + (10) + (11)

IX 000040 STIP

Calculation of Converted Unlimited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 Miscellaneous Industry Group, Industry Code 0  
 All Classes

Policy Year (1)	Injury Type (2)	Adjusted Excess Losses					Converted Unlimited Losses					Exposure (13)
		Indemnity		Medical		Total	Indemnity		Medical		Total	
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	(7)	Likely (8)	Not-Likely (9)	Likely (10)	Not-Likely (11)	(12)	
2013	Fatal	0	139,032	0	77,120	216,152	0	841,179	0	162,785	1,003,964	27,539,485
	Permanent Total	1,172,171	0	941,846	0	2,114,017	6,834,913	0	2,328,422	0	9,163,335	
	Permanent Partial	2,413,977	3,273,338	1,984,341	3,131,999	10,803,655	20,363,385	27,243,686	7,377,716	12,393,877	67,378,664	
	Temporary Total	689,308	1,571,891	713,063	2,002,639	4,976,901	5,911,218	13,593,228	3,112,120	9,581,868	32,198,434	
	Medical Only	0	0	0	369,788	369,788	0	0	0	2,580,251	2,580,251	
2014	Fatal	16,119	75,914	37,438	54,754	184,225	102,589	502,841	179,253	181,652	966,335	28,295,790
	Permanent Total	526,284	0	463,393	0	989,677	3,342,169	0	1,385,083	0	4,727,252	
	Permanent Partial	1,631,230	2,437,965	1,365,848	2,160,676	7,595,719	13,484,279	20,496,775	4,996,112	8,272,017	47,249,183	
	Temporary Total	691,448	1,696,918	650,745	2,048,713	5,087,824	6,234,087	14,545,856	2,849,287	9,519,522	33,148,752	
	Medical Only	0	0	0	410,146	410,146	0	0	0	2,907,927	2,907,927	
2015	Fatal	34,154	454,683	39,718	277,693	806,248	284,215	2,673,174	180,948	674,558	3,812,895	30,876,935
	Permanent Total	384,220	0	356,035	0	740,255	2,247,187	0	1,018,510	0	3,265,697	
	Permanent Partial	2,270,421	3,129,212	2,084,546	2,767,700	10,251,879	18,914,179	26,891,818	8,372,874	10,816,377	64,995,248	
	Temporary Total	720,857	1,686,090	629,334	2,055,111	5,091,392	5,798,488	14,447,570	2,381,447	9,552,205	32,179,710	
	Medical Only	0	0	0	469,342	469,342	0	0	0	3,329,113	3,329,113	
2016	Fatal	0	95,830	0	41,390	137,220	0	696,237	0	51,467	747,704	31,926,926
	Permanent Total	72,981	0	314,941	0	387,922	410,184	0	1,200,790	0	1,610,974	
	Permanent Partial	2,045,201	2,278,188	1,855,423	2,321,670	8,500,482	17,748,436	18,963,472	6,998,052	9,704,256	53,414,216	
	Temporary Total	1,746,181	2,934,529	1,846,934	3,252,221	9,779,865	15,011,458	25,371,292	7,952,172	14,754,720	63,089,642	
	Medical Only	0	0	0	479,457	479,457	0	0	0	3,492,254	3,492,254	
2017	Fatal	0	226,220	0	98,539	324,759	0	1,095,239	0	123,488	1,218,727	33,703,883
	Permanent Total	84,747	0	45,046	0	129,793	434,926	0	66,155	0	501,081	
	Permanent Partial	1,212,425	2,276,249	967,403	2,002,725	6,458,802	11,397,196	18,997,631	3,757,713	7,709,967	41,862,507	
	Temporary Total	1,926,110	4,131,732	1,791,470	4,227,176	12,076,488	15,945,364	36,084,395	7,121,073	18,306,501	77,457,333	
	Medical Only	0	0	0	519,159	519,159	0	0	0	3,695,018	3,695,018	
(14) All Years, All Injury Types		17,637,834	26,407,791	16,087,524	28,768,018	88,901,167	144,464,273	222,444,393	61,277,727	127,809,823	555,996,216	152,343,019
(15) Pure Premium							0.948	1.460	0.402	0.839	3.650	

Notes:  
 (3) , (4) = 0.7 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Indemnity Converted Limited Losses from Page 1, Columns (8) and (9).  
 (5), (6) = [ Excess Factor - 1.0 ] x Medical Converted Limited Losses + 0.3 x [ Excess Factor - 1.0 ] x Indemnity Converted Limited Losses. Excess Factor from Section IX-B, Exhibit 5 and Medical Converted Limited Losses from Page 1, Columns (10) and (11).  
 (7) = (3) + (4) + (5) + (6)  
 (8), (9), (10), (11): (Converted Limited Losses from Page 1 + Adjusted Excess Losses) x Secondary Conversion Factors from Section IX - B, Exhibit 1, Page 3.  
 (12) = (8) + (9) + (10) + (11)  
 (13): Unit Statistical Plan data, excluding Large Deductibles.  
 (15): Pure Premium calculated as the All Years, All Injury Types Converted Unlimited Losses divided by the All Years, All Injury Types Exposure.

IX 000041 STIP



Calculation of Converted Limited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 All Industry Groups  
 All Classes

Policy Year (1)	Injury Type (2)	Limited Losses					Converted Limited Losses				
		Indemnity		Medical		Total (7)	Indemnity		Medical		Total (12)
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)			Likely (8)	Not-Likely (9)	Likely (10)	
2013	Fatal	1,264,165	6,450,270	277,312	360,490	8,352,237	1,169,056	5,937,829	221,969	303,772	7,632,626
	Permanent Total	44,452,120	0	13,580,421	0	58,032,541	41,153,009	0	10,870,181	0	52,023,190
	Permanent Partial	69,714,958	120,919,260	25,096,067	46,195,370	261,925,655	66,446,631	114,725,676	20,087,652	38,927,213	240,187,172
	Temporary Total	31,332,569	81,541,290	12,748,329	58,468,408	184,090,596	28,474,209	73,765,179	10,204,149	49,269,268	161,712,805
	Medical Only	0	0	0	25,599,556	25,599,556	0	0	0	17,801,631	17,801,631
2014	Fatal	2,005,951	2,747,603	238,388	203,306	5,195,248	1,777,779	2,432,633	177,404	159,532	4,547,348
	Permanent Total	42,442,318	0	16,125,027	0	58,567,345	37,707,303	0	11,999,937	0	49,707,240
	Permanent Partial	84,549,475	133,778,138	30,541,108	48,995,282	297,864,003	77,118,290	121,898,086	22,728,106	38,446,194	260,190,676
	Temporary Total	41,184,162	85,777,539	17,675,174	60,901,824	205,538,699	35,972,500	74,847,830	13,153,526	47,789,161	171,763,017
	Medical Only	0	0	0	24,625,318	24,625,318	0	0	0	18,799,314	18,799,314
2015	Fatal	991,407	9,723,435	137,161	723,191	11,575,194	1,001,765	9,749,920	112,724	625,516	11,489,925
	Permanent Total	26,705,575	0	11,354,356	0	38,059,931	27,190,232	0	9,331,394	0	36,521,626
	Permanent Partial	84,694,294	135,620,893	31,509,830	49,247,302	301,072,319	88,160,116	140,091,631	25,895,843	42,595,840	296,743,430
	Temporary Total	35,785,594	85,966,578	15,188,197	61,704,866	198,645,235	35,915,237	85,618,522	12,482,174	53,370,853	187,386,786
	Medical Only	0	0	0	25,343,927	25,343,927	0	0	0	20,389,446	20,389,446
2016	Fatal	130,094	7,141,412	0	294,776	7,566,282	152,629	8,176,076	0	265,257	8,593,962
	Permanent Total	11,665,693	0	5,646,047	0	17,311,740	13,779,764	0	5,004,916	0	18,784,680
	Permanent Partial	65,051,826	113,659,976	25,888,851	48,107,176	252,707,829	78,265,491	133,444,515	22,949,067	43,289,387	277,948,460
	Temporary Total	43,373,314	93,577,071	21,236,585	67,842,709	226,029,679	50,624,202	106,592,760	18,825,083	61,048,501	237,090,546
	Medical Only	0	0	0	25,102,222	25,102,222	0	0	0	21,267,675	21,267,675
2017	Fatal	0	4,861,897	0	758,043	5,619,940	0	7,500,123	0	690,940	8,191,063
	Permanent Total	2,436,628	0	2,124,331	0	4,560,959	4,301,951	0	1,986,455	0	6,288,406
	Permanent Partial	33,276,629	71,639,679	18,538,051	38,550,192	162,004,551	59,601,830	112,726,629	17,334,859	35,137,674	224,800,992
	Temporary Total	38,542,196	100,609,453	26,217,290	81,701,428	247,070,367	67,408,351	154,585,462	24,515,686	74,469,101	320,978,600
	Medical Only	0	0	0	27,716,805	27,716,805	0	0	0	23,353,921	23,353,921
(13) All Years, All Injury Types		659,598,968	1,054,014,494	274,122,525	692,442,191	2,680,178,178	716,220,345	1,152,092,871	227,881,125	588,000,196	2,684,194,537

Notes:

(3) - (12): Total of Section IX - C, Page 1 of Exhibits 1 through 5.

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Calculation of Converted Unlimited Losses by Indemnity Likely/Not-Likely and Medical Likely/Not-Likely  
 All Industry Groups  
 All Classes

Policy Year (1)	Injury Type (2)	Adjusted Excess Losses				Converted Unlimited Losses						Exposure (13)
		Indemnity		Medical		Indemnity		Medical		Total		
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Total (7)	Likely (8)	Not-Likely (9)	Likely (10)	Not-Likely (11)	Total (12)	
2013	Fatal	189,020	1,066,810	130,382	571,138	1,957,350	1,288,705	6,646,844	418,241	1,038,518	9,392,308	1,043,128,658
	Permanent Total	7,089,626	0	5,563,780	0	12,653,406	42,615,111	0	14,607,772	0	57,222,883	
	Permanent Partial	10,146,709	18,332,483	8,637,585	16,555,771	53,672,548	94,620,355	164,374,738	35,708,065	68,970,359	363,673,517	
	Temporary Total	4,174,216	10,861,924	3,850,808	14,771,280	33,658,228	40,724,830	105,561,727	17,641,506	80,382,441	244,310,504	
	Medical Only	0	0	0	3,250,380	3,250,380	0	0	0	24,988,737	24,988,737	
2014	Fatal	295,051	327,447	167,576	178,333	968,407	1,966,950	2,619,096	409,491	401,046	5,396,583	1,101,756,647
	Permanent Total	6,437,874	0	5,858,122	0	12,295,996	38,995,623	0	15,873,619	0	54,869,242	
	Permanent Partial	12,664,842	19,374,306	10,608,681	16,699,773	59,347,602	110,914,501	174,522,272	41,440,639	68,551,420	395,428,832	
	Temporary Total	5,155,897	10,953,325	4,922,433	14,383,305	35,414,960	51,302,530	107,026,212	22,688,588	78,037,659	259,054,989	
	Medical Only	0	0	0	3,488,187	3,488,187	0	0	0	26,455,262	26,455,262	
2015	Fatal	238,311	1,949,657	127,214	1,009,152	3,324,334	1,176,733	11,101,964	284,806	1,940,351	14,503,854	1,177,384,421
	Permanent Total	4,821,618	0	4,629,622	0	9,451,240	28,277,653	0	12,409,627	0	40,687,280	
	Permanent Partial	14,687,987	22,578,280	12,299,535	19,171,544	68,737,346	127,054,443	200,955,912	47,480,305	76,782,436	452,273,096	
	Temporary Total	5,565,414	12,396,771	5,073,556	16,119,599	39,155,340	51,741,925	122,261,821	22,035,610	87,223,053	283,262,409	
	Medical Only	0	0	0	3,748,118	3,748,118	0	0	0	28,651,288	28,651,288	
2016	Fatal	33,477	1,528,287	14,347	712,280	2,288,391	176,600	9,208,664	17,030	1,160,334	10,562,628	1,216,715,471
	Permanent Total	2,611,195	0	2,509,014	0	5,120,209	14,478,949	0	6,678,960	0	21,157,909	
	Permanent Partial	12,432,545	21,526,659	10,823,261	18,811,411	63,593,876	112,044,731	191,445,203	41,982,055	77,196,901	422,668,890	
	Temporary Total	7,572,203	16,238,210	7,355,997	19,696,314	50,862,724	72,592,738	153,216,277	32,861,980	101,349,309	360,020,304	
	Medical Only	0	0	0	3,929,384	3,929,384	0	0	0	29,908,910	29,908,910	
2017	Fatal	0	1,426,719	0	795,088	2,221,807	0	8,470,860	0	1,763,914	10,234,774	1,275,871,852
	Permanent Total	913,766	0	968,830	0	1,882,596	4,607,301	0	2,626,885	0	7,234,186	
	Permanent Partial	9,590,583	17,877,105	8,060,114	15,514,900	51,042,702	85,477,545	161,342,640	31,568,245	62,965,726	341,354,156	
	Temporary Total	10,162,354	23,267,441	9,777,638	25,467,111	68,674,544	96,759,754	221,849,258	43,044,308	125,437,976	487,091,296	
	Medical Only	0	0	0	4,299,025	4,299,025	0	0	0	32,824,048	32,824,048	
(14) All Years, All Injury Types		114,782,688	179,705,424	101,378,495	199,172,093	595,038,700	976,816,977	1,640,603,488	389,777,732	976,029,688	3,983,227,885	5,814,857,049
(15) Pure Premium							0.168	0.282	0.067	0.168	0.685	

Notes:

(3) - (13): Total of Section IX - C, Page 2 of Exhibits 1 through 5.

(15): Pure Premium calculated as the All Years, All Injury Types Converted Unlimited Losses divided by the All Years, All Injury Types Exposure.

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Exhibit 1  
Page 1

## MA Full Credibility Standard and Partial Credibility

		Indemnity	Medical
(1)	Average Claim Cost (See Page 2)	32,000	15,000
(2)	Claims	850	400
(3)	Full Credibility Standard =(1) x (2)	27,200,000	6,000,000

Partial Credibility Z is given in terms of E, the expected losses and F, the criterion for full credibility by the formula:

$$Z=(E / F)^{0.4}$$

## Credibility of Countrywide Data

		Indemnity	Medical
(4)	Number of Countrywide Claims	1,150	1,000

### Notes:

Partial Credibility is determined from the full credibility standard and the observed number of countrywide claims using the same formula as is done for the Massachusetts data.

(2),(4): From the paper "Class Ratemaking for Workers Compensation: NCCI's New Methodology" by Tom Daley.

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 Page 2

## Selection of Average Massachusetts Claim Costs

Policy Year 2017

	Injury Type				
	1	2	9	5	6
	Indemnity				
(1) Losses Developed to Ultimate	9,165,720	11,278,845	202,545,458	264,956,935	
(2) On-Level Factor	1.023	1.029	1.044	1.019	
(3) On-Level Ultimate Losses = (1) x (2)	9,378,832	11,604,142	211,404,842	270,037,875	
	Medical				
(4) Losses Developed to Ultimate	1,124,572	8,896,050	69,649,199	128,231,842	29,404,310
(5) On-Level Factor	1.000	1.000	1.000	1.000	1.000
(6) On-Level Ultimate Losses = (4) x (5)	1,124,572	8,896,050	69,649,199	128,231,842	29,404,310
	Claim Count				
(7) Claim Count Developed to Fifth Report	28	16	2,079	13,612	
<b>Summary:</b>					
(8) Ultimate Losses			502,425,690		
(9) Ultimate Claim Count			15,735		
(10) Average Claim Cost = (8) / (9)			31,931		
(11) Selected Average Claim Cost			32,000		
(12) Ultimate Losses			237,305,972		
(13) Ultimate Claim Count			15,735		
(14) Average Claim Cost = (12) / (13)			15,082		
(15) Selected Average Claim Cost			15,000		

**Notes:**

- (1), (4) : Unit Statistical Plan Data, developed to Ultimate using development factors from Section X-A, Exhibit 5, Pages 2 and 5.
- (2), (5): Section IV-A, Exhibit 1.
- (7) : Unit Statistical Plan Data, developed to fifth report using development factors from Section IX-B, Exhibit 2, Page 1.
- (8) = Sum of (3)
- (9), (13) = Sum of (7)
- (12) = Sum of (6)

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Section IX - D  
 Exhibit 2

## Countrywide Classification Experience: Pitch Factors

State (1)	State Code (2)	Industry Group (3)	Industry Code (4)	Indemnity (5)	Medical (6)
Alabama	1	Manufacturing	1	2.311	0.610
		Construction	2	2.686	0.521
		Office and Clerical	3	1.749	0.421
		Goods and Services	9	2.118	0.492
		Miscellaneous	0	2.560	0.642
Arizona	2	Manufacturing	1	3.368	0.499
		Construction	2	3.066	0.460
		Office and Clerical	3	2.764	0.441
		Goods and Services	9	2.875	0.508
		Miscellaneous	0	3.061	0.581
Arkansas	3	Manufacturing	1	3.860	1.170
		Construction	2	3.653	1.140
		Office and Clerical	3	2.031	0.847
		Goods and Services	9	3.592	1.080
		Miscellaneous	0	4.032	1.023
Colorado	5	Manufacturing	1	1.913	0.626
		Construction	2	1.906	0.647
		Office and Clerical	3	1.658	0.585
		Goods and Services	9	1.576	0.537
		Miscellaneous	0	1.968	0.789
Connecticut	6	Manufacturing	1	0.979	0.497
		Construction	2	0.932	0.440
		Office and Clerical	3	0.581	0.429
		Goods and Services	9	0.830	0.429
		Miscellaneous	0	1.101	0.575
D.C.	8	Manufacturing	1	0.791	0.483
		Construction	2	1.123	0.615
		Office and Clerical	3	0.826	0.565
		Goods and Services	9	1.449	1.023
		Miscellaneous	0	0.552	0.416
Florida	9	Manufacturing	1	1.967	0.421
		Construction	2	1.781	0.350
		Office and Clerical	3	1.191	0.292
		Goods and Services	9	1.746	0.406
		Miscellaneous	0	1.896	0.530
Georgia	10	Manufacturing	1	1.461	0.707
		Construction	2	0.855	0.397
		Office and Clerical	3	1.358	0.701
		Goods and Services	9	1.163	0.635
		Miscellaneous	0	1.409	0.788
Idaho	11	Manufacturing	1	1.474	0.408
		Construction	2	1.419	0.396
		Office and Clerical	3	0.688	0.207
		Goods and Services	9	1.235	0.373
		Miscellaneous	0	2.085	0.612

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Section IX - D  
 Exhibit 2

## Countrywide Classification Experience: Pitch Factors

State (1)	State Code (2)	Industry Group (3)	Industry Code (4)	Indemnity (5)	Medical (6)
Illinois	12	Manufacturing	1	1.052	0.480
		Construction	2	1.003	0.548
		Office and Clerical	3	0.936	0.553
		Goods and Services	9	1.084	0.520
		Miscellaneous	0	1.050	0.603
Indiana	13	Manufacturing	1	4.022	0.710
		Construction	2	4.925	0.961
		Office and Clerical	3	2.094	0.452
		Goods and Services	9	3.805	0.684
		Miscellaneous	0	4.009	0.892
Iowa	14	Manufacturing	1	1.136	0.386
		Construction	2	1.643	0.573
		Office and Clerical	3	0.836	0.337
		Goods and Services	9	1.376	0.485
		Miscellaneous	0	1.631	0.642
Kansas	15	Manufacturing	1	2.411	0.610
		Construction	2	3.086	0.719
		Office and Clerical	3	2.630	0.665
		Goods and Services	9	2.597	0.657
		Miscellaneous	0	2.788	0.719
Kentucky	16	Manufacturing	1	1.988	0.816
		Construction	2	1.891	0.559
		Office and Clerical	3	1.009	0.506
		Goods and Services	9	1.975	0.903
		Miscellaneous	0	1.975	1.034
Louisiana	17	Manufacturing	1	1.943	0.576
		Construction	2	1.856	0.561
		Office and Clerical	3	1.151	0.397
		Goods and Services	9	1.455	0.475
		Miscellaneous	0	1.496	0.563
Maine	18	Manufacturing	1	1.319	0.601
		Construction	2	1.512	0.605
		Office and Clerical	3	0.571	0.269
		Goods and Services	9	1.089	0.490
		Miscellaneous	0	1.173	0.717
Maryland	19	Manufacturing	1	1.482	0.734
		Construction	2	1.794	0.746
		Office and Clerical	3	1.426	0.899
		Goods and Services	9	1.643	0.850
		Miscellaneous	0	1.400	0.820
Michigan	21	Manufacturing	1	2.321	0.832
		Construction	2	2.515	1.029
		Office and Clerical	3	2.290	0.964
		Goods and Services	9	2.274	0.865
		Miscellaneous	0	2.267	1.131
Minnesota	22	Manufacturing	1	1.585	0.705
		Construction	2	1.969	0.874
		Office and Clerical	3	1.826	0.764
		Goods and Services	9	1.615	0.694
		Miscellaneous	0	1.699	0.886

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Section IX - D  
 Exhibit 2

## Countrywide Classification Experience: Pitch Factors

State (1)	State Code (2)	Industry Group (3)	Industry Code (4)	Indemnity (5)	Medical (6)
Mississippi	23	Manufacturing	1	1.783	0.698
		Construction	2	2.086	0.660
		Office and Clerical	3	0.810	0.323
		Goods and Services	9	1.745	0.595
		Miscellaneous	0	1.980	0.766
Missouri	24	Manufacturing	1	1.352	0.528
		Construction	2	1.770	0.613
		Office and Clerical	3	0.769	0.345
		Goods and Services	9	1.493	0.502
		Miscellaneous	0	1.538	0.601
Montana	25	Manufacturing	1	1.399	0.393
		Construction	2	1.762	0.482
		Office and Clerical	3	0.504	0.206
		Goods and Services	9	1.444	0.417
		Miscellaneous	0	2.289	0.695
Nebraska	26	Manufacturing	1	1.968	0.493
		Construction	2	2.129	0.558
		Office and Clerical	3	0.835	0.225
		Goods and Services	9	1.893	0.521
		Miscellaneous	0	2.312	0.734
Nevada	27	Manufacturing	1	1.071	0.554
		Construction	2	1.561	0.644
		Office and Clerical	3	0.541	0.257
		Goods and Services	9	1.419	0.565
		Miscellaneous	0	1.137	0.575
New Hampshire	28	Manufacturing	1	2.280	0.530
		Construction	2	1.482	0.412
		Office and Clerical	3	1.808	0.432
		Goods and Services	9	1.533	0.397
		Miscellaneous	0	1.900	0.572
New Mexico	30	Manufacturing	1	0.931	0.356
		Construction	2	1.909	0.608
		Office and Clerical	3	0.471	0.222
		Goods and Services	9	1.637	0.575
		Miscellaneous	0	1.732	0.743
North Carolina	32	Manufacturing	1	1.675	0.972
		Construction	2	1.338	0.615
		Office and Clerical	3	1.221	0.770
		Goods and Services	9	1.556	0.815
		Miscellaneous	0	1.449	0.883
Oklahoma	35	Manufacturing	1	1.307	0.529
		Construction	2	1.798	0.636
		Office and Clerical	3	0.468	0.247
		Goods and Services	9	1.297	0.511
		Miscellaneous	0	1.717	0.660
Oregon	36	Manufacturing	1	2.231	0.896
		Construction	2	2.059	0.888
		Office and Clerical	3	1.153	0.498
		Goods and Services	9	1.709	0.704
		Miscellaneous	0	2.046	0.953

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Section IX - Classification Pricing  
 Subsection D - Credibility/Countrywide Data  
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Section IX - D  
 Exhibit 2

## Countrywide Classification Experience: Pitch Factors

State (1)	State Code (2)	Industry Group (3)	Industry Code (4)	Indemnity (5)	Medical (6)
Rhode Island	38	Manufacturing	1	0.633	0.613
		Construction	2	0.966	0.951
		Office and Clerical	3	0.356	0.477
		Goods and Services	9	0.653	0.654
		Miscellaneous	0	0.830	0.913
South Carolina	39	Manufacturing	1	0.938	0.667
		Construction	2	1.020	0.515
		Office and Clerical	3	0.543	0.387
		Goods and Services	9	0.927	0.615
		Miscellaneous	0	1.084	0.700
South Dakota	40	Manufacturing	1	3.275	0.579
		Construction	2	2.489	0.543
		Office and Clerical	3	1.196	0.294
		Goods and Services	9	2.712	0.505
		Miscellaneous	0	3.286	0.822
Tennessee	41	Manufacturing	1	3.204	0.757
		Construction	2	3.276	0.622
		Office and Clerical	3	1.860	0.572
		Goods and Services	9	3.371	0.749
		Miscellaneous	0	3.032	0.745
Utah	43	Manufacturing	1	4.331	0.790
		Construction	2	3.600	0.612
		Office and Clerical	3	3.155	0.622
		Goods and Services	9	3.898	0.707
		Miscellaneous	0	2.646	0.747
Vermont	44	Manufacturing	1	0.818	0.368
		Construction	2	1.012	0.443
		Office and Clerical	3	0.473	0.272
		Goods and Services	9	0.820	0.402
		Miscellaneous	0	1.052	0.557
Virginia	45	Manufacturing	1	2.459	0.536
		Construction	2	2.279	0.469
		Office and Clerical	3	2.385	0.534
		Goods and Services	9	2.284	0.514
		Miscellaneous	0	2.289	0.615
West Virginia	47	Manufacturing	1	2.706	0.826
		Construction	2	3.287	1.170
		Office and Clerical	3	1.824	0.762
		Goods and Services	9	2.926	1.020
		Miscellaneous	0	3.287	1.412
Wisconsin	48	Manufacturing	1	2.182	0.448
		Construction	2	1.734	0.418
		Office and Clerical	3	1.128	0.296
		Goods and Services	9	1.609	0.377
		Miscellaneous	0	1.938	0.507
Hawaii	52	Manufacturing	1	0.869	0.397
		Construction	2	1.646	0.794
		Office and Clerical	3	0.509	0.283
		Goods and Services	9	0.931	0.443
		Miscellaneous	0	1.198	0.592



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Section IX - D  
Exhibit 2

## Countrywide Classification Experience: Pitch Factors

State (1)	State Code (2)	Industry Group (3)	Industry Code (4)	Indemnity (5)	Medical (6)
Alaska	54	Manufacturing	1	1.279	0.202
		Construction	2	2.327	0.456
		Office and Clerical	3	1.126	0.193
		Goods and Services	9	1.794	0.305
		Miscellaneous	0	2.980	0.501

### Notes:

Factors to adjust countrywide data to the same payroll distribution and loss level as MA.

Pitch Factor = (MA Unlimited Losses) / [ (State Pure Premium) x (MA Exposure) ]

For a sample countrywide pure premium calculation, see Section IX - L, Exhibit 2, Page 2.

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Section IX - Classification Pricing  
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Section IX - D  
 Exhibit 3

Countrywide Classification Experience: Database

State (1)	State Code (2)	Experience Data					
		First Report (3)		Second Report (4)		Third Report (5)	
Alabama	1	5/1/2015	- 4/30/2016	5/1/2014	- 4/30/2015	5/1/2013	- 4/30/2014
Arizona	2	3/1/2015	- 2/29/2016	3/1/2014	- 2/28/2015	3/1/2013	- 2/28/2014
Arkansas	3	2/1/2016	- 1/31/2017	2/1/2015	- 1/31/2016	2/1/2014	- 1/31/2015
Colorado	5	3/1/2015	- 2/29/2016	3/1/2014	- 2/28/2015	3/1/2013	- 2/28/2014
Connecticut	6	8/1/2015	- 7/31/2016	8/1/2014	- 7/31/2015	8/1/2013	- 7/31/2014
D.C.	8	2/1/2015	- 1/31/2016	2/1/2014	- 1/31/2015	2/1/2013	- 1/31/2014
Florida	9	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014	1/1/2013	- 12/31/2013
Georgia	10	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
Idaho	11	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
Illinois	12	4/1/2015	- 3/31/2016	4/1/2014	- 3/31/2015	4/1/2013	- 3/31/2014
Indiana	13	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
Iowa	14	3/1/2015	- 2/29/2016	3/1/2014	- 2/28/2015	3/1/2013	- 2/28/2014
Kansas	15	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
Kentucky	16	5/1/2015	- 4/30/2016	5/1/2014	- 4/30/2015	5/1/2013	- 4/30/2014
Louisiana	17	9/1/2015	- 8/31/2016	9/1/2014	- 8/31/2015	9/1/2013	- 8/31/2014
Maine	18	6/1/2015	- 5/31/2016	6/1/2014	- 5/31/2015	6/1/2013	- 5/31/2014
Maryland	19	4/1/2015	- 3/31/2016	4/1/2014	- 3/31/2015	4/1/2013	- 3/31/2014
Michigan	21	4/1/2016	- 3/31/2017	4/1/2015	- 3/31/2016	4/1/2014	- 3/31/2015
Minnesota	22	1/1/2016	- 12/31/2016	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014
Mississippi	23	9/1/2015	- 8/31/2016	9/1/2014	- 8/31/2015	9/1/2013	- 8/31/2014
Missouri	24	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
Montana	25	1/1/2016	- 12/31/2016	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014
Nebraska	26	8/1/2015	- 7/31/2016	8/1/2014	- 7/31/2015	8/1/2013	- 7/31/2014
Nevada	27	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014	1/1/2013	- 12/31/2013
New Hampshire	28	4/1/2015	- 3/31/2016	4/1/2014	- 3/31/2015	4/1/2013	- 3/31/2014
New Mexico	30	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
North Carolina	32	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014	1/1/2013	- 12/31/2013
Oklahoma	35	6/1/2015	- 5/31/2016	6/1/2014	- 5/31/2015	6/1/2013	- 5/31/2014
Oregon	36	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014	1/1/2013	- 12/31/2013
Rhode Island	38	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014	1/1/2013	- 12/31/2013
South Carolina	39	5/1/2015	- 4/30/2016	5/1/2014	- 4/30/2015	5/1/2013	- 4/30/2014
South Dakota	40	1/1/2016	- 12/31/2016	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014
Tennessee	41	6/1/2015	- 5/31/2016	6/1/2014	- 5/31/2015	6/1/2013	- 5/31/2014
Utah	43	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
Vermont	44	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
Virginia	45	2/1/2015	- 1/31/2016	2/1/2014	- 1/31/2015	2/1/2013	- 1/31/2014
West Virginia	47	7/1/2015	- 6/30/2016	7/1/2014	- 6/30/2015	7/1/2013	- 6/30/2014
Wisconsin	48	1/1/2016	- 12/31/2016	1/1/2015	- 12/31/2015	1/1/2014	- 12/31/2014
Hawaii	52	6/1/2015	- 5/31/2016	6/1/2014	- 5/31/2015	6/1/2013	- 5/31/2014
Alaska	54	4/1/2015	- 3/31/2016	4/1/2014	- 3/31/2015	4/1/2013	- 3/31/2014

Calculation of Pure Premium Underlying Present Rate Factor

Industry Group (1)	Injury Type (2)	Uncapped Rate Level Factor (3)	Industry Group Pure Premium From Previous Revision (4)	Percent of Pure Premium =(4) / [Total of (4)] (5)	Expected Loss and LAE Ratio (6)	Benefit Level Change Factor (7)	Trend Factor (8)	Pure Premium Underlying Present Rate Factor = (3) x (5) x (6) x (7) x (8) (9)
Manufacturing	Indemnity	1.801	0.978	0.655	0.766	1.021	0.946	0.873
	Medical	1.801	0.514	0.345	0.766	1.000	0.935	0.444
	Total		1.492					
Construction	Indemnity	4.755	2.624	0.689	0.766	1.021	0.946	2.426
	Medical	4.755	1.182	0.311	0.766	1.000	0.935	1.058
	Total		3.806					
Office and Clerical	Indemnity	0.143	0.071	0.617	0.766	1.021	0.946	0.065
	Medical	0.143	0.044	0.383	0.766	1.000	0.935	0.039
	Total		0.115					
Goods and Services	Indemnity	1.600	0.837	0.637	0.766	1.021	0.946	0.755
	Medical	1.600	0.476	0.363	0.766	1.000	0.935	0.415
	Total		1.313					
Miscellaneous	Indemnity	4.432	2.400	0.668	0.766	1.021	0.946	2.189
	Medical	4.432	1.195	0.332	0.766	1.000	0.935	1.055
	Total		3.595					

Notes:

- (3): Section IX - H, Exhibit 1 of 07/01/18 stipulation.
- (4): Section IX - G of 07/01/18 stipulation.
- (6): Section VI - J, Exhibit 1 of 07/01/18 stipulation.
- (7): Section IV - A, Exhibit 1.
- (8): Net Indemnity and Medical Trends from Section V - A, Exhibit 1.

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# IX 00053 STIP

Section IX - Classification Pricing  
 Subsection F - Underlying Pure Premiums  
 7/1/2020

Section IX - F  
 Exhibit 1

## Calculation of Pure Premiums Underlying Present Rate Manufacturing Industry Group, Industry Code 1

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
1430	2.772	2.177	2.420	0.967	3.386
1438	1.684	1.610	1.470	0.715	2.185
1463	4.668	5.406	4.075	2.400	6.475
1701	1.477	1.211	1.289	0.538	1.827
1747	1.710	1.499	1.493	0.665	2.159
1748	1.367	1.840	1.193	0.817	2.010
1853	0.878	0.520	0.766	0.231	0.997
1924	1.139	1.083	0.994	0.481	1.475
1925	1.867	14.933	1.630	6.630	8.260
2003	1.956	1.861	1.708	0.826	2.534
2014	1.815	1.596	1.584	0.708	2.293
2021	1.230	1.224	1.074	0.544	1.617
2039	1.814	2.077	1.583	0.922	2.505
2041	1.497	1.332	1.307	0.591	1.898
2070	2.118	1.964	1.849	0.872	2.722
2081	1.450	2.124	1.266	0.943	2.209
2089	1.703	1.378	1.487	0.612	2.099
2095	1.904	1.561	1.662	0.693	2.356
2101	1.703	1.378	1.487	0.612	2.099
2111	1.092	1.052	0.953	0.467	1.420
2114	1.703	1.378	1.487	0.612	2.099
2115	2.657	2.341	2.320	1.039	3.359
2121	0.619	0.671	0.540	0.298	0.838
2130	0.957	0.813	0.835	0.361	1.197
2131	1.313	1.396	1.146	0.620	1.766
2143	0.968	1.014	0.845	0.450	1.295
2150	2.299	2.317	2.007	1.029	3.036
2156	2.475	2.321	2.160	1.030	3.191
2157	2.064	1.741	1.802	0.773	2.575
2172	1.134	0.726	0.990	0.323	1.312
2211	3.274	3.445	2.858	1.530	4.387
2220	1.226	1.359	1.070	0.603	1.674
2260	3.242	2.670	2.830	1.186	4.016
2288	1.622	1.469	1.416	0.652	2.068
2305	2.271	2.057	1.983	0.914	2.896
2362	0.754	0.975	0.659	0.433	1.091
2380	1.240	1.277	1.082	0.567	1.649
2402	1.166	1.221	1.018	0.542	1.560
2413	1.676	1.903	1.463	0.845	2.308
2416	1.442	1.232	1.259	0.547	1.806
2417	1.574	1.187	1.374	0.527	1.902
2501	1.023	0.942	0.893	0.418	1.311
2503	0.757	0.612	0.661	0.272	0.932
2570	3.324	2.693	2.902	1.196	4.098
2576	0.864	0.957	0.754	0.425	1.179
2585	1.527	1.562	1.333	0.694	2.026
2586	0.900	0.894	0.785	0.397	1.183
2623	2.629	2.438	2.295	1.082	3.377

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Section IX - Classification Pricing  
 Subsection F - Underlying Pure Premiums  
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Section IX - F  
 Exhibit 1

## Calculation of Pure Premiums Underlying Present Rate Manufacturing Industry Group, Industry Code 1

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
2651	0.791	0.715	0.691	0.318	1.008
2660	0.925	1.081	0.808	0.480	1.288
2683	0.854	1.088	0.745	0.483	1.228
2688	1.190	1.126	1.039	0.500	1.539
2710	3.321	4.050	2.899	1.798	4.697
2731	1.554	1.806	1.356	0.802	2.158
2747	3.070	2.822	2.680	1.253	3.934
2790	0.874	0.823	0.763	0.366	1.128
2802	2.068	2.027	1.806	0.900	2.706
2835	0.922	0.990	0.805	0.439	1.244
2836	1.008	0.966	0.880	0.429	1.309
2841	1.872	1.610	1.634	0.715	2.349
2883	1.681	1.504	1.468	0.668	2.136
2923	0.875	0.870	0.764	0.386	1.150
2942	0.969	1.013	0.846	0.450	1.296
3018	1.470	1.226	1.283	0.544	1.828
3022	1.830	1.939	1.598	0.861	2.459
3027	2.263	3.545	1.976	1.574	3.550
3028	1.412	1.546	1.233	0.687	1.919
3030	3.178	2.847	2.774	1.264	4.038
3040	2.762	2.091	2.411	0.928	3.339
3041	1.696	2.199	1.481	0.977	2.457
3042	3.266	2.500	2.851	1.110	3.962
3066	1.171	1.290	1.023	0.573	1.595
3076	1.156	1.162	1.010	0.516	1.525
3081	2.429	2.829	2.120	1.256	3.377
3082	2.429	2.829	2.120	1.256	3.377
3085	2.508	2.492	2.189	1.107	3.296
3110	4.576	4.853	3.995	2.155	6.149
3111	0.989	1.059	0.863	0.470	1.333
3113	0.767	0.780	0.669	0.346	1.015
3114	1.295	1.504	1.131	0.668	1.799
3118	1.111	0.641	0.970	0.284	1.255
3119	0.346	0.487	0.302	0.216	0.518
3120	0.819	0.620	0.715	0.275	0.990
3122	1.007	1.208	0.880	0.536	1.416
3127	0.659	0.806	0.575	0.358	0.933
3131	0.754	0.815	0.658	0.362	1.020
3132	1.516	1.732	1.324	0.769	2.093
3145	0.815	0.814	0.712	0.361	1.073
3146	1.082	1.240	0.945	0.551	1.495
3169	1.226	1.617	1.070	0.718	1.788
3179	0.654	0.511	0.571	0.227	0.798
3180	1.459	1.359	1.274	0.603	1.877
3188	1.044	1.023	0.911	0.454	1.366
3200	1.031	1.059	0.900	0.470	1.370
3220	2.243	1.696	1.958	0.753	2.711
3255	1.151	1.104	1.005	0.490	1.495

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Section IX - Classification Pricing  
 Subsection F - Underlying Pure Premiums  
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Section IX - F  
 Exhibit 1

## Calculation of Pure Premiums Underlying Present Rate Manufacturing Industry Group, Industry Code 1

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
3257	1.324	1.381	1.156	0.613	1.769
3270	1.044	1.031	0.911	0.458	1.369
3300	1.729	2.128	1.509	0.945	2.454
3315	1.660	1.469	1.450	0.652	2.102
3336	2.009	1.447	1.754	0.643	2.397
3372	1.076	1.314	0.939	0.583	1.522
3373	2.143	1.620	1.871	0.719	2.590
3381	1.205	1.141	1.052	0.506	1.558
3383	0.881	1.032	0.769	0.458	1.227
3385	0.356	0.363	0.311	0.161	0.472
3400	1.226	1.617	1.070	0.718	1.788
3507	1.413	1.252	1.234	0.556	1.790
3515	1.434	1.633	1.252	0.725	1.976
3558	0.362	0.606	0.316	0.269	0.586
3571	0.437	0.401	0.382	0.178	0.560
3574	0.865	0.822	0.755	0.365	1.120
3612	0.847	0.972	0.739	0.432	1.171
3620	2.045	3.157	1.785	1.402	3.187
3629	0.865	0.822	0.755	0.365	1.120
3632	0.865	0.822	0.755	0.365	1.120
3634	0.771	0.709	0.673	0.315	0.988
3635	1.403	1.442	1.225	0.640	1.865
3638	0.865	0.822	0.755	0.365	1.120
3642	0.617	0.531	0.539	0.236	0.774
3643	0.809	0.752	0.706	0.334	1.040
3647	1.047	0.935	0.914	0.415	1.329
3648	0.640	0.723	0.559	0.321	0.879
3681	0.376	0.328	0.329	0.146	0.474
3685	0.341	0.295	0.298	0.131	0.429
3807	1.226	1.617	1.070	0.718	1.788
3808	1.393	1.513	1.216	0.672	1.888
3826	2.609	3.450	2.278	1.532	3.809
3830	0.865	0.822	0.755	0.365	1.120
3841	0.661	0.728	0.577	0.323	0.901
4021	1.904	2.011	1.662	0.893	2.555
4024	1.576	1.466	1.376	0.651	2.027
4034	3.030	3.711	2.645	1.648	4.293
4036	1.288	1.106	1.124	0.491	1.615
4038	1.564	1.314	1.365	0.583	1.948
4053	1.101	1.296	0.961	0.575	1.536
4062	0.860	0.910	0.751	0.404	1.155
4112	0.252	0.233	0.220	0.104	0.324
4113	1.101	1.296	0.961	0.575	1.536
4114	1.263	0.952	1.102	0.423	1.525
4130	1.570	1.542	1.371	0.685	2.055
4133	0.873	0.757	0.762	0.336	1.098
4150	0.341	0.301	0.298	0.134	0.431
4239	1.199	1.190	1.047	0.528	1.575

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Section IX - Classification Pricing  
 Subsection F - Underlying Pure Premiums  
 7/1/2020

Section IX - F  
 Exhibit 1

## Calculation of Pure Premiums Underlying Present Rate Manufacturing Industry Group, Industry Code 1

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
4243	1.706	1.540	1.489	0.684	2.173
4244	1.278	1.088	1.116	0.483	1.599
4250	0.927	1.020	0.809	0.453	1.262
4251	1.285	0.925	1.122	0.411	1.533
4273	1.362	1.308	1.189	0.581	1.770
4279	1.003	1.003	0.876	0.445	1.321
4283	1.063	1.031	0.928	0.458	1.386
4299	0.940	0.982	0.821	0.436	1.257
4304	2.429	2.918	2.120	1.296	3.416
4307	0.792	0.881	0.692	0.391	1.083
4308	1.610	0.396	1.406	0.176	1.582
4351	0.482	0.442	0.421	0.196	0.617
4352	0.807	0.588	0.704	0.261	0.966
4360	0.327	0.290	0.285	0.129	0.414
4410	1.328	1.402	1.159	0.623	1.782
4432	0.428	0.513	0.374	0.228	0.601
4439	2.207	2.848	1.927	1.264	3.191
4452	1.587	1.447	1.385	0.642	2.028
4459	1.340	1.348	1.169	0.599	1.768
4470	1.133	0.904	0.989	0.401	1.390
4484	0.982	1.097	0.857	0.487	1.344
4493	1.102	1.061	0.962	0.471	1.433
4557	0.863	0.948	0.753	0.421	1.174
4558	0.663	0.760	0.578	0.337	0.916
4583	1.784	1.398	1.557	0.621	2.178
4611	0.307	0.266	0.268	0.118	0.386
4635	2.435	2.814	2.126	1.250	3.375
4653	0.897	0.757	0.783	0.336	1.119
4665	4.204	4.191	3.670	1.861	5.531
4692	0.318	0.294	0.278	0.131	0.408
4693	0.468	0.459	0.409	0.204	0.612
4720	0.961	1.015	0.839	0.451	1.290
4740	0.607	0.594	0.530	0.264	0.794
4741	1.307	0.937	1.141	0.416	1.557
4771	2.745	1.113	2.396	0.494	2.891
4777	1.784	1.398	1.557	0.621	2.178
4825	0.298	0.238	0.260	0.106	0.366
4828	0.567	0.532	0.495	0.236	0.731
4829	0.567	0.532	0.495	0.236	0.731
4902	0.969	1.013	0.846	0.450	1.296
4923	0.327	0.290	0.285	0.129	0.414
6504	1.703	1.378	1.487	0.612	2.099
9501	1.062	1.193	0.927	0.530	1.457
9505	1.062	1.193	0.927	0.530	1.457
9521	1.578	1.444	1.378	0.641	2.019
9522	0.974	0.883	0.851	0.392	1.243

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Section IX - Classification Pricing  
Subsection F - Underlying Pure Premiums  
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Section IX - F  
Exhibit 1

## Calculation of Pure Premiums Underlying Present Rate Manufacturing Industry Group, Industry Code 1

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)

Notes:

(2), (3): Section IX - I, Exhibit 1 of 07/01/2018 stipulation.

(4) = (2) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1

(5) = (3) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1  
(Indemnity = 0.873, Medical = 0.444).



# IX 00058 STIP

Section IX - Classification Pricing  
 Subsection F - Underlying Pure Premiums  
 7/1/2020

Section IX - F  
 Exhibit 2

## Calculation of Pure Premiums Underlying Present Rate Construction Industry Group, Industry Code 2

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
0050	0.990	0.884	2.401	0.935	3.336
3365	1.221	1.204	2.961	1.274	4.235
3724	1.085	1.065	2.632	1.127	3.759
3726	1.109	0.748	2.690	0.791	3.481
5020	0.958	0.754	2.324	0.798	3.122
5022	2.088	1.928	5.064	2.040	7.104
5037	3.825	3.037	9.279	3.213	12.492
5040	5.503	4.182	13.349	4.425	17.774
5057	4.231	5.376	10.264	5.687	15.951
5059	3.401	3.857	8.251	4.080	12.331
5102	1.410	1.053	3.420	1.114	4.534
5146	1.489	1.391	3.612	1.472	5.084
5160	0.600	0.547	1.456	0.578	2.035
5183	0.634	0.594	1.537	0.628	2.166
5188	0.962	0.819	2.334	0.866	3.200
5190	0.440	0.505	1.067	0.534	1.601
5213	2.680	2.228	6.502	2.357	8.859
5215	0.980	0.783	2.377	0.828	3.204
5221	1.565	1.303	3.796	1.379	5.175
5222	1.977	1.476	4.797	1.562	6.359
5223	0.858	0.957	2.081	1.012	3.093
5348	0.960	0.706	2.328	0.747	3.075
5402	1.059	1.338	2.569	1.415	3.984
5403	1.705	1.435	4.137	1.518	5.655
5437	0.984	0.882	2.388	0.933	3.321
5443	0.679	0.705	1.647	0.745	2.392
5445	1.383	1.087	3.354	1.150	4.505
5462	1.396	1.122	3.387	1.187	4.574
5472	1.965	1.619	4.767	1.713	6.480
5473	2.339	2.715	5.675	2.873	8.547
5474	0.874	0.965	2.120	1.021	3.141
5478	0.964	0.715	2.340	0.757	3.096
5479	1.480	1.445	3.591	1.528	5.119
5480	0.903	0.752	2.192	0.796	2.988
5506	1.121	1.064	2.719	1.125	3.844
5507	1.175	1.218	2.850	1.288	4.138
5508	0.990	0.884	2.401	0.935	3.336
5509	0.776	1.066	1.883	1.127	3.010
5538	0.805	0.820	1.954	0.868	2.822
5545	6.642	9.633	16.113	10.192	26.305
5547	2.120	3.112	5.144	3.293	8.437
5606	0.301	0.336	0.731	0.355	1.086
5610	1.341	0.892	3.254	0.944	4.198
5645	1.405	1.733	3.410	1.834	5.243
5701	3.999	6.153	9.702	6.510	16.212
5703	2.455	2.199	5.955	2.326	8.281
5705	2.730	2.770	6.624	2.931	9.555
6003	2.045	1.712	4.960	1.811	6.771

# IX 00059 STIP

Section IX - Classification Pricing  
Subsection F - Underlying Pure Premiums  
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Section IX - F  
Exhibit 2

## Calculation of Pure Premiums Underlying Present Rate Construction Industry Group, Industry Code 2

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
6005	0.990	0.884	2.401	0.935	3.336
6204	1.296	1.120	3.144	1.185	4.329
6217	0.853	0.862	2.069	0.912	2.980
6229	0.825	0.748	2.001	0.791	2.793
6233	0.588	0.436	1.425	0.462	1.887
6251	1.283	0.721	3.111	0.763	3.875
6252	1.816	1.627	4.406	1.722	6.128
6306	1.777	1.586	4.310	1.678	5.989
6319	0.731	0.805	1.773	0.852	2.625
6325	0.748	0.671	1.815	0.710	2.525
6400	0.986	1.032	2.392	1.092	3.484
7538	1.286	1.306	3.119	1.382	4.501
7601	1.316	1.676	3.193	1.773	4.966
7855	0.936	0.820	2.270	0.868	3.138
8227	0.995	1.064	2.413	1.126	3.539
9533	2.858	2.800	6.934	2.963	9.896
9534	1.110	1.151	2.693	1.217	3.910
9549	1.169	0.887	2.837	0.938	3.775
9552	1.498	1.705	3.634	1.804	5.438

Notes:

(2), (3): Section IX - I, Exhibit 1 of 07/01/2018 stipulation.

(4) = (2) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1

(5) = (3) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1  
(Indemnity = 2.426, Medical = 1.058).

# IX 000060 STIP

Section IX - Classification Pricing  
Subsection F - Underlying Pure Premiums  
7/1/2020

Section IX - F  
Exhibit 3

## Calculation of Pure Premiums Underlying Present Rate Office and Clerical Industry Group, Industry Code 3

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
4361	4.699	5.127	0.305	0.200	0.505
7610	3.915	2.453	0.254	0.096	0.350
8601	1.550	1.516	0.101	0.059	0.160
8721	2.336	3.945	0.152	0.154	0.306
8742	0.848	0.892	0.055	0.035	0.090
8748	4.759	4.258	0.309	0.166	0.475
8800	7.944	6.627	0.516	0.258	0.775
8803	0.295	0.284	0.019	0.011	0.030
8810	0.484	0.472	0.031	0.018	0.050
8820	0.593	0.543	0.039	0.021	0.060
8832	1.994	1.842	0.130	0.072	0.201
8833	8.633	7.077	0.561	0.276	0.837
8868	4.571	5.365	0.297	0.209	0.506
8901	0.484	0.472	0.031	0.018	0.050
9156	9.077	12.424	0.590	0.485	1.075

Notes:

(2), (3): Section IX - I, Exhibit 1 of 07/01/2018 stipulation.

(4) = (2) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1

(5) = (3) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1  
(Indemnity = 0.065, Medical = 0.039).

# IX 000061 STIP

Section IX - Classification Pricing  
 Subsection F - Underlying Pure Premiums  
 7/1/2020

Section IX - F  
 Exhibit 4

## Calculation of Pure Premiums Underlying Present Rate Goods and Services Industry Group, Industry Code 9

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
0005	1.345	1.291	1.016	0.536	1.552
0008	1.314	1.549	0.992	0.643	1.635
0016	2.372	2.224	1.791	0.923	2.714
0034	2.061	2.656	1.556	1.102	2.658
0035	1.180	1.369	0.891	0.568	1.459
0036	2.061	2.656	1.556	1.102	2.658
0042	2.232	2.463	1.685	1.022	2.707
0046	1.071	1.178	0.808	0.489	1.297
0079	1.668	2.677	1.260	1.111	2.370
0083	2.024	2.130	1.528	0.884	2.412
0113	2.061	2.656	1.556	1.102	2.658
0170	2.061	2.656	1.556	1.102	2.658
0908	105.766	81.332	79.853	33.753	113.606
0909	159.337	280.769	120.299	116.519	236.819
0912	159.337	280.769	120.299	116.519	236.819
0913	105.766	81.332	79.853	33.753	113.606
0917	1.762	1.844	1.330	0.765	2.095
0918	0.389	0.224	0.294	0.093	0.387
2587	2.271	1.899	1.715	0.788	2.503
3821	2.628	2.740	1.984	1.137	3.121
4362	0.338	0.313	0.255	0.130	0.385
4511	0.186	0.172	0.140	0.072	0.212
4512	0.055	0.063	0.042	0.026	0.068
5191	0.501	0.436	0.378	0.181	0.559
5192	1.759	1.647	1.328	0.683	2.012
8001	0.996	1.283	0.752	0.532	1.284
8002	0.789	1.039	0.596	0.431	1.027
8006	0.697	0.883	0.526	0.366	0.893
8008	0.451	0.480	0.341	0.199	0.540
8010	0.900	1.102	0.679	0.457	1.136
8013	0.206	0.207	0.155	0.086	0.241
8017	0.548	0.625	0.414	0.259	0.673
8018	2.010	1.797	1.518	0.746	2.263
8021	2.028	1.707	1.531	0.708	2.239
8031	1.158	1.042	0.874	0.432	1.307
8032	0.852	0.757	0.643	0.314	0.957
8033	0.984	1.128	0.743	0.468	1.211
8034	2.215	1.846	1.672	0.766	2.439
8039	0.639	0.863	0.482	0.358	0.840
8044	1.800	1.802	1.359	0.748	2.107
8046	1.061	1.176	0.801	0.488	1.289
8048	1.769	1.436	1.336	0.596	1.932
8058	1.299	1.641	0.981	0.681	1.662
8103	1.755	1.678	1.325	0.697	2.022
8105	7.909	5.961	5.972	2.474	8.445
8106	3.525	3.599	2.661	1.494	4.155

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Section IX - Classification Pricing  
 Subsection F - Underlying Pure Premiums  
 7/1/2020

Section IX - F  
 Exhibit 4

## Calculation of Pure Premiums Underlying Present Rate Goods and Services Industry Group, Industry Code 9

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
8107	1.543	1.627	1.165	0.675	1.840
8111	1.578	1.712	1.191	0.710	1.902
8203	3.640	3.484	2.749	1.446	4.195
8204	2.398	3.928	1.810	1.630	3.441
8215	2.085	2.346	1.574	0.973	2.547
8232	3.818	3.736	2.882	1.551	4.433
8233	4.015	3.795	3.031	1.575	4.606
8235	2.598	2.344	1.961	0.973	2.934
8263	2.175	2.809	1.642	1.166	2.808
8264	2.976	3.055	2.247	1.268	3.514
8265	4.015	3.795	3.031	1.575	4.606
8279	2.640	2.905	1.993	1.206	3.199
8291	2.156	2.165	1.627	0.899	2.526
8292	2.012	1.953	1.519	0.811	2.330
8293	5.122	4.960	3.867	2.059	5.926
8350	3.663	3.366	2.766	1.397	4.162
8380	1.649	1.574	1.245	0.653	1.898
8381	0.982	1.278	0.742	0.531	1.272
8385	1.637	1.725	1.236	0.716	1.952
8392	0.810	0.991	0.612	0.411	1.023
8393	1.138	0.832	0.859	0.345	1.204
8500	4.015	3.795	3.031	1.575	4.606
8710	2.687	2.108	2.029	0.875	2.904
8719	2.687	2.108	2.029	0.875	2.904
8720	0.570	0.502	0.430	0.208	0.639
8745	3.554	5.275	2.683	2.189	4.872
8747	0.574	0.419	0.433	0.174	0.607
8824	1.003	0.907	0.758	0.376	1.134
8826	1.003	0.907	0.758	0.376	1.134
8829	1.331	1.173	1.005	0.487	1.492
8831	0.424	0.852	0.320	0.354	0.674
8835	1.337	1.034	1.009	0.429	1.439
9014	1.517	1.294	1.145	0.537	1.682
9015	1.909	1.844	1.441	0.765	2.206
9016	1.059	1.705	0.800	0.707	1.507
9033	1.893	1.667	1.429	0.692	2.121
9040	1.758	1.923	1.327	0.798	2.125
9052	1.003	0.907	0.758	0.376	1.134
9058	0.906	0.889	0.684	0.369	1.053
9060	0.536	0.714	0.405	0.296	0.701
9061	0.552	0.648	0.417	0.269	0.686
9063	0.357	0.491	0.270	0.204	0.474
9079	0.633	0.747	0.478	0.310	0.788
9089	0.496	0.646	0.374	0.268	0.642
9093	0.562	0.927	0.425	0.385	0.809
9101	1.648	2.225	1.245	0.923	2.168

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Section IX - Classification Pricing  
Subsection F - Underlying Pure Premiums  
7/1/2020

Section IX - F  
Exhibit 4

## Calculation of Pure Premiums Underlying Present Rate Goods and Services Industry Group, Industry Code 9

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
9220	1.797	1.712	1.357	0.711	2.067
9410	1.596	1.886	1.205	0.783	1.987
9519	2.283	1.953	1.724	0.810	2.534
9586	0.209	0.160	0.158	0.066	0.224
9620	0.417	0.459	0.315	0.190	0.506

Notes:

(2), (3): Section IX - I, Exhibit 1 of 07/01/2018 stipulation.

(4) = (2) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1

(5) = (3) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1  
(Indemnity = 0.755, Medical = 0.415).

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Section IX - Classification Pricing  
 Subsection F - Underlying Pure Premiums  
 7/1/2020

Section IX - F  
 Exhibit 5

## Calculation of Pure Premiums Underlying Present Rate Miscellaneous Industry Group, Industry Code 0

Class (1)	Adopted Relativities		Pure Premiums Underlying Present Rate		
	Indemnity (2)	Medical (3)	Indemnity (4)	Medical (5)	Total (6) = (4) + (5)
0106	2.045	2.939	4.477	3.101	7.577
1624	0.805	0.906	1.761	0.955	2.717
1655	0.676	0.677	1.479	0.714	2.193
1710	0.805	0.906	1.761	0.955	2.717
2702	2.946	3.073	6.449	3.242	9.691
4000	1.083	0.969	2.370	1.022	3.393
6834	0.467	0.558	1.022	0.589	1.611
6836	0.789	1.089	1.728	1.149	2.877
7219	2.070	1.738	4.532	1.834	6.365
7230	2.162	2.134	4.732	2.252	6.983
7231	2.417	2.325	5.290	2.453	7.743
7360	0.988	1.070	2.163	1.129	3.292
7370	0.655	0.886	1.433	0.935	2.368
7380	1.405	1.358	3.076	1.432	4.508
7382	0.757	0.847	1.656	0.894	2.550
7403	1.017	1.188	2.227	1.253	3.480
7405	0.265	0.242	0.580	0.255	0.836
7420	1.801	0.842	3.942	0.889	4.831
7421	0.305	0.227	0.668	0.240	0.908
7422	0.305	0.227	0.668	0.240	0.908
7425	0.645	0.343	1.411	0.362	1.773
7431	0.305	0.227	0.668	0.240	0.908
7502	0.365	0.367	0.799	0.388	1.186
7515	0.457	1.128	1.000	1.190	2.190
7520	0.649	0.638	1.421	0.673	2.093
7539	0.266	0.259	0.581	0.274	0.855
7580	0.735	0.702	1.609	0.740	2.349
7590	0.825	0.792	1.806	0.835	2.642
7600	0.738	0.594	1.615	0.627	2.242
7704	0.868	1.104	1.900	1.165	3.065
7720	0.307	0.326	0.672	0.344	1.016
9019	0.644	0.508	1.410	0.536	1.946
9102	0.537	0.667	1.175	0.703	1.879
9154	0.342	0.474	0.748	0.500	1.249
9178	1.641	5.245	3.593	5.534	9.127
9179	7.471	11.228	16.354	11.846	28.199
9180	0.706	1.804	1.545	1.903	3.448
9182	0.569	0.846	1.245	0.892	2.138
9186	0.706	1.804	1.545	1.903	3.448
9402	0.952	0.839	2.083	0.885	2.968
9403	2.070	1.953	4.531	2.061	6.592

**Notes:**

- (2), (3): Section IX - I, Exhibit 1 of 07/01/2018 stipulation.
- (4) = (2) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1
- (5) = (3) x Pure Premium Underlying Present Rate Factors from Section IX - E, Exhibit 1  
 (Indemnity = 2.189, Medical = 1.055).

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Section IX - Classification Pricing  
 Subsection G - Class Relativities  
 7/1/2020

Section IX - G

## A-Sheet Table of Contents

Class	To find the A-Sheet for: Description	Class	Look at the A-Sheet for: Exhibit
0005	FARM: NURSERY EMP & DRIVERS	0005	Section IX - G, Exhibit 1
0008	FARM: GARDENING-MARKET OR TRUCK & DRIVERS	0008	Section IX - G, Exhibit 1
0016	FARM: ORCHARDS & DRIVERS	0016	Section IX - G, Exhibit 2
0034	FARM: POULTRY OR EGG PRODUCERS & DRIVERS	0034	Section IX - G, Exhibit 2
0035	FARM: FLORIST & DRIVERS	0035	Section IX - G, Exhibit 3
0036	FARM: DAIRY & DRIVERS	0034	Section IX - G, Exhibit 2
0042	LANDSCAPE GARDENING & DRIVERS	0042	Section IX - G, Exhibit 3
0046	FERTILIZER OR PESTICIDE APPLICATION-COMM OR DOMESTIC, DRIVERS	0046	Section IX - G, Exhibit 4
0050	FARM MACHINERY OPERATION-BY CONTRACTOR & DRIVERS	0050	Section IX - G, Exhibit 4
0079	FARM: BERRY OR VINEYARD & DRIVERS	0079	Section IX - G, Exhibit 5
0083	FARM: CATTLE OR LIVESTOCK RAISING NOC & DRIVERS	0083	Section IX - G, Exhibit 5
0106	TREE PRUNING, SPRAYING, REPAIRING & DRIVERS	0106	Section IX - G, Exhibit 6
0113	FARM: FISH HATCHERY & DRIVERS	0034	Section IX - G, Exhibit 2
0170	FARM: ANIMAL RAISING & DRIVERS	0034	Section IX - G, Exhibit 2
0908	DOMESTIC WORKERS-INSIDE-OCCASIONAL-NOC	0908	Section IX - G, Exhibit 6
0909	DOMESTIC WORKERS-OUTSIDE-OCCASIONAL-INCL OCCASNL PRIV CHAUFF	0909	Section IX - G, Exhibit 7
0912	DOMESTIC WORKERS-OUTSIDE-INCL PRIVATE CHAUFFERS	0909	Section IX - G, Exhibit 7
0913	DOMESTIC WORKERS-INSIDE-NOC	0908	Section IX - G, Exhibit 6
0917	DOMESTIC SERVICE CONTRACTOR-INSIDE	0917	Section IX - G, Exhibit 7
0918	DOMESTIC WORKERS-INSIDE-PHYSICAL ASSISTANCE	0918	Section IX - G, Exhibit 8
1430	SMELTING, SINTERING OR REFINING-LEAD & DRIVERS	1430	Section IX - G, Exhibit 8
1438	SMELTING, SINTERING OR REFINING-METALS-NOT IRON OR LEAD-NOC & D	1438	Section IX - G, Exhibit 9
1463	ASPHALT WORKS & DRIVERS	1463	Section IX - G, Exhibit 9
1624	QUARRY NOC & DRIVERS	1624	Section IX - G, Exhibit 10
1655	LIME MFG-QUARRY-SURFACE & DRIVERS	1655	Section IX - G, Exhibit 10
1701	CEMENT MFG	1701	Section IX - G, Exhibit 11
1710	STONE CRUSHING & DRIVERS	1624	Section IX - G, Exhibit 10
1747	EMERY WORKS & DRIVERS	1747	Section IX - G, Exhibit 11
1748	ABRASIVE WHEEL MFG & DRIVERS	1748	Section IX - G, Exhibit 12
1853	MICA GOODS MFG & MICA PREPARING	1853	Section IX - G, Exhibit 12
1924	WIRE DRAWING OR CABLE MFG-NOT IRON OR STEEL	1924	Section IX - G, Exhibit 13
1925	DIE CASTING MFG	1925	Section IX - G, Exhibit 13
2003	BAKERY & DRIVERS, ROUTE SUPERVISORS	2003	Section IX - G, Exhibit 14
2014	GRAIN MILLING	2014	Section IX - G, Exhibit 14
2021	SUGAR REFINING-ALL OPERATIONS & DRIVERS	2021	Section IX - G, Exhibit 15
2039	ICE CREAM MFG & DRIVERS	2039	Section IX - G, Exhibit 15
2041	CONFECTION MFG	2041	Section IX - G, Exhibit 16
2070	CREAMERY OR DAIRY & ROUTE SUPERVISORS, DRIVERS	2070	Section IX - G, Exhibit 16
2081	BUTCHERING	2081	Section IX - G, Exhibit 17
2089	PACKING HOUSE- ALL OPERATIONS	2089	Section IX - G, Exhibit 17
2095	MEAT PRODUCTS MFG-NOC	2095	Section IX - G, Exhibit 18
2101	FISH CURING	2089	Section IX - G, Exhibit 17
2111	CANNERY NOC	2111	Section IX - G, Exhibit 18
2114	OYSTERMEN	2089	Section IX - G, Exhibit 17
2115	SEAFOOD PRODUCTS MFG-NOC	2115	Section IX - G, Exhibit 19
2121	BREWERY & DRIVERS	2121	Section IX - G, Exhibit 19
2130	SPIRITUOUS LIQUOR DISTILLERY	2130	Section IX - G, Exhibit 20
2131	SPIRITUOUS LIQUOR BOTTLING	2131	Section IX - G, Exhibit 20
2143	FRUIT JUICE MFG	2143	Section IX - G, Exhibit 21
2150	ICE MFG	2150	Section IX - G, Exhibit 21
2156	BOTTLING-NOT CARBONATED LIQUIDS OR SPIRIT LIQRS & RTE SUP,DR	2156	Section IX - G, Exhibit 22
2157	BOTTLING NOC & ROUTE SUPERVISORS, DRIVERS	2157	Section IX - G, Exhibit 22
2172	CIGARETTE MFG	2172	Section IX - G, Exhibit 23
2211	COTTON BATTING,WADDING OR WASTE MFG	2211	Section IX - G, Exhibit 23
2220	YARN OR THREAD MFG-COTTON	2220	Section IX - G, Exhibit 24
2260	WOOL COMBING OR SCOURING	2260	Section IX - G, Exhibit 24
2288	FELTING MFG	2288	Section IX - G, Exhibit 25
2305	TEXTILE FIBER MFG-SYNTHETIC	2305	Section IX - G, Exhibit 25
2362	KNIT GOODS MFG NOC	2362	Section IX - G, Exhibit 26
2380	WEBBING MFG	2380	Section IX - G, Exhibit 26
2402	CARPET OR RUG MFG NOC	2402	Section IX - G, Exhibit 27
2413	TEXTILE - BLEACHING, DYEING, MERCERZNG, FINISH	2413	Section IX - G, Exhibit 27
2416	YARN OR THREAD DYEING OR FINISHING	2416	Section IX - G, Exhibit 28
2417	CLOTH PRINTING	2417	Section IX - G, Exhibit 28
2501	CLOTHING MFG	2501	Section IX - G, Exhibit 29
2503	DRESSMAKING OR TAILORING-CUSTOM EXCLUSIVELY	2503	Section IX - G, Exhibit 29
2570	MATTRESS OR BOX SPRING MFG	2570	Section IX - G, Exhibit 30



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Section IX - Classification Pricing  
 Subsection G - Class Relativities  
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Section IX - G

## A-Sheet Table of Contents

To find the A-Sheet for:		Look at the A-Sheet for:	
Class	Description	Class	Exhibit
2576	CANVAS GOODS MFG NOC-SHOP	2576	Section IX - G, Exhibit 30
2585	LAUNDRY NOC & ROUTE SUPERVISORS, DRIVERS	2585	Section IX - G, Exhibit 31
2586	CLEANING OR DYEING & ROUTE SUPERVISORS, DRIVERS	2586	Section IX - G, Exhibit 31
2587	TOWEL OR TOILET SUPPLY CO & RTE SUPERVISORS, DR	2587	Section IX - G, Exhibit 32
2623	TANNING	2623	Section IX - G, Exhibit 32
2651	SHOE STOCK MFG	2651	Section IX - G, Exhibit 33
2660	BOOT OR SHOE MFG NOC	2660	Section IX - G, Exhibit 33
2683	LUGGAGE MFG	2683	Section IX - G, Exhibit 34
2688	LEATHER GOODS MFG NOC	2688	Section IX - G, Exhibit 34
2702	LOGGING OR LUMBERING & DRIVERS	2702	Section IX - G, Exhibit 35
2710	SAWMILLS	2710	Section IX - G, Exhibit 35
2731	PLANING OR MOLDING MILL	2731	Section IX - G, Exhibit 36
2747	COOPERAGE ASSEMBLY	2747	Section IX - G, Exhibit 36
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 Exhibit 1

## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
0005 FARM: NURSERY EMP & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	112,533	0	23	0	5,509	0	24,746	30,255	0.049	0.220	0.269
2014	111,959	1	18	13,664	7,802	4,529	16,922	42,917	0.192	0.192	0.383
2015	117,774	0	18	0	369,201	0	106,113	475,313	3.135	0.901	4.036
2016	119,731	2	28	87,840	6,251	71,934	39,544	205,571	0.786	0.931	1.717
2017	133,117	0	28	0	32,883	0	42,240	75,123	0.247	0.317	0.564
<b>MA Total:</b>	<b>595,113</b>	<b>3</b>	<b>115</b>	<b>101,504</b>	<b>421,646</b>	<b>76,463</b>	<b>229,565</b>	<b>829,179</b>	<b>0.879</b>	<b>0.514</b>	<b>1.393</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.066	1.103	.
(14) Massachusetts Credibility:	0.220	0.310	.
(15) Countrywide Pure Premium:	1.482	0.825	2.307
(16) Countrywide Indicated Relativity:	1.851	1.790	.
(17) Countrywide Credibility:	0.390	0.350	.
(18) Countrywide Lost-Time Claims:	1775.0	.	.
(19) Pure Premium Underlying Present Rate:	1.016	0.536	1.552
(20) Relativity to Underlying Present Rate:	1.354	1.300	.
(21) Credibility to Underlying Relativity:	0.390	0.340	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.484	1.410	.
(24) Balanced Formula Relativity:	1.474	1.411	1.451

Class(es):		Effective: 7/1/2020							Goods and Services		
0008 FARM: GARDENING-MARKET OR TRUCK & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	295,175	0	38	0	68,903	0	313,668	382,571	0.233	1.063	1.296
2014	323,952	0	47	0	132,709	0	208,699	341,408	0.410	0.644	1.054
2015	355,510	1	48	37,354	429,624	2,839	175,788	645,605	1.314	0.502	1.816
2016	460,969	2	65	111,964	447,913	76,091	551,097	1,187,065	1.215	1.361	2.575
2017	539,462	1	58	44,954	595,889	58,034	350,908	1,049,786	1.188	0.758	1.946
<b>MA Total:</b>	<b>1,975,069</b>	<b>4</b>	<b>256</b>	<b>194,272</b>	<b>1,675,039</b>	<b>136,964</b>	<b>1,600,160</b>	<b>3,606,435</b>	<b>0.946</b>	<b>0.880</b>	<b>1.826</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.147	1.886	.
(14) Massachusetts Credibility:	0.350	0.540	.
(15) Countrywide Pure Premium:	1.595	0.915	2.510
(16) Countrywide Indicated Relativity:	1.992	1.984	.
(17) Countrywide Credibility:	0.330	0.230	.
(18) Countrywide Lost-Time Claims:	4766.0	.	.
(19) Pure Premium Underlying Present Rate:	0.992	0.643	1.635
(20) Relativity to Underlying Present Rate:	1.322	1.559	.
(21) Credibility to Underlying Relativity:	0.320	0.230	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.482	1.833	.
(24) Balanced Formula Relativity:	1.471	1.835	1.602

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 Exhibit 2

## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
0016 FARM: ORCHARDS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	78,206	0	11	0	182,488	0	68,921	251,410	2,333	0,881	3,215
2014	76,680	0	7	0	931	0	7,016	7,947	0,012	0,091	0,104
2015	77,633	0	12	0	4,420	0	24,609	29,030	0,057	0,317	0,374
2016	73,234	1	8	28,586	957	72,184	5,926	107,654	0,403	1,067	1,470
2017	76,508	1	4	12,805	52,705	8,145	74,370	148,025	0,856	1,079	1,935
<b>MA Total:</b>	<b>382,260</b>	<b>2</b>	<b>42</b>	<b>41,391</b>	<b>241,503</b>	<b>80,329</b>	<b>180,843</b>	<b>544,066</b>	<b>0,740</b>	<b>0,683</b>	<b>1,423</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.897	1.465	.
(14) Massachusetts Credibility:	0.230	0.320	.
(15) Countrywide Pure Premium:	2.185	1.375	3.560
(16) Countrywide Indicated Relativity:	2.729	2.981	.
(17) Countrywide Credibility:	0.390	0.340	.
(18) Countrywide Lost-Time Claims:	1048.0	.	.
(19) Pure Premium Underlying Present Rate:	1.791	0.923	2.714
(20) Relativity to Underlying Present Rate:	2.387	2.239	.
(21) Credibility to Underlying Relativity:	0.380	0.340	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.178	2.244	.
(24) Balanced Formula Relativity:	2.162	2.245	2.192

Class(es):		Effective: 7/1/2020							Goods and Services		
0034 FARM: POULTRY OR EGG PRODUCERS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	91,677	0	23	0	48,497	0	92,722	141,219	0,529	1,011	1,540
2014	96,359	0	20	0	7,537	0	43,351	50,887	0,078	0,450	0,528
2015	104,310	1	24	32,468	68,097	42,464	126,352	269,381	0,964	1,618	2,583
2016	104,089	1	16	33,862	1,714	14,991	27,632	78,199	0,342	0,409	0,751
2017	102,228	0	19	0	78,296	0	81,676	159,972	0,766	0,799	1,565
<b>MA Total:</b>	<b>498,664</b>	<b>2</b>	<b>102</b>	<b>66,330</b>	<b>204,141</b>	<b>57,455</b>	<b>371,733</b>	<b>699,659</b>	<b>0,542</b>	<b>0,861</b>	<b>1,403</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.657	1.846	.
(14) Massachusetts Credibility:	0.240	0.380	.
(15) Countrywide Pure Premium:	1.789	0.959	2.748
(16) Countrywide Indicated Relativity:	2.234	2.079	.
(17) Countrywide Credibility:	0.380	0.310	.
(18) Countrywide Lost-Time Claims:	3658.0	.	.
(19) Pure Premium Underlying Present Rate:	1.556	1.102	2.658
(20) Relativity to Underlying Present Rate:	2.074	2.674	.
(21) Credibility to Underlying Relativity:	0.380	0.310	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.795	2.175	.
(24) Balanced Formula Relativity:	1.782	2.176	1.924



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
0035 FARM: FLORIST & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	344,086	3	71	123,080	512,970	86,652	265,785	988,487	1,849	1,024	2,873
2014	381,340	0	41	0	248,970	0	187,518	436,489	0,653	0,492	1,145
2015	381,802	1	61	5,349	281,731	6,921	156,085	450,085	0,752	0,427	1,179
2016	415,202	1	40	5,326	174,876	8,396	146,970	335,568	0,434	0,374	0,808
2017	481,314	0	42	0	127,430	0	108,042	235,472	0,265	0,224	0,489
<b>MA Total:</b>	<b>2,003,743</b>	<b>5</b>	<b>255</b>	<b>133,755</b>	<b>1,345,977</b>	<b>101,968</b>	<b>864,400</b>	<b>2,446,101</b>	<b>0,738</b>	<b>0,482</b>	<b>1,221</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.895	1.034	.
(14) Massachusetts Credibility:	0.340	0.510	.
(15) Countrywide Pure Premium:	1.032	0.705	1.737
(16) Countrywide Indicated Relativity:	1.289	1.529	.
(17) Countrywide Credibility:	0.330	0.250	.
(18) Countrywide Lost-Time Claims:	1421.0	.	.
(19) Pure Premium Underlying Present Rate:	0.891	0.568	1.459
(20) Relativity to Underlying Present Rate:	1.188	1.378	.
(21) Credibility to Underlying Relativity:	0.330	0.240	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.121	1.241	.
(24) Balanced Formula Relativity:	1.114	1.241	1.160

Class(es):		Effective: 7/1/2020							Goods and Services		
0042 LANDSCAPE GARDENING & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	4,623,585	33	758	4,164,940	5,472,063	1,998,606	3,517,875	15,153,483	2,084	1,193	3,277
2014	5,040,205	31	758	3,716,811	5,727,632	1,493,982	3,840,085	14,778,510	1,874	1,058	2,932
2015	5,621,380	27	706	2,911,298	4,505,247	1,110,222	4,078,368	12,605,134	1,319	0,923	2,242
2016	5,994,798	26	712	3,729,572	6,099,015	1,644,544	5,924,140	17,397,271	1,640	1,263	2,902
2017	6,386,090	36	713	5,706,818	7,300,544	1,468,214	5,383,443	19,859,019	2,037	1,073	3,110
<b>MA Total:</b>	<b>27,666,058</b>	<b>153</b>	<b>3,647</b>	<b>20,229,439</b>	<b>29,104,501</b>	<b>7,715,567</b>	<b>22,743,910</b>	<b>79,793,417</b>	<b>1,783</b>	<b>1,101</b>	<b>2,884</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.161	2.361	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	2.393	1.322	3.715
(16) Countrywide Indicated Relativity:	2.989	2.867	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	7534.0	.	.
(19) Pure Premium Underlying Present Rate:	1.685	1.022	2.707
(20) Relativity to Underlying Present Rate:	2.246	2.479	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.161	2.361	.
(24) Balanced Formula Relativity:	2.146	2.362	2.224

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
0046 FERTILIZER OR PESTICIDE APPLICATION-COMM OR DOMESTIC, DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	115,931	1	15	175,196	62,716	17,501	53,543	308,956	2,052	0,613	2,665
2014	133,322	0	21	0	21,994	0	26,466	48,460	0,165	0,199	0,363
2015	128,180	0	15	0	221,854	0	114,700	336,554	1,731	0,895	2,626
2016	142,333	2	17	526,517	86,173	305,664	104,623	1,022,978	4,305	2,883	7,187
2017	166,427	2	23	501,487	290,892	293,485	407,022	1,492,886	4,761	4,209	8,970
<b>MA Total:</b>	<b>686,192</b>	<b>5</b>	<b>91</b>	<b>1,203,200</b>	<b>683,629</b>	<b>616,650</b>	<b>706,354</b>	<b>3,209,833</b>	<b>2,750</b>	<b>1,928</b>	<b>4,678</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.333	4.134	.
(14) Massachusetts Credibility:	0.210	0.320	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	1.069	1.177	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	0.808	0.489	1.297
(20) Relativity to Underlying Present Rate:	1.077	1.186	.
(21) Credibility to Underlying Relativity:	0.790	0.680	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.551	2.130	.
(24) Balanced Formula Relativity:	1.540	2.131	1.753

Class(es):		Effective: 7/1/2020							Construction		
0050 FARM MACHINERY OPERATION-BY CONTRACTOR & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure	Likely	Not-Likely	Likely	Not-Likely	Likely	Not-Likely	Total	Indemnity	Medical	Total
2013	15,705	0	1	0	0	0	143	143	0.000	0.009	0.009
2014	22,996	0	1	0	0	0	1,544	1,544	0.000	0.067	0.067
2015	19,519	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	17,940	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	16,971	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>93,131</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,687</b>	<b>1,687</b>	<b>0.000</b>	<b>0.018</b>	<b>0.018</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.015	.
(14) Massachusetts Credibility:	0.150	0.180	.
(15) Countrywide Pure Premium:	2.751	1.402	4.153
(16) Countrywide Indicated Relativity:	1.074	1.217	.
(17) Countrywide Credibility:	0.430	0.410	.
(18) Countrywide Lost-Time Claims:	854.00	.	.
(19) Pure Premium Underlying Present Rate:	2.401	0.935	3.336
(20) Relativity to Underlying Present Rate:	0.992	0.887	.
(21) Credibility to Underlying Relativity:	0.420	0.410	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.879	0.866	.
(24) Balanced Formula Relativity:	0.882	0.864	0.877

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
0079 FARM: BERRY OR VINEYARD & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	162,646	4	30	230,012	26,198	231,809	59,562	547,580	1,575	1,791	3,367
2014	151,607	0	18	0	47,539	0	74,743	122,282	0,314	0,493	0,807
2015	159,411	0	24	0	76,777	0	104,714	181,491	0,482	0,657	1,139
2016	162,612	0	17	0	133,330	0	75,858	209,188	0,820	0,466	1,286
2017	155,785	0	13	0	165,412	0	165,071	330,482	1,062	1,060	2,121
<b>MA Total:</b>	<b>792,061</b>	<b>4</b>	<b>102</b>	<b>230,012</b>	<b>449,255</b>	<b>231,809</b>	<b>479,949</b>	<b>1,391,024</b>	<b>0,858</b>	<b>0,899</b>	<b>1,756</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.039	1.927	.
(14) Massachusetts Credibility:	0.270	0.460	.
(15) Countrywide Pure Premium:	0.980	0.663	1.643
(16) Countrywide Indicated Relativity:	1.224	1.437	.
(17) Countrywide Credibility:	0.370	0.270	.
(18) Countrywide Lost-Time Claims:	265.00	.	.
(19) Pure Premium Underlying Present Rate:	1.260	1.111	2,370
(20) Relativity to Underlying Present Rate:	1.679	2.694	.
(21) Credibility to Underlying Relativity:	0.360	0.270	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.338	2.002	.
(24) Balanced Formula Relativity:	1.328	2.003	1.572

Class(es):		Effective: 7/1/2020							Goods and Services		
0083 FARM: CATTLE OR LIVESTOCK RAISING NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	46,963	0	4	0	1,697	0	76,185	77,882	0,036	1,622	1,658
2014	55,904	0	8	0	0	0	6,424	6,424	0,000	0,115	0,115
2015	61,471	0	10	0	44,345	0	6,899	51,244	0,721	0,112	0,834
2016	55,705	0	10	0	655	0	32,495	33,150	0,012	0,583	0,595
2017	76,331	1	4	90,248	3,384	45,344	7,585	146,562	1,227	0,693	1,920
<b>MA Total:</b>	<b>296,374</b>	<b>1</b>	<b>36</b>	<b>90,248</b>	<b>50,081</b>	<b>45,344</b>	<b>129,589</b>	<b>315,263</b>	<b>0,473</b>	<b>0,590</b>	<b>1,064</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.574	1.266	.
(14) Massachusetts Credibility:	0.190	0.290	.
(15) Countrywide Pure Premium:	2.432	1.387	3,819
(16) Countrywide Indicated Relativity:	3.037	3.008	.
(17) Countrywide Credibility:	0.410	0.360	.
(18) Countrywide Lost-Time Claims:	2997.0	.	.
(19) Pure Premium Underlying Present Rate:	1.528	0.884	2,412
(20) Relativity to Underlying Present Rate:	2.037	2.144	.
(21) Credibility to Underlying Relativity:	0.400	0.350	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.169	2.200	.
(24) Balanced Formula Relativity:	2.153	2.202	2,171

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## Calculation of Class Relativities

Class(es):									Effective: 7/1/2020			Miscellaneous		
0106 TREE PRUNING, SPRAYING, REPAIRING & DRIVERS														
Converted Unlimited Losses														
Amount														
		Claim Count		Indemnity		Medical				MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)			
2013	397,328	5	96	591,735	1,048,350	480,507	932,908	3,053,499	4,128	3,557	7,685			
2014	410,351	6	90	128,335	1,254,794	429,854	936,095	2,749,078	3,371	3,329	6,699			
2015	444,881	8	89	1,055,905	1,380,876	548,104	780,563	3,765,448	5,477	2,987	8,464			
2016	463,759	4	97	919,873	1,292,566	671,986	1,114,758	3,999,182	4,771	3,853	8,623			
2017	581,562	3	96	662,058	1,566,264	516,667	1,420,468	4,165,458	3,832	3,331	7,163			
<b>MA Total:</b>	<b>2,297,881</b>	<b>26</b>	<b>468</b>	<b>3,357,905</b>	<b>6,542,850</b>	<b>2,647,118</b>	<b>5,184,792</b>	<b>17,732,665</b>	<b>4,309</b>	<b>3,408</b>	<b>7,717</b>			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.789	2.746	.
(14) Massachusetts Credibility:	0.680	1.000	.
(15) Countrywide Pure Premium:	4.618	2.932	7.551
(16) Countrywide Indicated Relativity:	2.019	2.510	.
(17) Countrywide Credibility:	0.160	0.000	.
(18) Countrywide Lost-Time Claims:	3164.0	.	.
(19) Pure Premium Underlying Present Rate:	4.477	3.101	7.577
(20) Relativity to Underlying Present Rate:	2.055	2.948	.
(21) Credibility to Underlying Relativity:	0.160	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	1.868	2.746	.
(24) Balanced Formula Relativity:	1.863	2.763	2.169

Class(es):									Effective: 7/1/2020			Goods and Services		
0908 DOMESTIC WORKERS-INSIDE-OCCASIONAL-NOC														
Converted Unlimited Losses														
Amount														
		Claim Count		Indemnity		Medical				MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)			
2013	2,990	0	15	0	83,331	0	95,852	179,183	27,867	IDX682	59,921			
2014	3,339	1	21	91,026	580,638	4,016	199,431	875,111	201.16	60,930	262.09			
2015	3,429	0	21	0	80,939	0	129,077	210,016	23,605	37,644	61,249			
2016	3,529	2	14	97,691	180,815	32,602	134,755	445,863	78,910	47,418	126.33			
2017	3,515	1	16	1,101	22,528	8,237	27,675	59,542	6,723	10,218	16,941			
<b>MA Total:</b>	<b>16,802</b>	<b>4</b>	<b>87</b>	<b>189,818</b>	<b>948,251</b>	<b>44,855</b>	<b>586,791</b>	<b>1,769,714</b>	<b>67,733</b>	<b>37,593</b>	<b>105.33</b>			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	82.097	80.611	.
(14) Massachusetts Credibility:	0.320	0.410	.
(15) Countrywide Pure Premium:	153.21	71.821	225.03
(16) Countrywide Indicated Relativity:	119.28	91.755	.
(17) Countrywide Credibility:	0.340	0.300	.
(18) Countrywide Lost-Time Claims:	480.00	.	.
(19) Pure Premium Underlying Present Rate:	90.198	38.126	128.32
(20) Relativity to Underlying Present Rate:	120.21	92.477	.
(21) Credibility to Underlying Relativity:	0.340	0.290	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	107.70	87.396	.
(24) Balanced Formula Relativity:	106.93	87.456	99.899

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## Calculation of Class Relativities

Class(es): 0909 DOMESTIC WORKERS-OUTSIDE-OCCASIONAL-INCL OCCASNL PRIV CHAUFF									Effective: 7/1/2020			Goods and Services		
Converted Unlimited Losses														
Amount														
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums					
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)			
2013	337	0	6	0	95,154	0	48,301	143,455	282.61	143.45	426.06			
2014	338	0	5	0	53,095	0	100,235	153,330	157.16	296.68	453.84			
2015	336	0	4	0	0	0	3,152	3,152	0.000	9.371	9.371			
2016	342	1	3	2,658	2,210	19,575	3,764	28,206	14.232	68.241	82.473			
2017	299	0	2	0	0	0	32,535	32,535	0.000	108.87	108.87			
<b>MA Total:</b>	<b>1,652</b>	<b>1</b>	<b>20</b>	<b>2,658</b>	<b>150,459</b>	<b>19,575</b>	<b>187,987</b>	<b>360,678</b>	<b>92.697</b>	<b>125.66</b>	<b>218.35</b>			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	112.35	269.45	.
(14) Massachusetts Credibility:	0.150	0.270	.
(15) Countrywide Pure Premium:	84.646	73.267	157.91
(16) Countrywide Indicated Relativity:	189.53	334.07	.
(17) Countrywide Credibility:	0.100	0.110	.
(18) Countrywide Lost-Time Claims:	4.000	.	.
(19) Pure Premium Underlying Present Rate:	143.31	138.81	282.12
(20) Relativity to Underlying Present Rate:	191.00	336.70	.
(21) Credibility to Underlying Relativity:	0.750	0.620	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	179.05	318.25	.
(24) Balanced Formula Relativity:	177.78	318.47	228.59

Class(es): 0917 DOMESTIC SERVICE CONTRACTOR-INSIDE									Effective: 7/1/2020			Goods and Services		
Converted Unlimited Losses														
Amount														
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums					
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)			
2013	302,403	4	37	71,081	150,149	5,980	98,688	325,899	0.732	0.346	1.078			
2014	372,616	2	47	902	178,428	1,857	79,338	260,524	0.481	0.218	0.699			
2015	414,975	2	51	178,783	89,295	10,415	174,955	453,448	0.646	0.447	1.093			
2016	446,604	2	59	118,385	546,224	27,186	195,616	887,410	1.488	0.499	1.987			
2017	492,458	3	37	391,380	292,448	89,902	95,201	868,930	1.389	0.376	1.764			
<b>MA Total:</b>	<b>2,029,055</b>	<b>13</b>	<b>231</b>	<b>760,531</b>	<b>1,256,543</b>	<b>135,340</b>	<b>643,797</b>	<b>2,796,211</b>	<b>0.994</b>	<b>0.384</b>	<b>1.378</b>			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.205	0.823	.
(14) Massachusetts Credibility:	0.400	0.580	.
(15) Countrywide Pure Premium:	1.941	0.994	2.935
(16) Countrywide Indicated Relativity:	2.424	2.156	.
(17) Countrywide Credibility:	0.300	0.210	.
(18) Countrywide Lost-Time Claims:	916.00	.	.
(19) Pure Premium Underlying Present Rate:	1.330	0.765	2.095
(20) Relativity to Underlying Present Rate:	1.773	1.856	.
(21) Credibility to Underlying Relativity:	0.300	0.210	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.741	1.320	.
(24) Balanced Formula Relativity:	1.729	1.321	1.581

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
0918 DOMESTIC WORKERS-INSIDE-PHYSICAL ASSISTANCE											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,801,546	7	70	580,851	900,782	288,558	318,109	2,088,299	0.255	0.105	0.360
2014	6,713,372	10	62	465,425	454,229	167,798	162,106	1,249,557	0.137	0.049	0.186
2015	7,313,039	8	80	539,672	923,917	88,396	461,846	2,013,831	0.200	0.075	0.275
2016	6,494,666	6	78	574,177	804,550	125,573	249,099	1,753,398	0.212	0.058	0.270
2017	8,654,614	15	81	1,183,410	2,224,476	291,883	865,435	4,565,204	0.394	0.134	0.527
<b>MA Total:</b>	<b>34,977,237</b>	<b>46</b>	<b>371</b>	<b>3,343,535</b>	<b>5,307,954</b>	<b>962,207</b>	<b>2,056,594</b>	<b>11,670,289</b>	<b>0.247</b>	<b>0.086</b>	<b>0.334</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.300	0.185	.
(14) Massachusetts Credibility:	0.680	0.780	.
(15) Countrywide Pure Premium:	0.407	0.178	0.585
(16) Countrywide Indicated Relativity:	0.508	0.387	.
(17) Countrywide Credibility:	0.160	0.110	.
(18) Countrywide Lost-Time Claims:	62,000	.	.
(19) Pure Premium Underlying Present Rate:	0.294	0.093	0.387
(20) Relativity to Underlying Present Rate:	0.391	0.226	.
(21) Credibility to Underlying Relativity:	0.160	0.110	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.348	0.212	.
(24) Balanced Formula Relativity:	0.345	0.212	0.297

Class(es):		Effective: 7/1/2020							Manufacturing		
1430 SMELTING, SINTERING OR REFINING-LEAD & DRIVERS											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure	Likely	Not-Likely	Likely	Not-Likely	Likely	Not-Likely	Total	Indemnity	Medical	Total
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	92	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.010	0.010	.
(15) Countrywide Pure Premium:	1.309	0.876	2.185
(16) Countrywide Indicated Relativity:	1.465	1.872	.
(17) Countrywide Credibility:	0.330	0.350	.
(18) Countrywide Lost-Time Claims:	72,000	.	.
(19) Pure Premium Underlying Present Rate:	2.420	0.967	3.386
(20) Relativity to Underlying Present Rate:	2.748	2.158	.
(21) Credibility to Underlying Relativity:	0.660	0.640	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.297	2.036	.
(24) Balanced Formula Relativity:	2.267	2.009	2.178

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing			
1438 SMELTING, SINTERING OR REFINING-METALS-NOT IRON OR LEAD-NOC & D												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	141,367	0	17	0	82,953	0	72,792	155,745	0.587	0.515	1.102	
2014	141,023	1	19	92,497	60,643	7,123	115,071	275,335	1.086	0.866	1.952	
2015	135,407	0	18	0	35,269	0	39,103	74,372	0.260	0.289	0.549	
2016	128,957	0	13	0	7,244	0	33,200	40,444	0.056	0.257	0.314	
2017	144,211	0	16	0	142,031	0	96,427	238,458	0.985	0.669	1.654	
<b>MA Total:</b>	<b>690,966</b>	<b>1</b>	<b>83</b>	<b>92,497</b>	<b>328,140</b>	<b>7,123</b>	<b>356,594</b>	<b>784,354</b>	<b>0.609</b>	<b>0.526</b>	<b>1.135</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.627	1.029	.
(14) Massachusetts Credibility:	0.270	0.370	.
(15) Countrywide Pure Premium:	2.635	1.169	3.804
(16) Countrywide Indicated Relativity:	2.951	2.495	.
(17) Countrywide Credibility:	0.370	0.320	.
(18) Countrywide Lost-Time Claims:	812.00	.	.
(19) Pure Premium Underlying Present Rate:	1.470	0.715	2.185
(20) Relativity to Underlying Present Rate:	1.669	1.595	.
(21) Credibility to Underlying Relativity:	0.360	0.310	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.862	1.674	.
(24) Balanced Formula Relativity:	1.838	1.652	1.774

Class(es):		Effective: 7/1/2020							Manufacturing			
1463 ASPHALT WORKS & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	131,628	1	17	42,667	189,857	5,295	268,887	506,706	1.767	2.083	3.850	
2014	137,912	4	25	961,936	217,111	518,348	163,281	1,860,677	8.549	4.942	13.492	
2015	81,397	1	12	295,121	107,220	61,658	245,052	709,052	4.943	3.768	8.711	
2016	89,008	2	24	520,487	636,287	996,967	460,140	2,613,880	12.996	16.370	29.367	
2017	103,477	1	20	133,635	195,199	51,697	134,471	515,001	3.178	1.799	4.977	
<b>MA Total:</b>	<b>543,422</b>	<b>9</b>	<b>98</b>	<b>1,953,847</b>	<b>1,345,674</b>	<b>1,633,965</b>	<b>1,271,830</b>	<b>6,205,316</b>	<b>6.072</b>	<b>5.347</b>	<b>11.419</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	6.255	10.451	.
(14) Massachusetts Credibility:	0.370	0.540	.
(15) Countrywide Pure Premium:	4.045	2.104	6.150
(16) Countrywide Indicated Relativity:	4.530	4.493	.
(17) Countrywide Credibility:	0.320	0.230	.
(18) Countrywide Lost-Time Claims:	624.00	.	.
(19) Pure Premium Underlying Present Rate:	4.075	2.400	6.475
(20) Relativity to Underlying Present Rate:	4.628	5.358	.
(21) Credibility to Underlying Relativity:	0.310	0.230	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	5.199	7.909	.
(24) Balanced Formula Relativity:	5.131	7.806	6.054

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
1624 QUARRY NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	460.264	5	49	1,230.994	326.463	361.452	413.322	2,332.231	3.384	1.683	5.067
2014	492.709	3	62	392.589	470.672	204.960	443.822	1,512.043	1.752	1.317	3.069
2015	499.924	1	75	19.840	275.792	4.487	407.721	707.840	0.591	0.825	1.416
2016	496.311	2	63	480.932	940.383	121.694	490.356	2,033.366	2.864	1.233	4.097
2017	518.144	2	66	120.865	503.213	37.896	301.199	963.174	1.204	0.654	1.859
<b>MA Total:</b>	<b>2,467,353</b>	<b>13</b>	<b>315</b>	<b>2,245,221</b>	<b>2,516,524</b>	<b>730,489</b>	<b>2,056,420</b>	<b>7,548,653</b>	<b>1.930</b>	<b>1.130</b>	<b>3.059</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.801	0.910	.
(14) Massachusetts Credibility:	0.480	0.690	.
(15) Countrywide Pure Premium:	1.713	0.831	2.544
(16) Countrywide Indicated Relativity:	0.749	0.712	.
(17) Countrywide Credibility:	0.260	0.160	.
(18) Countrywide Lost-Time Claims:	1229.0	.	.
(19) Pure Premium Underlying Present Rate:	1.761	0.955	2.717
(20) Relativity to Underlying Present Rate:	0.808	0.908	.
(21) Credibility to Underlying Relativity:	0.260	0.150	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.789	0.878	.
(24) Balanced Formula Relativity:	0.787	0.883	0.820

Class(es):		Effective: 7/1/2020							Miscellaneous		
1655 LIME MFG-QUARRY-SURFACE & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3.333	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	3.780	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	6.197	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	3.319	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	2.018	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>18.647</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.060	0.090	.
(15) Countrywide Pure Premium:	0.414	0.188	0.602
(16) Countrywide Indicated Relativity:	0.181	0.161	.
(17) Countrywide Credibility:	0.140	0.150	.
(18) Countrywide Lost-Time Claims:	9.000	.	.
(19) Pure Premium Underlying Present Rate:	1.479	0.714	2.193
(20) Relativity to Underlying Present Rate:	0.679	0.679	.
(21) Credibility to Underlying Relativity:	0.800	0.760	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.569	0.540	.
(24) Balanced Formula Relativity:	0.567	0.543	0.559



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## Calculation of Class Relativities

Class(es): 1701 CEMENT MFG		Effective: 7/1/2020							Manufacturing		
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	10,053	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	8,079	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	6,989	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	1,876	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	422	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>27,419</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.070	0.090	.
(15) Countrywide Pure Premium:	1.096	0.618	1.714
(16) Countrywide Indicated Relativity:	1.228	1.319	.
(17) Countrywide Credibility:	0.470	0.460	.
(18) Countrywide Lost-Time Claims:	442.00	.	.
(19) Pure Premium Underlying Present Rate:	1.289	0.538	1.827
(20) Relativity to Underlying Present Rate:	1.465	1.201	.
(21) Credibility to Underlying Relativity:	0.460	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.251	1.147	.
(24) Balanced Formula Relativity:	1.234	1.132	1.199

Class(es): 1747 EMERY WORKS & DRIVERS		Effective: 7/1/2020							Manufacturing		
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	18,821	0	4	0	13,655	0	12,931	26,586	0.725	0.687	1.413
2014	46,843	2	6	130,228	26,994	198,433	20,010	375,665	3.356	4.663	8.020
2015	47,083	0	9	0	17,595	0	18,070	35,665	0.374	0.384	0.757
2016	46,528	0	9	0	15,886	0	15,958	31,844	0.341	0.343	0.684
2017	52,458	0	3	0	877	0	1,061	1,938	0.017	0.020	0.037
<b>MA Total:</b>	<b>211,733</b>	<b>2</b>	<b>31</b>	<b>130,228</b>	<b>75,008</b>	<b>198,433</b>	<b>68,030</b>	<b>471,699</b>	<b>0.969</b>	<b>1.258</b>	<b>2.228</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.999	2.460	.
(14) Massachusetts Credibility:	0.170	0.220	.
(15) Countrywide Pure Premium:	1.386	0.627	2.012
(16) Countrywide Indicated Relativity:	1.552	1.339	.
(17) Countrywide Credibility:	0.340	0.360	.
(18) Countrywide Lost-Time Claims:	76.000	.	.
(19) Pure Premium Underlying Present Rate:	1.493	0.665	2.159
(20) Relativity to Underlying Present Rate:	1.696	1.486	.
(21) Credibility to Underlying Relativity:	0.490	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.528	1.647	.
(24) Balanced Formula Relativity:	1.508	1.625	1.549

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
1748 ABRASIVE WHEEL MFG & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	39,087	0	14	0	49,394	0	76,949	126,343	1,264	1,969	3,232
2014	40,371	0	14	0	4,315	0	19,768	24,083	0,107	0,490	0,597
2015	38,198	0	9	0	29,157	0	53,849	83,006	0,763	1,410	2,173
2016	43,459	1	8	187,039	5,794	61,543	19,847	274,224	4,437	1,873	6,310
2017	50,469	0	11	0	50,622	0	43,401	94,023	1,003	0,860	1,863
<b>MA Total:</b>	<b>211,584</b>	<b>1</b>	<b>56</b>	<b>187,039</b>	<b>139,283</b>	<b>61,543</b>	<b>213,814</b>	<b>601,680</b>	<b>1,542</b>	<b>1,301</b>	<b>2,844</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.589	2.544	.
(14) Massachusetts Credibility:	0.150	0.240	.
(15) Countrywide Pure Premium:	1.258	1.040	2.298
(16) Countrywide Indicated Relativity:	1.409	2.220	.
(17) Countrywide Credibility:	0.300	0.310	.
(18) Countrywide Lost-Time Claims:	55.000	.	.
(19) Pure Premium Underlying Present Rate:	1.193	0.817	2.010
(20) Relativity to Underlying Present Rate:	1.355	1.824	.
(21) Credibility to Underlying Relativity:	0.550	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.406	2.119	.
(24) Balanced Formula Relativity:	1.388	2.092	1.631

Class(es):		Effective: 7/1/2020							Manufacturing		
1853 MICA GOODS MFG & MICA PREPARING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,525	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	1,611	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	1,161	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	840	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	957	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>6,093</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.030	0.040	.
(15) Countrywide Pure Premium:	0.754	0.095	0.849
(16) Countrywide Indicated Relativity:	0.844	0.203	.
(17) Countrywide Credibility:	0.060	0.060	.
(18) Countrywide Lost-Time Claims:	1.000	.	.
(19) Pure Premium Underlying Present Rate:	0.766	0.231	0.997
(20) Relativity to Underlying Present Rate:	0.870	0.516	.
(21) Credibility to Underlying Relativity:	0.910	0.900	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.843	0.476	.
(24) Balanced Formula Relativity:	0.832	0.470	0.707

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing			
1924 WIRE DRAWING OR CABLE MFG-NOT IRON OR STEEL												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	164,303	1	16	102,247	240,420	11,857	65,977	420,501	2,086	0,474	2,559	
2014	142,738	0	20	0	133,156	0	50,295	183,451	0,933	0,352	1,285	
2015	152,446	0	23	0	30,463	0	42,596	73,059	0,200	0,279	0,479	
2016	149,172	1	19	106,035	308,715	10,123	172,619	597,493	2,780	1,225	4,005	
2017	126,667	0	22	0	95,152	0	62,179	157,331	0,751	0,491	1,242	
<b>MA Total:</b>	<b>735,326</b>	<b>2</b>	<b>100</b>	<b>208,282</b>	<b>807,906</b>	<b>21,981</b>	<b>393,666</b>	<b>1,431,835</b>	<b>1,382</b>	<b>0,565</b>	<b>1,947</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.424	1.105	.
(14) Massachusetts Credibility:	0.240	0.320	.
(15) Countrywide Pure Premium:	1.146	0.559	1.705
(16) Countrywide Indicated Relativity:	1.284	1.193	.
(17) Countrywide Credibility:	0.380	0.340	.
(18) Countrywide Lost-Time Claims:	510.00	.	.
(19) Pure Premium Underlying Present Rate:	0.994	0.481	1.475
(20) Relativity to Underlying Present Rate:	1.129	1.073	.
(21) Credibility to Underlying Relativity:	0.380	0.340	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.259	1.124	.
(24) Balanced Formula Relativity:	1.242	1.110	1.196

Class(es):		Effective: 7/1/2020							Manufacturing			
1925 DIE CASTING MFG												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	5,017	0	2	0	66,993	0	580,960	647,953	13,353	115.80	129.15	
2014	3,090	0	0	0	0	0	0	0	0.000	0.000	0.000	
2015	240	0	0	0	0	0	0	0	0.000	0.000	0.000	
2016	185	0	1	0	310	0	675	986	1,675	3,646	5,321	
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000	
<b>MA Total:</b>	<b>8,532</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>67,304</b>	<b>0</b>	<b>581,635</b>	<b>648,939</b>	<b>7,888</b>	<b>68,170</b>	<b>76,058</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	8.126	133.23	.
(14) Massachusetts Credibility:	0.050	0.150	.
(15) Countrywide Pure Premium:	1.735	1.072	2.807
(16) Countrywide Indicated Relativity:	1.943	2.289	.
(17) Countrywide Credibility:	0.480	0.430	.
(18) Countrywide Lost-Time Claims:	751.00	.	.
(19) Pure Premium Underlying Present Rate:	1.630	6.630	8.260
(20) Relativity to Underlying Present Rate:	1.851	14.801	.
(21) Credibility to Underlying Relativity:	0.470	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.209	27.186	.
(24) Balanced Formula Relativity:	2.180	26.831	10.688

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2003 BAKERY & DRIVERS, ROUTE SUPERVISORS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,918,912	19	310	1,233,864	1,672,052	760,126	918,059	4,584,101	1,514	0,875	2,389
2014	2,017,733	16	298	1,807,336	3,692,775	633,598	1,814,495	7,948,204	2,726	1,213	3,939
2015	2,132,914	8	326	876,719	2,809,376	199,512	1,721,197	5,606,805	1,728	0,901	2,629
2016	2,248,618	8	288	587,442	3,593,942	203,547	1,625,483	6,010,414	1,860	0,813	2,673
2017	2,511,401	9	329	1,164,203	4,257,634	274,880	1,849,934	7,546,651	2,159	0,846	3,005
<b>MA Total:</b>	<b>10,829,578</b>	<b>60</b>	<b>1,551</b>	<b>5,669,564</b>	<b>16,025,778</b>	<b>2,071,664</b>	<b>7,929,169</b>	<b>31,696,174</b>	<b>2,003</b>	<b>0,923</b>	<b>2,927</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.064	1.805	.
(14) Massachusetts Credibility:	0.860	1.000	.
(15) Countrywide Pure Premium:	1.704	0.778	2.482
(16) Countrywide Indicated Relativity:	1.908	1.661	.
(17) Countrywide Credibility:	0.070	0.000	.
(18) Countrywide Lost-Time Claims:	6693.0	.	.
(19) Pure Premium Underlying Present Rate:	1.708	0.826	2.534
(20) Relativity to Underlying Present Rate:	1.940	1.844	.
(21) Credibility to Underlying Relativity:	0.070	0.000	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.044	1.805	.
(24) Balanced Formula Relativity:	2.017	1.781	1.936

Class(es):		Effective: 7/1/2020							Manufacturing		
2014 GRAIN MILLING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	21,420	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	1,984	0	1	0	0	0	113	113	0.000	0.057	0.057
2015	1,861	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	2,168	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	2,339	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>29,773</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>113</b>	<b>113</b>	<b>0.000</b>	<b>0.004</b>	<b>0.004</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.007	.
(14) Massachusetts Credibility:	0.080	0.100	.
(15) Countrywide Pure Premium:	2.533	1.192	3.726
(16) Countrywide Indicated Relativity:	2.837	2.546	.
(17) Countrywide Credibility:	0.460	0.450	.
(18) Countrywide Lost-Time Claims:	1218.0	.	.
(19) Pure Premium Underlying Present Rate:	1.584	0.708	2.293
(20) Relativity to Underlying Present Rate:	1.800	1.582	.
(21) Credibility to Underlying Relativity:	0.460	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.133	1.858	.
(24) Balanced Formula Relativity:	2.105	1.834	2.011

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2021 SUGAR REFINING-ALL OPERATIONS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,788	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	1,490	0	1	0	0	0	508	508	0.000	0.341	0.341
2015	4,600	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	4,223	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	2,135	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>14,235</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>508</b>	<b>508</b>	<b>0.000</b>	<b>0.036</b>	<b>0.036</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.070	.
(14) Massachusetts Credibility:	0.050	0.070	.
(15) Countrywide Pure Premium:	1.323	0.688	2.010
(16) Countrywide Indicated Relativity:	1.481	1.469	.
(17) Countrywide Credibility:	0.480	0.470	.
(18) Countrywide Lost-Time Claims:	242.00	.	.
(19) Pure Premium Underlying Present Rate:	1.074	0.544	1.617
(20) Relativity to Underlying Present Rate:	1.219	1.214	.
(21) Credibility to Underlying Relativity:	0.470	0.460	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.284	1.253	.
(24) Balanced Formula Relativity:	1.267	1.237	1.257

Class(es):		Effective: 7/1/2020							Manufacturing		
2039 ICE CREAM MFG & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	144,801	1	18	431,981	23,741	198,278	29,641	683,642	3,147	1,574	4,721
2014	160,530	3	35	349,164	105,960	126,248	155,026	736,398	2,835	1,752	4,587
2015	173,109	3	33	143,425	146,050	64,988	121,696	476,159	1,672	1,078	2,751
2016	132,001	2	22	271,663	356,072	27,606	89,590	744,931	4,756	0,888	5,643
2017	59,707	0	6	0	4,204	0	5,033	9,237	0,070	0,084	0,155
<b>MA Total:</b>	<b>670,147</b>	<b>9</b>	<b>114</b>	<b>1,196,233</b>	<b>636,028</b>	<b>417,121</b>	<b>400,984</b>	<b>2,650,366</b>	<b>2,734</b>	<b>1,221</b>	<b>3,955</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.817	2.386	.
(14) Massachusetts Credibility:	0.270	0.400	.
(15) Countrywide Pure Premium:	1.268	0.585	1.853
(16) Countrywide Indicated Relativity:	1.420	1.250	.
(17) Countrywide Credibility:	0.370	0.300	.
(18) Countrywide Lost-Time Claims:	411.00	.	.
(19) Pure Premium Underlying Present Rate:	1.583	0.922	2.505
(20) Relativity to Underlying Present Rate:	1.798	2.058	.
(21) Credibility to Underlying Relativity:	0.360	0.300	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.933	1.947	.
(24) Balanced Formula Relativity:	1.908	1.922	1.913

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2041 CONFECTION MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	225.929	1	16	22.494	259.712	3.112	93.515	378.834	1.249	0.428	1.677
2014	216.574	4	16	241.997	364.669	18.625	185.571	810.862	2.801	0.943	3.744
2015	235.757	0	16	0	35.290	0	48.721	84.011	0.150	0.207	0.356
2016	217.288	0	17	0	318.998	0	169.053	488.051	1.468	0.778	2.246
2017	175.099	0	21	0	79.519	0	49.240	128.759	0.454	0.281	0.735
<b>MA Total:</b>	<b>1,070.646</b>	<b>5</b>	<b>86</b>	<b>264.491</b>	<b>1,058,189</b>	<b>21,736</b>	<b>546.101</b>	<b>1,890,517</b>	<b>1.235</b>	<b>0.530</b>	<b>1.766</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.273	1.037	.
(14) Massachusetts Credibility:	0.310	0.410	.
(15) Countrywide Pure Premium:	1.210	0.572	1.782
(16) Countrywide Indicated Relativity:	1.356	1.221	.
(17) Countrywide Credibility:	0.350	0.300	.
(18) Countrywide Lost-Time Claims:	1018.0	.	.
(19) Pure Premium Underlying Present Rate:	1.307	0.591	1.898
(20) Relativity to Underlying Present Rate:	1.484	1.320	.
(21) Credibility to Underlying Relativity:	0.340	0.290	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.374	1.174	.
(24) Balanced Formula Relativity:	1.356	1.159	1.288

Class(es):		Effective: 7/1/2020							Manufacturing		
2070 CREAMERY OR DAIRY & ROUTE SUPERVISORS, DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	293.456	3	36	486.896	456.768	190.740	178.343	1,312.747	3.216	1.258	4.473
2014	298.686	3	30	223.724	227.045	104.726	124.323	679.818	1.509	0.767	2.276
2015	297.353	1	21	238.051	33.779	53.861	103.480	429.171	0.914	0.529	1.443
2016	151.921	0	13	0	276.901	0	77.407	354.308	1.823	0.510	2.332
2017	149.992	1	14	1.526	94.011	750	65.238	161.525	0.637	0.440	1.077
<b>MA Total:</b>	<b>1,191.409</b>	<b>8</b>	<b>114</b>	<b>950.197</b>	<b>1,088,505</b>	<b>350,077</b>	<b>548,790</b>	<b>2,937,569</b>	<b>1.711</b>	<b>0.754</b>	<b>2.466</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.763	1.475	.
(14) Massachusetts Credibility:	0.370	0.500	.
(15) Countrywide Pure Premium:	2.059	0.879	2.938
(16) Countrywide Indicated Relativity:	2.306	1.877	.
(17) Countrywide Credibility:	0.320	0.250	.
(18) Countrywide Lost-Time Claims:	3481.0	.	.
(19) Pure Premium Underlying Present Rate:	1.849	0.872	2.722
(20) Relativity to Underlying Present Rate:	2.101	1.947	.
(21) Credibility to Underlying Relativity:	0.310	0.250	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.041	1.693	.
(24) Balanced Formula Relativity:	2.015	1.671	1.896

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## Calculation of Class Relativities

Class(es): 2081 BUTCHERING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	16,802	0	20	0	1,501	0	10,939	12,440	0.089	0.651	0.740
2014	18,882	0	10	0	42	0	5,977	6,020	0.002	0.317	0.319
2015	21,751	0	7	0	3,782	0	6,208	9,990	0.174	0.285	0.459
2016	25,569	0	5	0	7,324	0	10,139	17,464	0.286	0.397	0.683
2017	27,808	0	16	0	34,565	0	34,544	69,109	1.243	1.242	2.485
<b>MA Total:</b>	<b>110,811</b>	<b>0</b>	<b>58</b>	<b>0</b>	<b>47,215</b>	<b>0</b>	<b>67,808</b>	<b>115,023</b>	<b>0.426</b>	<b>0.612</b>	<b>1.038</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.439	1.196	.
(14) Massachusetts Credibility:	0.120	0.200	.
(15) Countrywide Pure Premium:	1.287	0.767	2.053
(16) Countrywide Indicated Relativity:	1.441	1.637	.
(17) Countrywide Credibility:	0.440	0.400	.
(18) Countrywide Lost-Time Claims:	833.00	.	.
(19) Pure Premium Underlying Present Rate:	1.266	0.943	2.209
(20) Relativity to Underlying Present Rate:	1.438	2.105	.
(21) Credibility to Underlying Relativity:	0.440	0.400	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.319	1.736	.
(24) Balanced Formula Relativity:	1.302	1.713	1.444

Class(es): 2089 PACKING HOUSE- ALL OPERATIONS		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,286,083	10	203	752,174	1,559,023	295,372	547,231	3,153,800	1.797	0.655	2.452
2014	1,419,367	7	214	581,694	701,316	185,389	528,740	1,997,140	0.904	0.503	1.407
2015	1,658,444	14	221	1,737,834	1,614,656	405,833	908,024	4,666,346	2.021	0.792	2.814
2016	1,732,123	4	245	280,010	1,351,450	71,298	647,878	2,350,635	0.942	0.415	1.357
2017	1,973,731	9	267	869,258	2,701,749	160,436	1,303,881	5,035,324	1.809	0.742	2.551
<b>MA Total:</b>	<b>8,069,749</b>	<b>44</b>	<b>1,150</b>	<b>4,220,970</b>	<b>7,928,194</b>	<b>1,118,328</b>	<b>3,935,753</b>	<b>17,203,245</b>	<b>1.506</b>	<b>0.626</b>	<b>2.132</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.551	1.224	.
(14) Massachusetts Credibility:	0.720	0.920	.
(15) Countrywide Pure Premium:	1.246	0.654	1.899
(16) Countrywide Indicated Relativity:	1.395	1.396	.
(17) Countrywide Credibility:	0.140	0.040	.
(18) Countrywide Lost-Time Claims:	10734	.	.
(19) Pure Premium Underlying Present Rate:	1.487	0.612	2.099
(20) Relativity to Underlying Present Rate:	1.689	1.365	.
(21) Credibility to Underlying Relativity:	0.140	0.040	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.548	1.237	.
(24) Balanced Formula Relativity:	1.528	1.220	1.422

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2095 MEAT PRODUCTS MFG-NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	401,525	1	67	243,206	734,633	27,303	274,723	1,279,865	2,435	0,752	3,188
2014	398,697	1	59	18,030	252,095	1,145	141,921	413,191	0,678	0,359	1,036
2015	406,845	4	60	650,373	475,713	118,764	173,500	1,418,350	2,768	0,718	3,486
2016	473,075	1	72	2,726	346,868	6,253	148,860	504,708	0,739	0,328	1,067
2017	493,605	2	78	145,104	626,330	68,354	261,009	1,100,796	1,563	0,667	2,230
<b>MA Total:</b>	<b>2,173,746</b>	<b>9</b>	<b>336</b>	<b>1,059,438</b>	<b>2,435,639</b>	<b>221,818</b>	<b>1,000,014</b>	<b>4,716,909</b>	<b>1,608</b>	<b>0,562</b>	<b>2,170</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.656	1.099	.
(14) Massachusetts Credibility:	0.450	0.580	.
(15) Countrywide Pure Premium:	1.527	0.850	2.377
(16) Countrywide Indicated Relativity:	1.710	1.816	.
(17) Countrywide Credibility:	0.280	0.210	.
(18) Countrywide Lost-Time Claims:	3668.0	.	.
(19) Pure Premium Underlying Present Rate:	1.662	0.693	2.356
(20) Relativity to Underlying Present Rate:	1.888	1.547	.
(21) Credibility to Underlying Relativity:	0.270	0.210	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.734	1.343	.
(24) Balanced Formula Relativity:	1.711	1.326	1.578

Class(es):		Effective: 7/1/2020							Manufacturing		
2111 CANNERY NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	6,454	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	7,438	0	1	0	1,728	0	1,630	3,358	0.232	0.219	0.452
2015	9,343	0	1	0	0	0	305	305	0.000	0.033	0.033
2016	10,683	0	2	0	53,981	0	24,284	78,265	5.053	2.273	7.326
2017	4,054	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>37,971</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>55,710</b>	<b>0</b>	<b>26,219</b>	<b>81,929</b>	<b>1.467</b>	<b>0.690</b>	<b>2.158</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.511	1.350	.
(14) Massachusetts Credibility:	0.070	0.100	.
(15) Countrywide Pure Premium:	1.061	0.589	1.649
(16) Countrywide Indicated Relativity:	1.188	1.257	.
(17) Countrywide Credibility:	0.470	0.450	.
(18) Countrywide Lost-Time Claims:	1085.0	.	.
(19) Pure Premium Underlying Present Rate:	0.953	0.467	1.420
(20) Relativity to Underlying Present Rate:	1.083	1.042	.
(21) Credibility to Underlying Relativity:	0.460	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.162	1.170	.
(24) Balanced Formula Relativity:	1.147	1.154	1.150



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## Calculation of Class Relativities

Class(es): 2115 SEAFOOD PRODUCTS MFG-NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	128,207	1	24	6,654	329,795	425	121,145	458,019	2,624	0,948	3,572
2014	178,880	2	28	740,083	365,271	67,937	147,632	1,320,922	6,179	1,205	7,384
2015	173,410	2	47	587,768	591,795	85,562	323,736	1,588,861	6,802	2,360	9,162
2016	69,585	0	21	0	76,631	0	105,781	182,412	1,101	1,520	2,621
2017	70,831	0	18	0	40,889	0	39,271	80,160	0,577	0,554	1,132
<b>MA Total:</b>	<b>620,913</b>	<b>5</b>	<b>138</b>	<b>1,334,504</b>	<b>1,404,382</b>	<b>153,924</b>	<b>737,565</b>	<b>3,630,375</b>	<b>4,411</b>	<b>1,436</b>	<b>5,847</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.544	2.806	.
(14) Massachusetts Credibility:	0.310	0.410	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	2.604	2.294	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	2.320	1.039	3.359
(20) Relativity to Underlying Present Rate:	2.634	2.320	.
(21) Credibility to Underlying Relativity:	0.690	0.590	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	3.226	2.519	.
(24) Balanced Formula Relativity:	3.184	2.486	2.943

Class(es): 2121 BREWERY & DRIVERS		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	93,124	0	16	0	5,331	0	25,598	30,929	0,057	0,275	0,332
2014	114,534	0	15	0	3,251	0	10,584	13,834	0,028	0,092	0,121
2015	159,803	0	22	0	170,499	0	59,249	229,748	1,067	0,371	1,438
2016	211,012	0	45	0	451,487	0	202,095	653,583	2,140	0,958	3,097
2017	307,327	1	38	69,443	99,539	19,291	56,933	245,207	0,550	0,248	0,798
<b>MA Total:</b>	<b>885,800</b>	<b>1</b>	<b>136</b>	<b>69,443</b>	<b>730,107</b>	<b>19,291</b>	<b>354,459</b>	<b>1,173,300</b>	<b>0,903</b>	<b>0,422</b>	<b>1,325</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.930	0.825	.
(14) Massachusetts Credibility:	0.200	0.290	.
(15) Countrywide Pure Premium:	0.752	0.353	1.105
(16) Countrywide Indicated Relativity:	0.842	0.754	.
(17) Countrywide Credibility:	0.400	0.360	.
(18) Countrywide Lost-Time Claims:	610.00	.	.
(19) Pure Premium Underlying Present Rate:	0.540	0.298	0.838
(20) Relativity to Underlying Present Rate:	0.613	0.665	.
(21) Credibility to Underlying Relativity:	0.400	0.350	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.768	0.743	.
(24) Balanced Formula Relativity:	0.758	0.734	0.750

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2130 SPIRITUOUS LIQUOR DISTILLERY											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,148	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	4,230	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	13,861	0	1	0	0	0	1,296	1,296	0.000	0.093	0.093
2016	9,836	0	1	0	0	0	940	940	0.000	0.096	0.096
2017	9,137	0	1	0	0	0	1,058	1,058	0.000	0.116	0.116
<b>MA Total:</b>	<b>38,213</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,294</b>	<b>3,294</b>	<b>0.000</b>	<b>0.086</b>	<b>0.086</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.168	.
(14) Massachusetts Credibility:	0.070	0.090	.
(15) Countrywide Pure Premium:	0.670	0.396	1.066
(16) Countrywide Indicated Relativity:	0.751	0.846	.
(17) Countrywide Credibility:	0.470	0.460	.
(18) Countrywide Lost-Time Claims:	249.00	.	.
(19) Pure Premium Underlying Present Rate:	0.835	0.361	1.197
(20) Relativity to Underlying Present Rate:	0.949	0.806	.
(21) Credibility to Underlying Relativity:	0.460	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.789	0.767	.
(24) Balanced Formula Relativity:	0.779	0.757	0.771

Class(es):		Effective: 7/1/2020							Manufacturing		
2131 SPIRITUOUS LIQUOR BOTTLING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	51,848	0	14	0	168,248	0	118,243	286,491	3,245	2,281	5,526
2014	64,419	0	18	0	338,281	0	146,753	485,034	5,251	2,278	7,529
2015	56,368	0	18	0	21,088	0	22,953	44,041	0.374	0.407	0.781
2016	58,005	0	26	0	697,203	0	121,927	819,130	12,020	2,102	14,122
2017	64,821	0	19	0	19,591	0	43,820	63,410	0.302	0.676	0.978
<b>MA Total:</b>	<b>295,462</b>	<b>0</b>	<b>95</b>	<b>0</b>	<b>1,244,410</b>	<b>0</b>	<b>453,697</b>	<b>1,698,106</b>	<b>4,212</b>	<b>1,536</b>	<b>5,747</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.339	3.001	.
(14) Massachusetts Credibility:	0.170	0.250	.
(15) Countrywide Pure Premium:	0.617	0.339	0.956
(16) Countrywide Indicated Relativity:	0.691	0.724	.
(17) Countrywide Credibility:	0.420	0.380	.
(18) Countrywide Lost-Time Claims:	150.00	.	.
(19) Pure Premium Underlying Present Rate:	1.146	0.620	1.766
(20) Relativity to Underlying Present Rate:	1.301	1.384	.
(21) Credibility to Underlying Relativity:	0.410	0.370	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.561	1.537	.
(24) Balanced Formula Relativity:	1.541	1.517	1.533

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## Calculation of Class Relativities

Class(es): 2143 FRUIT JUICE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	43,418	0	15	0	12,155	0	16,496	28,651	0.280	0.380	0.660
2014	46,627	0	8	0	190	0	7,842	8,032	0.004	0.168	0.172
2015	57,914	1	18	201,864	75,017	37,743	68,181	382,805	4.781	1.829	6.610
2016	62,149	0	11	0	10,003	0	7,799	17,802	0.161	0.125	0.286
2017	71,778	1	8	333,858	11,707	23,962	3,102	372,629	4.814	0.377	5.191
<b>MA Total:</b>	<b>281,886</b>	<b>2</b>	<b>60</b>	<b>535,721</b>	<b>109,072</b>	<b>61,705</b>	<b>103,421</b>	<b>809,919</b>	<b>2.287</b>	<b>0.586</b>	<b>2.873</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.356	1.145	.
(14) Massachusetts Credibility:	0.150	0.210	.
(15) Countrywide Pure Premium:	1.158	0.525	1.683
(16) Countrywide Indicated Relativity:	1.297	1.121	.
(17) Countrywide Credibility:	0.430	0.400	.
(18) Countrywide Lost-Time Claims:	277.00	.	.
(19) Pure Premium Underlying Present Rate:	0.845	0.450	1.295
(20) Relativity to Underlying Present Rate:	0.960	1.005	.
(21) Credibility to Underlying Relativity:	0.420	0.390	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.314	1.081	.
(24) Balanced Formula Relativity:	1.297	1.067	1.218

Class(es): 2150 ICE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	7,624	0	2	0	3,214	0	11,665	14,879	0.422	1.530	1.952
2014	6,795	0	2	0	2,556	0	2,385	4,941	0.376	0.351	0.727
2015	7,338	0	1	0	3,572	0	1,587	5,159	0.487	0.216	0.703
2016	11,932	0	2	0	0	0	1,647	1,647	0.000	0.138	0.138
2017	11,783	0	1	0	0	0	1,227	1,227	0.000	0.104	0.104
<b>MA Total:</b>	<b>45,472</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>9,342</b>	<b>0</b>	<b>18,510</b>	<b>27,852</b>	<b>0.205</b>	<b>0.407</b>	<b>0.613</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.212	0.796	.
(14) Massachusetts Credibility:	0.100	0.140	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	2.253	2.270	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	2.007	1.029	3.036
(20) Relativity to Underlying Present Rate:	2.280	2.297	.
(21) Credibility to Underlying Relativity:	0.900	0.860	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.073	2.086	.
(24) Balanced Formula Relativity:	2.046	2.059	2.050

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## Calculation of Class Relativities

Class(es): 2156 BOTTLING-NOT CARBONATED LIQUIDS OR SPIRIT LIQRS & RTE SUP,DR									Effective: 7/1/2020 Manufacturing		
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical				MA Indicated Pure Premiums	
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	64,810	1	13	30,503	177,941	3,613	164,069	376,126	3,216	2,587	5,804
2014	77,369	0	14	0	27,716	0	59,675	87,391	0,358	0,771	1,130
2015	89,808	1	11	33,412	126,874	76,242	36,928	273,456	1,785	1,260	3,045
2016	92,127	1	10	108,974	52,621	29,929	53,795	245,319	1,754	0,909	2,663
2017	113,880	0	10	0	183,333	0	152,756	336,089	1,610	1,341	2,951
<b>MA Total:</b>	<b>437,993</b>	<b>3</b>	<b>58</b>	<b>172,889</b>	<b>568,485</b>	<b>109,784</b>	<b>467,223</b>	<b>1,318,381</b>	<b>1,693</b>	<b>1,317</b>	<b>3,010</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.744	2.575	.
(14) Massachusetts Credibility:	0.260	0.360	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	2.425	2.274	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	2.160	alcula	3.191
(20) Relativity to Underlying Present Rate:	2.454	2.300	.
(21) Credibility to Underlying Relativity:	0.740	0.640	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.269	2.399	.
(24) Balanced Formula Relativity:	2.240	2.368	2.284

Class(es): 2157 BOTTLING NOC & ROUTE SUPERVISORS, DRIVERS									Effective: 7/1/2020 Manufacturing		
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical				MA Indicated Pure Premiums	
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	294,943	3	102	515,181	179,124	81,991	140,032	916,328	2,354	0,753	3,107
2014	322,436	1	83	83,529	298,352	13,498	272,065	667,443	1,184	0,886	2,070
2015	344,869	1	89	269,632	619,332	33,175	338,693	1,260,832	2,578	1,078	3,656
2016	362,709	1	95	160,413	886,338	28,181	270,317	1,345,249	2,886	0,823	3,709
2017	404,000	2	119	220,045	750,284	84,113	338,577	1,393,018	2,402	1,046	3,448
<b>MA Total:</b>	<b>1,728,956</b>	<b>8</b>	<b>488</b>	<b>1,248,800</b>	<b>2,733,429</b>	<b>240,958</b>	<b>1,359,684</b>	<b>5,582,871</b>	<b>2,303</b>	<b>0,926</b>	<b>3,229</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.373	1.809	.
(14) Massachusetts Credibility:	0.420	0.550	.
(15) Countrywide Pure Premium:	2.209	0.835	3.045
(16) Countrywide Indicated Relativity:	2.474	1.784	.
(17) Countrywide Credibility:	0.290	0.230	.
(18) Countrywide Lost-Time Claims:	6008.0	.	.
(19) Pure Premium Underlying Present Rate:	1.802	0.773	2.575
(20) Relativity to Underlying Present Rate:	2.047	1.726	.
(21) Credibility to Underlying Relativity:	0.290	0.220	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.308	1.785	.
(24) Balanced Formula Relativity:	2.277	1.762	2.099

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## Calculation of Class Relativities

Class(es): 2172 CIGARETTE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	1,669	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>1,669</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.020	0.020	.
(15) Countrywide Pure Premium:	0.922	0.349	1.271
(16) Countrywide Indicated Relativity:	1.032	0.745	.
(17) Countrywide Credibility:	0.490	0.490	.
(18) Countrywide Lost-Time Claims:	285.00	.	.
(19) Pure Premium Underlying Present Rate:	0.990	0.323	1.312
(20) Relativity to Underlying Present Rate:	1.124	0.720	.
(21) Credibility to Underlying Relativity:	0.490	0.490	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.057	0.718	.
(24) Balanced Formula Relativity:	1.043	0.709	0.928

Class(es): 2211 COTTON BATTING,WADDING OR WASTE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	551	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	468	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	263	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	858	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>2,140</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.030	0.050	.
(15) Countrywide Pure Premium:	2.910	1.615	4.525
(16) Countrywide Indicated Relativity:	3.259	3.448	.
(17) Countrywide Credibility:	0.310	0.330	.
(18) Countrywide Lost-Time Claims:	63.000	.	.
(19) Pure Premium Underlying Present Rate:	2.858	1.530	4.387
(20) Relativity to Underlying Present Rate:	3.246	3.414	.
(21) Credibility to Underlying Relativity:	0.660	0.620	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	3.153	3.255	.
(24) Balanced Formula Relativity:	3.112	3.212	3.146

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2220 YARN OR THREAD MFG-COTTON											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	85,462	1	29	124,940	146,136	12,741	58,109	341,926	3,172	0,829	4,001
2014	94,001	0	25	0	60,913	0	56,382	117,296	0,648	0,600	1,248
2015	96,917	1	17	6,900	588	714	14,588	22,790	0,077	0,158	0,235
2016	105,665	1	25	201,494	160,269	45,471	89,699	496,933	3,424	1,279	4,703
2017	106,061	0	20	0	130,232	0	62,693	192,925	1,228	0,591	1,819
<b>MA Total:</b>	<b>488,107</b>	<b>3</b>	<b>116</b>	<b>333,334</b>	<b>498,138</b>	<b>58,926</b>	<b>281,472</b>	<b>1,171,869</b>	<b>1,703</b>	<b>0,697</b>	<b>2,401</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.755	1.363	.
(14) Massachusetts Credibility:	0.210	0.300	.
(15) Countrywide Pure Premium:	0.800	0.442	1.243
(16) Countrywide Indicated Relativity:	0.896	0.945	.
(17) Countrywide Credibility:	0.400	0.350	.
(18) Countrywide Lost-Time Claims:	818.00	.	.
(19) Pure Premium Underlying Present Rate:	1.070	0.603	1.674
(20) Relativity to Underlying Present Rate:	1.216	1.347	.
(21) Credibility to Underlying Relativity:	0.390	0.350	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.201	1.211	.
(24) Balanced Formula Relativity:	1.185	1.195	1.189

Class(es):		Effective: 7/1/2020							Manufacturing		
2260 WOOL COMBING OR SCOURING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	405	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	488	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	522	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	522	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	534	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>2,470</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.040	0.050	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	3.177	2.616	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	2.830	1.186	4.016
(20) Relativity to Underlying Present Rate:	3.214	2.646	.
(21) Credibility to Underlying Relativity:	0.960	0.950	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	3.086	2.514	.
(24) Balanced Formula Relativity:	3.045	2.481	2.851

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## Calculation of Class Relativities

Class(es): 2288 FELTING MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	128,095	0	26	0	115,780	0	53,651	169,431	0.904	0.419	1.323
2014	110,090	1	17	62,757	212,625	5,184	37,318	317,885	2.501	0.386	2.887
2015	117,630	0	26	0	384,234	0	77,131	461,365	3.266	0.656	3.922
2016	68,868	0	8	0	441,733	0	231,173	672,906	6.414	3.357	9.771
2017	31,564	0	7	0	131,986	0	55,033	187,019	4.182	1.744	5.925
<b>MA Total:</b>	<b>456,247</b>	<b>1</b>	<b>84</b>	<b>62,757</b>	<b>1,286,359</b>	<b>5,184</b>	<b>454,306</b>	<b>1,808,606</b>	<b>2.957</b>	<b>1.007</b>	<b>3.964</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.046	1.968	.
(14) Massachusetts Credibility:	0.220	0.300	.
(15) Countrywide Pure Premium:	1.295	0.980	2.275
(16) Countrywide Indicated Relativity:	1.451	2.092	.
(17) Countrywide Credibility:	0.390	0.350	.
(18) Countrywide Lost-Time Claims:	213.00	.	.
(19) Pure Premium Underlying Present Rate:	1.416	0.652	2.068
(20) Relativity to Underlying Present Rate:	1.608	1.456	.
(21) Credibility to Underlying Relativity:	0.390	0.350	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.863	1.832	.
(24) Balanced Formula Relativity:	1.839	1.808	1.828

Class(es): 2305 TEXTILE FIBER MFG-SYNTHETIC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	13,319	3	2	132,613	26,604	29,371	2,664	191,251	11.954	2.405	14.360
2014	2,148	0	2	0	0	0	1,785	1,785	0.000	0.831	0.831
2015	3,525	0	2	0	2,230	0	2,073	4,302	0.633	0.588	1.221
2016	5,945	0	1	0	0	0	82	82	0.000	0.014	0.014
2017	4,509	0	3	0	8,829	0	6,169	14,998	1.958	1.368	3.326
<b>MA Total:</b>	<b>29,446</b>	<b>3</b>	<b>10</b>	<b>132,613</b>	<b>37,663</b>	<b>29,371</b>	<b>12,773</b>	<b>212,419</b>	<b>5.783</b>	<b>1.431</b>	<b>7.214</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	5.957	2.797	.
(14) Massachusetts Credibility:	0.090	0.110	.
(15) Countrywide Pure Premium:	1.021	0.583	1.604
(16) Countrywide Indicated Relativity:	1.144	1.245	.
(17) Countrywide Credibility:	0.460	0.450	.
(18) Countrywide Lost-Time Claims:	735.00	.	.
(19) Pure Premium Underlying Present Rate:	1.983	0.914	2.896
(20) Relativity to Underlying Present Rate:	2.252	2.039	.
(21) Credibility to Underlying Relativity:	0.450	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.076	1.765	.
(24) Balanced Formula Relativity:	2.049	1.742	1.943

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## Calculation of Class Relativities

Class(es): 2362 KNIT GOODS MFG NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	14,472	0	1	0	0	0	307	307	0.000	0.021	0.021
2014	13,641	0	1	0	0	0	3,043	3,043	0.000	0.223	0.223
2015	9,754	0	3	0	5,771	0	25,116	30,886	0.592	2.575	3.167
2016	10,080	0	6	0	8,674	0	13,917	020	lculat	1.381	2.241
2017	21,300	0	1	0	0	0	684	684	0.000	0.032	0.032
<b>MA Total:</b>	<b>69,247</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>14,445</b>	<b>0</b>	<b>43,067</b>	<b>57,512</b>	<b>0.209</b>	<b>0.622</b>	<b>0.831</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.215	1.216	.
(14) Massachusetts Credibility:	0.080	0.120	.
(15) Countrywide Pure Premium:	0.754	0.561	1.315
(16) Countrywide Indicated Relativity:	0.845	1.199	.
(17) Countrywide Credibility:	0.460	0.440	.
(18) Countrywide Lost-Time Claims:	163.00	.	.
(19) Pure Premium Underlying Present Rate:	0.659	0.433	1.091
(20) Relativity to Underlying Present Rate:	0.748	0.966	.
(21) Credibility to Underlying Relativity:	0.460	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.750	1.098	.
(24) Balanced Formula Relativity:	0.740	1.084	0.859

Class(es): 2380 WEBBING MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	67,407	1	10	169,350	145,954	70,703	56,623	442,630	4,678	1,889	6,567
2014	70,637	0	5	0	6,220	0	9,635	15,855	0.088	0.136	0.224
2015	63,280	0	15	0	15,446	0	30,250	45,696	0.244	0.478	0.722
2016	62,937	0	6	0	5,482	0	7,424	12,906	0.087	0.118	0.205
2017	56,467	0	5	0	5,263	0	5,005	10,267	0.093	0.089	0.182
<b>MA Total:</b>	<b>320,728</b>	<b>1</b>	<b>41</b>	<b>169,350</b>	<b>178,365</b>	<b>70,703</b>	<b>108,938</b>	<b>527,355</b>	<b>1.084</b>	<b>0.560</b>	<b>1.644</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.117	1.095	.
(14) Massachusetts Credibility:	0.170	0.250	.
(15) Countrywide Pure Premium:	0.913	0.509	1.422
(16) Countrywide Indicated Relativity:	1.022	1.087	.
(17) Countrywide Credibility:	0.420	0.380	.
(18) Countrywide Lost-Time Claims:	218.00	.	.
(19) Pure Premium Underlying Present Rate:	1.082	0.567	1.649
(20) Relativity to Underlying Present Rate:	1.229	1.266	.
(21) Credibility to Underlying Relativity:	0.410	0.370	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.123	1.155	.
(24) Balanced Formula Relativity:	1.109	1.140	1.119



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2402 CARPET OR RUG MFG NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	9,491	0	2	0	0	0	263	263	0.000	0.028	0.028
2014	6,545	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	8,562	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	10,548	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	9,820	0	1	0	0	0	643	643	0.000	0.065	0.065
<b>MA Total:</b>	<b>44,966</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>906</b>	<b>906</b>	<b>0.000</b>	<b>0.020</b>	<b>0.020</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.039	.
(14) Massachusetts Credibility:	0.080	0.110	.
(15) Countrywide Pure Premium:	1.241	0.737	1.977
(16) Countrywide Indicated Relativity:	1.389	1.573	.
(17) Countrywide Credibility:	0.460	0.450	.
(18) Countrywide Lost-Time Claims:	463.00	.	.
(19) Pure Premium Underlying Present Rate:	1.018	0.542	1.560
(20) Relativity to Underlying Present Rate:	1.156	1.210	.
(21) Credibility to Underlying Relativity:	0.460	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.171	1.244	.
(24) Balanced Formula Relativity:	1.155	1.228	1.181

Class(es):		Effective: 7/1/2020							Manufacturing		
2413 TEXTILE - BLEACHING, DYEING, MERCERZNG, FINISH											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	278,287	0	39	0	427,637	0	135,925	563,562	1.537	0.488	2.025
2014	328,027	2	42	198,632	349,728	40,551	237,207	826,118	1.672	0.847	2.518
2015	297,053	3	49	659,705	421,820	329,441	187,758	1,598,725	3.641	1.741	5.382
2016	248,924	1	26	151,277	576,154	16,377	199,150	942,958	2.922	0.866	3.788
2017	113,159	0	16	0	241,741	0	73,952	315,694	2.136	0.654	2.790
<b>MA Total:</b>	<b>1,265,450</b>	<b>6</b>	<b>172</b>	<b>1,009,615</b>	<b>2,017,080</b>	<b>386,369</b>	<b>833,992</b>	<b>4,247,056</b>	<b>2.392</b>	<b>0.964</b>	<b>3.356</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.464	1.885	.
(14) Massachusetts Credibility:	0.340	0.500	.
(15) Countrywide Pure Premium:	1.041	0.687	1.727
(16) Countrywide Indicated Relativity:	1.166	1.466	.
(17) Countrywide Credibility:	0.330	0.250	.
(18) Countrywide Lost-Time Claims:	230.00	.	.
(19) Pure Premium Underlying Present Rate:	1.463	0.845	2.308
(20) Relativity to Underlying Present Rate:	1.662	1.886	.
(21) Credibility to Underlying Relativity:	0.330	0.250	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.771	1.781	.
(24) Balanced Formula Relativity:	1.748	1.757	1.751

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## Calculation of Class Relativities

Class(es): 2416 YARN OR THREAD DYEING OR FINISHING		Effective: 7/1/2020							Manufacturing		
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	16,577	1	4	90,857	101,750	24,677	32,904	250,187	11,619	3,474	15,093
2014	16,410	0	2	0	0	0	2,653	2,653	0,000	0,162	0,162
2015	14,775	1	3	778	476	8,164	16,889	26,307	0,085	1,696	1,781
2016	16,949	0	3	0	20,079	0	6,439	26,518	1,185	0,380	1,565
2017	20,981	0	7	0	4,346	0	10,823	15,169	0,207	0,516	0,723
<b>MA Total:</b>	<b>85,692</b>	<b>2</b>	<b>19</b>	<b>91,635</b>	<b>126,651</b>	<b>32,841</b>	<b>69,708</b>	<b>320,835</b>	<b>2,547</b>	<b>1,197</b>	<b>3,744</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.624	2.339	.
(14) Massachusetts Credibility:	0.110	0.140	.
(15) Countrywide Pure Premium:	0.559	0.422	0.981
(16) Countrywide Indicated Relativity:	0.626	0.902	.
(17) Countrywide Credibility:	0.260	0.270	.
(18) Countrywide Lost-Time Claims:	38,000	.	.
(19) Pure Premium Underlying Present Rate:	1.259	0.547	1.806
(20) Relativity to Underlying Present Rate:	1.430	1.222	.
(21) Credibility to Underlying Relativity:	0.630	0.590	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.352	1.292	.
(24) Balanced Formula Relativity:	1.335	1.275	1.314

Class(es): 2417 CLOTH PRINTING		Effective: 7/1/2020							Manufacturing		
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	54,585	0	0	0	0	0	0	0	0,000	0,000	0,000
2014	54,295	0	2	0	80,368	0	16,139	96,507	1,480	0,297	1,777
2015	59,268	0	1	0	327	0	940	1,266	0,006	0,016	0,021
2016	18,910	0	0	0	0	0	0	0	0,000	0,000	0,000
2017	2,061	0	0	0	0	0	0	0	0,000	0,000	0,000
<b>MA Total:</b>	<b>189,120</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>80,695</b>	<b>0</b>	<b>17,079</b>	<b>97,774</b>	<b>0,427</b>	<b>0,090</b>	<b>0,517</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.440	0.176	.
(14) Massachusetts Credibility:	0.160	0.190	.
(15) Countrywide Pure Premium:	0.479	0.278	0.756
(16) Countrywide Indicated Relativity:	0.536	0.593	.
(17) Countrywide Credibility:	0.260	0.270	.
(18) Countrywide Lost-Time Claims:	38,000	.	.
(19) Pure Premium Underlying Present Rate:	1.374	0.527	1.902
(20) Relativity to Underlying Present Rate:	1.561	1.177	.
(21) Credibility to Underlying Relativity:	0.580	0.540	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.115	0.829	.
(24) Balanced Formula Relativity:	1.101	0.818	1.003

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## Calculation of Class Relativities

Class(es): 2501 CLOTHING MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	887.702	5	106	360.414	320.595	95.131	257.121	1,033.262	0.767	0.397	1.164
2014	861.903	3	81	440.440	803.199	130.215	476.365	1,850.219	1.443	0.704	2.147
2015	913.151	2	109	281.164	698.441	41.640	336.702	1,357.948	1.073	0.414	1.487
2016	951.077	5	101	386.100	845.950	147.158	525.395	1,904.602	1.295	0.707	2.003
2017	969.531	2	99	70.221	592.583	33.590	307.417	1,003.810	0.684	0.352	1.035
<b>MA Total:</b>	<b>4,583,364</b>	<b>17</b>	<b>496</b>	<b>1,538,338</b>	<b>3,260,768</b>	<b>447,734</b>	<b>1,903,000</b>	<b>7,149,841</b>	<b>1.047</b>	<b>0.513</b>	<b>1.560</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.079	1.002	.
(14) Massachusetts Credibility:	0.470	0.630	.
(15) Countrywide Pure Premium:	0.974	0.591	1.565
(16) Countrywide Indicated Relativity:	1.091	1.263	.
(17) Countrywide Credibility:	0.270	0.190	.
(18) Countrywide Lost-Time Claims:	2642.0	.	.
(19) Pure Premium Underlying Present Rate:	0.893	0.418	1.311
(20) Relativity to Underlying Present Rate:	1.014	0.934	.
(21) Credibility to Underlying Relativity:	0.260	0.180	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.065	1.039	.
(24) Balanced Formula Relativity:	1.051	1.026	1.042

Class(es): 2503 DRESSMAKING OR TAILORING-CUSTOM EXCLUSIVELY		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	51.737	1	3	136.853	12.167	14.299	3.077	166.396	2.880	0.336	3.216
2014	62.087	0	2	0	4.149	0	1.620	5.769	0.067	0.026	0.093
2015	54.241	0	2	0	97.044	0	44.859	141.904	1.789	0.827	2.616
2016	49.561	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	42.449	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>260,075</b>	<b>1</b>	<b>7</b>	<b>136.853</b>	<b>113.361</b>	<b>14.299</b>	<b>49.556</b>	<b>314,069</b>	<b>0.962</b>	<b>0.246</b>	<b>1.208</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.991	0.480	.
(14) Massachusetts Credibility:	0.130	0.170	.
(15) Countrywide Pure Premium:	0.360	0.160	0.520
(16) Countrywide Indicated Relativity:	0.403	0.341	.
(17) Countrywide Credibility:	0.240	0.250	.
(18) Countrywide Lost-Time Claims:	32.000	.	.
(19) Pure Premium Underlying Present Rate:	0.661	0.272	0.932
(20) Relativity to Underlying Present Rate:	0.750	0.607	.
(21) Credibility to Underlying Relativity:	0.630	0.580	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.698	0.519	.
(24) Balanced Formula Relativity:	0.689	0.512	0.628

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2570 MATTRESS OR BOX SPRING MFG											
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	29,228	0	8	0	52,165	0	10,510	62,674	1,785	0,360	2,144
2014	33,050	0	4	0	0	0	3,396	3,396	0,000	0,103	0,103
2015	38,338	0	6	0	855	0	2,511	3,366	0,022	0,066	0,088
2016	40,003	0	1	0	0	0	150	150	0,000	0,004	0,004
2017	44,344	0	8	0	11,064	0	14,076	25,140	0,249	0,317	0,567
<b>MA Total:</b>	<b>184,963</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>64,083</b>	<b>0</b>	<b>30,643</b>	<b>94,726</b>	<b>0,346</b>	<b>0,166</b>	<b>0,512</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.357	0.324	.
(14) Massachusetts Credibility:	0.210	0.270	.
(15) Countrywide Pure Premium:	1.937	0.879	2.816
(16) Countrywide Indicated Relativity:	2.169	1.877	.
(17) Countrywide Credibility:	0.400	0.370	.
(18) Countrywide Lost-Time Claims:	564.00	.	.
(19) Pure Premium Underlying Present Rate:	2.902	1.196	4.098
(20) Relativity to Underlying Present Rate:	3.296	2.669	.
(21) Credibility to Underlying Relativity:	0.390	0.360	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.228	1.743	.
(24) Balanced Formula Relativity:	2.199	1.720	2,034

Class(es):		Effective: 7/1/2020							Manufacturing		
2576 CANVAS GOODS MFG NOC-SHOP											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	101,331	0	11	0	82,017	0	53,952	135,970	0,809	0,532	1,342
2014	111,278	1	11	2,350	43,470	3,224	60,685	109,729	0,412	0,574	0,986
2015	117,479	0	11	0	405,513	0	109,886	515,399	3,452	0,935	4,387
2016	131,538	0	14	0	27,920	0	24,220	52,141	0,212	0,184	0,396
2017	129,309	2	13	76,662	124,657	62,980	73,451	337,750	1,557	1,055	2,612
<b>MA Total:</b>	<b>590,935</b>	<b>3</b>	<b>60</b>	<b>79,011</b>	<b>683,577</b>	<b>66,205</b>	<b>322,195</b>	<b>1,150,988</b>	<b>1,290</b>	<b>0,657</b>	<b>1,948</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.329	1.285	.
(14) Massachusetts Credibility:	0.190	0.280	.
(15) Countrywide Pure Premium:	1.373	0.805	2.178
(16) Countrywide Indicated Relativity:	1.538	1.720	.
(17) Countrywide Credibility:	0.190	0.200	.
(18) Countrywide Lost-Time Claims:	17,000	.	.
(19) Pure Premium Underlying Present Rate:	0.754	0.425	1.179
(20) Relativity to Underlying Present Rate:	0.856	0.948	.
(21) Credibility to Underlying Relativity:	0.620	0.520	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.076	1.197	.
(24) Balanced Formula Relativity:	1.062	1.181	1,103

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
2585 LAUNDRY NOC & ROUTE SUPERVISORS, DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	672.991	6	76	311.795	280.170	191.497	210.551	994.013	0.880	0.597	1.477
2014	743.525	4	111	407.465	741.019	57.838	383.451	1,589.772	1.545	0.594	2.138
2015	782.288	6	115	769.776	334.050	583.714	285.125	1,972.665	1.411	1.111	2.522
2016	884.918	2	120	113.623	813.030	42.120	480.764	1,449.537	1.047	0.591	1.638
2017	828.115	4	120	364.976	597.807	309.629	586.921	1,859.333	1.163	1.083	2.245
<b>MA Total:</b>	<b>3,911.836</b>	<b>22</b>	<b>542</b>	<b>1,967.634</b>	<b>2,766.076</b>	<b>1,184.798</b>	<b>1,946.811</b>	<b>7,865.320</b>	<b>1.210</b>	<b>0.801</b>	<b>2.011</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.247	1.565	.
(14) Massachusetts Credibility:	0.520	0.730	.
(15) Countrywide Pure Premium:	1.585	0.782	2.367
(16) Countrywide Indicated Relativity:	1.775	1.671	.
(17) Countrywide Credibility:	0.240	0.140	.
(18) Countrywide Lost-Time Claims:	3491.0	.	.
(19) Pure Premium Underlying Present Rate:	1.333	0.694	2.026
(20) Relativity to Underlying Present Rate:	1.514	1.549	.
(21) Credibility to Underlying Relativity:	0.240	0.130	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.437	1.577	.
(24) Balanced Formula Relativity:	1.419	1.557	1.466

Class(es):		Effective: 7/1/2020							Manufacturing		
2586 CLEANING OR DYEING & ROUTE SUPERVISORS, DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	510.922	1	41	44.196	82.752	4.286	83.334	214.569	0.248	0.171	0.420
2014	492.235	0	55	0	375.186	0	179.897	555.084	0.762	0.365	1.128
2015	532.960	2	49	108.750	161.052	58.000	72.869	400.672	0.506	0.246	0.752
2016	538.249	3	41	310.374	867.317	73.914	880.622	2,132.227	2.188	1.773	3.961
2017	520.036	0	22	0	216.248	0	74.861	291.109	0.416	0.144	0.560
<b>MA Total:</b>	<b>2,594.402</b>	<b>6</b>	<b>208</b>	<b>463.320</b>	<b>1,702.555</b>	<b>136.201</b>	<b>1,291.584</b>	<b>3,593.660</b>	<b>0.835</b>	<b>0.550</b>	<b>1.385</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.860	1.076	.
(14) Massachusetts Credibility:	0.350	0.490	.
(15) Countrywide Pure Premium:	1.095	0.649	1.744
(16) Countrywide Indicated Relativity:	1.226	1.385	.
(17) Countrywide Credibility:	0.330	0.260	.
(18) Countrywide Lost-Time Claims:	263.00	.	.
(19) Pure Premium Underlying Present Rate:	0.785	0.397	1.183
(20) Relativity to Underlying Present Rate:	0.892	0.886	.
(21) Credibility to Underlying Relativity:	0.320	0.250	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.991	1.109	.
(24) Balanced Formula Relativity:	0.978	1.094	1.018

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
2587 TOWEL OR TOILET SUPPLY CO & RTE SUPERVISORS, DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	23,502	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	28,700	1	2	62,516	1,029	31,618	1,175	96,338	2,214	1,143	3,357
2015	27,234	0	1	0	0	0	276	276	0.000	0.010	0.010
2016	50,527	0	5	0	3,175	0	5,164	8,340	0.063	0.102	0.165
2017	37,788	0	1	0	0	0	1,325	1,325	0.000	0.035	0.035
<b>MA Total:</b>	<b>167,752</b>	<b>1</b>	<b>9</b>	<b>62,516</b>	<b>4,204</b>	<b>31,618</b>	<b>7,940</b>	<b>106,278</b>	<b>0.398</b>	<b>0.236</b>	<b>0.634</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.482	0.506	.
(14) Massachusetts Credibility:	0.160	0.220	.
(15) Countrywide Pure Premium:	0.962	0.397	1.359
(16) Countrywide Indicated Relativity:	1.201	0.861	.
(17) Countrywide Credibility:	0.370	0.390	.
(18) Countrywide Lost-Time Claims:	93.000	.	.
(19) Pure Premium Underlying Present Rate:	1.715	0.788	2.503
(20) Relativity to Underlying Present Rate:	2.285	1.911	.
(21) Credibility to Underlying Relativity:	0.470	0.390	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.595	1.192	.
(24) Balanced Formula Relativity:	1.584	1.193	1.443

Class(es):		Effective: 7/1/2020							Manufacturing		
2623 TANNING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,896	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	2,628	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	2,528	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	168	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	205	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>7,424</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.050	0.070	.
(15) Countrywide Pure Premium:	2.664	1.551	4.215
(16) Countrywide Indicated Relativity:	2.983	3.313	.
(17) Countrywide Credibility:	0.390	0.410	.
(18) Countrywide Lost-Time Claims:	108.00	.	.
(19) Pure Premium Underlying Present Rate:	2.295	1.082	3.377
(20) Relativity to Underlying Present Rate:	2.606	2.416	.
(21) Credibility to Underlying Relativity:	0.560	0.520	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.623	2.615	.
(24) Balanced Formula Relativity:	2.589	2.580	2.586

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## Calculation of Class Relativities

Class(es): 2651 SHOE STOCK MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	61.831	0	7	0	0	0	2.612	2.612	0.000	0.042	0.042
2014	61.617	0	4	0	1.546	0	6.445	7.991	0.025	0.105	0.130
2015	58.024	1	4	14.843	27.062	23.424	48.883	114.213	0.722	1.246	1.968
2016	55.673	0	2	0	7.068	0	15.099	22.167	0.127	0.271	0.398
2017	47.248	0	5	0	17.683	0	5.582	23.265	0.374	0.118	0.492
<b>MA Total:</b>	<b>284.392</b>	<b>1</b>	<b>22</b>	<b>14.843</b>	<b>53.359</b>	<b>23.424</b>	<b>78.621</b>	<b>170.248</b>	<b>0.240</b>	<b>0.359</b>	<b>0.599</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.247	0.701	.
(14) Massachusetts Credibility:	0.140	0.190	.
(15) Countrywide Pure Premium:	0.932	0.526	1.458
(16) Countrywide Indicated Relativity:	1.043	1.123	.
(17) Countrywide Credibility:	0.360	0.380	.
(18) Countrywide Lost-Time Claims:	90.000	.	.
(19) Pure Premium Underlying Present Rate:	0.691	0.318	1.008
(20) Relativity to Underlying Present Rate:	0.785	0.709	.
(21) Credibility to Underlying Relativity:	0.500	0.430	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.803	0.865	.
(24) Balanced Formula Relativity:	0.792	0.854	0.813

Class(es): 2660 BOOT OR SHOE MFG NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	44.048	0	1	0	1.867	0	8.601	10.468	0.042	0.195	0.238
2014	46.156	1	2	4.187	0	2.023	333	6.543	0.091	0.051	0.142
2015	44.779	0	4	0	110.569	0	33.295	143.865	2.469	0.744	3.213
2016	37.929	0	7	0	661	0	3.533	4.193	0.017	0.093	0.111
2017	52.045	0	3	0	2.209	0	3.551	5.760	0.042	0.068	0.111
<b>MA Total:</b>	<b>224.958</b>	<b>1</b>	<b>17</b>	<b>4.187</b>	<b>115.306</b>	<b>2.023</b>	<b>49.313</b>	<b>170.829</b>	<b>0.531</b>	<b>0.228</b>	<b>0.759</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.547	0.446	.
(14) Massachusetts Credibility:	0.130	0.200	.
(15) Countrywide Pure Premium:	1.294	0.787	2.082
(16) Countrywide Indicated Relativity:	1.449	1.681	.
(17) Countrywide Credibility:	0.440	0.400	.
(18) Countrywide Lost-Time Claims:	300.00	.	.
(19) Pure Premium Underlying Present Rate:	0.808	0.480	1.288
(20) Relativity to Underlying Present Rate:	0.917	1.072	.
(21) Credibility to Underlying Relativity:	0.430	0.400	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.103	1.190	.
(24) Balanced Formula Relativity:	1.089	1.175	1.119

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## Calculation of Class Relativities

Class(es): 2683 LUGGAGE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3,225	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	1,056	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	2,504	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	2,320	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	2,131	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>11,235</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.040	0.060	.
(15) Countrywide Pure Premium:	1.600	0.929	2.529
(16) Countrywide Indicated Relativity:	1.792	1.984	.
(17) Countrywide Credibility:	0.280	0.290	.
(18) Countrywide Lost-Time Claims:	46.000	.	.
(19) Pure Premium Underlying Present Rate:	0.745	0.483	1.228
(20) Relativity to Underlying Present Rate:	0.847	1.078	.
(21) Credibility to Underlying Relativity:	0.680	0.650	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.077	1.276	.
(24) Balanced Formula Relativity:	1.063	1.260	1.131

Class(es): 2688 LEATHER GOODS MFG NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	70,432	0	8	0	222	0	20,176	20,398	0.003	0.286	0.290
2014	81,800	1	7	58,851	89,138	2,421	166,699	317,109	1.809	2.067	3.877
2015	81,706	0	8	0	3,786	0	11,819	15,605	0.046	0.145	0.191
2016	78,560	1	2	103,525	3,537	37,198	1,177	145,437	1.363	0.488	1.851
2017	82,441	0	11	0	4,342	0	12,662	17,003	0.053	0.154	0.206
<b>MA Total:</b>	<b>394,938</b>	<b>2</b>	<b>36</b>	<b>162,376</b>	<b>101,025</b>	<b>39,619</b>	<b>212,532</b>	<b>515,552</b>	<b>0.667</b>	<b>0.638</b>	<b>1.305</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.687	1.248	.
(14) Massachusetts Credibility:	0.190	0.260	.
(15) Countrywide Pure Premium:	0.713	0.470	1.183
(16) Countrywide Indicated Relativity:	0.798	1.003	.
(17) Countrywide Credibility:	0.370	0.370	.
(18) Countrywide Lost-Time Claims:	96.000	.	.
(19) Pure Premium Underlying Present Rate:	1.039	0.500	1.539
(20) Relativity to Underlying Present Rate:	1.180	1.116	.
(21) Credibility to Underlying Relativity:	0.440	0.370	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.945	1.108	.
(24) Balanced Formula Relativity:	0.933	1.094	0.988



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
2702 LOGGING OR LUMBERING & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	30,199	0	8	0	278,902	0	197,733	476,635	9,235	6,548	15,783
2014	33,107	0	6	0	44,872	0	68,082	112,953	1,355	2,056	3,412
2015	42,026	0	8	0	79,492	0	41,132	120,624	1,891	0,979	2,870
2016	48,866	0	3	0	7,586	0	3,566	11,152	0,155	0,073	0,228
2017	44,984	0	3	0	31,189	0	35,928	67,117	0,693	0,799	1,492
<b>MA Total:</b>	<b>199,183</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>442,041</b>	<b>0</b>	<b>346,441</b>	<b>788,482</b>	<b>2,219</b>	<b>1,739</b>	<b>3,959</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.921	1.401	.
(14) Massachusetts Credibility:	0.290	0.410	.
(15) Countrywide Pure Premium:	9.263	4.688	13.951
(16) Countrywide Indicated Relativity:	4.049	4.013	.
(17) Countrywide Credibility:	0.360	0.300	.
(18) Countrywide Lost-Time Claims:	1644.0	.	.
(19) Pure Premium Underlying Present Rate:	6.449	3.242	9.691
(20) Relativity to Underlying Present Rate:	2.960	3.083	.
(21) Credibility to Underlying Relativity:	0.350	0.290	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	2.761	2.673	.
(24) Balanced Formula Relativity:	2.753	2.689	2.731

Class(es):		Effective: 7/1/2020							Manufacturing		
2710 SAWMILLS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	32,059	0	10	0	7,696	0	17,243	24,938	0,240	0,538	0,778
2014	30,445	1	8	2,333	16,643	3,288	18,514	40,777	0,623	0,716	1,339
2015	36,050	1	6	12,194	46,150	16,865	20,464	95,673	1,618	1,035	2,654
2016	32,162	0	9	0	141,325	0	75,598	216,923	4,394	2,351	6,745
2017	33,841	0	5	0	2,667	0	7,203	9,870	0,079	0,213	0,292
<b>MA Total:</b>	<b>164,556</b>	<b>2</b>	<b>38</b>	<b>14,527</b>	<b>214,480</b>	<b>20,153</b>	<b>139,020</b>	<b>388,181</b>	<b>1,392</b>	<b>0,967</b>	<b>2,359</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.434	1.891	.
(14) Massachusetts Credibility:	0.200	0.300	.
(15) Countrywide Pure Premium:	3.447	2.013	5.460
(16) Countrywide Indicated Relativity:	3.860	4.298	.
(17) Countrywide Credibility:	0.400	0.350	.
(18) Countrywide Lost-Time Claims:	2258.0	.	.
(19) Pure Premium Underlying Present Rate:	2.899	1.798	4.697
(20) Relativity to Underlying Present Rate:	3.293	4.014	.
(21) Credibility to Underlying Relativity:	0.400	0.350	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	3.148	3.477	.
(24) Balanced Formula Relativity:	3.107	3.431	3.219

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## Calculation of Class Relativities

Class(es): 2731 PLANING OR MOLDING MILL		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	35,328	0	8	0	0	0	4,298	4,298	0.000	0.122	0.122
2014	37,484	0	7	0	18,742	0	31,796	50,537	0.500	0.848	1.348
2015	39,539	0	7	0	29,380	0	23,273	52,653	0.743	0.589	1.332
2016	41,077	0	6	0	957	0	5,855	6,813	0.023	0.143	0.166
2017	41,093	0	8	0	24,956	0	19,478	44,433	0.607	0.474	1.081
<b>MA Total:</b>	<b>194,520</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>74,035</b>	<b>0</b>	<b>84,700</b>	<b>158,735</b>	<b>0.381</b>	<b>0.435</b>	<b>0.816</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.392	0.851	.
(14) Massachusetts Credibility:	0.160	0.230	.
(15) Countrywide Pure Premium:	1.734	1.096	2.829
(16) Countrywide Indicated Relativity:	1.941	2.340	.
(17) Countrywide Credibility:	0.420	0.390	.
(18) Countrywide Lost-Time Claims:	1410.0	.	.
(19) Pure Premium Underlying Present Rate:	1.356	0.802	2.158
(20) Relativity to Underlying Present Rate:	1.541	1.790	.
(21) Credibility to Underlying Relativity:	0.420	0.380	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.525	1.788	.
(24) Balanced Formula Relativity:	1.505	1.765	1.595

Class(es): 2747 COOPERAGE ASSEMBLY		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	1	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.000	0.000	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	3.009	2.765	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	2.680	1.253	3.934
(20) Relativity to Underlying Present Rate:	3.044	2.797	.
(21) Credibility to Underlying Relativity:	1.000	1.000	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	3.044	2.797	.
(24) Balanced Formula Relativity:	3.005	2.761	2.920

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## Calculation of Class Relativities

Class(es): 2790 PATTERN MAKING NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	35,372	0	4	0	201,555	0	35,540	237,094	5,698	1,005	6,703
2014	35,435	0	8	0	22,545	0	25,085	47,630	0,636	0,708	1,344
2015	39,867	0	3	0	1,249	0	4,666	5,915	0,031	0,117	0,148
2016	34,859	0	5	0	1,984	0	3,811	5,795	0,057	0,109	0,166
2017	49,425	0	11	0	31,741	0	23,563	55,304	0,642	0,477	1,119
<b>MA Total:</b>	<b>194,957</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>259,074</b>	<b>0</b>	<b>92,664</b>	<b>351,738</b>	<b>1.329</b>	<b>0.475</b>	<b>1.804</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.369	0.929	.
(14) Massachusetts Credibility:	0.120	0.170	.
(15) Countrywide Pure Premium:	0.737	0.403	1.141
(16) Countrywide Indicated Relativity:	0.826	0.861	.
(17) Countrywide Credibility:	0.440	0.420	.
(18) Countrywide Lost-Time Claims:	212.00	.	.
(19) Pure Premium Underlying Present Rate:	0.763	0.366	1.128
(20) Relativity to Underlying Present Rate:	0.866	0.816	.
(21) Credibility to Underlying Relativity:	0.440	0.410	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.909	0.854	.
(24) Balanced Formula Relativity:	0.897	0.843	0.878

Class(es): 2802 CARPENTRY-SHOP ONLY & DRIVERS		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,073,949	3	209	77,088	1,375,942	45,170	813,111	2,311,311	1,353	0,799	2,152
2014	1,078,139	1	169	15,341	699,249	8,139	642,136	1,364,865	0,663	0,603	1,266
2015	1,138,051	7	168	666,795	2,032,720	302,852	944,277	3,946,644	2,372	1,096	3,468
2016	1,197,062	6	173	346,068	1,415,759	259,184	892,002	2,913,013	1,472	0,962	2,433
2017	1,222,115	5	162	595,040	2,833,448	731,642	1,151,855	5,311,985	2,805	1,541	4,347
<b>MA Total:</b>	<b>5,709,316</b>	<b>22</b>	<b>881</b>	<b>1,700,332</b>	<b>8,357,118</b>	<b>1,346,987</b>	<b>4,443,381</b>	<b>15,847,818</b>	<b>1.762</b>	<b>1.014</b>	<b>2.776</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.815	1.982	.
(14) Massachusetts Credibility:	0.680	0.940	.
(15) Countrywide Pure Premium:	2.131	1.196	3.327
(16) Countrywide Indicated Relativity:	2.386	2.554	.
(17) Countrywide Credibility:	0.160	0.030	.
(18) Countrywide Lost-Time Claims:	5886.0	.	.
(19) Pure Premium Underlying Present Rate:	1.806	0.900	2.706
(20) Relativity to Underlying Present Rate:	2.051	2.009	.
(21) Credibility to Underlying Relativity:	0.160	0.030	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.944	2.000	.
(24) Balanced Formula Relativity:	1.919	1.974	1.938

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## Calculation of Class Relativities

Class(es): 2835 BRUSH OR BROOM ASSEMBLY		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	51.653	0	4	0	7.771	0	13.239	21.010	0.150	0.256	0.407
2014	46.309	0	5	0	209	0	5.738	5.947	0.005	0.124	0.128
2015	50.627	0	3	0	138	0	2.223	2.361	0.003	0.044	0.047
2016	49.397	1	4	4.048	0	25.618	2.534	32.201	0.082	0.570	0.652
2017	53.322	0	6	0	0	0	4.767	4.767	0.000	0.089	0.089
<b>MA Total:</b>	<b>251.309</b>	<b>1</b>	<b>22</b>	<b>4.048</b>	<b>8.118</b>	<b>25.618</b>	<b>28.502</b>	<b>66.286</b>	<b>0.048</b>	<b>0.215</b>	<b>0.264</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.050	0.421	.
(14) Massachusetts Credibility:	0.140	0.200	.
(15) Countrywide Pure Premium:	0.669	0.388	1.056
(16) Countrywide Indicated Relativity:	0.749	0.828	.
(17) Countrywide Credibility:	0.310	0.330	.
(18) Countrywide Lost-Time Claims:	63.000	.	.
(19) Pure Premium Underlying Present Rate:	0.805	0.439	1.244
(20) Relativity to Underlying Present Rate:	0.914	0.981	.
(21) Credibility to Underlying Relativity:	0.550	0.470	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.742	0.818	.
(24) Balanced Formula Relativity:	0.732	0.808	0.758

Class(es): 2836 BRUSH OR BROOM MFG NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5.613	0	3	0	41	0	1.061	1.102	0.007	0.189	0.196
2014	5.804	0	1	0	230	0	632	862	0.040	0.109	0.149
2015	6.979	0	1	0	0	0	90	90	0.000	0.013	0.013
2016	5.718	0	1	0	10.692	0	954	11.647	1.870	0.167	2.037
2017	7.209	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>31.323</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>10.964</b>	<b>0</b>	<b>2.737</b>	<b>13.701</b>	<b>0.350</b>	<b>0.087</b>	<b>0.437</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.361	0.171	.
(14) Massachusetts Credibility:	0.060	0.090	.
(15) Countrywide Pure Premium:	1.410	0.697	2.108
(16) Countrywide Indicated Relativity:	1.579	1.489	.
(17) Countrywide Credibility:	0.290	0.310	.
(18) Countrywide Lost-Time Claims:	53.000	.	.
(19) Pure Premium Underlying Present Rate:	0.880	0.429	1.309
(20) Relativity to Underlying Present Rate:	0.999	0.957	.
(21) Credibility to Underlying Relativity:	0.650	0.600	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.129	1.051	.
(24) Balanced Formula Relativity:	1.114	1.038	1.088

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## Calculation of Class Relativities

Class(es): 2841 WOODENWARE MFG NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	44,738	0	13	0	135,757	0	56,396	192,153	3,035	1,261	4,295
2014	49,723	0	11	0	64,852	0	18,123	82,974	1,304	0,364	1,669
2015	42,775	0	6	0	25,892	0	27,200	53,092	0,605	0,636	1,241
2016	34,041	0	1	0	0	0	160	160	0,000	0,005	0,005
2017	32,136	1	0	177,095	0	219,068	0	396,163	5,511	6,817	12,328
<b>MA Total:</b>	<b>203,413</b>	<b>1</b>	<b>31</b>	<b>177,095</b>	<b>226,500</b>	<b>219,068</b>	<b>101,879</b>	<b>724,542</b>	<b>1,984</b>	<b>1,578</b>	<b>3,562</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.044	3.084	.
(14) Massachusetts Credibility:	0.170	0.230	.
(15) Countrywide Pure Premium:	1.636	1.196	2.831
(16) Countrywide Indicated Relativity:	1.832	2.553	.
(17) Countrywide Credibility:	0.420	0.390	.
(18) Countrywide Lost-Time Claims:	178.00	.	.
(19) Pure Premium Underlying Present Rate:	1.634	0.715	2.349
(20) Relativity to Underlying Present Rate:	1.856	1.596	.
(21) Credibility to Underlying Relativity:	0.410	0.380	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.878	2.311	.
(24) Balanced Formula Relativity:	1.853	2.281	2.001

Class(es): 2883 FURNITURE MFG-WOOD-NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	450,967	1	77	28,753	863,419	3,408	424,130	1,319,710	1,978	0,948	2,926
2014	509,563	5	68	833,667	597,914	73,870	288,215	1,793,665	2,809	0,711	3,520
2015	546,445	3	67	390,458	241,030	76,109	330,041	1,037,638	1,156	0,743	1,899
2016	555,315	2	103	585,985	454,122	124,859	253,491	1,418,457	1,873	0,681	2,554
2017	537,493	3	80	571,564	463,907	396,205	309,593	1,741,268	1,926	1,313	3,240
<b>MA Total:</b>	<b>2,599,783</b>	<b>14</b>	<b>395</b>	<b>2,410,427</b>	<b>2,620,391</b>	<b>674,451</b>	<b>1,605,470</b>	<b>7,310,738</b>	<b>1,935</b>	<b>0,877</b>	<b>2,812</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.993	1.714	.
(14) Massachusetts Credibility:	0.460	0.610	.
(15) Countrywide Pure Premium:	1.468	0.806	2.274
(16) Countrywide Indicated Relativity:	1.644	1.722	.
(17) Countrywide Credibility:	0.270	0.200	.
(18) Countrywide Lost-Time Claims:	5235.0	.	.
(19) Pure Premium Underlying Present Rate:	1.468	0.668	2.136
(20) Relativity to Underlying Present Rate:	1.667	1.491	.
(21) Credibility to Underlying Relativity:	0.270	0.190	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.811	1.673	.
(24) Balanced Formula Relativity:	1.787	1.651	1.740

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## Calculation of Class Relativities

Class(es): 2923 PIANO MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	52,244	0	7	0	62,781	0	5,982	68,763	1,202	0.114	1.316
2014	52,592	0	2	0	0	0	2,110	2,110	0.000	0.040	0.040
2015	51,404	1	2	182,467	0	77,991	649	261,108	3,550	1.530	5.079
2016	58,472	0	1	0	0	0	431	431	0.000	0.007	0.007
2017	58,733	0	4	0	0	0	1,406	1,406	0.000	0.024	0.024
<b>MA Total:</b>	<b>273,446</b>	<b>1</b>	<b>16</b>	<b>182,467</b>	<b>62,781</b>	<b>77,991</b>	<b>10,577</b>	<b>333,817</b>	<b>0.897</b>	<b>0.324</b>	<b>1.221</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.924	0.633	.
(14) Massachusetts Credibility:	0.140	0.200	.
(15) Countrywide Pure Premium:	0.776	0.439	1.215
(16) Countrywide Indicated Relativity:	0.869	0.937	.
(17) Countrywide Credibility:	0.360	0.380	.
(18) Countrywide Lost-Time Claims:	89,000	.	.
(19) Pure Premium Underlying Present Rate:	0.764	0.386	1.150
(20) Relativity to Underlying Present Rate:	0.868	0.862	.
(21) Credibility to Underlying Relativity:	0.500	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.876	0.845	.
(24) Balanced Formula Relativity:	0.865	0.834	0.854

Class(es): 2942 PENCIL, PENHOLDER OR CRAYON MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	953,373	1	54	9,618	525,282	340	514,813	1,050,053	0.561	0.540	1.101
2014	145,227	0	8	0	17,477	0	17,466	34,943	0.120	0.120	0.241
2015	140,412	0	9	0	0	0	7,089	7,089	0.000	0.050	0.050
2016	134,148	0	12	0	220,026	0	65,764	285,790	1.640	0.490	2.130
2017	160,530	0	18	0	314,174	0	121,706	435,880	1.957	0.758	2.715
<b>MA Total:</b>	<b>1,533,690</b>	<b>1</b>	<b>101</b>	<b>9,618</b>	<b>1,076,959</b>	<b>340</b>	<b>726,838</b>	<b>1,813,755</b>	<b>0.708</b>	<b>0.474</b>	<b>1.183</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.730	0.927	.
(14) Massachusetts Credibility:	0.300	0.420	.
(15) Countrywide Pure Premium:	0.815	0.496	1.312
(16) Countrywide Indicated Relativity:	0.913	1.060	.
(17) Countrywide Credibility:	0.350	0.290	.
(18) Countrywide Lost-Time Claims:	458,00	.	.
(19) Pure Premium Underlying Present Rate:	0.846	0.450	1.296
(20) Relativity to Underlying Present Rate:	0.961	1.004	.
(21) Credibility to Underlying Relativity:	0.350	0.290	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.875	0.988	.
(24) Balanced Formula Relativity:	0.863	0.975	0.902

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3018 IRON OR STEEL: MFG: ROLLING MILL & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	206,122	0	19	0	100,286	0	71,393	171,679	0.487	0.346	0.833
2014	185,303	1	17	1,828	123,351	11,327	57,029	193,535	0.676	0.369	1.044
2015	171,105	0	6	0	192,985	0	53,770	246,755	1.128	0.314	1.442
2016	209,784	1	31	159,409	373,225	51,384	191,791	775,809	2.539	1.159	3.698
2017	218,380	1	18	169,965	117,084	78,263	96,221	461,534	1.314	0.799	2.113
<b>MA Total:</b>	<b>990,694</b>	<b>3</b>	<b>91</b>	<b>331,202</b>	<b>906,931</b>	<b>140,974</b>	<b>470,206</b>	<b>1,849,313</b>	<b>1.250</b>	<b>0.617</b>	<b>1.867</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.287	1.206	.
(14) Massachusetts Credibility:	0.290	0.380	.
(15) Countrywide Pure Premium:	1.280	0.654	1.935
(16) Countrywide Indicated Relativity:	1.434	1.398	.
(17) Countrywide Credibility:	0.360	0.310	.
(18) Countrywide Lost-Time Claims:	481.00	.	.
(19) Pure Premium Underlying Present Rate:	1.283	0.544	1.828
(20) Relativity to Underlying Present Rate:	1.458	1.215	.
(21) Credibility to Underlying Relativity:	0.350	0.310	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.400	1.268	.
(24) Balanced Formula Relativity:	1.381	1.251	1.337

Class(es):		Effective: 7/1/2020							Manufacturing		
3022 PIPE OR TUBE MFG NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	10,326	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	17,051	1	4	16,639	16,954	33,969	27,776	95,338	1.970	3.621	5.591
2015	18,656	0	6	0	21,689	0	14,779	36,468	1.163	0.792	1.955
2016	8,139	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	5,211	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>59,384</b>	<b>1</b>	<b>10</b>	<b>16,639</b>	<b>38,643</b>	<b>33,969</b>	<b>42,556</b>	<b>131,806</b>	<b>0.931</b>	<b>1.289</b>	<b>2.220</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.959	2.519	.
(14) Massachusetts Credibility:	0.100	0.150	.
(15) Countrywide Pure Premium:	1.774	0.863	2.636
(16) Countrywide Indicated Relativity:	1.986	1.842	.
(17) Countrywide Credibility:	0.450	0.430	.
(18) Countrywide Lost-Time Claims:	493.00	.	.
(19) Pure Premium Underlying Present Rate:	1.598	0.861	2.459
(20) Relativity to Underlying Present Rate:	1.815	1.922	.
(21) Credibility to Underlying Relativity:	0.450	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.806	1.977	.
(24) Balanced Formula Relativity:	1.783	1.951	1.841

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3027 ROLLING MILL NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	218	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	3,641	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	10,658	1	3	30,139	5,061	4,975	10,650	50,824	3,302	1,486	4,768
2016	9,601	0	1	0	0	0	660	660	0.000	0.069	0.069
2017	7,162	0	1	0	0	0	450	450	0.000	0.063	0.063
<b>MA Total:</b>	<b>31,281</b>	<b>1</b>	<b>5</b>	<b>30,139</b>	<b>5,061</b>	<b>4,975</b>	<b>11,760</b>	<b>51,934</b>	<b>1.125</b>	<b>0.535</b>	<b>1.660</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.159	1.046	.
(14) Massachusetts Credibility:	0.090	0.150	.
(15) Countrywide Pure Premium:	1.016	0.567	1.584
(16) Countrywide Indicated Relativity:	1.138	1.211	.
(17) Countrywide Credibility:	0.460	0.430	.
(18) Countrywide Lost-Time Claims:	417.00	.	.
(19) Pure Premium Underlying Present Rate:	1.976	1.574	3.550
(20) Relativity to Underlying Present Rate:	2.244	3.514	.
(21) Credibility to Underlying Relativity:	0.450	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.638	2.153	.
(24) Balanced Formula Relativity:	1.616	2.125	1.792

Class(es):		Effective: 7/1/2020							Manufacturing		
3028 PIPE OR TUBE MFG - IRON OR STEEL & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	4,653	0	9	0	21,851	0	23,004	44,856	4,696	4,944	9,640
2014	5,315	0	1	0	8,045	0	8,634	16,679	1,514	1,625	3,138
2015	24,770	0	9	0	8,226	0	15,342	23,567	0.332	0.619	0.951
2016	6,253	0	5	0	9,343	0	5,601	14,944	1,494	0,896	2,390
2017	5,763	0	3	0	13,922	0	5,406	19,329	2,416	0,938	3,354
<b>MA Total:</b>	<b>46,754</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>61,388</b>	<b>0</b>	<b>57,986</b>	<b>119,374</b>	<b>1.313</b>	<b>1.240</b>	<b>2.553</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.353	2.424	.
(14) Massachusetts Credibility:	0.090	0.120	.
(15) Countrywide Pure Premium:	1.410	0.699	2.109
(16) Countrywide Indicated Relativity:	1.579	1.492	.
(17) Countrywide Credibility:	0.460	0.440	.
(18) Countrywide Lost-Time Claims:	1105.0	.	.
(19) Pure Premium Underlying Present Rate:	1.233	0.687	1.919
(20) Relativity to Underlying Present Rate:	1.400	1.533	.
(21) Credibility to Underlying Relativity:	0.450	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.478	1.622	.
(24) Balanced Formula Relativity:	1.459	1.601	1.508



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3030 IRON OR STEEL: FABRICATION: IRON/STEEL WORK-SHOP-STRUCT & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	115.752	0	33	0	1,058,550	0	243,537	1,302,087	9,145	2,104	11,249
2014	117,891	0	11	0	13,700	0	18,222	31,921	0,116	0,155	0,271
2015	124,152	0	25	0	249,137	0	176,606	425,742	2,007	1,422	3,429
2016	125,621	1	21	166,256	42,938	258,247	115,674	583,115	1,665	2,977	4,642
2017	120,391	1	19	64,025	558,092	35,864	223,628	881,609	5,167	2,155	7,323
<b>MA Total:</b>	<b>603,807</b>	<b>2</b>	<b>109</b>	<b>230,280</b>	<b>1,922,416</b>	<b>294,111</b>	<b>777,667</b>	<b>3,224,475</b>	<b>3,565</b>	<b>1,775</b>	<b>5,340</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.673	3.469	.
(14) Massachusetts Credibility:	0.330	0.440	.
(15) Countrywide Pure Premium:	2.604	1.300	3.903
(16) Countrywide Indicated Relativity:	2.916	2.775	.
(17) Countrywide Credibility:	0.340	0.280	.
(18) Countrywide Lost-Time Claims:	2665.0	.	.
(19) Pure Premium Underlying Present Rate:	2.774	1.264	4.038
(20) Relativity to Underlying Present Rate:	3.151	2.821	.
(21) Credibility to Underlying Relativity:	0.330	0.280	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	3.243	3.093	.
(24) Balanced Formula Relativity:	3.201	3.053	3.150

Class(es):		Effective: 7/1/2020							Manufacturing		
3040 IRON OR STEEL: FABRICATION: IRON WORKS-SHOP-ORNAMENTAL & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	168,205	1	27	13,307	24,777	850	29,521	68,456	0,226	0,181	0,407
2014	184,645	1	31	188,421	101,883	20,077	52,072	362,452	1,572	0,391	1,963
2015	196,068	2	21	568,985	694,916	89,418	168,991	1,522,310	6,446	1,318	7,764
2016	217,526	2	40	843,801	147,100	101,486	199,562	1,291,949	4,555	1,384	5,939
2017	239,531	0	38	0	333,471	0	163,849	497,320	1,392	0,684	2,076
<b>MA Total:</b>	<b>1,005,975</b>	<b>6</b>	<b>157</b>	<b>1,614,514</b>	<b>1,302,146</b>	<b>211,831</b>	<b>613,995</b>	<b>3,742,486</b>	<b>2,899</b>	<b>0,821</b>	<b>3,720</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.987	1.604	.
(14) Massachusetts Credibility:	0.380	0.480	.
(15) Countrywide Pure Premium:	2.304	1.203	3.507
(16) Countrywide Indicated Relativity:	2.580	2.570	.
(17) Countrywide Credibility:	0.310	0.260	.
(18) Countrywide Lost-Time Claims:	1564.0	.	.
(19) Pure Premium Underlying Present Rate:	2.411	0.928	3.339
(20) Relativity to Underlying Present Rate:	2.738	2.072	.
(21) Credibility to Underlying Relativity:	0.310	0.260	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.784	1.977	.
(24) Balanced Formula Relativity:	2.747	1.951	2.472

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing			
3041 IRON OR STEEL: FABRICATION: IRON WORKS-SHP-DEC/ART &FNDRS,DR												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	38,530	0	1	0	0	0	1,925	1,925	0.000	0.050	0.050	
2014	50,510	0	4	0	0	0	2,533	2,533	0.000	0.050	0.050	
2015	40,557	0	3	0	0	0	1,370	1,370	0.000	0.034	0.034	
2016	43,286	0	2	0	5,288	0	2,715	8,002	0.122	0.063	0.185	
2017	50,813	0	6	0	1,373	0	6,296	7,669	0.027	0.124	0.151	
<b>MA Total:</b>	<b>223,697</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>6,660</b>	<b>0</b>	<b>14,840</b>	<b>21,500</b>	<b>0.030</b>	<b>0.066</b>	<b>0.096</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.031	0.130	.
(14) Massachusetts Credibility:	0.170	0.270	.
(15) Countrywide Pure Premium:	1.582	0.824	2.406
(16) Countrywide Indicated Relativity:	1.771	1.760	.
(17) Countrywide Credibility:	0.420	0.370	.
(18) Countrywide Lost-Time Claims:	204.00	.	.
(19) Pure Premium Underlying Present Rate:	1.481	0.977	2.457
(20) Relativity to Underlying Present Rate:	1.682	2.180	.
(21) Credibility to Underlying Relativity:	0.410	0.360	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.439	1.471	.
(24) Balanced Formula Relativity:	1.420	1.452	1.431

Class(es):		Effective: 7/1/2020							Manufacturing			
3042 ELEVATOR OR ESCALATOR MFG												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	7,294	0	2	0	1,981	0	40,013	41,994	0.272	5.486	5.757	
2014	6,749	0	2	0	0	0	761	761	0.000	0.113	0.113	
2015	7,198	0	2	0	0	0	1,924	1,924	0.000	0.267	0.267	
2016	7,941	0	0	0	0	0	0	0	0.000	0.000	0.000	
2017	8,752	0	2	0	0	0	3,075	3,075	0.000	0.351	0.351	
<b>MA Total:</b>	<b>37,934</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1,981</b>	<b>0</b>	<b>45,773</b>	<b>47,754</b>	<b>0.052</b>	<b>1.207</b>	<b>1.259</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.054	2.358	.
(14) Massachusetts Credibility:	0.110	0.140	.
(15) Countrywide Pure Premium:	1.885	1.041	2.926
(16) Countrywide Indicated Relativity:	2.111	2.223	.
(17) Countrywide Credibility:	0.450	0.430	.
(18) Countrywide Lost-Time Claims:	195.00	.	.
(19) Pure Premium Underlying Present Rate:	2.851	1.110	3.962
(20) Relativity to Underlying Present Rate:	3.239	2.478	.
(21) Credibility to Underlying Relativity:	0.440	0.430	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.381	2.352	.
(24) Balanced Formula Relativity:	2.350	2.321	2.340

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3066 SHEET METAL WORK - SHOP											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	932,349	3	143	159,116	601,369	52,977	722,515	1,535,978	0.816	0.832	1.647
2014	920,719	4	139	173,979	578,664	43,337	449,276	1,245,256	0.817	0.535	1.352
2015	950,801	3	151	207,247	560,899	56,036	383,955	1,208,136	0.808	0.463	1.271
2016	943,850	2	134	109,068	778,114	74,901	475,097	1,437,180	0.940	0.583	1.523
2017	987,743	4	129	406,471	769,672	142,126	480,876	1,799,145	1.191	0.631	1.821
<b>MA Total:</b>	<b>4,735,462</b>	<b>16</b>	<b>696</b>	<b>1,055,881</b>	<b>3,288,719</b>	<b>369,377</b>	<b>2,511,719</b>	<b>7,225,696</b>	<b>0.917</b>	<b>0.608</b>	<b>1.526</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.945	1.189	.
(14) Massachusetts Credibility:	0.500	0.730	.
(15) Countrywide Pure Premium:	1.548	0.811	2.359
(16) Countrywide Indicated Relativity:	1.734	1.732	.
(17) Countrywide Credibility:	0.250	0.140	.
(18) Countrywide Lost-Time Claims:	981.00	.	.
(19) Pure Premium Underlying Present Rate:	1.023	0.573	1.595
(20) Relativity to Underlying Present Rate:	1.162	1.278	.
(21) Credibility to Underlying Relativity:	0.250	0.130	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.196	1.277	.
(24) Balanced Formula Relativity:	1.181	1.260	1.208

Class(es):		Effective: 7/1/2020							Manufacturing		
3076 FIREPROOF EQUIPMENT MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	303,824	0	33	0	249,457	0	112,244	361,701	0.821	0.369	1.190
2014	364,179	0	34	0	21,950	0	55,279	77,229	0.060	0.152	0.212
2015	281,707	3	27	215,394	489,609	93,517	143,629	942,149	2.503	0.842	3.344
2016	270,095	0	47	0	171,377	0	94,617	265,994	0.635	0.350	0.985
2017	293,702	2	31	52,703	26,271	18,865	39,706	137,545	0.269	0.199	0.468
<b>MA Total:</b>	<b>1,513,507</b>	<b>5</b>	<b>172</b>	<b>268,097</b>	<b>2,106,822</b>	<b>112,381</b>	<b>445,475</b>	<b>1,784,617</b>	<b>0.811</b>	<b>0.369</b>	<b>1.179</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.835	0.720	.
(14) Massachusetts Credibility:	0.320	0.440	.
(15) Countrywide Pure Premium:	1.247	0.709	1.956
(16) Countrywide Indicated Relativity:	1.396	1.514	.
(17) Countrywide Credibility:	0.340	0.280	.
(18) Countrywide Lost-Time Claims:	8773.0	.	.
(19) Pure Premium Underlying Present Rate:	1.010	0.516	1.525
(20) Relativity to Underlying Present Rate:	1.147	1.151	.
(21) Credibility to Underlying Relativity:	0.340	0.280	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.132	1.063	.
(24) Balanced Formula Relativity:	1.117	1.049	1.094

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3081 FOUNDRY-FERROUS-NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	16,664	0	4	0	11,192	0	146,236	157,428	0.672	8,775	9,447
2014	18,779	2	4	150,606	55	50,738	3,360	204,759	8.023	2,881	10,904
2015	15,003	0	4	0	7,541	0	36,930	44,471	0.503	2,461	2,964
2016	16,294	0	2	0	0	0	428	428	0.000	0.026	0.026
2017	19,902	0	5	0	1,948	0	9,975	11,924	0.098	0.501	0.599
<b>MA Total:</b>	<b>86,642</b>	<b>2</b>	<b>19</b>	<b>150,606</b>	<b>20,737</b>	<b>50,738</b>	<b>196,929</b>	<b>419,010</b>	<b>1.978</b>	<b>2,859</b>	<b>4,836</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.037	5.587	.
(14) Massachusetts Credibility:	0.140	0.200	.
(15) Countrywide Pure Premium:	2.200	1.098	3.298
(16) Countrywide Indicated Relativity:	2.463	2.345	.
(17) Countrywide Credibility:	0.430	0.400	.
(18) Countrywide Lost-Time Claims:	2042.0	.	.
(19) Pure Premium Underlying Present Rate:	2.120	1.256	3.377
(20) Relativity to Underlying Present Rate:	2.408	2.804	.
(21) Credibility to Underlying Relativity:	0.430	0.400	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.380	3.177	.
(24) Balanced Formula Relativity:	2.349	3.135	2.620

Class(es):		Effective: 7/1/2020							Manufacturing		
3085 FOUNDRY-NON FERROUS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	114,230	4	24	603,045	44,662	130,071	44,927	822,705	5.670	1,532	7,202
2014	116,847	0	23	0	146,484	0	62,689	209,173	1.254	0.536	1,790
2015	112,511	2	10	447,440	208,233	213,078	57,095	925,844	5.828	2,401	8,229
2016	109,493	0	18	0	17,944	0	41,806	59,750	0.164	0.382	0,546
2017	114,568	0	31	0	261,050	0	129,437	390,487	2.279	1.130	3,408
<b>MA Total:</b>	<b>567,650</b>	<b>6</b>	<b>106</b>	<b>1,050,485</b>	<b>678,373</b>	<b>343,149</b>	<b>335,953</b>	<b>2,407,959</b>	<b>3.046</b>	<b>1.196</b>	<b>4,242</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.137	2.338	.
(14) Massachusetts Credibility:	0.290	0.410	.
(15) Countrywide Pure Premium:	1.656	0.988	2.644
(16) Countrywide Indicated Relativity:	1.855	2.110	.
(17) Countrywide Credibility:	0.360	0.300	.
(18) Countrywide Lost-Time Claims:	852.00	.	.
(19) Pure Premium Underlying Present Rate:	2.189	1.107	3.296
(20) Relativity to Underlying Present Rate:	2.486	2.470	.
(21) Credibility to Underlying Relativity:	0.350	0.290	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.448	2.308	.
(24) Balanced Formula Relativity:	2.416	2.278	2.368

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3110 FORGING WORK - DROP OR MACHINE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	14,727	0	11	0	48,353	0	38,899	87,253	3,283	2,641	5,925
2014	14,155	0	5	0	29,167	0	11,265	40,432	2,061	0,796	2,856
2015	11,186	0	6	0	134,511	0	87,391	221,902	12,025	7,813	19,838
2016	20,193	1	12	80,471	147,951	35,893	69,707	334,022	11,312	5,230	16,542
2017	17,397	0	9	0	128,054	0	47,581	175,635	7,361	2,735	10,096
<b>MA Total:</b>	<b>77,657</b>	<b>1</b>	<b>43</b>	<b>80,471</b>	<b>488,036</b>	<b>35,893</b>	<b>254,843</b>	<b>859,243</b>	<b>7,321</b>	<b>3,744</b>	<b>11,065</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	7.541	7.317	.
(14) Massachusetts Credibility:	0.170	0.240	.
(15) Countrywide Pure Premium:	2.324	1.061	3.385
(16) Countrywide Indicated Relativity:	2.602	2.266	.
(17) Countrywide Credibility:	0.420	0.380	.
(18) Countrywide Lost-Time Claims:	442.00	.	.
(19) Pure Premium Underlying Present Rate:	3.995	2.155	6.149
(20) Relativity to Underlying Present Rate:	4.537	4.810	.
(21) Credibility to Underlying Relativity:	0.410	0.380	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	4.235	4.445	.
(24) Balanced Formula Relativity:	4.180	4.387	4.251

Class(es):		Effective: 7/1/2020							Manufacturing		
3111 BLACKSMITH											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	60,460	0	10	0	659	0	5,040	5,698	0.011	0.083	0.094
2014	66,537	2	12	160,283	15,419	31,473	19,790	226,966	2,641	0,770	3,411
2015	71,625	0	9	0	7,773	0	34,089	41,863	0.109	0,476	0.584
2016	79,120	0	7	0	7,978	0	26,715	34,694	0.101	0,338	0.438
2017	81,346	0	7	0	59,713	0	22,294	82,007	0.734	0,274	1,008
<b>MA Total:</b>	<b>359,089</b>	<b>2</b>	<b>45</b>	<b>160,283</b>	<b>91,543</b>	<b>31,473</b>	<b>107,929</b>	<b>391,228</b>	<b>0.701</b>	<b>0.388</b>	<b>1.090</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.722	0.759	.
(14) Massachusetts Credibility:	0.170	0.240	.
(15) Countrywide Pure Premium:	1.051	0.462	1.513
(16) Countrywide Indicated Relativity:	1.177	0.986	.
(17) Countrywide Credibility:	0.420	0.380	.
(18) Countrywide Lost-Time Claims:	240.00	.	.
(19) Pure Premium Underlying Present Rate:	0.863	0.470	1.333
(20) Relativity to Underlying Present Rate:	0.980	1.050	.
(21) Credibility to Underlying Relativity:	0.410	0.380	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.019	0.955	.
(24) Balanced Formula Relativity:	1.006	0.943	0.984

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3113 TOOL MFG-NOT DROP OR MACHINE FORGED-NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	794,761	0	81	0	344,203	0	244,720	588,923	0.433	0.308	0.741
2014	848,311	5	65	499,342	147,662	127,809	172,901	947,714	0.763	0.354	1.117
2015	882,763	5	69	756,325	664,695	282,953	390,776	2,094,749	1.610	0.763	2.373
2016	805,945	1	87	95,906	445,447	22,477	276,066	839,896	0.672	0.370	1.042
2017	749,898	2	64	80,121	450,955	91,816	279,288	902,180	0.708	0.495	1.203
<b>MA Total:</b>	<b>4,081,679</b>	<b>13</b>	<b>366</b>	<b>1,431,694</b>	<b>2,052,963</b>	<b>525,054</b>	<b>1,363,751</b>	<b>5,373,462</b>	<b>0.854</b>	<b>0.463</b>	<b>1.316</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.879	0.904	.
(14) Massachusetts Credibility:	0.400	0.560	.
(15) Countrywide Pure Premium:	0.767	0.399	1.166
(16) Countrywide Indicated Relativity:	0.859	0.851	.
(17) Countrywide Credibility:	0.300	0.220	.
(18) Countrywide Lost-Time Claims:	1631.0	.	.
(19) Pure Premium Underlying Present Rate:	0.669	0.346	1.015
(20) Relativity to Underlying Present Rate:	0.760	0.773	.
(21) Credibility to Underlying Relativity:	0.300	0.220	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.838	0.864	.
(24) Balanced Formula Relativity:	0.827	0.852	0.836

Class(es):		Effective: 7/1/2020							Manufacturing		
3114 TOOL MFG-DROP OR MACHINE FORGED-NOC: MACHINING OR FINISHING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	34,544	1	9	2,855	341,795	2,645	87,961	435,256	9.977	2.623	12.600
2014	34,349	1	7	16,622	139,605	19,807	50,305	226,340	4.548	2.041	6.590
2015	38,343	0	13	0	3,723	0	12,569	16,292	0.097	0.328	0.425
2016	41,619	1	9	96,543	385	11,157	6,563	114,648	2.329	0.426	2.755
2017	30,261	0	9	0	1,548	0	6,541	8,089	0.051	0.216	0.267
<b>MA Total:</b>	<b>179,116</b>	<b>3</b>	<b>47</b>	<b>116,021</b>	<b>487,056</b>	<b>33,609</b>	<b>163,940</b>	<b>800,625</b>	<b>3.367</b>	<b>1.103</b>	<b>4.470</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.468	2.156	.
(14) Massachusetts Credibility:	0.140	0.210	.
(15) Countrywide Pure Premium:	1.351	0.721	2.072
(16) Countrywide Indicated Relativity:	1.513	1.540	.
(17) Countrywide Credibility:	0.430	0.400	.
(18) Countrywide Lost-Time Claims:	258.00	.	.
(19) Pure Premium Underlying Present Rate:	1.131	0.668	1.799
(20) Relativity to Underlying Present Rate:	1.284	1.491	.
(21) Credibility to Underlying Relativity:	0.430	0.390	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.688	1.650	.
(24) Balanced Formula Relativity:	1.666	1.629	1.653

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## Calculation of Class Relativities

Class(es): 3118 SAW MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	326.043	0	22	0	255.267	0	51.585	306.852	0.783	0.158	0.941
2014	329.012	1	20	311.672	312.211	32.500	72.655	729.038	1.896	0.320	2.216
2015	332.270	0	15	0	281.159	0	116.125	397.285	0.846	0.349	1.196
2016	262.897	0	17	0	73.168	0	60.768	133.935	0.278	0.231	0.509
2017	90.032	0	9	0	119.879	0	139.313	259.191	1.332	1.547	2.879
<b>MA Total:</b>	<b>1,340,254</b>	<b>1</b>	<b>83</b>	<b>311,672</b>	<b>1,041,684</b>	<b>32,500</b>	<b>440,446</b>	<b>1,826,301</b>	<b>1.010</b>	<b>0.353</b>	<b>1.363</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.040	0.690	.
(14) Massachusetts Credibility:	0.300	0.330	.
(15) Countrywide Pure Premium:	0.636	0.449	1.085
(16) Countrywide Indicated Relativity:	0.712	0.958	.
(17) Countrywide Credibility:	0.350	0.340	.
(18) Countrywide Lost-Time Claims:	125.00	.	.
(19) Pure Premium Underlying Present Rate:	0.970	0.284	1.255
(20) Relativity to Underlying Present Rate:	1.102	0.635	.
(21) Credibility to Underlying Relativity:	0.350	0.330	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.947	0.763	.
(24) Balanced Formula Relativity:	0.935	0.753	0.872

Class(es): 3119 NEEDLE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	77.087	0	3	0	0	0	3.307	3.307	0.000	0.043	0.043
2014	57.363	1	7	49.118	3.809	18.921	13.279	85.127	0.923	0.561	1.484
2015	65.239	1	6	73.621	0	12.171	3.367	89.159	1.128	0.238	1.367
2016	57.898	0	6	0	64.366	Se	48.090	112.457	1.112	0.831	1.942
2017	58.683	0	2	0	0	0	7.748	7.748	0.000	0.132	0.132
<b>MA Total:</b>	<b>316,270</b>	<b>2</b>	<b>24</b>	<b>122,740</b>	<b>68,175</b>	<b>31,092</b>	<b>75,791</b>	<b>297,798</b>	<b>0.604</b>	<b>0.338</b>	<b>0.942</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.622	0.661	.
(14) Massachusetts Credibility:	0.100	0.170	.
(15) Countrywide Pure Premium:	0.328	0.096	0.424
(16) Countrywide Indicated Relativity:	0.367	0.205	.
(17) Countrywide Credibility:	0.160	0.170	.
(18) Countrywide Lost-Time Claims:	12.000	.	.
(19) Pure Premium Underlying Present Rate:	0.302	0.216	0.518
(20) Relativity to Underlying Present Rate:	0.343	0.482	.
(21) Credibility to Underlying Relativity:	0.740	0.660	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.375	0.466	.
(24) Balanced Formula Relativity:	0.370	0.459	0.401

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## Calculation of Class Relativities

Class(es): 3120 RAZOR MFG-SAFETY		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	7.300	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	6.869	1	0	8.386	0	6.265	0	14.650	1.221	0.912	2.133
2015	34.123	1	1	13.493	0	420	2.325	16.237	0.395	0.080	0.476
2016	53.954	1	1	37.673	3.055	3.903	643	45.274	0.755	0.084	0.839
2017	60.462	1	4	17.240	54.958	12.087	11.026	95.310	1.194	0.382	1.576
<b>MA Total:</b>	<b>162,708</b>	<b>4</b>	<b>6</b>	<b>76,791</b>	<b>58,012</b>	<b>22,675</b>	<b>13,994</b>	<b>171,472</b>	<b>0.828</b>	<b>0.225</b>	<b>1.054</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.853	0.440	.
(14) Massachusetts Credibility:	0.110	0.140	.
(15) Countrywide Pure Premium:	0.118	0.321	0.439
(16) Countrywide Indicated Relativity:	0.132	0.685	.
(17) Countrywide Credibility:	0.130	0.140	.
(18) Countrywide Lost-Time Claims:	7.000	.	.
(19) Pure Premium Underlying Present Rate:	0.715	0.275	0.990
(20) Relativity to Underlying Present Rate:	0.812	0.615	.
(21) Credibility to Underlying Relativity:	0.760	0.720	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.728	0.600	.
(24) Balanced Formula Relativity:	0.719	0.592	0.675

Class(es): 3122 CUTLERY MFG-NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	108.468	3	41	179.368	28.042	30.125	89.823	327.358	1.912	1.106	3.018
2014	111.219	1	24	116.579	98.741	16.570	60.476	292.367	1.936	0.693	2.629
2015	122.922	1	39	115.999	61.637	4.096	53.276	235.008	1.445	0.467	1.912
2016	126.037	0	46	0	191.834	0	130.203	322.036	1.522	1.033	2.555
2017	127.683	0	39	0	20.420	0	46.190	66.610	0.160	0.362	0.522
<b>MA Total:</b>	<b>596,328</b>	<b>5</b>	<b>189</b>	<b>411,946</b>	<b>400,674</b>	<b>50,791</b>	<b>379,968</b>	<b>1,243,379</b>	<b>1.363</b>	<b>0.722</b>	<b>2.085</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.404	1.412	.
(14) Massachusetts Credibility:	0.210	0.310	.
(15) Countrywide Pure Premium:	1.108	0.668	1.776
(16) Countrywide Indicated Relativity:	1.241	1.427	.
(17) Countrywide Credibility:	0.390	0.350	.
(18) Countrywide Lost-Time Claims:	107.00	.	.
(19) Pure Premium Underlying Present Rate:	0.880	0.536	1.416
(20) Relativity to Underlying Present Rate:	0.999	1.197	.
(21) Credibility to Underlying Relativity:	0.400	0.340	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.178	1.344	.
(24) Balanced Formula Relativity:	1.163	1.326	1.219



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3127 PRECISION MEASURING TOOL MFG-NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,144	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	1,665	0	1	0	104,941	0	24,264	129,205	63,045	14,577	77,621
2015	2,614	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	1,749	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	1,642	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>9,814</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>104,941</b>	<b>0</b>	<b>24,264</b>	<b>129,205</b>	<b>10.693</b>	<b>2.472</b>	<b>13.166</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	11.016	4.832	.
(14) Massachusetts Credibility:	0.030	0.050	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	0.645	0.789	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	0.575	0.358	0.933
(20) Relativity to Underlying Present Rate:	0.653	0.798	.
(21) Credibility to Underlying Relativity:	0.970	0.950	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.964	1.000	.
(24) Balanced Formula Relativity:	0.951	0.987	0.964

Class(es):		Effective: 7/1/2020							Manufacturing		
3131 BUTTON OR FASTENER MFG-METAL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	6,832	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	7,090	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	7,968	0	1	0	0	0	1,947	1,947	0.000	0.244	0.244
2016	8,520	0	1	0	0	0	236	236	0.000	0.028	0.028
2017	9,894	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>40,304</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,183</b>	<b>2,183</b>	<b>0.000</b>	<b>0.054</b>	<b>0.054</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.106	.
(14) Massachusetts Credibility:	0.060	0.090	.
(15) Countrywide Pure Premium:	0.708	0.446	1.154
(16) Countrywide Indicated Relativity:	0.793	0.952	.
(17) Countrywide Credibility:	0.470	0.460	.
(18) Countrywide Lost-Time Claims:	281.00	.	.
(19) Pure Premium Underlying Present Rate:	0.658	0.362	1.020
(20) Relativity to Underlying Present Rate:	0.747	0.808	.
(21) Credibility to Underlying Relativity:	0.470	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.724	0.811	.
(24) Balanced Formula Relativity:	0.715	0.800	0.744

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## Calculation of Class Relativities

Class(es): 3132 NUT OR BOLT MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	10.119	0	1	0	8.721	0	5.490	14.211	0.862	0.543	1.404
2014	10.358	0	4	0	85.858	0	30.007	115.866	8.289	2.897	11.186
2015	13.189	0	2	0	1.514	0	9.647	11.161	0.115	0.731	0.846
2016	15.158	0	2	0	0	0	2.643	2.643	0.000	0.174	0.174
2017	15.421	0	1	0	0	0	1.039	1.039	0.000	0.067	0.067
<b>MA Total:</b>	<b>64.245</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>96.093</b>	<b>0</b>	<b>48.826</b>	<b>144.919</b>	<b>1.496</b>	<b>0.760</b>	<b>2.256</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.541	1.485	.
(14) Massachusetts Credibility:	0.100	0.150	.
(15) Countrywide Pure Premium:	0.936	0.600	1.536
(16) Countrywide Indicated Relativity:	1.048	1.282	.
(17) Countrywide Credibility:	0.450	0.430	.
(18) Countrywide Lost-Time Claims:	328.00	.	.
(19) Pure Premium Underlying Present Rate:	1.324	0.769	2.093
(20) Relativity to Underlying Present Rate:	1.503	1.716	.
(21) Credibility to Underlying Relativity:	0.450	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.302	1.495	.
(24) Balanced Formula Relativity:	1.285	1.475	1.351

Class(es): 3145 SCREW MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	190.150	0	34	0	213.468	0	91.498	304.966	1.123	0.481	1.604
2014	199.751	0	15	0	129.852	0	28.421	158.273	0.650	0.142	0.792
2015	205.780	1	25	237.355	40.328	15.584	60.382	353.650	1.349	0.369	1.719
2016	205.318	1	18	212.543	48.777	30.460	56.778	348.558	1.273	0.425	1.698
2017	368.567	0	18	0	134.227	0	113.294	247.521	0.364	0.307	0.672
<b>MA Total:</b>	<b>1,169.566</b>	<b>2</b>	<b>110</b>	<b>449.898</b>	<b>566.652</b>	<b>46.044</b>	<b>350.374</b>	<b>1,412.967</b>	<b>0.869</b>	<b>0.339</b>	<b>1.208</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.895	0.662	.
(14) Massachusetts Credibility:	0.250	0.350	.
(15) Countrywide Pure Premium:	0.857	0.494	1.351
(16) Countrywide Indicated Relativity:	0.960	1.055	.
(17) Countrywide Credibility:	0.380	0.330	.
(18) Countrywide Lost-Time Claims:	574.00	.	.
(19) Pure Premium Underlying Present Rate:	0.712	0.361	1.073
(20) Relativity to Underlying Present Rate:	0.808	0.807	.
(21) Credibility to Underlying Relativity:	0.370	0.320	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.888	0.838	.
(24) Balanced Formula Relativity:	0.876	0.827	0.859

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## Calculation of Class Relativities

Class(es): 3146 HARDWARE MFG-NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	79,044	1	7	48,771	5,797	15,400	10,550	80,519	0.690	0.328	1.019
2014	105,273	0	11	0	235,836	0	27,954	263,790	2.240	0.266	2.506
2015	86,768	1	12	8,600	41,093	18,100	115,884	183,678	0.573	1.544	2.117
2016	89,198	1	11	65,107	847	54,567	10,558	131,079	0.739	0.730	1.470
2017	91,029	0	17	0	31,845	0	38,478	70,323	0.350	0.423	0.773
<b>MA Total:</b>	<b>451,312</b>	<b>3</b>	<b>58</b>	<b>122,479</b>	<b>315,419</b>	<b>88,068</b>	<b>203,424</b>	<b>729,389</b>	<b>0.970</b>	<b>0.646</b>	<b>1.616</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.000	1.262	.
(14) Massachusetts Credibility:	0.190	0.280	.
(15) Countrywide Pure Premium:	1.155	0.619	1.774
(16) Countrywide Indicated Relativity:	1.293	1.323	.
(17) Countrywide Credibility:	0.410	0.360	.
(18) Countrywide Lost-Time Claims:	1814.0	.	.
(19) Pure Premium Underlying Present Rate:	0.945	0.551	1.495
(20) Relativity to Underlying Present Rate:	1.073	1.229	.
(21) Credibility to Underlying Relativity:	0.400	0.360	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.149	1.272	.
(24) Balanced Formula Relativity:	1.134	1.256	1.176

Class(es): 3169 STOVE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Section IX
2013	376,468	2	62	127,957	320,433	20,227	440,387	909,004	1.191	1.224	2.415
2014	437,178	1	51	38,434	365,391	16,708	462,116	882,648	0.924	1.095	2.019
2015	415,233	3	50	336,228	512,046	335,734	192,205	1,376,213	2.043	1.271	3.314
2016	420,303	0	52	0	565,436	0	497,322	1,062,759	1.345	1.183	2.529
2017	474,449	1	55	16,517	136,754	10,732	164,907	328,911	0.323	0.370	0.693
<b>MA Total:</b>	<b>2,123,632</b>	<b>7</b>	<b>270</b>	<b>519,137</b>	<b>1,900,060</b>	<b>383,401</b>	<b>1,756,937</b>	<b>4,559,535</b>	<b>1.139</b>	<b>1.008</b>	<b>2.147</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.174	1.970	.
(14) Massachusetts Credibility:	0.370	0.580	.
(15) Countrywide Pure Premium:	1.276	0.714	1.990
(16) Countrywide Indicated Relativity:	1.429	1.524	.
(17) Countrywide Credibility:	0.320	0.210	.
(18) Countrywide Lost-Time Claims:	6792.0	.	.
(19) Pure Premium Underlying Present Rate:	1.070	0.718	1.788
(20) Relativity to Underlying Present Rate:	1.215	1.602	.
(21) Credibility to Underlying Relativity:	0.310	0.210	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.268	1.799	.
(24) Balanced Formula Relativity:	1.252	1.776	1.432

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3179 ELECTRICAL APPARATUS MFG-NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,507,501	5	112	415,806	410,675	84,952	269,169	1,180,602	0.548	0.235	0.783
2014	1,236,577	2	85	86,340	288,058	20,318	121,812	516,528	0.303	0.115	0.418
2015	1,369,620	0	75	0	588,210	0	324,621	912,831	0.429	0.237	0.666
2016	1,330,715	1	82	39,299	723,546	49,176	358,254	1,170,275	0.573	0.306	0.879
2017	1,545,662	1	91	14,055	957,822	17,391	329,064	1,318,332	0.629	0.224	0.853
<b>MA Total:</b>	<b>6,990,075</b>	<b>9</b>	<b>445</b>	<b>555,500</b>	<b>2,968,310</b>	<b>171,837</b>	<b>1,402,920</b>	<b>5,098,567</b>	<b>0.504</b>	<b>0.225</b>	<b>0.729</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.519	0.440	.
(14) Massachusetts Credibility:	0.460	0.590	.
(15) Countrywide Pure Premium:	0.782	0.416	1.197
(16) Countrywide Indicated Relativity:	0.875	0.887	.
(17) Countrywide Credibility:	0.270	0.210	.
(18) Countrywide Lost-Time Claims:	4155.0	.	.
(19) Pure Premium Underlying Present Rate:	0.571	0.227	0.798
(20) Relativity to Underlying Present Rate:	0.648	0.506	.
(21) Credibility to Underlying Relativity:	0.270	0.200	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.650	0.547	.
(24) Balanced Formula Relativity:	0.642	0.540	0.607

Class(es):		Effective: 7/1/2020							Manufacturing		
3180 ELECTRIC OR GAS LIGHTING FIXTURES MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	152,488	0	33	0	21,432	0	48,363	69,794	0.141	0.317	0.458
2014	120,495	0	30	0	126,513	0	62,349	188,862	1.050	0.517	1.567
2015	118,871	2	23	473,414	96,631	95,791	47,254	713,090	4.796	1.203	5.999
2016	124,574	1	19	37,021	5,391	8,388	15,226	66,026	0.340	0.190	0.530
2017	130,353	0	25	0	144,922	0	63,450	208,371	1.112	0.487	1.599
<b>MA Total:</b>	<b>646,781</b>	<b>3</b>	<b>130</b>	<b>510,435</b>	<b>394,889</b>	<b>104,180</b>	<b>236,642</b>	<b>1,246,145</b>	<b>1.400</b>	<b>0.527</b>	<b>1.927</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.442	1.030	.
(14) Massachusetts Credibility:	0.250	0.340	.
(15) Countrywide Pure Premium:	0.800	0.476	1.276
(16) Countrywide Indicated Relativity:	0.896	1.017	.
(17) Countrywide Credibility:	0.380	0.330	.
(18) Countrywide Lost-Time Claims:	342.00	.	.
(19) Pure Premium Underlying Present Rate:	1.274	0.603	1.877
(20) Relativity to Underlying Present Rate:	1.447	1.347	.
(21) Credibility to Underlying Relativity:	0.370	0.330	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.236	1.130	.
(24) Balanced Formula Relativity:	1.220	1.115	1.184

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3188 PLUMBERS SUPPLIES MFG-NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	18,059	0	4	0	20,611	0	26,297	46,908	1,141	1,456	2,598
2014	22,598	0	7	0	19,451	0	9,758	29,210	0,861	0,432	1,293
2015	21,597	0	5	0	295,328	0	63,243	358,570	13,675	2,928	16,603
2016	22,318	0	5	0	0	0	4,102	4,102	0,000	0,184	0,184
2017	21,811	0	4	0	11,853	0	14,064	25,917	0,543	0,645	1,188
<b>MA Total:</b>	<b>106,382</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>347,243</b>	<b>0</b>	<b>117,465</b>	<b>464,707</b>	<b>3,264</b>	<b>1,104</b>	<b>4,368</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.362	2.158	.
(14) Massachusetts Credibility:	0.100	0.150	.
(15) Countrywide Pure Premium:	0.963	0.525	1.488
(16) Countrywide Indicated Relativity:	1.079	1.120	.
(17) Countrywide Credibility:	0.450	0.430	.
(18) Countrywide Lost-Time Claims:	427.00	.	.
(19) Pure Premium Underlying Present Rate:	0.911	0.454	1.366
(20) Relativity to Underlying Present Rate:	1.035	1.014	.
(21) Credibility to Underlying Relativity:	0.450	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.287	1.231	.
(24) Balanced Formula Relativity:	1.271	1.215	1.252

Class(es):		Effective: 7/1/2020							Manufacturing		
3200 ARMS MFG-SMALL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	78,866	0	14	0	4,577	0	16,767	21,344	0,058	0,213	0,271
2014	69,092	1	13	51,952	50,360	8,152	30,893	141,358	1,481	0,565	2,046
2015	69,171	0	7	0	95,435	0	22,276	117,711	1,380	0,322	1,702
2016	106,226	0	9	0	126,021	0	116,841	242,862	1,186	1,100	2,286
2017	58,551	0	7	0	181,322	0	51,086	232,408	3,097	0,873	3,969
<b>MA Total:</b>	<b>381,906</b>	<b>1</b>	<b>50</b>	<b>51,952</b>	<b>457,715</b>	<b>8,152</b>	<b>237,863</b>	<b>755,682</b>	<b>1,335</b>	<b>0,644</b>	<b>1,979</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.375	1.259	.
(14) Massachusetts Credibility:	0.170	0.250	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	1.010	1.038	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	0.900	0.470	1.370
(20) Relativity to Underlying Present Rate:	1.022	1.050	.
(21) Credibility to Underlying Relativity:	0.830	0.750	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.082	1.102	.
(24) Balanced Formula Relativity:	1.068	1.088	1.075

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## Calculation of Class Relativities

Class(es): 3220 CAN MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	97,625	1	10	185,228	21,633	8,396	16,601	231,858	2,119	0,256	2,375
2014	100,269	2	12	264,805	8,538	399,180	11,099	683,622	2,726	4,092	6,818
2015	98,802	1	10	114,733	0	10,244	16,280	141,257	1,161	0,268	1,430
2016	66,719	0	8	0	14,606	0	22,687	37,293	0,219	0,340	0,559
2017	101,274	0	5	0	214,399	0	60,116	274,514	2,117	0,594	2,711
<b>MA Total:</b>	<b>464,690</b>	<b>4</b>	<b>45</b>	<b>564,766</b>	<b>259,176</b>	<b>417,820</b>	<b>126,783</b>	<b>1,368,545</b>	<b>1,773</b>	<b>1,172</b>	<b>2,945</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.827	2.291	.
(14) Massachusetts Credibility:	0.260	0.320	.
(15) Countrywide Pure Premium:	0.763	0.341	1.104
(16) Countrywide Indicated Relativity:	0.854	0.728	.
(17) Countrywide Credibility:	0.370	0.340	.
(18) Countrywide Lost-Time Claims:	303.00	.	.
(19) Pure Premium Underlying Present Rate:	1.958	0.753	2.711
(20) Relativity to Underlying Present Rate:	2.224	1.681	.
(21) Credibility to Underlying Relativity:	0.370	0.340	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.614	1.552	.
(24) Balanced Formula Relativity:	1.593	1.532	1.572

Class(es): 3255 WIRE CLOTH MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,948	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	1,620	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	1,937	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	968	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	1,331	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>7,803</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.040	0.050	.
(15) Countrywide Pure Premium:	0.849	0.515	1.363
(16) Countrywide Indicated Relativity:	0.950	1.099	.
(17) Countrywide Credibility:	0.240	0.260	.
(18) Countrywide Lost-Time Claims:	33.000	.	.
(19) Pure Premium Underlying Present Rate:	1.005	0.490	1.495
(20) Relativity to Underlying Present Rate:	1.141	1.095	.
(21) Credibility to Underlying Relativity:	0.720	0.690	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.050	1.041	.
(24) Balanced Formula Relativity:	1.036	1.028	1.033

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## Calculation of Class Relativities

Class(es): 3257 WIRE GOODS MFG - NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	205,502	0	29	0	22,171	0	35,340	57,511	0.108	0.172	0.280
2014	210,922	1	44	32,716	160,509	5,538	95,741	294,504	0.916	0.480	1.396
2015	217,374	0	61	0	266,153	0	160,778	426,931	1.224	0.740	1.964
2016	239,664	1	49	405,283	170,172	156,520	102,992	834,967	2.401	1.083	3.484
2017	251,839	0	60	0	56,432	0	77,117	133,549	0.224	0.306	0.530
<b>MA Total:</b>	<b>1,125,301</b>	<b>2</b>	<b>243</b>	<b>437,999</b>	<b>675,436</b>	<b>162,058</b>	<b>471,968</b>	<b>1,747,461</b>	<b>0.989</b>	<b>- Clas</b>	<b>1.553</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.019	1.101	.
(14) Massachusetts Credibility:	0.300	0.420	.
(15) Countrywide Pure Premium:	1.025	0.617	1.642
(16) Countrywide Indicated Relativity:	1.148	1.318	.
(17) Countrywide Credibility:	0.350	0.290	.
(18) Countrywide Lost-Time Claims:	1033.0	.	.
(19) Pure Premium Underlying Present Rate:	1.156	0.613	1.769
(20) Relativity to Underlying Present Rate:	1.313	1.368	.
(21) Credibility to Underlying Relativity:	0.350	0.290	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.167	1.241	.
(24) Balanced Formula Relativity:	1.152	1.225	1.177

Class(es): 3270 EYELET MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,234	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	6,237	0	1	0	0	0	585	585	0.000	0.094	0.094
2015	6,211	0	1	0	0	0	58	58	0.000	0.009	0.009
2016	6,087	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	5,750	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>29,519</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>643</b>	<b>643</b>	<b>0.000</b>	<b>0.022</b>	<b>0.022</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.043	.
(14) Massachusetts Credibility:	0.060	0.090	.
(15) Countrywide Pure Premium:	1.517	0.749	2.267
(16) Countrywide Indicated Relativity:	1.699	1.601	.
(17) Countrywide Credibility:	0.450	0.460	.
(18) Countrywide Lost-Time Claims:	155.00	.	.
(19) Pure Premium Underlying Present Rate:	0.911	0.458	1.369
(20) Relativity to Underlying Present Rate:	1.035	1.022	.
(21) Credibility to Underlying Relativity:	0.490	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.272	1.200	.
(24) Balanced Formula Relativity:	1.255	1.184	1.231

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3300 BED SPRING OR WIRE MATTRESS MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	113	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	4,863	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	286	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>5,262</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.040	0.060	.
(15) Countrywide Pure Premium:	1.255	1.043	2.298
(16) Countrywide Indicated Relativity:	1.405	2.228	.
(17) Countrywide Credibility:	0.480	0.470	.
(18) Countrywide Lost-Time Claims:	321.00	.	.
(19) Pure Premium Underlying Present Rate:	1.509	0.945	2.454
(20) Relativity to Underlying Present Rate:	1.714	2.110	.
(21) Credibility to Underlying Relativity:	0.480	0.470	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.497	2.039	.
(24) Balanced Formula Relativity:	1.478	2.012	1.662

Class(es):		Effective: 7/1/2020							Manufacturing		
3315 BRASS OR COPPER GOODS MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	196,174	1	32	86,403	43,831	11,136	89,281	230,651	0.664	0.512	1.176
2014	199,184	0	36	0	51,395	0	46,003	97,398	0.258	0.231	0.489
2015	212,728	0	47	0	174,538	0	201,200	375,738	0.820	0.946	1.766
2016	197,543	0	38	0	290,451	0	269,469	559,920	1.470	1.364	2.834
2017	217,137	0	34	0	815,473	0	243,724	1,059,196	3.756	1.122	4.878
<b>MA Total:</b>	<b>1,022,767</b>	<b>1</b>	<b>187</b>	<b>86,403</b>	<b>1,375,688</b>	<b>11,136</b>	<b>849,676</b>	<b>2,322,903</b>	<b>1.430</b>	<b>0.842</b>	<b>2.271</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.473	1.645	.
(14) Massachusetts Credibility:	0.310	0.420	.
(15) Countrywide Pure Premium:	1.346	0.622	1.967
(16) Countrywide Indicated Relativity:	1.507	1.327	.
(17) Countrywide Credibility:	0.350	0.290	.
(18) Countrywide Lost-Time Claims:	155.00	.	.
(19) Pure Premium Underlying Present Rate:	1.450	0.652	2.102
(20) Relativity to Underlying Present Rate:	1.646	1.456	.
(21) Credibility to Underlying Relativity:	0.340	0.290	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.544	1.498	.
(24) Balanced Formula Relativity:	1.524	1.478	1.508



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## Calculation of Class Relativities

Class(es): 3336 TYPE FOUNDRY		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	7,023	0	2	0	3,158	0	1,937	5,095	0.450	0.276	0.725
2014	9,353	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	5,644	0	2	0	1,931	0	1,144	3,075	0.342	0.203	0.545
2016	4,317	0	4	0	851	0	2,270	3,121	0.197	0.526	0.723
2017	4,022	0	1	0	0	0	242	242	0.000	0.060	0.060
<b>MA Total:</b>	<b>30,358</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>5,939</b>	<b>0</b>	<b>5,593</b>	<b>11,533</b>	<b>0.196</b>	<b>0.184</b>	<b>0.380</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.202	0.360	.
(14) Massachusetts Credibility:	0.080	0.100	.
(15) Countrywide Pure Premium:	1.600	0.717	2.317
(16) Countrywide Indicated Relativity:	1.792	1.530	.
(17) Countrywide Credibility:	0.460	0.450	.
(18) Countrywide Lost-Time Claims:	308.00	.	.
(19) Pure Premium Underlying Present Rate:	1.754	0.643	2.397
(20) Relativity to Underlying Present Rate:	1.992	1.434	.
(21) Credibility to Underlying Relativity:	0.460	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.757	1.370	.
(24) Balanced Formula Relativity:	1.734	1.352	1.602

Class(es): 3365 WELDING OR CUTTING - NOC & DRIVERS		Effective: 7/1/2020							Construction		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	122,325	1	31	64,274	654,456	20,098	246,570	985,399	5.876	2.180	8.056
2014	139,860	2	31	14,339	45,521	9,827	90,758	160,444	0.428	0.719	1.147
2015	152,386	1	23	51,436	426,032	3,654	283,968	765,090	3.133	1.887	5.021
2016	157,538	0	28	0	172,829	0	179,581	352,409	1.097	1.140	2.237
2017	168,010	0	19	0	318,046	0	225,359	543,406	1.893	1.341	3.234
<b>MA Total:</b>	<b>740,118</b>	<b>4</b>	<b>132</b>	<b>130,049</b>	<b>1,616,883</b>	<b>33,580</b>	<b>1,026,236</b>	<b>2,806,749</b>	<b>2.360</b>	<b>1.432</b>	<b>3.792</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.907	1.206	.
(14) Massachusetts Credibility:	0.370	0.480	.
(15) Countrywide Pure Premium:	2.227	1.009	3.236
(16) Countrywide Indicated Relativity:	0.870	0.876	.
(17) Countrywide Credibility:	0.320	0.260	.
(18) Countrywide Lost-Time Claims:	1028.0	.	.
(19) Pure Premium Underlying Present Rate:	2.961	1.274	4.235
(20) Relativity to Underlying Present Rate:	1.224	1.209	.
(21) Credibility to Underlying Relativity:	0.310	0.260	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.993	1.121	.
(24) Balanced Formula Relativity:	0.997	1.119	1.035

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## Calculation of Class Relativities

Class(es): 3372 ELECTROPLATING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	541.986	0	82	0	346.911	0	374.948	721.859	0.640	0.692	1.332
2014	542.333	0	76	0	465.147	0	204.896	670.043	0.858	0.378	1.235
2015	562.107	2	46	100.102	193.628	32.469	113.069	439.268	0.523	0.259	0.781
2016	570.001	1	49	39.229	499.324	2.645	288.613	829.810	0.945	0.511	1.456
2017	586.830	2	54	56.611	271.188	102.876	165.645	596.319	0.559	0.458	1.016
<b>MA Total:</b>	<b>2,803,258</b>	<b>5</b>	<b>307</b>	<b>195,942</b>	<b>1,776,198</b>	<b>137,990</b>	<b>1,147,170</b>	<b>3,257,300</b>	<b>0.704</b>	<b>0.458</b>	<b>1.162</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.725	0.896	.
(14) Massachusetts Credibility:	0.390	0.590	.
(15) Countrywide Pure Premium:	1.330	0.753	2.082
(16) Countrywide Indicated Relativity:	1.489	1.607	.
(17) Countrywide Credibility:	0.310	0.210	.
(18) Countrywide Lost-Time Claims:	1028.0	.	.
(19) Pure Premium Underlying Present Rate:	0.939	0.583	1.522
(20) Relativity to Underlying Present Rate:	1.066	1.302	.
(21) Credibility to Underlying Relativity:	0.300	0.200	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.064	1.127	.
(24) Balanced Formula Relativity:	1.050	1.112	1.072

Class(es): 3373 GALVANIZING OR TINNING - NOT ELECTROLYTIC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	9.776	1a	0	0	0	0	0	0	0.000	0.000	0.000
2014	9.304	1	0	171.619	0	19.498	0	191.117	18.445	2.096	20.541
2015	7.823	0	2	0	0	0	799	799	0.000	0.102	0.102
2016	8.421	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	7.270	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>42,594</b>	<b>1</b>	<b>2</b>	<b>171,619</b>	<b>0</b>	<b>19,498</b>	<b>799</b>	<b>191,916</b>	<b>4.029</b>	<b>0.477</b>	<b>4.506</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.151	0.931	.
(14) Massachusetts Credibility:	0.100	0.120	.
(15) Countrywide Pure Premium:	1.499	0.832	2.331
(16) Countrywide Indicated Relativity:	1.678	1.777	.
(17) Countrywide Credibility:	0.440	0.440	.
(18) Countrywide Lost-Time Claims:	146.00	.	.
(19) Pure Premium Underlying Present Rate:	1.871	0.719	2.590
(20) Relativity to Underlying Present Rate:	2.125	1.606	.
(21) Credibility to Underlying Relativity:	0.460	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.131	1.600	.
(24) Balanced Formula Relativity:	2.103	1.579	1.922

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## Calculation of Class Relativities

Class(es): 3381 SILVERWARE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,499	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	8,487	0	2	0	0	0	1,290	1,290	0.000	0.152	0.152
2015	8,683	0	2	0	0	0	1,649	1,649	0.000	0.190	0.190
2016	7,946	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	7,161	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>37,777</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,939</b>	<b>2,939</b>	<b>0.000</b>	<b>0.078</b>	<b>0.078</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.152	.
(14) Massachusetts Credibility:	0.070	0.100	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	1.180	1.118	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	1.052	0.506	1.558
(20) Relativity to Underlying Present Rate:	1.194	1.131	.
(21) Credibility to Underlying Relativity:	0.930	0.900	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.111	1.033	.
(24) Balanced Formula Relativity:	1.096	1.019	1.070

Class(es): 3383 JEWELRY MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	650,118	1	74	146,534	431,427	437,883	208,558	1,224,402	0.889	0.994	1.883
2014	601,130	4	64	450,198	335,582	147,323	216,539	1,149,642	1.307	0.605	1.912
2015	630,897	2	50	53,955	473,872	27,628	253,068	808,522	0.837	0.445	1.282
2016	572,785	0	53	0	506,455	0	285,437	791,891	0.884	0.498	1.383
2017	521,522	0	40	0	83,308	0	90,987	174,295	0.160	0.174	0.334
<b>MA Total:</b>	<b>2,976,452</b>	<b>7</b>	<b>281</b>	<b>650,686</b>	<b>1,830,643</b>	<b>612,834</b>	<b>1,054,590</b>	<b>4,148,753</b>	<b>0.834</b>	<b>0.560</b>	<b>1.394</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.859	1.095	.
(14) Massachusetts Credibility:	0.370	0.550	.
(15) Countrywide Pure Premium:	0.647	0.327	0.974
(16) Countrywide Indicated Relativity:	0.725	0.697	.
(17) Countrywide Credibility:	0.320	0.230	.
(18) Countrywide Lost-Time Claims:	269.00	.	.
(19) Pure Premium Underlying Present Rate:	0.769	0.458	1.227
(20) Relativity to Underlying Present Rate:	0.873	1.023	.
(21) Credibility to Underlying Relativity:	0.310	0.220	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.820	0.988	.
(24) Balanced Formula Relativity:	0.810	0.975	0.867

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## Calculation of Class Relativities

Class(es): 3385 WATCH MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	27,418	0	2	0	0	0	798	798	0.000	0.029	0.029
2014	27,218	0	2	0	0	0	531	531	0.000	0.020	0.020
2015	27,842	0	3	0	7,139	0	11,642	18,781	0.256	0.418	0.675
2016	24,624	0	2	0	0	0	2,201	2,201	0.000	0.089	0.089
2017	24,734	0	2	0	0	0	1,901	1,901	0.000	0.077	0.077
<b>MA Total:</b>	<b>131,837</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>7,139</b>	<b>0</b>	<b>17,072</b>	<b>24,211</b>	<b>0.054</b>	<b>0.129</b>	<b>0.184</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.056	0.253	.
(14) Massachusetts Credibility:	0.070	0.100	.
(15) Countrywide Pure Premium:	0.422	0.258	0.679
(16) Countrywide Indicated Relativity:	0.472	0.550	.
(17) Countrywide Credibility:	0.180	0.190	.
(18) Countrywide Lost-Time Claims:	15.000	.	.
(19) Pure Premium Underlying Present Rate:	0.311	0.161	0.472
(20) Relativity to Underlying Present Rate:	0.353	0.359	.
(21) Credibility to Underlying Relativity:	0.750	0.710	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.354	0.385	.
(24) Balanced Formula Relativity:	0.349	0.380	0.360

Class(es): 3507 CONSTRUCTION OR AGRICULTURAL MACHINERY MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	52,458	0	16	0	87,942	0	48,715	136,658	1.676	0.929	2.605
2014	55,651	0	12	0	13,722	0	7,597	21,319	0.247	0.137	0.383
2015	35,050	0	7	0	6,216	0	24,278	30,495	0.177	0.693	0.870
2016	34,192	0	4	0	7,484	0	11,380	18,864	0.219	0.333	0.552
2017	26,518	0	5	0	339,995	0	48,149	388,145	12.821	1.816	14.637
<b>MA Total:</b>	<b>203,870</b>	<b>0</b>	<b>44</b>	<b>0</b>	<b>455,361</b>	<b>0</b>	<b>140,119</b>	<b>595,480</b>	<b>2.234</b>	<b>0.687</b>	<b>2.921</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.301	1.343	.
(14) Massachusetts Credibility:	0.150	0.200	.
(15) Countrywide Pure Premium:	1.196	0.617	1.814
(16) Countrywide Indicated Relativity:	1.340	1.318	.
(17) Countrywide Credibility:	0.430	0.400	.
(18) Countrywide Lost-Time Claims:	4937.0	.	.
(19) Pure Premium Underlying Present Rate:	1.234	0.556	1.790
(20) Relativity to Underlying Present Rate:	1.401	1.241	.
(21) Credibility to Underlying Relativity:	0.420	0.400	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.510	1.292	.
(24) Balanced Formula Relativity:	1.490	1.275	1.416

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3515 TEXTILE MACHINERY MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	33,505	0	19	0	12,221	0	22,570	34,791	0.365	0.674	1.038
2014	35,015	0	24	0	38,047	0	31,197	69,244	1.087	0.891	1.978
2015	43,110	1	18	86,228	30,333	11,275	24,314	152,149	2.704	0.826	3.529
2016	46,748	1	18	168,505	78,344	7,590	54,243	308,683	5.280	1.323	6.603
2017	53,464	0	12	0	38,893	0	21,963	60,856	0.727	0.411	1.138
<b>MA Total:</b>	<b>211,842</b>	<b>2</b>	<b>91</b>	<b>254,732</b>	<b>197,839</b>	<b>18,865</b>	<b>154,287</b>	<b>625,723</b>	<b>2.136</b>	<b>0.817</b>	<b>2.954</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.201	1.597	.
(14) Massachusetts Credibility:	0.160	0.230	.
(15) Countrywide Pure Premium:	1.088	0.635	1.723
(16) Countrywide Indicated Relativity:	1.219	1.355	.
(17) Countrywide Credibility:	0.290	0.310	.
(18) Countrywide Lost-Time Claims:	53.000	.	.
(19) Pure Premium Underlying Present Rate:	1.252	0.725	1.976
(20) Relativity to Underlying Present Rate:	1.421	1.618	.
(21) Credibility to Underlying Relativity:	0.550	0.460	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.487	1.532	.
(24) Balanced Formula Relativity:	1.468	1.512	1.483

Class(es):		Effective: 7/1/2020							Manufacturing		
3558 BOOT OR SHOE MACHINERY MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,219	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	2,251	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	2,313	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	2,390	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	2,374	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>11,547</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.030	0.050	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	0.355	0.594	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	0.316	0.269	0.586
(20) Relativity to Underlying Present Rate:	0.359	0.601	.
(21) Credibility to Underlying Relativity:	0.970	0.950	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.349	0.571	.
(24) Balanced Formula Relativity:	0.344	0.563	0.420

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3571 STEAM OR AIR PRESSURE GAUGE MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	4,046	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	7,421	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	8,824	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	8,666	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	9,343	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>38,299</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.050	0.070	.
(15) Countrywide Pure Premium:	0.235	0.142	0.377
(16) Countrywide Indicated Relativity:	0.263	0.304	.
(17) Countrywide Credibility:	0.080	0.080	.
(18) Countrywide Lost-Time Claims:	2.000	.	.
(19) Pure Premium Underlying Present Rate:	0.382	0.178	0.560
(20) Relativity to Underlying Present Rate:	0.433	0.397	.
(21) Credibility to Underlying Relativity:	0.870	0.850	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.398	0.362	.
(24) Balanced Formula Relativity:	0.393	0.357	0.381

Class(es):		Effective: 7/1/2020							Manufacturing		
3574 CASH REGISTER MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,988,144	8	543	1,073,965	4,546,646	301,429	2,111,545	8,033,586	0.939	0.403	1.342
2014	6,011,026	14	522	1,769,033	3,089,051	1,099,440	2,005,624	7,963,148	0.808	0.517	1.325
2015	6,277,891	9	474	1,549,026	3,110,183	518,981	1,895,079	7,073,269	0.742	0.385	1.127
2016	6,117,980	12	462	2,190,129	4,568,303	811,154	2,223,439	9,793,026	1.105	0.496	1.601
2017	5,841,276	7	411	1,111,564	2,615,043	424,155	2,230,633	6,381,396	0.638	0.454	1.092
<b>MA Total:</b>	<b>30,236,317</b>	<b>50</b>	<b>2,412</b>	<b>7,693,717</b>	<b>17,929,227</b>	<b>3,155,159</b>	<b>10,466,320</b>	<b>39,244,423</b>	<b>0.847</b>	<b>0.451</b>	<b>1.298</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.873	0.880	.
(14) Massachusetts Credibility:	0.930	1.000	.
(15) Countrywide Pure Premium:	0.844	0.442	1.285
(16) Countrywide Indicated Relativity:	0.945	0.943	.
(17) Countrywide Credibility:	0.040	0.000	.
(18) Countrywide Lost-Time Claims:	18932	.	.
(19) Pure Premium Underlying Present Rate:	0.755	0.365	1.120
(20) Relativity to Underlying Present Rate:	0.858	0.814	.
(21) Credibility to Underlying Relativity:	0.030	0.000	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.875	0.880	.
(24) Balanced Formula Relativity:	0.864	0.869	0.866

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## Calculation of Class Relativities

Class(es): 3612 PUMP MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	294,411	0	25	0	187,131	0	203,668	390,799	0.636	0.692	1.327
2014	293,375	0	22	0	14,968	0	24,713	39,682	0.051	0.084	0.135
2015	278,611	0	20	0	3,459	0	32,470	35,929	0.012	0.117	0.129
2016	284,610	0	21	0	57,498	0	167,295	224,793	0.202	0.588	0.790
2017	274,512	0	14	0	42,551	0	24,303	66,854	0.155	0.089	0.244
<b>MA Total:</b>	<b>1,425,519</b>	<b>0</b>	<b>102</b>	<b>0</b>	<b>305,608</b>	<b>0</b>	<b>452,450</b>	<b>758,057</b>	<b>0.214</b>	<b>0.317</b>	<b>0.532</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.221	0.620	.
(14) Massachusetts Credibility:	0.270	0.400	.
(15) Countrywide Pure Premium:	0.835	0.409	1.243
(16) Countrywide Indicated Relativity:	0.935	0.873	.
(17) Countrywide Credibility:	0.370	0.300	.
(18) Countrywide Lost-Time Claims:	1781.0	.	.
(19) Pure Premium Underlying Present Rate:	0.739	0.432	1.171
(20) Relativity to Underlying Present Rate:	0.839	0.963	.
(21) Credibility to Underlying Relativity:	0.360	0.300	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.708	0.799	.
(24) Balanced Formula Relativity:	0.698	0.788	0.730

Class(es): 3620 BOILERMAKING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	179,144	1	18	6,654	41,304	425	113,830	162,213	0.268	0.638	0.905
2014	161,029	0	24	0	43,230	0	68,178	111,408	0.268	0.423	0.692
2015	157,183	1	20	298,521	30,671	34,061	38,572	401,826	2.094	0.462	2.556
2016	139,554	0	15	0	210,573	0	81,474	292,046	1.509	0.584	2.093
2017	129,551	0	18	0	464,205	0	343,610	807,815	3.583	2.652	6.236
<b>MA Total:</b>	<b>766,462</b>	<b>2</b>	<b>95</b>	<b>305,175</b>	<b>789,984</b>	<b>34,486</b>	<b>645,664</b>	<b>1,775,309</b>	<b>1.429</b>	<b>0.887</b>	<b>2.316</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.472	1.734	.
(14) Massachusetts Credibility:	0.300	0.500	.
(15) Countrywide Pure Premium:	1.468	0.786	2.255
(16) Countrywide Indicated Relativity:	1.644	1.680	.
(17) Countrywide Credibility:	0.350	0.250	.
(18) Countrywide Lost-Time Claims:	1291.0	.	.
(19) Pure Premium Underlying Present Rate:	1.785	1.402	3.187
(20) Relativity to Underlying Present Rate:	2.028	3.129	.
(21) Credibility to Underlying Relativity:	0.350	0.250	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.727	2.069	.
(24) Balanced Formula Relativity:	1.704	2.042	1.821

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## Calculation of Class Relativities

Class(es): 3634 VALVE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	441.895	0	33	0	258.956	0	119.612	378.568	0.586	0.271	0.857
2014	322.852	2	35	160.407	198.772	24.039	146.647	529.864	1.113	0.529	1.641
2015	460.279	0	23	0	145.374	0	31.838	177.213	0.316	0.069	0.385
2016	295.587	0	19	0	493.322	0	67.869	561.191	1.669	0.230	1.899
2017	260.803	0	20	0	70.928	0	74.153	145.081	0.272	0.284	0.556
<b>MA Total:</b>	<b>1,781.417</b>	<b>2</b>	<b>130</b>	<b>160,407</b>	<b>1,167,352</b>	<b>24,039</b>	<b>440,120</b>	<b>1,791,918</b>	<b>0.745</b>	<b>0.261</b>	<b>1.006</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.768	0.509	.
(14) Massachusetts Credibility:	0.290	0.390	.
(15) Countrywide Pure Premium:	0.738	0.387	1.124
(16) Countrywide Indicated Relativity:	0.826	0.826	.
(17) Countrywide Credibility:	0.360	0.310	.
(18) Countrywide Lost-Time Claims:	950.00	.	.
(19) Pure Premium Underlying Present Rate:	0.673	0.315	0.988
(20) Relativity to Underlying Present Rate:	0.764	0.703	.
(21) Credibility to Underlying Relativity:	0.350	0.300	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.788	0.665	.
(24) Balanced Formula Relativity:	0.777	0.657	0.736

Class(es): 3635 GEAR MFG OR GRINDING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	257.744	1	48	89.654	775.422	29.682	310.360	1,205.119	3.356	1.319	4.676
2014	273.066	2	33	118.367	462.261	16.986	241.972	839.586	2.126	0.948	3.075
2015	302.157	0	40	0	106.140	0	94.406	200.546	0.351	0.312	0.664
2016	339.117	4	38	197.082	345.009	136.131	731.009	1,409.231	1.599	2.557	4.156
2017	52.775	0	5	0	13.837	0	3.565	17.402	0.262	0.068	0.330
<b>MA Total:</b>	<b>1,224.858</b>	<b>7</b>	<b>164</b>	<b>405,103</b>	<b>1,702,669</b>	<b>182,799</b>	<b>1,381,313</b>	<b>3,671,884</b>	<b>1.721</b>	<b>1.277</b>	<b>2.998</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.773	2.496	.
(14) Massachusetts Credibility:	0.310	0.440	.
(15) Countrywide Pure Premium:	1.047	0.523	1.570
(16) Countrywide Indicated Relativity:	1.172	1.117	.
(17) Countrywide Credibility:	0.350	0.280	.
(18) Countrywide Lost-Time Claims:	564.00	.	.
(19) Pure Premium Underlying Present Rate:	1.225	0.640	1.865
(20) Relativity to Underlying Present Rate:	1.391	1.429	.
(21) Credibility to Underlying Relativity:	0.340	0.280	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.433	1.811	.
(24) Balanced Formula Relativity:	1.414	1.787	1.543



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## Calculation of Class Relativities

Class(es): 3642 BATTERY MFG-DRY		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	157,524	0	5	0	28,816	0	17,170	45,986	0.183	0.109	0.292
2014	196,131	0	14	0	188,581	0	66,951	255,533	0.962	0.341	1.303
2015	167,546	0	10	0	9,150	0	24,574	33,724	0.055	0.147	0.201
2016	41,867	0	2	0	0	0	3,274	3,274	0.000	0.078	0.078
2017	68,163	0	1	0	0	0	1,572	1,572	0.000	0.023	0.023
<b>MA Total:</b>	<b>631,231</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>226,547</b>	<b>0</b>	<b>113,542</b>	<b>340,089</b>	<b>0.359</b>	<b>0.180</b>	<b>0.539</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.370	0.352	.
(14) Massachusetts Credibility:	0.170	0.230	.
(15) Countrywide Pure Premium:	0.601	0.354	0.955
(16) Countrywide Indicated Relativity:	0.673	0.756	.
(17) Countrywide Credibility:	0.370	0.390	.
(18) Countrywide Lost-Time Claims:	94.000	.	.
(19) Pure Premium Underlying Present Rate:	0.539	0.236	0.774
(20) Relativity to Underlying Present Rate:	0.612	0.526	.
(21) Credibility to Underlying Relativity:	0.460	0.380	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.593	0.575	.
(24) Balanced Formula Relativity:	0.586	0.568	0.579

Class(es): 3643 ELECTRIC POWER OR TRANSMISSION EQUIP MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	881,007	0	97	0	381,762	0	271,071	652,833	0.433	0.308	0.741
2014	917,874	2	65	14,750	163,887	5,461	158,187	342,285	0.195	0.178	0.373
2015	892,848	3	61	174,984	632,963	37,245	253,225	1,098,416	0.905	0.325	1.230
2016	1,013,186	4	34	494,092	681,888	323,800	211,728	1,711,508	1.161	0.529	1.689
2017	1,059,733	2	64	146,913	487,619	58,976	460,192	1,153,700	0.599	0.490	1.089
<b>MA Total:</b>	<b>4,764,648</b>	<b>11</b>	<b>321</b>	<b>830,740</b>	<b>2,348,118</b>	<b>425,482</b>	<b>1,354,403</b>	<b>4,958,743</b>	<b>0.667</b>	<b>0.374</b>	<b>1.041</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.687	0.730	.
(14) Massachusetts Credibility:	0.430	0.590	.
(15) Countrywide Pure Premium:	0.912	0.458	1.370
(16) Countrywide Indicated Relativity:	1.022	0.978	.
(17) Countrywide Credibility:	0.290	0.210	.
(18) Countrywide Lost-Time Claims:	2059.0	.	.
(19) Pure Premium Underlying Present Rate:	0.706	0.334	1.040
(20) Relativity to Underlying Present Rate:	0.802	0.745	.
(21) Credibility to Underlying Relativity:	0.280	0.200	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.816	0.785	.
(24) Balanced Formula Relativity:	0.806	0.775	0.795

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## Calculation of Class Relativities

Class(es): 3647 BATTERY MFG-STORAGE		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3,280	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	791	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	860	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	2,400	0	1	0	0	0	1,711	1,711	0.000	0.713	0.713
2017	3,828	0	1	0	0	0	204	204	0.000	0.053	0.053
<b>MA Total:</b>	<b>11,158</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,916</b>	<b>1,916</b>	<b>0.000</b>	<b>0.172</b>	<b>0.172</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.336	.
(14) Massachusetts Credibility:	0.040	0.060	.
(15) Countrywide Pure Premium:	1.222	0.628	1.850
(16) Countrywide Indicated Relativity:	1.369	1.341	.
(17) Countrywide Credibility:	0.480	0.470	.
(18) Countrywide Lost-Time Claims:	368.00	.	.
(19) Pure Premium Underlying Present Rate:	0.914	0.415	1.329
(20) Relativity to Underlying Present Rate:	1.038	0.926	.
(21) Credibility to Underlying Relativity:	0.480	0.470	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.155	1.086	.
(24) Balanced Formula Relativity:	1.140	1.072	1.117

Class(es): 3648 AUTOMOTIVE LIGHTING, IGNITION APPARATUS MFG NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	417	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	933	0	1	0	0	0	304	304	0.000	0.326	0.326
2015	1,248	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	40,505	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	31,529	0	1	0	0	0	69	69	0.000	0.002	0.002
<b>MA Total:</b>	<b>74,632</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>373</b>	<b>373</b>	<b>0.000</b>	<b>0.005</b>	<b>0.005</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.010	.
(14) Massachusetts Credibility:	0.070	0.110	.
(15) Countrywide Pure Premium:	0.596	0.400	0.995
(16) Countrywide Indicated Relativity:	0.667	0.854	.
(17) Countrywide Credibility:	0.470	0.450	.
(18) Countrywide Lost-Time Claims:	532.00	.	.
(19) Pure Premium Underlying Present Rate:	0.559	0.321	0.879
(20) Relativity to Underlying Present Rate:	0.634	0.716	.
(21) Credibility to Underlying Relativity:	0.460	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.605	0.700	.
(24) Balanced Formula Relativity:	0.597	0.691	0.630

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
3681 TELEVISION, RADIO, TELEPHONE OR TELECOMMUNCTN DEVICE MFG NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,232,680	12	200	1,374,089	1,542,245	341,154	639,034	3,896,522	0.557	0.187	0.745
2014	5,584,890	7	199	888,799	557,233	276,802	535,451	2,258,284	0.259	0.145	0.404
2015	5,277,890	2	190	76,350	1,307,416	5,941	834,635	2,224,342	0.262	0.159	0.421
2016	5,298,944	7	154	950,240	1,207,351	327,544	439,009	2,924,145	0.407	0.145	0.552
2017	5,587,483	6	182	524,163	1,762,497	183,079	776,123	3,245,864	0.409	0.172	0.581
<b>MA Total:</b>	<b>26,981,888</b>	<b>34</b>	<b>925</b>	<b>3,813,640</b>	<b>6,376,743</b>	<b>1,134,520</b>	<b>3,224,253</b>	<b>14,549,156</b>	<b>0.378</b>	<b>0.162</b>	<b>0.539</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.389	0.316	.
(14) Massachusetts Credibility:	0.640	0.840	.
(15) Countrywide Pure Premium:	0.322	0.175	0.497
(16) Countrywide Indicated Relativity:	0.361	0.373	.
(17) Countrywide Credibility:	0.180	0.080	.
(18) Countrywide Lost-Time Claims:	2845.0	.	.
(19) Pure Premium Underlying Present Rate:	0.329	0.146	0.474
(20) Relativity to Underlying Present Rate:	0.373	0.325	.
(21) Credibility to Underlying Relativity:	0.180	0.080	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.381	0.321	.
(24) Balanced Formula Relativity:	0.376	0.317	0.356

Class(es):		Effective: 7/1/2020							Manufacturing		
3685 INSTRUMENT MFG NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,690,345	11	205	1,318,148	1,436,434	414,085	631,636	3,800,303	0.484	0.184	0.668
2014	6,760,840	5	253	492,225	1,724,267	91,513	946,470	3,254,473	0.328	0.154	0.481
2015	7,268,401	7	250	1,012,256	2,503,637	102,998	1,009,920	4,628,811	0.484	0.153	0.637
2016	6,636,729	9	204	541,478	1,021,580	155,489	744,012	2,462,559	0.236	0.136	0.371
2017	6,345,984	4	223	622,740	435,614	125,721	576,966	1,761,041	0.167	0.111	0.278
<b>MA Total:</b>	<b>32,702,298</b>	<b>36</b>	<b>1,135</b>	<b>3,986,846</b>	<b>7,121,532</b>	<b>889,805</b>	<b>3,909,003</b>	<b>15,907,187</b>	<b>0.340</b>	<b>0.147</b>	<b>0.486</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.350	0.287	.
(14) Massachusetts Credibility:	0.660	0.870	.
(15) Countrywide Pure Premium:	0.397	0.219	0.616
(16) Countrywide Indicated Relativity:	0.445	0.468	.
(17) Countrywide Credibility:	0.170	0.070	.
(18) Countrywide Lost-Time Claims:	2130.0	.	.
(19) Pure Premium Underlying Present Rate:	0.298	0.131	0.429
(20) Relativity to Underlying Present Rate:	0.339	0.293	.
(21) Credibility to Underlying Relativity:	0.170	0.060	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.364	0.300	.
(24) Balanced Formula Relativity:	0.359	0.296	0.337

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
3724 MACHINERY OR EQUIPMENT ERECT OR REPAIR NOC &DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,545,889	13	323	2,336,543	5,955,000	663,735	2,538,388	11,493,666	3,257	1,258	4,515
2014	2,740,333	22	314	3,078,246	6,262,987	1,269,667	3,208,396	13,819,296	3,409	1,634	5,043
2015	3,249,861	17	403	4,550,182	5,080,882	1,030,862	3,479,651	14,141,578	2,964	1,388	4,351
2016	3,529,122	13	371	2,696,177	4,991,540	710,470	3,049,728	11,447,916	2,178	1,065	3,244
2017	3,522,482	13	364	2,229,519	6,307,026	514,271	3,416,991	12,467,807	2,423	1,116	3,539
<b>MA Total:</b>	<b>15,587,688</b>	<b>78</b>	<b>1,775</b>	<b>14,890,668</b>	<b>28,597,435</b>	<b>4,189,006</b>	<b>15,693,154</b>	<b>63,370,263</b>	<b>2,790</b>	<b>1,276</b>	<b>4,065</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.071	1.074	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	1.783	0.756	2.539
(16) Countrywide Indicated Relativity:	0.696	0.656	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	7910.0	.	.
(19) Pure Premium Underlying Present Rate:	2.632	1.127	3.759
(20) Relativity to Underlying Present Rate:	1.087	1.069	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.071	1.074	.
(24) Balanced Formula Relativity:	1.076	1.072	1.075

Class(es):		Effective: 7/1/2020							Construction		
3726 BOILER INSTALLATION OR REPAIR-STEAM											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	67,705	1	7	62,103	68,168	16,885	37,814	184,970	1,924	0,808	2,732
2014	90,952	1	4	92,048	5,577	14,942	33,944	146,511	1,073	0,537	1,611
2015	113,846	0	6	0	6,882	0	24,287	31,169	0,060	0,213	0,274
2016	181,597	1	6	248,232	811,520	46,482	247,941	1,354,176	5,836	1,621	7,457
2017	153,302	0	4	0	145,554	0	42,435	187,989	0,949	0,277	1,226
<b>MA Total:</b>	<b>607,403</b>	<b>3</b>	<b>27</b>	<b>402,383</b>	<b>1,037,702</b>	<b>78,309</b>	<b>386,420</b>	<b>1,904,815</b>	<b>2,371</b>	<b>0,765</b>	<b>3,136</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.911	0.644	.
(14) Massachusetts Credibility:	0.320	0.360	.
(15) Countrywide Pure Premium:	1.821	0.711	2.532
(16) Countrywide Indicated Relativity:	0.711	0.617	.
(17) Countrywide Credibility:	0.340	0.320	.
(18) Countrywide Lost-Time Claims:	553.00	.	.
(19) Pure Premium Underlying Present Rate:	2.690	0.791	3.481
(20) Relativity to Underlying Present Rate:	1.112	0.751	.
(21) Credibility to Underlying Relativity:	0.340	0.320	R
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.911	0.670	.
(24) Balanced Formula Relativity:	0.915	0.669	0.838

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## Calculation of Class Relativities

Class(es): 3808 AUTOMOBILE MFG OR ASSEMBLY		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	115.967	0	27	0	46.850	0	147.541	194.392	0.404	1.272	1.676
2014	130.689	2	35	237.659	7.715	79.065	35.938	360.377	1.878	0.880	2.758
2015	155.929	0	49	0	125.369	0	143.394	268.764	0.804	0.920	1.724
2016	123.879	2	37	248.920	31.563	49.472	36.107	366.061	2.264	0.691	2.955
2017	280.125	0	59	0	952.556	0	463.703	1,416.259	3.400	1.655	5.056
<b>MA Total:</b>	<b>806.588</b>	<b>4</b>	<b>207</b>	<b>486.579</b>	<b>1,164.054</b>	<b>128.537</b>	<b>826.683</b>	<b>2,605.852</b>	<b>2.046</b>	<b>1.184</b>	<b>3.231</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.108	2.315	.
(14) Massachusetts Credibility:	0.260	0.380	.
(15) Countrywide Pure Premium:	1.610	0.713	2.323
(16) Countrywide Indicated Relativity:	1.803	1.522	.
(17) Countrywide Credibility:	0.370	0.310	.
(18) Countrywide Lost-Time Claims:	6233.0	.	.
(19) Pure Premium Underlying Present Rate:	1.216	0.672	1.888
(20) Relativity to Underlying Present Rate:	1.381	1.500	.
(21) Credibility to Underlying Relativity:	0.370	0.310	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.726	1.816	.
(24) Balanced Formula Relativity:	1.704	1.793	1.734

Class(es): 3821 AUTOMOBILE DISMANTLING & DRIVERS		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	174.556	1	28	104.842	36.417	96.456	133.193	370.908	0.809	1.316	2.125
2014	160.662	3	27	259.920	24.947	249.318	90.974	625.158	1.773	2.118	3.891
2015	156.663	0	19	0	170.365	0	79.065	249.430	1.087	0.505	1.592
2016	156.778	1	27	109.729	666.992	72.512	297.762	1,146.995	4.954	2.362	7.316
2017	184.461	1	21	281.299	283.809	357.397	124.725	1,047.231	3.064	2.614	5.677
<b>MA Total:</b>	<b>833.121</b>	<b>6</b>	<b>122</b>	<b>755.790</b>	<b>1,182.531</b>	<b>775.682</b>	<b>725.720</b>	<b>3,439.723</b>	<b>2.327</b>	<b>1.802</b>	<b>4.129</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.820	3.864	.
(14) Massachusetts Credibility:	0.330	0.480	.
(15) Countrywide Pure Premium:	2.777	1.528	4.305
(16) Countrywide Indicated Relativity:	3.468	3.314	.
(17) Countrywide Credibility:	0.340	0.260	.
(18) Countrywide Lost-Time Claims:	920.00	.	.
(19) Pure Premium Underlying Present Rate:	1.984	1.137	3.121
(20) Relativity to Underlying Present Rate:	2.644	2.758	.
(21) Credibility to Underlying Relativity:	0.330	0.260	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.982	3.434	.
(24) Balanced Formula Relativity:	2.961	3.436	3.133

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## Calculation of Class Relativities

Class(es): 3826 AIRCRAFT ENGINE MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,849,772	15	291	1,082,577	3,160,472	812,377	2,774,833	7,830,259	2,294	1,939	4,233
2014	1,729,388	16	250	1,467,257	2,296,547	620,849	2,603,027	6,987,681	2,176	1,864	4,041
2015	1,607,228	9	261	2,195,621	5,376,452	389,038	3,921,223	11,882,334	4,711	2,682	7,393
2016	2,272,901	13	187	2,340,075	2,418,327	965,000	2,001,967	7,725,369	2,094	1,305	3,399
2017	2,282,308	9	151	1,049,172	3,674,773	346,593	2,672,685	7,743,224	2,070	1,323	3,393
<b>MA Total:</b>	<b>9,741,597</b>	<b>62</b>	<b>1,140</b>	<b>8,134,701</b>	<b>16,926,572</b>	<b>3,133,858</b>	<b>13,973,735</b>	<b>42,168,866</b>	<b>2,573</b>	<b>1,756</b>	<b>4,329</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.650	3.432	.
(14) Massachusetts Credibility:	0.920	1.000	.
(15) Countrywide Pure Premium:	0.466	0.194	0.660
(16) Countrywide Indicated Relativity:	0.522	0.415	.
(17) Countrywide Credibility:	0.040	0.000	.
(18) Countrywide Lost-Time Claims:	411.00	.	.
(19) Pure Premium Underlying Present Rate:	2.278	1.532	3.809
(20) Relativity to Underlying Present Rate:	2.587	3.419	.
(21) Credibility to Underlying Relativity:	0.040	0.000	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.562	3.432	.
(24) Balanced Formula Relativity:	2.529	3.387	2.825

Class(es): 3841 TUBULAR METAL PRODUCTS MFG OR ASSEMBLY		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	46,193	0	2	0	0	0	978	978	0.000	0.021	0.021
2014	57,808	1	4	196,230	0	39,643	3,177	239,049	3.395	0.741	4.135
2015	58,501	0	2	0	200,575	0	35,644	236,218	3.429	0.609	4.038
2016	64,013	0	3	0	0	0	1,617	1,617	0.000	0.025	0.025
2017	61,442	0	4	0	5,794	0	7,036	12,831	0.094	0.115	0.209
<b>MA Total:</b>	<b>287,958</b>	<b>1</b>	<b>15</b>	<b>196,230</b>	<b>206,369</b>	<b>39,643</b>	<b>48,452</b>	<b>490,694</b>	<b>1.398</b>	<b>0.306</b>	<b>1.704</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.440	0.598	.
(14) Massachusetts Credibility:	0.130	0.190	.
(15) Countrywide Pure Premium:	0.519	0.410	0.929
(16) Countrywide Indicated Relativity:	0.581	0.875	.
(17) Countrywide Credibility:	0.310	0.330	.
(18) Countrywide Lost-Time Claims:	62.000	.	.
(19) Pure Premium Underlying Present Rate:	0.577	0.323	0.901
(20) Relativity to Underlying Present Rate:	0.656	0.722	.
(21) Credibility to Underlying Relativity:	0.560	0.480	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.735	0.749	.
(24) Balanced Formula Relativity:	0.725	0.739	0.730

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous			
4000 SAND OR GRAVEL DIGGING & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	392.176	1	38	282.714	499.729	115.190	289.006	1.186.639	1.995	1.031	3.026	
2014	397.186	3	33	450.319	743.970	164.893	304.230	1.663.412	3.007	1.181	4.188	
2015	445.165	3	52	727.374	906.693	236.763	295.233	2.166.063	3.671	1.195	4.866	
2016	475.676	4	41	935.330	681.570	673.595	491.552	2.782.048	3.399	2.449	5.849	
2017	491.949	0	40	0	761.202	0	662.327	1.423.529	1.547	1.346	2.894	
<b>MA Total:</b>	<b>2,202,151</b>	<b>11</b>	<b>204</b>	<b>2,395,736</b>	<b>3,593,165</b>	<b>1,190,441</b>	<b>2,042,348</b>	<b>9,221,691</b>	<b>2.720</b>	<b>1.468</b>	<b>4.188</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.129	1.183	.
(14) Massachusetts Credibility:	0.520	0.680	.
(15) Countrywide Pure Premium:	2.720	1.259	3.979
(16) Countrywide Indicated Relativity:	1.189	1.078	.
(17) Countrywide Credibility:	0.240	0.160	.
(18) Countrywide Lost-Time Claims:	1013.0	.	.
(19) Pure Premium Underlying Present Rate:	2.370	1.022	3.393
(20) Relativity to Underlying Present Rate:	1.088	0.972	.
(21) Credibility to Underlying Relativity:	0.240	0.160	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	1.134	1.132	.
(24) Balanced Formula Relativity:	1.130	1.139	1.133

Class(es):		Effective: 7/1/2020							Manufacturing			
4021 BRICK OR CLAY PRODUCTS MFG NOC & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	12.117	0	0	0	0	0	0	0	0.000	0.000	0.000	
2014	15.367	0	0	0	0	0	0	0	0.000	0.000	0.000	
2015	13.365	0	0	0	0	0	0	0	0.000	0.000	0.000	
2016	10.263	0	2	0	13.713	0	13.831	27.543	1.336	1.348	2.684	
2017	7.427	0	0	0	0	0	0	0	0.000	0.000	0.000	
<b>MA Total:</b>	<b>58,539</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>13,713</b>	<b>0</b>	<b>13,831</b>	<b>27,543</b>	<b>0.234</b>	<b>0.236</b>	<b>0.471</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.241	0.462	.
(14) Massachusetts Credibility:	0.110	0.150	.
(15) Countrywide Pure Premium:	2.035	1.128	3.163
(16) Countrywide Indicated Relativity:	2.279	2.409	.
(17) Countrywide Credibility:	0.450	0.430	.
(18) Countrywide Lost-Time Claims:	278.00	.	.
(19) Pure Premium Underlying Present Rate:	1.662	0.893	2.555
(20) Relativity to Underlying Present Rate:	1.888	1.993	.
(21) Credibility to Underlying Relativity:	0.440	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.883	1.942	.
(24) Balanced Formula Relativity:	1.858	1.917	1.878

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4024 REFRACTORY PRODUCTS MFG & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	4,733	0	1	0	0	0	258	258	0.000	0.054	0.054
2014	5,869	0	1	0	6,421	0	5,962	12,383	1.094	1.016	2.110
2015	42	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	49	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>10,695</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6,421</b>	<b>0</b>	<b>6,220</b>	<b>12,640</b>	<b>0.600</b>	<b>0.582</b>	<b>1.182</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.618	1.137	.
(14) Massachusetts Credibility:	0.050	0.070	.
(15) Countrywide Pure Premium:	2.015	0.914	2.929
(16) Countrywide Indicated Relativity:	2.256	1.952	.
(17) Countrywide Credibility:	0.410	0.440	.
(18) Countrywide Lost-Time Claims:	127.00	.	.
(19) Pure Premium Underlying Present Rate:	1.376	0.651	2.027
(20) Relativity to Underlying Present Rate:	1.562	1.453	.
(21) Credibility to Underlying Relativity:	0.540	0.490	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.800	1.650	.
(24) Balanced Formula Relativity:	1.776	1.629	1.725

Class(es):		Effective: 7/1/2020							Manufacturing		
4034 CONCRETE PRODUCTS MFG & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	155,112	3	39	94,489	306,390	67,711	226,776	695,366	2,584	1,899	4,483
2014	175,307	2	48	217,972	511,173	147,279	284,093	1,160,516	4,159	2,461	6,620
2015	198,757	0	38	0	489,879	0	228,430	718,309	2,465	1,149	3,614
2016	213,542	0	28	0	156,548	0	132,082	288,630	0,733	0,619	1,352
2017	204,441	0	35	0	504,250	0	332,558	836,808	2,466	1,627	4,093
<b>MA Total:</b>	<b>947,159</b>	<b>5</b>	<b>188</b>	<b>312,460</b>	<b>on IX - CI</b>	<b>214,990</b>	<b>1,203,937</b>	<b>3,699,629</b>	<b>2,408</b>	<b>1,498</b>	<b>3,906</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.481	2.928	.
(14) Massachusetts Credibility:	0.390	0.580	.
(15) Countrywide Pure Premium:	2.804	1.451	4.255
(16) Countrywide Indicated Relativity:	3.141	3.098	.
(17) Countrywide Credibility:	0.310	0.210	.
(18) Countrywide Lost-Time Claims:	2711.0	.	.
(19) Pure Premium Underlying Present Rate:	2.645	1.648	4.293
(20) Relativity to Underlying Present Rate:	3.005	3.678	.
(21) Credibility to Underlying Relativity:	0.300	0.210	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.842	3.121	.
(24) Balanced Formula Relativity:	2.805	3.080	2.900



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## Calculation of Class Relativities

Class(es): 4036 PLASTERBOARD OR PLASTER BLOCK MFG & DRIVERS									Effective: 7/1/2020			Manufacturing		
Converted Unlimited Losses														
Amount														
Claim Count				Indemnity		Medical		MA Indicated Pure Premiums						
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)			
2013	11,496	0	0	0	0	0	0	0	0.000	0.000	0.000			
2014	10,463	0	2	0	12,956	0	18,039	30,995	1,238	1,724	2,962			
2015	10,394	0	1	0	709	0	4,853	5,562	0.068	0.467	0.535			
2016	12,550	0	0	0	0	0	0	0	0.000	0.000	0.000			
2017	11,931	0	0	0	0	0	0	0	0.000	0.000	0.000			
<b>MA Total:</b>	<b>56,834</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>13,665</b>	<b>0</b>	<b>22,892</b>	<b>36,556</b>	<b>0.240</b>	<b>0.403</b>	<b>0.643</b>			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.248	0.787	.
(14) Massachusetts Credibility:	0.090	0.120	.
(15) Countrywide Pure Premium:	0.904	0.571	1.475
(16) Countrywide Indicated Relativity:	1.012	1.219	.
(17) Countrywide Credibility:	0.460	0.440	.
(18) Countrywide Lost-Time Claims:	268.00	.	.
(19) Pure Premium Underlying Present Rate:	1.124	0.491	1.615
(20) Relativity to Underlying Present Rate:	1.277	1.096	.
(21) Credibility to Underlying Relativity:	0.450	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.063	1.113	.
(24) Balanced Formula Relativity:	1.049	1.099	1.066

Class(es): 4038 PLASTER STATUARY OR ORNAMENT MFG									Effective: 7/1/2020			Manufacturing		
Converted Unlimited Losses														
Amount														
Claim Count				Indemnity		Medical		MA Indicated Pure Premiums						
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)			
2013	15,298	0	0	0	0	0	0	0	0.000	0.000	0.000			
2014	15,837	0	0	0	0	0	0	0	0.000	0.000	0.000			
2015	15,537	0	0	0	0	0	0	0	0.000	0.000	0.000			
2016	13,856	0	0	0	0	0	0	0	0.000	0.000	0.000			
2017	14,182	0	0	0	0	0	0	0	0.000	0.000	0.000			
<b>MA Total:</b>	<b>74,710</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.110	0.140	.
(15) Countrywide Pure Premium:	2.953	0.550	3.503
(16) Countrywide Indicated Relativity:	3.307	1.175	.
(17) Countrywide Credibility:	0.290	0.310	.
(18) Countrywide Lost-Time Claims:	53.000	.	.
(19) Pure Premium Underlying Present Rate:	1.365	0.583	1.948
(20) Relativity to Underlying Present Rate:	1.550	1.302	.
(21) Credibility to Underlying Relativity:	0.600	0.550	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.889	1.081	.
(24) Balanced Formula Relativity:	1.864	1.066	1.589

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4053 POTTERY MFG: CHINA OR TABLEWARE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	59,220	0	10	0	10,788	0	54,335	65,123	0.182	0.918	1.100
2014	71,577	2	7	280,107	328,297	124,030	21,740	754,174	8.500	2.037	10.537
2015	78,068	0	11	0	72,209	0	34,810	107,020	0.925	0.446	1.371
2016	81,111	0	5	0	7,013	0	12,555	19,568	0.086	0.155	0.241
2017	83,652	0	12	0	39,546	0	18,661	58,207	0.473	0.223	0.696
<b>MA Total:</b>	<b>373,627</b>	<b>2</b>	<b>45</b>	<b>280,107</b>	<b>457,853</b>	<b>124,030</b>	<b>142,101</b>	<b>1,004,091</b>	<b>1.975</b>	<b>0.712</b>	<b>2.687</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.035	1.392	.
(14) Massachusetts Credibility:	0.180	0.260	.
(15) Countrywide Pure Premium:	0.436	0.391	0.827
(16) Countrywide Indicated Relativity:	0.488	0.835	.
(17) Countrywide Credibility:	0.160	0.160	.
(18) Countrywide Lost-Time Claims:	11.000	.	.
(19) Pure Premium Underlying Present Rate:	0.961	0.575	1.536
(20) Relativity to Underlying Present Rate:	1.092	1.284	.
(21) Credibility to Underlying Relativity:	0.660	0.580	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.165	1.240	.
(24) Balanced Formula Relativity:	1.150	1.224	1.175

Class(es):		Effective: 7/1/2020							Manufacturing		
4062 POTTERY MFG: PORCELAIN WARE-MECHANICAL PRESS FORMING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	43,212	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	58,612	0	2	0	845	0	5,773	6,618	0.014	0.098	0.113
2015	69,316	0	1	0	0	0	232	232	0.000	0.003	0.003
2016	73,394	0	1	0	0	0	182	182	0.000	0.002	0.002
2017	84,799	0	3	0	46,224	0	26,413	72,637	0.545	0.311	0.857
<b>MA Total:</b>	<b>329,333</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>47,070</b>	<b>0</b>	<b>32,600</b>	<b>79,669</b>	<b>0.143</b>	<b>0.099</b>	<b>0.242</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.147	0.193	.
(14) Massachusetts Credibility:	0.150	0.220	.
(15) Countrywide Pure Premium:	1.228	0.680	1.908
(16) Countrywide Indicated Relativity:	1.375	1.452	.
(17) Countrywide Credibility:	0.430	0.390	.
(18) Countrywide Lost-Time Claims:	315.00	.	.
(19) Pure Premium Underlying Present Rate:	0.751	0.404	1.155
(20) Relativity to Underlying Present Rate:	0.853	0.902	.
(21) Credibility to Underlying Relativity:	0.420	0.390	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.972	0.960	.
(24) Balanced Formula Relativity:	0.959	0.948	0.955

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## Calculation of Class Relativities

Class(es): 4112 INCANDESCENT LAMP MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	72,342	0	3	0	0	0	1,203	1,203	0.000	0.017	0.017
2014	55,027	0	5	0	3,953	0	12,518	16,471	0.072	0.227	0.299
2015	54,906	0	8	0	2,878	0	6,331	9,209	0.052	0.115	0.168
2016	44,168	0	2	0	1,668	0	6,854	8,522	0.038	0.155	0.193
2017	64,542	0	2	0	523	0	2,719	3,242	0.008	0.042	0.050
<b>MA Total:</b>	<b>290,984</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>9,022</b>	<b>0</b>	<b>29,625</b>	<b>38,647</b>	<b>0.031</b>	<b>0.102</b>	<b>0.133</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.032	0.199	.
(14) Massachusetts Credibility:	0.090	0.120	.
(15) Countrywide Pure Premium:	0.102	0.094	0.196
(16) Countrywide Indicated Relativity:	0.114	0.201	.
(17) Countrywide Credibility:	0.140	0.140	.
(18) Countrywide Lost-Time Claims:	8.000	.	.
(19) Pure Premium Underlying Present Rate:	0.220	0.104	0.324
(20) Relativity to Underlying Present Rate:	0.250	0.231	.
(21) Credibility to Underlying Relativity:	0.770	0.740	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.211	0.223	.
(24) Balanced Formula Relativity:	0.209	0.220	0.213

Class(es): 4114 GLASSWARE MFG-NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	136,672	1	13	86,783	5,224	15,846	7,556	115,410	0.673	0.171	0.844
2014	157,682	0	17	0	225,311	0	102,791	328,102	1.429	0.652	2.081
2015	188,417	0	22	0	67,534	0	45,426	112,960	0.358	0.241	0.600
2016	145,591	0	20	0	435,951	0	108,666	544,617	2.994	0.746	3.741
2017	39,083	1	10	78,891	142,869	59,778	18,244	299,783	5.674	1.996	7.670
<b>MA Total:</b>	<b>667,446</b>	<b>2</b>	<b>82</b>	<b>165,674</b>	<b>876,890</b>	<b>75,624</b>	<b>282,684</b>	<b>1,400,872</b>	<b>1.562</b>	<b>0.537</b>	<b>2.099</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.609	1.049	.
(14) Massachusetts Credibility:	0.240	0.290	.
(15) Countrywide Pure Premium:	1.453	0.553	2.006
(16) Countrywide Indicated Relativity:	1.627	1.180	.
(17) Countrywide Credibility:	0.380	0.360	.
(18) Countrywide Lost-Time Claims:	325.00	.	.
(19) Pure Premium Underlying Present Rate:	1.102	0.423	1.525
(20) Relativity to Underlying Present Rate:	1.252	0.943	.
(21) Credibility to Underlying Relativity:	0.380	0.350	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.480	1.059	.
(24) Balanced Formula Relativity:	1.461	1.046	1.318

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## Calculation of Class Relativities

Class(es): 4130 GLASS MERCHANT		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	193.870	0	25	0	352.332	0	125.419	477.751	1.817	0.647	2.464
2014	217.699	1	30	240.113	21.198	108.523	45.647	415.480	1.200	0.708	1.909
2015	211.918	1	19	214.923	81.071	33.769	98.667	428.430	1.397	0.625	2.022
2016	256.142	1	42	447.538	363.069	102.645	119.451	1,032.703	3.165	0.867	4.032
2017	287.993	0	45	0	285.973	0	152.027	438.000	0.993	0.528	1.521
<b>MA Total:</b>	<b>1,167,622</b>	<b>3</b>	<b>161</b>	<b>902,574</b>	<b>1,103,643</b>	<b>244,936</b>	<b>541,211</b>	<b>2,792,364</b>	<b>1.718</b>	<b>0.673</b>	<b>2.391</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.770	1.316	.
(14) Massachusetts Credibility:	0.320	0.450	.
(15) Countrywide Pure Premium:	1.399	0.765	2.164
(16) Countrywide Indicated Relativity:	1.567	1.635	.
(17) Countrywide Credibility:	0.340	0.280	.
(18) Countrywide Lost-Time Claims:	935.00	.	.
(19) Pure Premium Underlying Present Rate:	1.371	0.685	2.055
(20) Relativity to Underlying Present Rate:	1.557	1.528	.
(21) Credibility to Underlying Relativity:	0.340	0.270	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.628	1.462	.
(24) Balanced Formula Relativity:	1.607	1.443	1.551

Class(es): 4133 CATHEDRAL OR ART GLASS WINDOW MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	10.431	0	1	0	74	0	624	698	0.007	0.060	0.067
2014	14.947	0	1	0	0	0	1.222	1.222	0.000	0.082	0.082
2015	11.759	0	2	0	0	0	1.451	1.451	0.000	0.123	0.123
2016	11.922	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	11.462	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>60,521</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>74</b>	<b>0</b>	<b>3,297</b>	<b>3,371</b>	<b>0.001</b>	<b>0.054</b>	<b>0.056</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.001	0.106	.
(14) Massachusetts Credibility:	0.080	0.100	.
(15) Countrywide Pure Premium:	0.783	0.376	1.160
(16) Countrywide Indicated Relativity:	0.877	0.804	.
(17) Countrywide Credibility:	0.230	0.240	.
(18) Countrywide Lost-Time Claims:	28.000	.	.
(19) Pure Premium Underlying Present Rate:	0.762	0.336	1.098
(20) Relativity to Underlying Present Rate:	0.866	0.750	.
(21) Credibility to Underlying Relativity:	0.690	0.660	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.799	0.699	.
(24) Balanced Formula Relativity:	0.789	0.690	0.755

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## Calculation of Class Relativities

Class(es): 4150 OPTICAL GOODS MFG-NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,758,297	0	108	0	280,147	0	288,485	568,632	0.159	0.164	0.323
2014	1,889,441	1	102	122,204	352,814	28,249	185,033	688,300	0.251	0.113	0.364
2015	2,135,133	2	102	248,984	351,320	40,135	208,261	848,700	0.281	0.116	0.397
2016	2,271,241	2	83	384,993	282,750	41,207	181,904	890,854	0.294	0.098	0.392
2017	1,725,575	3	70	340,438	588,225	92,833	138,079	1,159,574	0.538	0.134	0.672
<b>MA Total:</b>	<b>9,779,686</b>	<b>8</b>	<b>465</b>	<b>1,096,618</b>	<b>1,855,256</b>	<b>202,424</b>	<b>1,001,761</b>	<b>4,156,060</b>	<b>0.302</b>	<b>0.123</b>	<b>0.425</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.311	0.241	.
(14) Massachusetts Credibility:	0.410	0.540	.
(15) Countrywide Pure Premium:	0.672	0.285	0.957
(16) Countrywide Indicated Relativity:	0.753	0.608	.
(17) Countrywide Credibility:	0.300	0.230	.
(18) Countrywide Lost-Time Claims:	88,000	.	.
(19) Pure Premium Underlying Present Rate:	0.298	0.134	0.431
(20) Relativity to Underlying Present Rate:	0.338	0.298	.
(21) Credibility to Underlying Relativity:	0.290	0.230	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.451	0.338	.
(24) Balanced Formula Relativity:	0.446	0.334	0.407

Class(es): 4239 PAPER MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	163,576	0	27	0	56,528	0	38,944	95,473	0.346	0.238	0.584
2014	171,243	1	43	54,280	72,260	5,719	91,425	223,683	0.739	0.567	1.306
2015	192,752	0	34	0	92,700	0	91,127	183,828	0.481	0.473	0.954
2016	163,690	0	26	0	151,833	0	80,257	232,090	0.928	0.490	1.418
2017	155,440	1	17	46,098	118,389	43,503	103,911	311,901	1.058	0.948	2.007
<b>MA Total:</b>	<b>846,702</b>	<b>2</b>	<b>147</b>	<b>100,378</b>	<b>491,710</b>	<b>49,222</b>	<b>405,664</b>	<b>1,046,974</b>	<b>0.699</b>	<b>0.537</b>	<b>1.237</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.720	1.050	.
(14) Massachusetts Credibility:	0.250	0.350	.
(15) Countrywide Pure Premium:	1.175	0.497	1.673
(16) Countrywide Indicated Relativity:	1.316	1.062	.
(17) Countrywide Credibility:	0.380	0.330	.
(18) Countrywide Lost-Time Claims:	1819.0	.	.
(19) Pure Premium Underlying Present Rate:	1.047	0.528	1.575
(20) Relativity to Underlying Present Rate:	1.189	1.180	.
(21) Credibility to Underlying Relativity:	0.370	0.320	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.120	1.096	.
(24) Balanced Formula Relativity:	1.105	1.081	1.097

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4243 BOX MFG-FOLDING PAPER-NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	225,510	1	30	13,948	286,960	6,580	100,018	407,507	1,334	0,473	1,807
2014	243,323	1	27	152,930	308,362	17,640	139,675	618,607	1,896	0,647	2,542
2015	213,373	1	36	38,350	563,479	1,692	176,814	780,335	2,821	0,837	3,657
2016	254,426	0	40	0	613,403	0	305,224	918,628	2,411	1,200	3,611
2017	257,211	2	27	121,449	264,676	48,212	84,471	518,808	1,501	0,516	2,017
<b>MA Total:</b>	<b>1,193,844</b>	<b>5</b>	<b>160</b>	<b>326,678</b>	<b>2,036,880</b>	<b>74,125</b>	<b>806,202</b>	<b>3,243,885</b>	<b>1,980</b>	<b>0,737</b>	<b>2,717</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.039	1.441	.
(14) Massachusetts Credibility:	0.340	0.450	.
(15) Countrywide Pure Premium:	1.044	0.493	1.537
(16) Countrywide Indicated Relativity:	1.169	1.052	.
(17) Countrywide Credibility:	0.330	0.280	.
(18) Countrywide Lost-Time Claims:	1003.0	.	.
(19) Pure Premium Underlying Present Rate:	1.489	0.684	2.173
(20) Relativity to Underlying Present Rate:	1.691	1.526	.
(21) Credibility to Underlying Relativity:	0.330	0.270	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.637	1.355	.
(24) Balanced Formula Relativity:	1.616	1.337	1.520

Class(es):		Effective: 7/1/2020							Manufacturing		
4244 CORRUGATED OR FIBERBOARD CONTAINER MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	310,612	2	34	478,493	95,658	60,662	123,167	757,979	1,848	0,592	2,440
2014	325,214	5	37	237,575	347,715	71,857	160,990	818,137	1,800	0,716	2,516
2015	205,715	0	29	0	216,071	0	54,663	270,734	1,050	0,266	1,316
2016	211,914	2	27	142,499	638,910	69,942	158,467	1,009,817	3,687	1,078	4,765
2017	247,774	0	34	0	213,511	0	114,146	327,657	0,862	0,461	1,322
<b>MA Total:</b>	<b>1,301,229</b>	<b>9</b>	<b>161</b>	<b>858,566</b>	<b>1,511,865</b>	<b>202,460</b>	<b>611,433</b>	<b>3,184,324</b>	<b>1,822</b>	<b>0,625</b>	<b>2,447</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.877	1.222	.
(14) Massachusetts Credibility:	0.310	0.410	.
(15) Countrywide Pure Premium:	1.106	0.553	1.659
(16) Countrywide Indicated Relativity:	1.238	1.181	.
(17) Countrywide Credibility:	0.350	0.300	.
(18) Countrywide Lost-Time Claims:	1191.0	.	.
(19) Pure Premium Underlying Present Rate:	1.116	0.483	1.599
(20) Relativity to Underlying Present Rate:	1.267	1.079	.
(21) Credibility to Underlying Relativity:	0.340	0.290	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.446	1.168	.
(24) Balanced Formula Relativity:	1.427	1.153	1.332

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## Calculation of Class Relativities

Class(es): 4250 PAPER COATING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	926,296	2	84	261,762	498,479	46,634	278,231	1,085,107	0.821	0.351	1.171
2014	923,429	1	93	69,868	831,965	4,093	432,967	1,338,893	0.977	0.473	1.450
2015	945,444	0	78	0	488,330	0	299,009	787,339	0.517	0.316	0.833
2016	848,955	5	61	891,413	384,691	349,235	221,237	1,846,576	1.503	0.672	2.175
2017	677,713	2	54	77,676	514,280	51,150	256,833	899,939	0.873	0.454	1.328
<b>MA Total:</b>	<b>4,321,837</b>	<b>10</b>	<b>370</b>	<b>1,300,719</b>	<b>2,717,745</b>	<b>451,112</b>	<b>1,488,277</b>	<b>5,957,854</b>	<b>0.930</b>	<b>0.449</b>	<b>1.379</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.958	0.877	.
(14) Massachusetts Credibility:	0.440	0.640	.
(15) Countrywide Pure Premium:	0.795	0.461	1.257
(16) Countrywide Indicated Relativity:	0.891	0.985	.
(17) Countrywide Credibility:	0.280	0.180	.
(18) Countrywide Lost-Time Claims:	739.00	.	.
(19) Pure Premium Underlying Present Rate:	0.809	0.453	1.262
(20) Relativity to Underlying Present Rate:	0.919	1.011	.
(21) Credibility to Underlying Relativity:	0.280	0.180	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.928	0.921	.
(24) Balanced Formula Relativity:	0.916	0.909	0.914

Class(es): 4251 STATIONERY MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	138,853	0	8	0	9,131	0	10,173	19,304	0.066	0.073	0.139
2014	109,254	0	3	0	547,109	0	60,335	607,444	5.008	0.552	5.560
2015	113,382	0	7	0	17,797	0	12,324	30,121	0.157	0.109	0.266
2016	108,686	0	10	0	30,429	0	34,009	64,438	0.280	0.313	0.593
2017	103,404	0	6	0	1,678	0	6,556	8,234	0.016	0.063	0.080
<b>MA Total:</b>	<b>573,579</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>606,144</b>	<b>0</b>	<b>123,397</b>	<b>729,541</b>	<b>1.057</b>	<b>0.215</b>	<b>1.272</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.089	0.420	.
(14) Massachusetts Credibility:	0.220	0.270	.
(15) Countrywide Pure Premium:	1.097	0.520	1.617
(16) Countrywide Indicated Relativity:	1.229	1.111	.
(17) Countrywide Credibility:	0.390	0.370	.
(18) Countrywide Lost-Time Claims:	327.00	.	.
(19) Pure Premium Underlying Present Rate:	1.122	0.411	1.533
(20) Relativity to Underlying Present Rate:	1.274	0.917	.
(21) Credibility to Underlying Relativity:	0.390	0.360	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.216	0.855	.
(24) Balanced Formula Relativity:	1.200	0.843	1.077

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## Calculation of Class Relativities

Class(es): 4273 BAG MFG-PAPER OR PLASTIC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	46,643	1	15	70,426	73,730	24,578	36,522	205,255	3,091	1,310	4,401
2014	48,334	0	12	0	189,981	0	91,185	281,167	3,931	1,887	5,817
2015	46,720	2	15	269,225	28,874	25,978	30,261	354,338	6,381	1,204	7,584
2016	50,284	1	22	66,157	84,610	12,122	63,758	226,647	2,998	1,509	4,507
2017	52,552	0	8	0	117,877	0	38,079	155,955	2,243	0,725	2,968
<b>MA Total:</b>	<b>244,533</b>	<b>.8</b>	<b>72</b>	<b>405,808</b>	<b>495,071</b>	<b>62,679</b>	<b>259,805</b>	<b>1,223,363</b>	<b>3,684</b>	<b>1,319</b>	<b>5,003</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.795	2.577	.
(14) Massachusetts Credibility:	0.160	0.220	.
(15) Countrywide Pure Premium:	0.998	0.536	1.534
(16) Countrywide Indicated Relativity:	1.117	1.145	.
(17) Countrywide Credibility:	0.420	0.390	.
(18) Countrywide Lost-Time Claims:	722.00	.	.
(19) Pure Premium Underlying Present Rate:	1.189	0.581	1.770
(20) Relativity to Underlying Present Rate:	1.350	1.297	.
(21) Credibility to Underlying Relativity:	0.420	0.390	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.644	1.519	.
(24) Balanced Formula Relativity:	1.622	1.499	1.580

Class(es): 4279 PAPER GOODS MFG NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	349,087	1	40	125,031	177,215	17,908	116,228	436,382	0.866	0.384	1.250
2014	407,010	3	74	71,431	195,016	51,498	165,391	483,336	0.655	0.533	1.188
2015	478,342	2	57	364,008	101,667	51,690	167,235	684,599	0.974	0.458	1.431
2016	423,740	1	44	102,651	632,501	41,046	275,450	1,051,647	1.735	0.747	2.482
2017	511,106	2	66	407,136	458,694	52,277	240,563	1,158,670	1.694	0.573	2.267
<b>MA Total:</b>	<b>2,169,286</b>	<b>9</b>	<b>281</b>	<b>1,070,257</b>	<b>1,565,092</b>	<b>214,419</b>	<b>964,867</b>	<b>3,814,635</b>	<b>1.215</b>	<b>0.544</b>	<b>1.758</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.251	1.062	.
(14) Massachusetts Credibility:	0.340	0.480	.
(15) Countrywide Pure Premium:	1.127	0.534	1.661
(16) Countrywide Indicated Relativity:	1.262	1.141	.
(17) Countrywide Credibility:	0.330	0.260	.
(18) Countrywide Lost-Time Claims:	1505.0	.	.
(19) Pure Premium Underlying Present Rate:	0.876	0.445	1.321
(20) Relativity to Underlying Present Rate:	0.995	0.994	.
(21) Credibility to Underlying Relativity:	0.330	0.260	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.170	1.065	.
(24) Balanced Formula Relativity:	1.155	1.051	1.119



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4283 BUILDING OR ROOFING PAPER OR FELT PREPARATION-NO INSTALLATION											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	15,366	0	3	0	5,156	0	3,510	8,666	0.336	0.228	0.564
2014	6,683	0	1	0	12,736	0	682	13,418	1.906	0.102	2.008
2015	10,701	0	2	0	51,420	0	11,679	63,098	4.805	1.091	5.897
2016	6,369	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	15,363	0	2	0	682	0	2,810	3,492	0.044	0.183	0.227
<b>MA Total:</b>	<b>54,482</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>69,993</b>	<b>0</b>	<b>18,681</b>	<b>88,674</b>	<b>1.285</b>	<b>0.343</b>	<b>1.628</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.323	0.670	.
(14) Massachusetts Credibility:	0.080	0.110	.
(15) Countrywide Pure Premium:	0.709	0.318	1.027
(16) Countrywide Indicated Relativity:	0.794	0.679	.
(17) Countrywide Credibility:	0.420	0.440	.
(18) Countrywide Lost-Time Claims:	128.00	.	.
(19) Pure Premium Underlying Present Rate:	0.928	0.458	1.386
(20) Relativity to Underlying Present Rate:	1.054	1.022	.
(21) Credibility to Underlying Relativity:	0.500	0.450	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.967	0.832	.
(24) Balanced Formula Relativity:	0.954	0.821	0.908

Class(es):		Effective: 7/1/2020							Manufacturing		
4299 PRINTING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,271,014	8	302	716,084	1,469,486	222,503	1,073,285	3,481,358	0.962	0.571	1.533
2014	2,209,793	13	191	1,284,096	841,285	199,626	585,812	2,910,820	0.962	0.355	1.317
2015	2,441,677	14	238	1,306,379	804,208	897,840	756,033	3,764,459	0.864	0.677	1.542
2016	2,216,506	5	179	579,607	2,190,515	65,353	864,506	3,699,981	1.250	0.420	1.669
2017	2,403,226	5	180	472,576	911,277	98,832	899,415	2,382,101	0.576	0.415	0.991
<b>MA Total:</b>	<b>11,542,217</b>	<b>45</b>	<b>1,090</b>	<b>4,358,742</b>	<b>6,216,772</b>	<b>1,484,155</b>	<b>4,179,050</b>	<b>16,238,719</b>	<b>0.916</b>	<b>0.491</b>	<b>1.407</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.944	0.959	.
(14) Massachusetts Credibility:	0.660	0.930	.
(15) Countrywide Pure Premium:	0.831	0.463	1.294
(16) Countrywide Indicated Relativity:	0.930	0.989	.
(17) Countrywide Credibility:	0.170	0.040	.
(18) Countrywide Lost-Time Claims:	5246.0	.	.
(19) Pure Premium Underlying Present Rate:	0.821	0.436	1.257
(20) Relativity to Underlying Present Rate:	0.932	0.973	.
(21) Credibility to Underlying Relativity:	0.170	0.030	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.940	0.961	.
(24) Balanced Formula Relativity:	0.927	0.948	0.934

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## Calculation of Class Relativities

Class(es): 4304 NEWSPAPER PUBLISHING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	594,154	4	72	522,468	947,787	416,645	539,827	2,426,726	2,475	1,610	4,084
2014	598,084	2	75	178,675	570,552	147,400	269,770	1,166,396	1,253	0,698	1,950
2015	694,569	5	68	553,301	1,016,827	154,101	519,343	2,243,572	2,261	0,970	3,230
2016	484,125	0	83	0	938,882	0	598,939	1,537,821	1,939	1,237	3,176
2017	333,639	4	48	492,840	1,066,818	164,201	479,307	2,203,166	4,675	1,929	6,603
<b>MA Total:</b>	<b>2,704,571</b>	<b>15</b>	<b>346</b>	<b>1,747,283</b>	<b>4,540,866</b>	<b>882,347</b>	<b>2,407,185</b>	<b>9,577,681</b>	<b>2,325</b>	<b>1,216</b>	<b>3,541</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.395	2.377	.
(14) Massachusetts Credibility:	0.540	0.810	.
(15) Countrywide Pure Premium:	1.968	1.104	3.072
(16) Countrywide Indicated Relativity:	2.204	2.358	.
(17) Countrywide Credibility:	0.230	0.100	.
(18) Countrywide Lost-Time Claims:	1216.0	.	.
(19) Pure Premium Underlying Present Rate:	2.120	1.296	3.416
(20) Relativity to Underlying Present Rate:	2.408	2.892	.
(21) Credibility to Underlying Relativity:	0.230	0.090	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.354	2.422	.
(24) Balanced Formula Relativity:	2.323	2.390	2.346

Class(es): 4307 BOOKBINDING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	149,037	0	10	0	270,309	0	70,185	340,494	1,814	0,471	2,285
2014	159,570	0	12	0	12,179	0	34,490	46,669	0,076	0,216	0,292
2015	156,716	1	13	95,625	2,666	20,367	18,773	137,431	0,627	0,250	0,877
2016	173,267	0	14	0	89,039	0	160,444	249,483	0,514	0,926	1,440
2017	156,568	0	10	0	45,108	0	50,033	95,141	0,288	0,320	0,608
<b>MA Total:</b>	<b>795,157</b>	<b>1</b>	<b>59</b>	<b>95,625</b>	<b>419,301</b>	<b>20,367</b>	<b>333,923</b>	<b>869,217</b>	<b>0,648</b>	<b>0,446</b>	<b>1,093</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.667	0.871	.
(14) Massachusetts Credibility:	0.210	0.310	.
(15) Countrywide Pure Premium:	0.761	0.421	1.181
(16) Countrywide Indicated Relativity:	0.852	0.899	.
(17) Countrywide Credibility:	0.400	0.350	.
(18) Countrywide Lost-Time Claims:	202.00	.	.
(19) Pure Premium Underlying Present Rate:	0.692	0.391	1.083
(20) Relativity to Underlying Present Rate:	0.786	0.873	.
(21) Credibility to Underlying Relativity:	0.390	0.340	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.787	0.881	.
(24) Balanced Formula Relativity:	0.777	0.870	0.809

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4308 LINOTYPE OR HAND COMPOSITION											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	118	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	105	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	106	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	104	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	323	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>756</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.020	0.010	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	1.578	0.388	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	1.406	0.176	1.582
(20) Relativity to Underlying Present Rate:	1.597	0.393	.
(21) Credibility to Underlying Relativity:	0.980	0.990	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.565	0.389	.
(24) Balanced Formula Relativity:	1.544	0.384	1.144

Class(es):		Effective: 7/1/2020							Manufacturing		
4351 PHOTOENGRAVING											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	264.619	1	25	299.602	70.451	154.787	29.576	554.416	1.398	0.697	2.095
2014	270.241	1	29	139.035	38.770	6.134	50.398	234.337	0.658	0.209	0.867
2015	285.673	1	25	37.784	24.639	1.667	51.739	115.829	0.219	0.187	0.405
2016	305.322	0	38	0	98.456	0	85.568	184.024	0.322	0.280	0.603
2017	328.065	0	36	0	39.085	0	26.803	65.887	0.119	0.082	0.201
<b>MA Total:</b>	<b>1,453.919</b>	<b>3</b>	<b>153</b>	<b>476.421</b>	<b>271.401</b>	<b>162.588</b>	<b>244.084</b>	<b>1,154.493</b>	<b>0.514</b>	<b>0.280</b>	<b>0.794</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.530	0.547	.
(14) Massachusetts Credibility:	0.220	0.300	.
(15) Countrywide Pure Premium:	0.382	0.212	0.594
(16) Countrywide Indicated Relativity:	0.428	0.454	.
(17) Countrywide Credibility:	0.240	0.260	.
(18) Countrywide Lost-Time Claims:	33.000	.	.
(19) Pure Premium Underlying Present Rate:	0.421	0.196	0.617
(20) Relativity to Underlying Present Rate:	0.478	0.438	.
(21) Credibility to Underlying Relativity:	0.540	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.477	0.475	.
(24) Balanced Formula Relativity:	0.471	0.469	0.470

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## Calculation of Class Relativities

Class(es): 4352 ENGRAVING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	46,244	0	1	0	0	0	171	171	0.000	0.004	0.004
2014	50,295	0	2	0	0	0	570	570	0.000	0.011	0.011
2015	64,195	0	2	0	0	0	753	753	0.000	0.012	0.012
2016	63,939	0	3	0	1,284	0	950	2,234	0.020	0.015	0.035
2017	71,041	0	4	0	0	0	3,775	3,775	0.000	0.053	0.053
<b>MA Total:</b>	<b>295,715</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>1,284</b>	<b>0</b>	<b>6,219</b>	<b>7,503</b>	<b>0.004</b>	<b>0.021</b>	<b>0.025</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.004	0.041	.
(14) Massachusetts Credibility:	0.140	0.180	.
(15) Countrywide Pure Premium:	0.849	0.375	1.225
(16) Countrywide Indicated Relativity:	0.951	0.802	.
(17) Countrywide Credibility:	0.380	0.400	.
(18) Countrywide Lost-Time Claims:	100.00	.	.
(19) Pure Premium Underlying Present Rate:	0.704	0.261	0.966
(20) Relativity to Underlying Present Rate:	0.800	0.583	.
(21) Credibility to Underlying Relativity:	0.480	0.420	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.746	0.573	.
(24) Balanced Formula Relativity:	0.736	0.565	0.677

Class(es): 4360 MOTION PICTURE: DEVLPMNT OF NEGATIVES, PRINTING & ALL SUB OP		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	576,029	0	5	0	0	0	22,914	22,914	0.000	0.040	0.040
2014	574,511	0	6	0	1,719	0	6,091	7,810	0.003	0.011	0.014
2015	573,042	0	1	0	0	0	283	283	0.000	0.000	0.000
2016	541,230	0	3	0	380	0	5,071	5,451	0.001	0.009	0.010
2017	573,538	0	1	0	0	0	220	220	0.000	0.000	0.000
<b>MA Total:</b>	<b>2,838,350</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>2,099</b>	<b>0</b>	<b>34,579</b>	<b>36,678</b>	<b>0.001</b>	<b>0.012</b>	<b>0.013</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.001	0.024	.
(14) Massachusetts Credibility:	0.250	0.330	.
(15) Countrywide Pure Premium:	0.490	0.277	0.768
(16) Countrywide Indicated Relativity:	0.549	0.592	.
(17) Countrywide Credibility:	0.380	0.340	.
(18) Countrywide Lost-Time Claims:	174.00	.	.
(19) Pure Premium Underlying Present Rate:	0.285	0.129	0.414
(20) Relativity to Underlying Present Rate:	0.324	0.288	.
(21) Credibility to Underlying Relativity:	0.370	0.330	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.329	0.304	.
(24) Balanced Formula Relativity:	0.324	0.300	0.316

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Office and Clerical			
4361 PHOTOGRAPHER - ALL EMP & CLERICAL, SALES, DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	610,285	1	24	209,380	23,504	381,648	39,040	653,572	0.382	0.689	1.071	
2014	610,340	0	24	0	48,182	0	95,467	143,649	0.079	0.156	0.235	
2015	611,325	1	13	122,876	8,278	70,047	12,103	213,305	0.215	0.134	0.349	
2016	635,480	3	21	294,752	9,921	107,187	35,128	446,988	0.479	0.224	0.703	
2017	590,338	1	19	154,440	3,720	88,051	23,446	269,657	0.268	0.189	0.457	
<b>MA Total:</b>	<b>3,057,768</b>	<b>6</b>	<b>101</b>	<b>781,448</b>	<b>93,605</b>	<b>646,933</b>	<b>205,184</b>	<b>1,727,170</b>	<b>0.286</b>	<b>0.279</b>	<b>0.565</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.127	6.545	.
(14) Massachusetts Credibility:	0.260	0.400	.
(15) Countrywide Pure Premium:	0.274	0.191	0.465
(16) Countrywide Indicated Relativity:	4.591	4.946	.
(17) Countrywide Credibility:	0.370	0.300	.
(18) Countrywide Lost-Time Claims:	497.00	.	.
(19) Pure Premium Underlying Present Rate:	0.305	0.200	0.505
(20) Relativity to Underlying Present Rate:	4.724	5.150	.
(21) Credibility to Underlying Relativity:	0.370	0.300	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	4.519	5.647	.
(24) Balanced Formula Relativity:	4.539	5.657	4.964

Class(es):		Effective: 7/1/2020							Goods and Services			
4362 MOTION PICTURE: FILM EXCH & PROJECTION RMS, CL												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	8,720	0	0	0	0	0	0	0	0.000	0.000	0.000	
2014	5,625	0	0	0	0	0	0	0	0.000	0.000	0.000	
2015	4,486	0	0	0	0	0	0	0	0.000	0.000	0.000	
2016	1,769	0	0	0	0	0	0	0	0.000	0.000	0.000	
2017	2,697	0	0	0	0	0	0	0	0.000	0.000	0.000	
<b>MA Total:</b>	<b>23,297</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.030	0.050	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	0.337	0.313	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	0.255	0.130	0.385
(20) Relativity to Underlying Present Rate:	0.340	0.315	.
(21) Credibility to Underlying Relativity:	0.970	0.950	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.330	0.300	.
(24) Balanced Formula Relativity:	0.327	0.300	0.317

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## Calculation of Class Relativities

Class(es): 4410 RUBBER GOODS MFG NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	575.846	3	94	55.338	195.505	23.779	202.022	476.643	0.436	0.392	0.828
2014	482.606	5	68	511.990	830.987	277.086	425.032	2,045.095	2.783	1.455	4.238
2015	457.932	1	77	4.002	446.007	15.075	306.095	771.179	0.983	0.701	1.684
2016	387.605	0	48	0	914.868	0	1,139.633	2,054.501	2.360	2.940	5.300
2017	427.338	1	41	213.728	212.002	34.235	257.027	716.993	0.996	0.682	1.678
<b>MA Total:</b>	<b>2,331,328</b>	<b>10</b>	<b>328</b>	<b>785,058</b>	<b>2,599,368</b>	<b>350,175</b>	<b>2,329,809</b>	<b>6,064,410</b>	<b>1.452</b>	<b>1.150</b>	<b>2.601</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.495	2.247	.
(14) Massachusetts Credibility:	0.400	0.570	.
(15) Countrywide Pure Premium:	1.240	0.691	1.930
(16) Countrywide Indicated Relativity:	1.388	1.475	.
(17) Countrywide Credibility:	0.300	0.220	.
(18) Countrywide Lost-Time Claims:	2743.0	.	.
(19) Pure Premium Underlying Present Rate:	1.159	0.623	1.782
(20) Relativity to Underlying Present Rate:	1.316	1.390	.
(21) Credibility to Underlying Relativity:	0.300	0.210	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.410	1.897	.
(24) Balanced Formula Relativity:	1.391	1.872	1.557

Class(es): 4432 FOUNTAIN PEN MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	57.316	0	5	0	5.237	0	18.663	23.900	0.091	0.326	0.417
2014	60.186	0	3	0	5.171	0	12.156	17.327	0.086	0.202	0.288
2015	73.496	0	4	0	9.899	0	1.654	11.553	0.135	0.023	0.157
2016	63.230	0	5	0	8.544	0	1.546	10.090	0.135	0.024	0.160
2017	63.484	0	10	0	3.857	0	5.566	9.422	0.061	0.088	0.148
<b>MA Total:</b>	<b>317.713</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>32.708</b>	<b>0</b>	<b>39.584</b>	<b>72.292</b>	<b>0.103</b>	<b>0.125</b>	<b>0.228</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.106	0.244	.
(14) Massachusetts Credibility:	0.110	0.170	.
(15) Countrywide Pure Premium:	0.251	0.218	0.469
(16) Countrywide Indicated Relativity:	0.281	0.466	.
(17) Countrywide Credibility:	0.270	0.290	.
(18) Countrywide Lost-Time Claims:	44.000	.	.
(19) Pure Premium Underlying Present Rate:	0.374	0.228	0.601
(20) Relativity to Underlying Present Rate:	0.425	0.508	.
(21) Credibility to Underlying Relativity:	0.620	0.540	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.351	0.451	.
(24) Balanced Formula Relativity:	0.346	0.445	0.380

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4439 LACQUER OR SPIRIT VARNISH MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	41,149	0	4	0	0	0	1,800	1,800	0.000	0.044	0.044
2014	38,754	1	4	283,141	0	177,198	5,051	465,390	7.306	4.703	12.009
2015	41,771	0	10	0	510,077	0	252,556	762,633	12.211	6.046	18.258
2016	42,107	0	10	0	53,434	0	70,006	123,439	1.269	1.663	2.932
2017	43,570	0	6	0	53,014	0	14,830	67,844	1.217	0.340	1.557
<b>MA Total:</b>	<b>207,351</b>	<b>1</b>	<b>34</b>	<b>283,141</b>	<b>616,524</b>	<b>177,198</b>	<b>344,244</b>	<b>1,421,107</b>	<b>4.339</b>	<b>2.515</b>	<b>6.854</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.470	4.915	.
(14) Massachusetts Credibility:	0.180	0.290	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	2.163	2.790	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	1.927	1.264	3.191
(20) Relativity to Underlying Present Rate:	2.188	2.822	.
(21) Credibility to Underlying Relativity:	0.820	0.710	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.599	3.429	.
(24) Balanced Formula Relativity:	2.565	3.384	2.848

Class(es):		Effective: 7/1/2020							Manufacturing		
4452 PLASTICS MFG: FABRICATED PRODUCTS NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	560,272	3	88	377,358	295,205	177,383	254,216	1,104,162	1.200	0.770	1.971
2014	697,898	4	87	273,689	554,010	192,142	237,832	1,257,673	1.186	0.616	1.802
2015	694,402	5	107	390,740	928,017	96,455	410,397	1,825,609	1.899	0.730	2.629
2016	777,658	2	91	233,277	1,027,758	188,650	409,249	1,858,934	1.622	0.769	2.390
2017	772,863	2	105	230,269	924,662	58,054	337,085	1,550,070	1.494	0.511	2.006
<b>MA Total:</b>	<b>3,503,093</b>	<b>16</b>	<b>478</b>	<b>1,505,333</b>	<b>3,729,652</b>	<b>712,684</b>	<b>1,648,779</b>	<b>7,596,448</b>	<b>1.494</b>	<b>0.674</b>	<b>2.168</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.539	1.318	.
(14) Massachusetts Credibility:	0.500	0.680	.
(15) Countrywide Pure Premium:	1.074	0.622	1.696
(16) Countrywide Indicated Relativity:	1.203	1.328	.
(17) Countrywide Credibility:	0.250	0.160	.
(18) Countrywide Lost-Time Claims:	2075.0	.	.
(19) Pure Premium Underlying Present Rate:	1.385	0.642	2.028
(20) Relativity to Underlying Present Rate:	1.573	1.434	.
(21) Credibility to Underlying Relativity:	0.250	0.160	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.464	1.338	.
(24) Balanced Formula Relativity:	1.445	1.320	1.402

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4459 PLASTICS MFG: SHEETS, RODS OR TUBES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	628.364	1	109	66.982	1,241.508	6.715	405.753	1,720.958	2.082	0.656	2.739
2014	658.725	2	118	195.841	641.498	49.323	362.760	1,249.422	1.271	0.626	1.897
2015	499.031	2	68	133.286	729.866	40.713	462.704	1,366.569	1.730	1.009	2.738
2016	553.511	0	82	0	912.387	0	386.071	1,298.459	1.648	0.697	2.346
2017	533.736	2	80	356.007	666.823	121.718	383.284	1,527.832	1.916	0.946	2.863
<b>MA Total:</b>	<b>2,873.367</b>	<b>7</b>	<b>457</b>	<b>752,117</b>	<b>4,192,082</b>	<b>218,470</b>	<b>2,000,573</b>	<b>7,163,240</b>	<b>1.721</b>	<b>0.772</b>	<b>2.493</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.773	1.509	.
(14) Massachusetts Credibility:	0.430	0.610	.
(15) Countrywide Pure Premium:	1.039	0.546	1.584
(16) Countrywide Indicated Relativity:	1.164	1.165	.
(17) Countrywide Credibility:	0.290	0.200	.
(18) Countrywide Lost-Time Claims:	2595.0	.	.
(19) Pure Premium Underlying Present Rate:	1.169	0.599	1.768
(20) Relativity to Underlying Present Rate:	1.328	1.336	.
(21) Credibility to Underlying Relativity:	0.280	0.190	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.472	1.408	.
(24) Balanced Formula Relativity:	1.452	1.389	1.431

Class(es):		Effective: 7/1/2020							Manufacturing		
4470 CABLE MFG - INSULATED ELECTRICAL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	503.684	1	57	199.691	306.242	52.279	310.299	868.511	1.004	0.720	1.724
2014	423.595	4	51	737.036	345.957	455.465	164.609	1,703.068	2.557	1.464	4.021
2015	475.096	1	39	34.193	127.161	6.949	88.530	256.833	0.340	0.201	0.541
2016	480.077	0	44	0	175.852	0	94.596	270.448	0.366	0.197	0.563
2017	577.543	1	59	315.568	365.680	68.234	315.230	1,064.713	1.180	0.664	1.844
<b>MA Total:</b>	<b>2,459.994</b>	<b>7</b>	<b>250</b>	<b>1,286,488</b>	<b>1,320,891</b>	<b>582,927</b>	<b>973,265</b>	<b>4,163,572</b>	<b>1.060</b>	<b>0.633</b>	<b>1.693</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.092	1.236	.
(14) Massachusetts Credibility:	0.380	0.490	.
(15) Countrywide Pure Premium:	0.960	0.431	1.391
(16) Countrywide Indicated Relativity:	1.075	0.921	.
(17) Countrywide Credibility:	0.310	0.260	.
(18) Countrywide Lost-Time Claims:	410.00	.	.
(19) Pure Premium Underlying Present Rate:	0.989	0.401	1.390
(20) Relativity to Underlying Present Rate:	1.123	0.896	.
(21) Credibility to Underlying Relativity:	0.310	0.250	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.097	1.069	.
(24) Balanced Formula Relativity:	1.082	1.055	1.073



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## Calculation of Class Relativities

Class(es): 4484 PLASTICS MFG: MOLDED PRODUCTS NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,737,189	7	213	335,393	511,360	73,125	527,400	1,447,279	0.487	0.346	0.833
2014	2,005,823	11	221	1,085,045	725,239	757,723	611,451	3,179,458	0.903	0.683	1.585
2015	2,374,062	4	333	163,503	2,078,887	258,802	1,335,172	3,836,364	0.945	0.671	1.616
2016	2,207,444	10	274	824,378	2,088,017	579,862	1,109,066	4,601,324	1.319	0.765	2.084
2017	1,817,078	5	234	630,086	1,165,845	139,342	726,584	2,661,857	0.988	0.477	1.465
<b>MA Total:</b>	<b>10,141,596</b>	<b>37</b>	<b>1,275</b>	<b>3,038,405</b>	<b>6,569,348</b>	<b>1,808,855</b>	<b>4,309,675</b>	<b>15,726,282</b>	<b>0.947</b>	<b>0.603</b>	<b>1.551</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.976	1.179	.
(14) Massachusetts Credibility:	0.630	0.930	.
(15) Countrywide Pure Premium:	1.030	0.595	1.625
(16) Countrywide Indicated Relativity:	1.154	1.271	.
(17) Countrywide Credibility:	0.190	0.040	.
(18) Countrywide Lost-Time Claims:	9877.0	.	.
(19) Pure Premium Underlying Present Rate:	0.857	0.487	1.344
(20) Relativity to Underlying Present Rate:	0.973	1.088	.
(21) Credibility to Underlying Relativity:	0.180	0.030	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.009	1.180	.
(24) Balanced Formula Relativity:	0.996	1.165	1.054

Class(es): 4493 FABRIC COATING OR IMPREGNATING NOC		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	408,814	0	58	0	144,620	0	101,515	246,135	0.354	0.248	0.602
2014	402,658	1	61	239,041	474,277	20,163	267,610	1,001,091	1.772	0.715	2.486
2015	336,120	0	43	0	47,400	0	68,951	116,351	0.141	0.205	0.346
2016	294,171	0	36	0	151,499	0	76,721	228,220	0.515	0.261	0.776
2017	330,057	1	37	66,503	177,116	44,352	125,340	413,310	0.738	0.514	1.252
<b>MA Total:</b>	<b>1,771,819</b>	<b>2</b>	<b>235</b>	<b>305,543</b>	<b>994,912</b>	<b>64,515</b>	<b>640,137</b>	<b>2,005,108</b>	<b>0.734</b>	<b>0.398</b>	<b>1.132</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.756	0.777	.
(14) Massachusetts Credibility:	0.330	0.450	.
(15) Countrywide Pure Premium:	1.074	0.603	1.677
(16) Countrywide Indicated Relativity:	1.203	1.287	.
(17) Countrywide Credibility:	0.340	0.280	.
(18) Countrywide Lost-Time Claims:	187.00	.	.
(19) Pure Premium Underlying Present Rate:	0.962	0.471	1.433
(20) Relativity to Underlying Present Rate:	1.093	1.052	.
(21) Credibility to Underlying Relativity:	0.330	0.270	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.019	0.994	.
(24) Balanced Formula Relativity:	1.006	0.981	0.997

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## Calculation of Class Relativities

Class(es): 4511 ANALYTICAL CHEMIST		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,650,654	4	106	175,381	147,729	173,652	164,059	660,821	0.057	0.060	0.117
2014	6,578,399	4	100	555,921	164,825	91,321	283,893	1,095,959	0.110	0.057	0.167
2015	5,356,765	1	74	16,146	513,235	31,704	244,408	805,493	0.099	0.052	0.150
2016	5,606,370	2	93	214,789	72,544	82,087	264,329	633,749	0.051	0.062	0.113
2017	5,777,786	1	86	90,200	551,225	27,899	316,061	985,384	0.111	0.060	0.171
<b>MA Total:</b>	<b>28,969,974</b>	<b>12</b>	<b>459</b>	<b>1,052,437</b>	<b>1,449,557</b>	<b>406,663</b>	<b>1,272,749</b>	<b>4,181,407</b>	<b>0.086</b>	<b>0.058</b>	<b>0.144</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.105	0.124	.
(14) Massachusetts Credibility:	0.470	0.650	.
(15) Countrywide Pure Premium:	0.238	0.133	0.371
(16) Countrywide Indicated Relativity:	0.297	0.288	.
(17) Countrywide Credibility:	0.270	0.180	.
(18) Countrywide Lost-Time Claims:	1815.0	.	.
(19) Pure Premium Underlying Present Rate:	0.140	0.072	0.212
(20) Relativity to Underlying Present Rate:	0.187	0.173	.
(21) Credibility to Underlying Relativity:	0.260	0.170	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.178	0.162	.
(24) Balanced Formula Relativity:	0.177	0.162	0.172

Class(es): 4512 BIOMEDICAL RESEARCH LABS-INCL OUTSIDE OPERATNS		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	9,156,498	0	84	0	173,710	0	106,518	280,228	0.019	0.012	0.031
2014	10,031,372	0	90	0	314,134	0	222,119	536,253	0.031	0.022	0.053
2015	12,206,041	2	121	262,952	300,282	29,993	336,456	929,684	0.046	0.030	0.076
2016	14,024,024	2	97	175,554	532,462	88,999	222,227	1,019,243	0.050	0.022	0.073
2017	15,380,739	1	113	172,543	1,409,545	53,838	329,167	1,965,093	0.103	0.025	0.128
<b>MA Total:</b>	<b>60,798,673</b>	<b>5</b>	<b>505</b>	<b>611,050</b>	<b>2,730,134</b>	<b>172,830</b>	<b>1,216,487</b>	<b>4,730,501</b>	<b>0.055</b>	<b>0.023</b>	<b>0.078</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.067	0.049	.
(14) Massachusetts Credibility:	0.390	0.590	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	0.055	0.063	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	0.042	0.026	0.068
(20) Relativity to Underlying Present Rate:	0.056	0.063	.
(21) Credibility to Underlying Relativity:	0.610	0.410	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.060	0.055	.
(24) Balanced Formula Relativity:	0.059	0.055	0.058

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## Calculation of Class Relativities

Class(es): 4557 INK MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	380,076	2	53	181,313	393,746	183,192	109,444	867,696	1,513	0,770	2,283
2014	412,269	0	33	0	330,922	0	92,176	423,098	0,803	0,224	1,026
2015	832,698	1	52	240,842	306,861	46,779	150,759	745,242		0,237	0,895
2016	397,721	1	30	11,172	198,783	4,121	70,646	284,722	0,528	0,188	0,716
2017	459,827	3	22	536,105	258,635	145,854	90,183	1,030,777	1,728	0,513	2,242
<b>MA Total:</b>	<b>2,482,591</b>	<b>7</b>	<b>190</b>	<b>969,432</b>	<b>1,488,948</b>	<b>379,947</b>	<b>513,208</b>	<b>3,351,535</b>	<b>0,990</b>	<b>0,360</b>	<b>1,350</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.020	0.703	.
(14) Massachusetts Credibility:	0.340	0.500	.
(15) Countrywide Pure Premium:	0.836	0.447	1.284
(16) Countrywide Indicated Relativity:	0.937	0.955	.
(17) Countrywide Credibility:	0.330	0.250	.
(18) Countrywide Lost-Time Claims:	557.00	.	.
(19) Pure Premium Underlying Present Rate:	0.753	0.421	1.174
(20) Relativity to Underlying Present Rate:	0.856	0.939	.
(21) Credibility to Underlying Relativity:	0.330	0.250	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.938	0.825	.
(24) Balanced Formula Relativity:	0.926	0.814	0.888

Class(es): 4558 PAINT MFG		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	85,298	0	8	0	10,721	0	22,415	33,136	0,126	0,263	0,388
2014	90,338	0	5	0	48,528	0	75,919	124,447	0,537	0,840	1,378
2015	79,244	1	7	154,600	154	97,637	4,081	256,471	1,953	1,284	3,236
2016	129,470	0	9	0	3,195	0	9,931	13,126	0,025	0,077	0,101
2017	150,758	1	12	40,548	21,418	45,400	29,644	137,010	0,411	0,498	0,909
<b>MA Total:</b>	<b>535,109</b>	<b>2</b>	<b>41</b>	<b>195,148</b>	<b>84,016</b>	<b>143,037</b>	<b>141,990</b>	<b>564,191</b>	<b>0,522</b>	<b>0,533</b>	<b>1,054</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.537	1.041	.
(14) Massachusetts Credibility:	0.170	0.250	.
(15) Countrywide Pure Premium:	0.842	0.414	1.256
(16) Countrywide Indicated Relativity:	0.942	0.884	.
(17) Countrywide Credibility:	0.420	0.380	.
(18) Countrywide Lost-Time Claims:	536.00	.	.
(19) Pure Premium Underlying Present Rate:	0.578	0.337	0.916
(20) Relativity to Underlying Present Rate:	0.657	0.753	.
(21) Credibility to Underlying Relativity:	0.410	0.370	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.757	0.875	.
(24) Balanced Formula Relativity:	0.747	0.863	0.787

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4583 FERTILIZER MFG & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	43.040	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	44.430	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	53.919	0	2	0	4.164	0	10.526	14.691	0.077	0.195	0.272
2016	55.189	0	2	0	2.926	0	1.760	4.686	0.053	0.032	0.085
2017	55.074	0	7	0	0	0	17.656	17.656	0.000	0.321	0.321
<b>MA Total:</b>	<b>251.652</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>7.090</b>	<b>0</b>	<b>29.943</b>	<b>37.033</b>	<b>0.028</b>	<b>0.119</b>	<b>0.147</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.029	0.233	.
(14) Massachusetts Credibility:	0.180	0.230	.
(15) Countrywide Pure Premium:	1.571	0.851	2.422
(16) Countrywide Indicated Relativity:	1.759	1.817	.
(17) Countrywide Credibility:	0.410	0.390	.
(18) Countrywide Lost-Time Claims:	538.00	.	.
(19) Pure Premium Underlying Present Rate:	1.557	0.621	2.178
(20) Relativity to Underlying Present Rate:	1.769	1.386	.
(21) Credibility to Underlying Relativity:	0.410	0.380	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.452	1.289	.
(24) Balanced Formula Relativity:	1.433	1.272	1.377

Class(es):		Effective: 7/1/2020							Manufacturing		
4611 DRUG MEDICINE OR PHARMACEUTICAL PREP-NO MFG OF INGREDIENTS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,011.513	1	42	9.260	190.030	327	148.385	348.002	0.197	0.147	0.344
2014	906.497	0	28	0	192.237	0	94.999	287.235	0.212	0.105	0.317
2015	1,129.420	3	43	305.224	188.761	126.484	89.703	710.172	0.437	0.191	0.629
2016	703.787	1	57	269.361	271.481	63.597	97.926	702.365	0.768	0.230	0.998
2017	581.578	1	32	98.014	537.049	24.409	293.821	953.293	1.092	0.547	1.639
<b>MA Total:</b>	<b>4,332.794</b>	<b>6</b>	<b>202</b>	<b>681.859</b>	<b>1,379.558</b>	<b>214.817</b>	<b>724.834</b>	<b>3,001.068</b>	<b>0.476</b>	<b>0.217</b>	<b>0.693</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.490	0.424	.
(14) Massachusetts Credibility:	0.280	0.370	.
(15) Countrywide Pure Premium:	0.363	0.220	0.583
(16) Countrywide Indicated Relativity:	0.407	0.470	.
(17) Countrywide Credibility:	0.360	0.320	.
(18) Countrywide Lost-Time Claims:	2097.0	.	.
(19) Pure Premium Underlying Present Rate:	0.268	0.118	0.386
(20) Relativity to Underlying Present Rate:	0.305	0.264	.
(21) Credibility to Underlying Relativity:	0.360	0.310	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.393	0.389	.
(24) Balanced Formula Relativity:	0.388	0.384	0.387

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4635 OXYGEN OR HYDROGEN MFG & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	145,252	3	28	339,407	186,590	124,164	216,701	866,863	3,621	2,347	5,968
2014	159,756	0	25	0	170,638	0	186,916	357,554	1,068	1,170	2,238
2015	112,404	1	18	130,966	561,931	46,057	366,013	1,104,967	6,164	3,686	9,830
2016	163,269	2	23	313,597	153,344	158,016	192,371	817,329	2,860	2,146	5,006
2017	167,372	0	11	0	326,687	0	289,817	616,504	1,952	1,732	3,683
<b>MA Total:</b>	<b>748,053</b>	<b>6</b>	<b>105</b>	<b>783,970</b>	<b>1,399,190</b>	<b>328,238</b>	<b>1,251,819</b>	<b>3,763,217</b>	<b>2,918</b>	<b>2,112</b>	<b>5,031</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.006	4.128	.
(14) Massachusetts Credibility:	0.320	0.480	.
(15) Countrywide Pure Premium:	1.508	0.651	2.158
(16) Countrywide Indicated Relativity:	1.688	1.390	.
(17) Countrywide Credibility:	0.340	0.260	.
(18) Countrywide Lost-Time Claims:	665.00	.	.
(19) Pure Premium Underlying Present Rate:	2.126	1.250	3.375
(20) Relativity to Underlying Present Rate:	2.414	2.789	.
(21) Credibility to Underlying Relativity:	0.340	0.260	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	2.357	3.068	.
(24) Balanced Formula Relativity:	2.326	3.028	2.568

Class(es):		Effective: 7/1/2020							Manufacturing		
4653 GLUE MFG & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	43,947	0	2	0	0	0	550	550	0.000	0.013	0.013
2014	39,196	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	43,331	0	8	0	311,935	0	88,311	400,245	7,199	2,038	9,237
2016	46,606	0	7	0	10,690	0	25,391	36,080	0.229	0.545	0.774
2017	46,048	0	5	0	79,486	0	51,418	130,903	1,726	1,117	2,843
<b>MA Total:</b>	<b>219,129</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>402,110</b>	<b>0</b>	<b>165,669</b>	<b>567,779</b>	<b>1,835</b>	<b>0,756</b>	<b>2,591</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.890	1.478	.
(14) Massachusetts Credibility:	0.130	0.170	.
(15) Countrywide Pure Premium:	0.641	0.291	0.933
(16) Countrywide Indicated Relativity:	0.718	0.623	.
(17) Countrywide Credibility:	0.330	0.350	.
(18) Countrywide Lost-Time Claims:	74.000	.	.
(19) Pure Premium Underlying Present Rate:	0.783	0.336	1.119
(20) Relativity to Underlying Present Rate:	0.889	0.751	.
(21) Credibility to Underlying Relativity:	0.540	0.480	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.963	0.829	.
(24) Balanced Formula Relativity:	0.950	0.819	0.905

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4665 RENDERING WORKS NOC & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	53,599	0	10	0	118,395	0	56,446	174,841	2,209	1,053	3,262
2014	51,440	2	17	343,032	493,319	100,087	185,278	1,121,717	16,259	5,548	21,806
2015	53,466	2	10	290,763	180,049	94,512	37,011	602,335	8,806	2,460	11,266
2016	55,468	1	11	309,976	54,749	153,911	70,839	589,474	6,575	4,052	10,627
2017	57,365	0	9	0	110,350	0	56,554	166,904	1,924	0,986	2,909
<b>MA Total:</b>	<b>271,337</b>	<b>5</b>	<b>57</b>	<b>943,771</b>	<b>956,863</b>	<b>348,510</b>	<b>406,128</b>	<b>2,655,272</b>	<b>7,005</b>	<b>2,781</b>	<b>9,786</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	7.216	5.436	.
(14) Massachusetts Credibility:	0.270	0.370	.
(15) Countrywide Pure Premium:	3.162	1.718	4.880
(16) Countrywide Indicated Relativity:	3.541	3.669	.
(17) Countrywide Credibility:	0.370	0.320	.
(18) Countrywide Lost-Time Claims:	405.00	.	.
(19) Pure Premium Underlying Present Rate:	3.670	1.861	5.531
(20) Relativity to Underlying Present Rate:	4.168	4.154	.
(21) Credibility to Underlying Relativity:	0.360	0.310	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	4.759	4.473	.
(24) Balanced Formula Relativity:	4.697	4.414	4.599

Class(es):		Effective: 7/1/2020							Manufacturing		
4692 DENTAL LABORATORY											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	314,608	0	6	0	0	0	6,755	6,755	0.000	0.021	0.021
2014	274,992	0	4	0	12,154	0	17,043	29,196	0.044	0.062	0.106
2015	320,551	0	3	0	3,839	0	6,614	10,453	0.012	0.021	0.033
2016	414,821	0	7	0	57,065	0	20,927	77,992	0.138	0.050	0.188
2017	411,534	0	6	0	470	0	7,143	7,613	0.001	0.017	0.018
<b>MA Total:</b>	<b>1,736,506</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>73,527</b>	<b>0</b>	<b>58,482</b>	<b>132,009</b>	<b>0.042</b>	<b>0.034</b>	<b>0.076</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.044	0.066	.
(14) Massachusetts Credibility:	0.200	0.270	.
(15) Countrywide Pure Premium:	0.325	0.151	0.477
(16) Countrywide Indicated Relativity:	0.364	0.323	.
(17) Countrywide Credibility:	0.400	0.370	.
(18) Countrywide Lost-Time Claims:	213.00	.	.
(19) Pure Premium Underlying Present Rate:	0.278	0.131	0.408
(20) Relativity to Underlying Present Rate:	0.315	0.291	.
(21) Credibility to Underlying Relativity:	0.400	0.360	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.281	0.242	.
(24) Balanced Formula Relativity:	ificat	0.239	0.264

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4693 PHARMACEUTICAL OR SURGICAL GOODS MFG NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	695.851	1	36	69.577	236.737	6.782	225.985	539.081	0.440	0.335	0.775
2014	835.735	2	26	81.773	31.077	14.235	50.796	177.881	0.135	0.078	0.213
2015	491.780	1	44	11.516	145.882	11.311	152.338	321.046	0.320	0.333	0.653
2016	492.297	1	41	98.646	186.418	51.685	102.925	439.673	0.579	0.314	0.893
2017	620.568	2	29	127.824	232.159	50.919	100.756	511.658	0.580	0.244	0.825
<b>MA Total:</b>	<b>3,136,231</b>	<b>7</b>	<b>176</b>	<b>389,337</b>	<b>832,272</b>	<b>134,932</b>	<b>632,799</b>	<b>1,989,340</b>	<b>0.390</b>	<b>0.245</b>	<b>0.634</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.401	0.478	.
(14) Massachusetts Credibility:	0.290	0.410	.
(15) Countrywide Pure Premium:	0.376	0.236	0.612
(16) Countrywide Indicated Relativity:	0.421	0.505	.
(17) Countrywide Credibility:	0.360	0.300	.
(18) Countrywide Lost-Time Claims:	768.00	.	.
(19) Pure Premium Underlying Present Rate:	0.409	0.204	0.612
(20) Relativity to Underlying Present Rate:	0.464	0.455	.
(21) Credibility to Underlying Relativity:	0.350	0.290	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.430	0.479	.
(24) Balanced Formula Relativity:	0.425	0.473	0.441

Class(es):		Effective: 7/1/2020							Manufacturing		
4720 SOAP OR SYNTHETIC DETERGENT MFG											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	187.957	1	26	144.530	93.343	47.221	80.177	365.271	1.266	0.678	1.943
2014	214.134	0	24	0	83.328	0	45.032	128.360	0.389	0.210	0.599
2015	224.363	0	13	0	243.942	0	97.870	341.813	1.087	0.436	1.523
2016	219.466	0	20	0	143.252	0	69.332	212.584	0.653	0.316	0.969
2017	250.194	1	14	73.487	31.258	23.014	41.856	169.615	0.419	0.259	0.678
<b>MA Total:</b>	<b>1,096,114</b>	<b>2</b>	<b>97</b>	<b>218,017</b>	<b>595,123</b>	<b>70,235</b>	<b>334,267</b>	<b>1,217,642</b>	<b>0.742</b>	<b>0.369</b>	<b>1.111</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.764	0.721	.
(14) Massachusetts Credibility:	0.260	0.370	.
(15) Countrywide Pure Premium:	0.912	0.485	1.397
(16) Countrywide Indicated Relativity:	1.021	1.036	.
(17) Countrywide Credibility:	0.370	0.320	.
(18) Countrywide Lost-Time Claims:	426.00	.	.
(19) Pure Premium Underlying Present Rate:	0.839	0.451	1.290
(20) Relativity to Underlying Present Rate:	0.953	1.006	.
(21) Credibility to Underlying Relativity:	0.370	0.310	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.929	0.910	.
(24) Balanced Formula Relativity:	0.917	0.898	0.910

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4740 OIL REFINING - PETROLEUM & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	19.339	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	20.625	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	19.582	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	16.503	0	2	0	249	0	1.942	2.191	0.015	0.118	0.133
2017	14.478	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>90.527</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>249</b>	<b>0</b>	<b>1.942</b>	<b>2.191</b>	<b>0.003</b>	<b>0.021</b>	<b>0.024</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.003	0.042	.
(14) Massachusetts Credibility:	0.080	0.110	.
(15) Countrywide Pure Premium:	0.417	0.205	0.622
(16) Countrywide Indicated Relativity:	0.467	0.437	.
(17) Countrywide Credibility:	0.460	0.450	.
(18) Countrywide Lost-Time Claims:	483.00	.	.
(19) Pure Premium Underlying Present Rate:	0.530	0.264	0.794
(20) Relativity to Underlying Present Rate:	0.602	0.589	.
(21) Credibility to Underlying Relativity:	0.460	0.440	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.492	0.461	.
(24) Balanced Formula Relativity:	0.486	0.455	0.475

Class(es):		Effective: 7/1/2020							Manufacturing		
4741 ASPHALT OR TAR DISTILLING OR REFINING & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	6.337	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	3.660	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	2.905	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	3.033	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	3.531	0	1	0	7.419	0	3.958	11.377	2.101	1.121	3.222
<b>MA Total:</b>	<b>19.466</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7.419</b>	<b>0</b>	<b>3.958</b>	<b>11.377</b>	<b>0.381</b>	<b>0.203</b>	<b>0.584</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.393	0.397	.
(14) Massachusetts Credibility:	0.060	0.070	.
(15) Countrywide Pure Premium:	1.096	0.514	1.610
(16) Countrywide Indicated Relativity:	1.228	1.097	.
(17) Countrywide Credibility:	0.370	0.400	.
(18) Countrywide Lost-Time Claims:	99.000	.	.
(19) Pure Premium Underlying Present Rate:	1.141	0.416	1.557
(20) Relativity to Underlying Present Rate:	1.296	0.929	.
(21) Credibility to Underlying Relativity:	0.570	0.530	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.217	0.959	.
(24) Balanced Formula Relativity:	1.201	0.946	1.113



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## Calculation of Class Relativities

Class(es): 4771 EXPLOSIVES OR AMMUNITION MFG: NOC - & DRIVERS									Effective: 7/1/2020			Manufacturing		
Converted Unlimited Losses														
Amount														
		Claim Count		Indemnity		Medical				MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)			
2013	1,024	0	0	0	0	0	0	0	0.000	0.000	0.000			
2014	3,997	0	1	0	0	0	1,980	1,980	0.000	0.495	0.495			
2015	5,140	0	0	0	0	0	0	0	0.000	0.000	0.000			
2016	11,970	0	1	0	0	0	101	101	0.000	0.008	0.008			
2017	0	0	0	0	0	0	0	0	0.000	0.000	0.000			
<b>MA Total:</b>	<b>22,130</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,081</b>	<b>2,081</b>	<b>0.000</b>	<b>0.094</b>	<b>0.094</b>			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.184	.
(14) Massachusetts Credibility:	0.080	0.080	.
(15) Countrywide Pure Premium:	1.084	0.565	1.649
(16) Countrywide Indicated Relativity:	1.214	1.207	.
(17) Countrywide Credibility:	0.460	0.460	.
(18) Countrywide Lost-Time Claims:	335.00	.	.
(19) Pure Premium Underlying Present Rate:	2.396	0.494	2.891
(20) Relativity to Underlying Present Rate:	2.722	1.103	.
(21) Credibility to Underlying Relativity:	0.460	0.460	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.811	1.077	.
(24) Balanced Formula Relativity:	1.787	1.063	1.537

Class(es): 4825 DRUG, MEDICINE OR PHARM PREP MFG & INCIDENTAL MFG INGREDIENTS									Effective: 7/1/2020			Manufacturing		
Converted Unlimited Losses														
Amount														
		Claim Count		Indemnity		Medical				MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)			
2013	2,572,314	0	38	0	296,095	0	438,724	734,819	0.115	0.171	0.286			
2014	2,606,420	2	33	14,135	598,296	30,693	161,195	804,319	0.235	0.074	0.309			
2015	2,587,699	0	34	0	21,074	0	38,087	59,161	0.008	0.015	0.023			
2016	3,803,048	3	52	542,182	288,234	141,507	198,918	1,170,840	0.218	0.090	0.308			
2017	3,322,304	0	50	0	263,181	0	136,320	399,501	0.079	0.041	0.120			
<b>MA Total:</b>	<b>14,891,784</b>	<b>5</b>	<b>207</b>	<b>556,317</b>	<b>1,466,880</b>	<b>172,200</b>	<b>973,244</b>	<b>3,168,641</b>	<b>0.136</b>	<b>0.077</b>	<b>0.213</b>			

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.140	0.150	.
(14) Massachusetts Credibility:	0.460	0.590	.
(15) Countrywide Pure Premium:	0.392	0.191	0.583
(16) Countrywide Indicated Relativity:	0.439	0.408	.
(17) Countrywide Credibility:	0.270	0.210	.
(18) Countrywide Lost-Time Claims:	766.00	.	.
(19) Pure Premium Underlying Present Rate:	0.260	0.106	0.366
(20) Relativity to Underlying Present Rate:	0.295	0.236	.
(21) Credibility to Underlying Relativity:	0.270	0.200	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.263	0.222	.
(24) Balanced Formula Relativity:	0.259	0.219	0.245

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Manufacturing		
4828 CHEMICAL BLENDING OR MIXING NOC- ALL OPERS & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	863.221	0	22	0	333.231	0	146.633	479.865	0.386	0.170	0.556
2014	935.225	1	21	374.233	203.060	37.435	114.839	729.567	0.617	0.163	0.780
2015	1,034.967	2	29	285.098	469.473	27.117	447.896	1,229.583	0.729	0.459	1.188
2016	1,083.705	1	31	12.230	251.097	7.424	189.165	459.916	0.243	0.181	0.424
2017	1,071.309	0	23	0	136.358	0	117.341	253.699	0.127	0.110	0.237
<b>MA Total:</b>	<b>4,988.428</b>	<b>4</b>	<b>126</b>	<b>671.560</b>	<b>1,393.219</b>	<b>71.976</b>	<b>1,015.875</b>	<b>3,152.630</b>	<b>0.414</b>	<b>0.218</b>	<b>0.632</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.426	0.426	.
(14) Massachusetts Credibility:	0.380	0.520	.
(15) Countrywide Pure Premium:	0.514	0.258	0.772
(16) Countrywide Indicated Relativity:	0.576	0.552	.
(17) Countrywide Credibility:	0.310	0.240	.
(18) Countrywide Lost-Time Claims:	2233.0	.	.
(19) Pure Premium Underlying Present Rate:	0.495	0.236	0.731
(20) Relativity to Underlying Present Rate:	0.562	0.527	.
(21) Credibility to Underlying Relativity:	0.310	0.240	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.515	0.481	.
(24) Balanced Formula Relativity:	0.508	0.474	0.496

Class(es):		Effective: 7/1/2020							Construction		
5020 CEILING INSTALLATION-SUSPENDED ACOUSTICAL GRID											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	242.440	0	17	0	342.713	0	84.185	426.899	1.414	0.347	1.761
2014	218.297	1	17	17.550	630.370	2.750	193.162	843.832	2.968	0.897	3.866
2015	210.962	2	16	578.301	497.808	194.976	123.319	1,394.403	5.101	1.509	6.610
2016	224.390	0	14	0	827.918	0	205.146	1,033.064	3.690	0.914	4.604
2017	242.158	0	14	0	49.642	0	34.777	84.419	0.205	0.144	0.349
<b>MA Total:</b>	<b>1,138.248</b>	<b>3</b>	<b>78</b>	<b>595.851</b>	<b>2,348.451</b>	<b>197.725</b>	<b>640.589</b>	<b>3,782.617</b>	<b>2.587</b>	<b>0.736</b>	<b>3.323</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.993	0.620	.
(14) Massachusetts Credibility:	0.390	0.470	.
(15) Countrywide Pure Premium:	2.816	1.281	4.097
(16) Countrywide Indicated Relativity:	1.100	1.112	.
(17) Countrywide Credibility:	0.310	0.270	.
(18) Countrywide Lost-Time Claims:	285.00	.	.
(19) Pure Premium Underlying Present Rate:	2.324	0.798	3.122
(20) Relativity to Underlying Present Rate:	0.960	0.758	.
(21) Credibility to Underlying Relativity:	0.300	0.260	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.016	0.789	.
(24) Balanced Formula Relativity:	1.021	0.787	0.948

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## Calculation of Class Relativities

Class(es): 5022 MASONRY NOC		Effective: 7/1/2020							Construction		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,102,711	13	127	3,799,120	3,453,895	1,064,602	1,393,079	9,710,696	6,577	2,229	8,806
2014	1,163,367	13	112	3,261,801	3,275,658	1,048,494	1,561,922	9,147,874	5,619	2,244	7,863
2015	1,279,113	15	110	3,297,897	3,769,437	1,104,413	2,175,492	10,347,239	5,525	2,564	8,089
2016	1,374,802	12	120	1,636,357	5,064,814	1,200,956	1,942,176	9,844,303	4,874	2,286	7,161
2017	1,501,148	12	117	3,051,601	4,812,320	1,858,371	1,887,682	11,609,973	5,239	2,495	7,734
<b>MA Total:</b>	<b>6,421,142</b>	<b>65</b>	<b>586</b>	<b>15,046,777</b>	<b>20,376,122</b>	<b>6,276,836</b>	<b>8,960,350</b>	<b>50,660,085</b>	<b>5,517</b>	<b>2,373</b>	<b>7,890</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.119	1.999	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	3.847	1.637	5.484
(16) Countrywide Indicated Relativity:	1.502	1.422	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	5155.0	.	.
(19) Pure Premium Underlying Present Rate:	5.064	2.040	7.104
(20) Relativity to Underlying Present Rate:	2.093	1.936	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	2.119	1.999	.
(24) Balanced Formula Relativity:	2.128	1.995	2.086

Class(es): 5037 PAINTING: METAL STRUCTURES-OVER 2 STORIES IN HEIGHT & DRIVERS		Effective: 7/1/2020							Construction		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	95,019	2	11	479,735	767,987	107,063	199,841	1,554,627	13,131	3,230	16,361
2014	105,650	2	11	137,061	1,036,849	29,204	354,418	1,557,532	11,111	3,631	14,742
2015	80,013	3	7	451,490	745,551	90,831	351,374	1,639,247	14,961	5,527	20,487
2016	61,101	0	5	0	0	0	5,386	0,000	0,000	0,088	0,088
2017	89,725	0	7	0	1,155,400	0	588,248	1,743,648	12,877	6,556	19,433
<b>MA Total:</b>	<b>431,508</b>	<b>7</b>	<b>41</b>	<b>1,068,286</b>	<b>3,705,787</b>	<b>227,098</b>	<b>1,499,268</b>	<b>6,500,440</b>	<b>11,064</b>	<b>4,001</b>	<b>15,064</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.249	3.370	.
(14) Massachusetts Credibility:	0.460	0.560	.
(15) Countrywide Pure Premium:	7.270	3.201	10.470
(16) Countrywide Indicated Relativity:	2.839	2.779	.
(17) Countrywide Credibility:	0.270	0.220	.
(18) Countrywide Lost-Time Claims:	93.000	.	.
(19) Pure Premium Underlying Present Rate:	9.279	3.213	12.492
(20) Relativity to Underlying Present Rate:	3.834	3.049	.
(21) Credibility to Underlying Relativity:	0.270	0.220	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	3.756	3.169	.
(24) Balanced Formula Relativity:	3.772	3.163	3.582

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction			
5040 IRON OR STEEL: ERECTION: ERECTION-FRAME STRUCTURES												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	220,834	5	43	1,391,030	1,905,951	310,359	696,628	4,303,968	14,930	4,560	19,490	
2014	282,222	7	63	1,948,625	1,572,752	803,550	778,987	5,103,914	12,477	5,607	18,085	
2015	255,712	4	59	1,946,693	2,288,935	632,744	856,696	5,725,068	16,564	5,825	22,389	
2016	243,004	1	44	609,648	3,123,635	94,588	1,063,322	4,891,192	15,363	4,765	20,128	
2017	304,055	6	60	1,306,753	1,494,469	351,440	715,388	3,868,049	9,213	3,509	12,722	
<b>MA Total:</b>	<b>1,305,826</b>	<b>23</b>	<b>269</b>	<b>7,202,748</b>	<b>10,385,742</b>	<b>2,192,681</b>	<b>4,111,021</b>	<b>23,892,192</b>	<b>13,469</b>	<b>4,827</b>	<b>18,297</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	5.173	4.066	.
(14) Massachusetts Credibility:	0.840	0.990	.
(15) Countrywide Pure Premium:	3.452	1.417	4.869
(16) Countrywide Indicated Relativity:	1.348	1.230	.
(17) Countrywide Credibility:	0.080	0.010	.
(18) Countrywide Lost-Time Claims:	889.00	.	.
(19) Pure Premium Underlying Present Rate:	13.349	4.425	17.774
(20) Relativity to Underlying Present Rate:	5.516	4.199	.
(21) Credibility to Underlying Relativity:	0.080	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	4.894	4.037	.
(24) Balanced Formula Relativity:	4.915	4.030	4.638

Class(es):		Effective: 7/1/2020							Construction			
5057 IRON OR STEEL: ERECTION-NOC												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	7,100	0	4	0	25,840	0	10,884	36,724	3,640	1,533	5,173	
2014	11,700	0	8	0	513,426	0	206,985	720,411	43,882	17,691	61,573	
2015	20,181	0	2	0	692,765	0	246,716	939,481	34,328	12,225	46,553	
2016	21,372	1	7	194,065	495,959	699,332	97,605	1,486,961	32,287	37,289	69,576	
2017	32,070	0	6	0	146,920	0	64,619	211,540	4,581	2,015	6,596	
<b>MA Total:</b>	<b>92,422</b>	<b>1</b>	<b>27</b>	<b>194,065</b>	<b>1,874,911</b>	<b>699,332</b>	<b>626,809</b>	<b>3,395,117</b>	<b>22,386</b>	<b>14,349</b>	<b>36,735</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	8.598	12.085	.
(14) Massachusetts Credibility:	0.260	0.380	.
(15) Countrywide Pure Premium:	2.395	0.917	3.312
(16) Countrywide Indicated Relativity:	0.935	0.796	.
(17) Countrywide Credibility:	0.370	0.310	.
(18) Countrywide Lost-Time Claims:	945.00	.	.
(19) Pure Premium Underlying Present Rate:	10.264	5.687	15.951
(20) Relativity to Underlying Present Rate:	4.241	5.397	.
(21) Credibility to Underlying Relativity:	0.370	0.310	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	4.151	6.512	.
(24) Balanced Formula Relativity:	4.168	6.500	4.899

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction			
5059 IRON OR STEEL: ERECTION: FRAME STRUCT NOT OVER 2 STRS IN HGT												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	65,252	0	9	0	930,521	0	364,076	1,294,598	14,260	5,580	19,840	
2014	67,619	1	15	474,095	119,687	111,903	78,668	784,354	8,781	2,818	11,600	
2015	102,691	4	13	1,091,685	1,724,420	481,291	787,657	4,085,053	27,423	12,357	39,780	
2016	125,530	1	16	480,136	1,679,168	206,121	679,946	3,045,370	17,201	7,059	24,260	
2017	135,095	2	12	1,066,537	1,195,322	779,232	378,386	3,419,476	16,743	8,569	25,312	
<b>MA Total:</b>	<b>496,187</b>	<b>8</b>	<b>65</b>	<b>3,112,453</b>	<b>5,649,119</b>	<b>1,578,547</b>	<b>2,288,733</b>	<b>12,628,852</b>	<b>17,658</b>	<b>7,794</b>	<b>25,452</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	6.782	6.564	.
(14) Massachusetts Credibility:	0.470	0.650	.
(15) Countrywide Pure Premium:	8.930	4.613	13.544
(16) Countrywide Indicated Relativity:	3.487	4.005	.
(17) Countrywide Credibility:	0.270	0.180	.
(18) Countrywide Lost-Time Claims:	397.00	.	.
(19) Pure Premium Underlying Present Rate:	8.251	4.080	12.331
(20) Relativity to Underlying Present Rate:	3.410	3.872	.
(21) Credibility to Underlying Relativity:	0.260	0.170	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	5.015	5.646	.
(24) Balanced Formula Relativity:	5.037	5.636	5.224

Class(es):		Effective: 7/1/2020							Construction			
5102 DOOR, DOOR FRAME OR SASH ERECTION - METAL OR METAL COVERED												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	529,302	6	60	781,827	1,526,100	179,367	502,809	2,990,103	4,360	1,289	5,649	
2014	688,510	8	68	1,543,588	1,761,811	335,297	738,286	4,378,982	4,801	1,559	6,360	
2015	767,734	7	94	1,011,214	2,485,517	191,384	682,757	4,370,871	4,555	1,139	5,693	
2016	787,041	6	62	1,196,847	1,566,716	295,995	653,084	3,712,641	3,511	1,206	4,717	
2017	820,898	4	77	546,414	2,822,287	267,454	1,105,297	4,741,452	4,104	1,672	5,776	
<b>MA Total:</b>	<b>3,593,483</b>	<b>31</b>	<b>361</b>	<b>5,079,890</b>	<b>10,162,430</b>	<b>1,269,496</b>	<b>3,682,233</b>	<b>20,194,049</b>	<b>4,242</b>	<b>1,378</b>	<b>5,620</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.629	1.161	.
(14) Massachusetts Credibility:	0.730	0.850	.
(15) Countrywide Pure Premium:	3.206	1.376	4.582
(16) Countrywide Indicated Relativity:	1.252	1.195	.
(17) Countrywide Credibility:	0.140	0.080	.
(18) Countrywide Lost-Time Claims:	1982.0	.	.
(19) Pure Premium Underlying Present Rate:	3.420	1.114	4.534
(20) Relativity to Underlying Present Rate:	1.413	1.057	.
(21) Credibility to Underlying Relativity:	0.130	0.070	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.548	1.156	.
(24) Balanced Formula Relativity:	1.555	1.154	1.429

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5146 FURNITURE OR FIXTURES INSTALLATION - PORTABLE - NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	564,164	8	95	1,313,390	1,234,241	323,530	683,594	3,554,755	4,516	1,785	6,301
2014	611,666	6	110	1,392,555	1,472,735	248,765	624,531	3,738,587	4,684	1,428	6,112
2015	692,972	3	83	685,453	1,910,079	99,728	1,020,829	3,716,089	3,746	1,617	5,363
2016	681,527	4	102	421,028	1,966,383	74,504	818,950	3,280,865	3,503	1,311	4,814
2017	699,655	9	88	1,402,592	2,042,620	1,046,762	1,021,806	5,513,780	4,924	2,957	7,881
<b>MA Total:</b>	<b>3,249,984</b>	<b>30</b>	<b>478</b>	<b>5,215,018</b>	<b>8,626,058</b>	<b>1,793,288</b>	<b>4,169,712</b>	<b>19,804,077</b>	<b>4,259</b>	<b>1,835</b>	<b>6,094</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.636	1.545	.
(14) Massachusetts Credibility:	0.710	0.910	.
(15) Countrywide Pure Premium:	2.521	1.035	3.557
(16) Countrywide Indicated Relativity:	0.985	0.899	.
(17) Countrywide Credibility:	0.150	0.050	.
(18) Countrywide Lost-Time Claims:	1735.0	.	.
(19) Pure Premium Underlying Present Rate:	3.612	1.472	5.084
(20) Relativity to Underlying Present Rate:	1.493	1.397	.
(21) Credibility to Underlying Relativity:	0.140	0.040	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.518	1.507	.
(24) Balanced Formula Relativity:	1.524	1.504	1.518

Class(es):		Effective: 7/1/2020							Construction		
5160 ELEVATOR ERECTION OR REPAIR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	735,464	0	29	0	681,442	0	230,357	911,798	0.927	0.313	1,240
2014	859,239	4	34	978,297	693,129	479,592	309,866	2,460,885	1,945	0,919	2,864
2015	901,781	5	48	707,103	419,772	216,128	414,361	1,757,363	1,250	0,699	1,949
2016	991,153	2	49	78,033	357,651	80,856	354,088	870,629	0,440	0,439	0,878
2017	1,071,737	4	49	374,619	1,806,067	188,325	599,421	2,968,432	2,035	0,735	2,770
<b>MA Total:</b>	<b>4,559,374</b>	<b>15</b>	<b>209</b>	<b>2,138,052</b>	<b>3,958,061</b>	<b>964,901</b>	<b>1,908,093</b>	<b>8,969,107</b>	<b>1,337</b>	<b>0,630</b>	<b>1,967</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.514	0.531	.
(14) Massachusetts Credibility:	0.570	0.720	.
(15) Countrywide Pure Premium:	1.359	0.477	1.836
(16) Countrywide Indicated Relativity:	0.531	0.414	.
(17) Countrywide Credibility:	0.220	0.140	.
(18) Countrywide Lost-Time Claims:	483.00	.	.
(19) Pure Premium Underlying Present Rate:	1.456	0.578	2.035
(20) Relativity to Underlying Present Rate:	0.602	0.549	.
(21) Credibility to Underlying Relativity:	0.210	0.140	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.536	0.517	.
(24) Balanced Formula Relativity:	0.538	0.516	0.531

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5183 PLUMBING NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	6,200,395	31	633	5,249,296	5,021,552	1,614,453	3,008,427	14,893,727	1,656	0,746	2,402
2014	6,795,089	26	609	4,946,233	6,515,315	1,227,374	2,889,741	15,578,663	1,687	0,606	2,293
2015	7,440,616	30	627	4,822,871	8,713,839	2,050,954	3,606,207	19,193,871	1,819	0,760	2,580
2016	8,047,647	35	633	6,379,273	10,067,980	2,294,051	4,704,095	23,445,399	2,044	0,870	2,913
2017	8,722,163	23	689	2,187,418	10,410,273	1,556,309	5,373,401	19,527,401	1,444	0,794	2,239
<b>MA Total:</b>	<b>37,205,911</b>	<b>145</b>	<b>3,191</b>	<b>23,585,091</b>	<b>40,728,959</b>	<b>8,743,141</b>	<b>19,581,871</b>	<b>92,639,062</b>	<b>1,729</b>	<b>0,761</b>	<b>2,490</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.664	0.641	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	1.674	0.664	2.338
(16) Countrywide Indicated Relativity:	0.654	0.577	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	11014	.	.
(19) Pure Premium Underlying Present Rate:	1.537	0.628	2.166
(20) Relativity to Underlying Present Rate:	0.635	0.596	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.664	0.641	.
(24) Balanced Formula Relativity:	0.667	0.640	0.658

Class(es):		Effective: 7/1/2020							Construction		
5188 AUTOMATIC SPRINKLER INSTALLATION & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	799,807	4	70	784,509	1,314,070	147,168	414,351	2,660,098	2,624	0,702	3,326
2014	877,910	8	66	2,198,554	1,201,583	662,610	414,776	4,477,523	3,873	1,227	5,100
2015	932,903	6	70	1,150,029	2,039,865	312,524	471,098	3,973,516	3,419	0,840	4,259
2016	959,104	2	83	541,241	1,029,824	381,480	404,391	2,356,936	1,638	0,819	2,457
2017	986,940	2	65	165,109	1,328,595	91,252	365,376	1,950,333	1,513	0,463	1,976
<b>MA Total:</b>	<b>4,556,664</b>	<b>22</b>	<b>354</b>	<b>4,839,442</b>	<b>6,913,938</b>	<b>1,595,033</b>	<b>2,069,992</b>	<b>15,418,405</b>	<b>2,579</b>	<b>0,804</b>	<b>3,384</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.991	0.677	.
(14) Massachusetts Credibility:	0.690	0.850	.
(15) Countrywide Pure Premium:	1.623	0.652	2.275
(16) Countrywide Indicated Relativity:	0.634	0.566	.
(17) Countrywide Credibility:	0.160	0.080	.
(18) Countrywide Lost-Time Claims:	1073.0	.	.
(19) Pure Premium Underlying Present Rate:	2.334	0.866	3.200
(20) Relativity to Underlying Present Rate:	0.964	0.822	.
(21) Credibility to Underlying Relativity:	0.150	0.070	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.930	0.679	.
(24) Balanced Formula Relativity:	0.934	0.677	0.853

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5190 ELECTRICAL WIRING - WITHIN BUILDINGS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	6,919,021	20	595	2,071,592	4,287,722	954,062	2,850,716	10,164,091	0.919	0.550	1.469
2014	8,116,621	22	638	3,690,482	6,472,020	1,832,697	3,478,665	15,473,864	1.252	0.654	1.906
2015	8,552,750	20	624	4,649,210	5,743,864	1,066,695	3,614,109	15,073,879	1.215	0.547	1.762
2016	9,203,470	29	595	5,099,489	6,337,338	1,812,203	4,000,670	17,249,700	1.243	0.632	1.874
2017	10,010,041	24	638	4,453,076	8,690,720	2,145,639	4,282,002	19,571,437	1.313	0.642	1.955
<b>MA Total:</b>	<b>42,801,904</b>	<b>115</b>	<b>3,090</b>	<b>19,963,849</b>	<b>31,531,665</b>	<b>7,811,296</b>	<b>18,226,162</b>	<b>77,532,972</b>	<b>1.203</b>	<b>0.608</b>	<b>1.811</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.462	0.512	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	1.483	0.638	2.121
(16) Countrywide Indicated Relativity:	0.579	0.554	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	11149	.	.
(19) Pure Premium Underlying Present Rate:	1.067	0.534	1.601
(20) Relativity to Underlying Present Rate:	0.441	0.507	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.462	0.512	.
(24) Balanced Formula Relativity:	0.464	0.511	0.479

Class(es):		Effective: 7/1/2020							Goods and Services		
5191 OFFICE MACHICE OR APPLIANCE INSTALL, INSP, ADJSTMT OR REPAIR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	4,367,132	8	131	1,747,691	668,594	583,394	391,544	3,391,224	0.553	0.223	0.777
2014	4,630,329	7	157	1,032,305	947,222	296,981	559,857	2,836,365	0.428	0.185	0.613
2015	4,419,811	5	175	798,219	1,708,507	238,573	874,443	3,619,742	0.567	0.252	0.819
2016	4,414,778	4	119	421,613	1,184,892	126,406	1,108,276	2,841,187	0.364	0.280	0.644
2017	4,485,232	4	119	280,292	616,538	112,168	587,066	1,596,063	0.200	0.156	0.356
<b>MA Total:</b>	<b>22,317,281</b>	<b>28</b>	<b>701</b>	<b>4,280,120</b>	<b>5,125,752</b>	<b>1,357,522</b>	<b>3,521,187</b>	<b>14,284,581</b>	<b>0.421</b>	<b>0.219</b>	<b>0.640</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.511	0.469	.
(14) Massachusetts Credibility:	0.630	0.850	.
(15) Countrywide Pure Premium:	0.439	0.196	0.635
(16) Countrywide Indicated Relativity:	0.548	0.424	.
(17) Countrywide Credibility:	0.190	0.080	.
(18) Countrywide Lost-Time Claims:	3429.0	.	.
(19) Pure Premium Underlying Present Rate:	0.378	0.181	0.559
(20) Relativity to Underlying Present Rate:	0.504	0.439	.
(21) Credibility to Underlying Relativity:	0.180	0.070	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.517	0.463	.
(24) Balanced Formula Relativity:	0.513	0.463	0.495



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services			
5192 VENDING OR COIN OPERTD MACHINES-INSTALL, SRVC OR RPR &SALES, DR												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	307.732	1	50	6.625	231.409	17.700	112.622	368.356	0.774	0.423	1.197	
2014	376.378	4	50	461.028	763.261	335.769	276.521	1,836.580	3.253	1.627	4.880	
2015	391.274	0	43	0	246.083	0	268.958	515.041	0.629	0.687	1.316	
2016	383.815	2	33	40.761	96.160	64.250	52.386	253.556	0.357	0.304	0.661	
2017	455.281	3	42	24.652	641.069	47.385	272.513	985.618	1.462	0.703	2.165	
<b>MA Total:</b>	<b>1,914.480</b>	<b>10</b>	<b>218</b>	<b>533.067</b>	<b>1,977.981</b>	<b>465.105</b>	<b>983.000</b>	<b>3,959.152</b>	<b>1.312</b>	<b>0.756</b>	<b>2.068</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.590	1.622	.
(14) Massachusetts Credibility:	0.390	0.540	.
(15) Countrywide Pure Premium:	1.398	0.678	2.076
(16) Countrywide Indicated Relativity:	1.746	1.470	.
(17) Countrywide Credibility:	0.310	0.230	.
(18) Countrywide Lost-Time Claims:	1702.0	.	.
(19) Pure Premium Underlying Present Rate:	1.328	0.683	2.012
(20) Relativity to Underlying Present Rate:	1.770	1.658	.
(21) Credibility to Underlying Relativity:	0.300	0.230	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.692	1.595	.
(24) Balanced Formula Relativity:	1.680	1.596	1.650

Class(es):		Effective: 7/1/2020							Construction			
5213 CONCRETE CONSTRUCTION-NOC												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	475.003	9	120	1,382.065	1,805.640	353.458	1,051.571	4,592.734	6.711	2.958	9.669	
2014	543.405	8	136	3,174.164	3,679.509	1,211.890	1,127.447	9,193.010	12.612	4.305	16.917	
2015	588.279	7	98	1,056.854	2,448.479	365.064	1,121.959	4,992.355	5.959	2.528	8.486	
2016	726.450	6	100	502.136	3,007.437	319.811	1,250.995	5,080.379	4.831	2.162	6.993	
2017	946.910	4	116	1,675.189	3,125.989	736.855	1,355.276	6,893.308	5.070	2.209	7.280	
<b>MA Total:</b>	<b>3,280.047</b>	<b>34</b>	<b>570</b>	<b>7,790.408</b>	<b>14,067.053</b>	<b>2,987.078</b>	<b>5,907.247</b>	<b>30,751.786</b>	<b>6.664</b>	<b>2.712</b>	<b>9.375</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.559	2.284	.
(14) Massachusetts Credibility:	0.910	1.000	.
(15) Countrywide Pure Premium:	2.973	1.300	4.273
(16) Countrywide Indicated Relativity:	1.161	1.129	.
(17) Countrywide Credibility:	0.050	0.000	.
(18) Countrywide Lost-Time Claims:	5015.0	.	.
(19) Pure Premium Underlying Present Rate:	6.502	2.357	8.859
(20) Relativity to Underlying Present Rate:	2.687	2.237	.
(21) Credibility to Underlying Relativity:	0.040	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	2.494	2.284	.
(24) Balanced Formula Relativity:	2.505	2.280	2.434

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction			
5215 CONCRETE WORK - INCIDENTAL TO CONSTRUCTION OF PRIVATE RES												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	281,377	1	28	127,642	442,909	12,393	245,690	828,635	2,028	0,917	2,945	
2014	265,067	1	26	104,053	205,556	13,933	113,074	436,615	1,168	0,479	1,647	
2015	315,915	0	21	0	258,892	0	68,256	327,148	0,819	0,216	1,036	
2016	339,164	1	21	304,905	652,979	179,372	296,198	1,433,454	2,824	1,402	4,226	
2017	368,463	3	22	315,740	228,515	72,634	179,212	796,102	1,477	0,684	2,161	
<b>MA Total:</b>	<b>1,569,986</b>	<b>6</b>	<b>118</b>	<b>852,341</b>	<b>1,788,850</b>	<b>278,333</b>	<b>902,430</b>	<b>3,821,954</b>	<b>1,682</b>	<b>0,752</b>	<b>2,434</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.646	0.633	.
(14) Massachusetts Credibility:	0.450	0.540	.
(15) Countrywide Pure Premium:	3.236	1.394	4.630
(16) Countrywide Indicated Relativity:	1.264	1.210	.
(17) Countrywide Credibility:	0.280	0.230	.
(18) Countrywide Lost-Time Claims:	1642.0	.	.
(19) Pure Premium Underlying Present Rate:	2.377	0.828	3.204
(20) Relativity to Underlying Present Rate:	0.982	0.786	.
(21) Credibility to Underlying Relativity:	0.270	0.230	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.910	0.801	.
(24) Balanced Formula Relativity:	0.914	0.800	0.878

Class(es):		Effective: 7/1/2020							Construction			
5221 CONCRETE OR CEMENT WORK-FLOORS DRIVEWAYS YRDS OR SIDEWALKS & DR												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	1,272,659	9	159	1,882,258	3,790,761	500,606	1,950,477	8,124,102	4,458	1,926	6,384	
2014	1,524,499	20	163	4,649,805	3,889,521	1,283,549	1,233,385	11,056,259	5,601	1,651	7,252	
2015	1,826,144	10	151	2,526,240	2,278,180	991,940	1,015,148	6,811,508	2,631	1,099	3,730	
2016	1,847,378	16	186	3,553,969	4,826,183	1,239,407	1,795,366	11,414,925	4,536	1,643	6,179	
2017	2,089,862	17	152	3,270,686	2,997,735	1,060,476	1,541,655	8,870,553	2,999	1,245	4,245	
<b>MA Total:</b>	<b>8,560,543</b>	<b>72</b>	<b>811</b>	<b>15,882,957</b>	<b>17,782,380</b>	<b>5,075,977</b>	<b>7,536,031</b>	<b>46,277,346</b>	<b>3,933</b>	<b>1,473</b>	<b>5,406</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.510	1.241	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	2.567	1.055	3.621
(16) Countrywide Indicated Relativity:	1.002	0.916	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	8110.0	.	.
(19) Pure Premium Underlying Present Rate:	3.796	1.379	5.175
(20) Relativity to Underlying Present Rate:	1.569	1.309	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.510	1.241	.
(24) Balanced Formula Relativity:	1.517	1.239	1.430

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5222 CONCRETE CONSTRUCTION IN CONNECTION WITH BRIDGES OR CULVERTS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	241,376	2	31	606,671	1,099,612	216,639	427,057	2,349,979	7,069	2,667	9,736
2014	257,758	2	29	289,625	927,283	87,606	187,481	1,491,996	4,721	1,067	5,788
2015	325,326	3	52	1,129,740	687,261	232,363	234,127	2,283,492	5,585	1,434	7,019
2016	271,967	2	30	559,077	890,174	552,927	389,775	2,391,953	5,329	3,466	8,795
2017	260,958	0	23	0	3,196,241	0	695,704	3,891,944	12,248	2,666	14,914
<b>MA Total:</b>	<b>1,357,385</b>	<b>9</b>	<b>165</b>	<b>2,585,113</b>	<b>6,800,571</b>	<b>1,089,535</b>	<b>1,934,144</b>	<b>12,409,364</b>	<b>6,915</b>	<b>2,228</b>	<b>9,142</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.656	1.876	.
(14) Massachusetts Credibility:	0.560	0.660	.
(15) Countrywide Pure Premium:	4.738	1.721	6.459
(16) Countrywide Indicated Relativity:	1.850	1.494	.
(17) Countrywide Credibility:	0.220	0.170	.
(18) Countrywide Lost-Time Claims:	1183.0	.	.
(19) Pure Premium Underlying Present Rate:	4.797	1.562	6.359
(20) Relativity to Underlying Present Rate:	1.982	1.482	.
(21) Credibility to Underlying Relativity:	0.220	0.170	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	2.330	1.744	.
(24) Balanced Formula Relativity:	2.340	1.741	2.152

Class(es):		Effective: 7/1/2020							Construction		
5223 SWIMMING POOL CONSTRUCTN-NOT IRON OR STEEL &DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	183,083	0	27	0	135,867	0	237,684	373,551	0.742	1,298	2,040
2014	199,032	1	22	361,702	224,998	28,502	146,401	761,602	2,948	0,879	3,827
2015	218,059	1	41	297,135	147,181	28,832	205,273	678,421	2,038	1,074	3,111
2016	235,970	1	20	11,109	372,275	710	159,010	543,104	1,625	0,677	2,302
2017	238,937	1	21	82,507	67,452	47,585	52,592	250,136	0,628	0,419	1,047
<b>MA Total:</b>	<b>1,075,081</b>	<b>4</b>	<b>131</b>	<b>752,454</b>	<b>947,773</b>	<b>105,629</b>	<b>800,959</b>	<b>2,606,814</b>	<b>1,581</b>	<b>0,843</b>	<b>2,425</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.607	0.710	.
(14) Massachusetts Credibility:	0.370	0.510	.
(15) Countrywide Pure Premium:	2.865	1.216	4.081
(16) Countrywide Indicated Relativity:	1.119	1.056	.
(17) Countrywide Credibility:	0.320	0.250	.
(18) Countrywide Lost-Time Claims:	727.00	.	.
(19) Pure Premium Underlying Present Rate:	2.081	1.012	3.093
(20) Relativity to Underlying Present Rate:	0.860	0.960	.
(21) Credibility to Underlying Relativity:	0.310	0.240	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.849	0.857	.
(24) Balanced Formula Relativity:	0.853	0.855	0.854

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5348 STONE, MOSAIC, TERRAZZO OR CERAMIC TILE WORK - INSIDE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	577,412	4	49	834,701	334,246	436,518	207,001	1,812,466	2,024	1,114	3,139
2014	722,020	7	65	1,053,957	808,389	301,501	272,848	2,436,694	2,579	0,795	3,375
2015	746,146	7	66	915,188	1,017,122	108,544	379,034	2,419,888	2,590	0,653	3,243
2016	811,507	8	59	605,576	1,437,852	106,165	510,269	2,659,863	2,518	0,760	3,278
2017	941,147	6	48	889,668	1,849,653	165,018	911,867	3,816,206	2,911	1,144	4,055
<b>MA Total:</b>	<b>3,798,232</b>	<b>32</b>	<b>287</b>	<b>4,299,090</b>	<b>5,447,262</b>	<b>1,117,746</b>	<b>2,281,019</b>	<b>13,145,117</b>	<b>2,566</b>	<b>0,895</b>	<b>3,461</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.986	0.754	.
(14) Massachusetts Credibility:	0.640	0.740	.
(15) Countrywide Pure Premium:	2.301	0.883	3.185
(16) Countrywide Indicated Relativity:	0.899	0.767	.
(17) Countrywide Credibility:	0.180	0.130	.
(18) Countrywide Lost-Time Claims:	1887.0	.	.
(19) Pure Premium Underlying Present Rate:	2.328	0.747	3.075
(20) Relativity to Underlying Present Rate:	0.962	0.708	.
(21) Credibility to Underlying Relativity:	0.180	0.130	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.966	0.750	.
(24) Balanced Formula Relativity:	0.970	0.748	0.900

Class(es):		Effective: 7/1/2020							Construction		
5402 HOTHOUSE ERECTION - ALL OPERATIONS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,485	0	1	0	0	0	2,803	2,803	0,000	0,511	0,511
2014	2,571	0	0	0	0	0	0	0	0,000	0,000	0,000
2015	4,016	0	2	0	0	0	3,835	3,835	0,000	0,955	0,955
2016	4,179	0	1	0	0	0	1,799	1,799	0,000	0,431	0,431
2017	6,876	0	1	0	13,393	0	9,130	22,524	1,948	1,328	3,276
<b>MA Total:</b>	<b>23,126</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>13,393</b>	<b>0</b>	<b>17,567</b>	<b>30,961</b>	<b>0,579</b>	<b>0,760</b>	<b>1,339</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.222	0.640	.
(14) Massachusetts Credibility:	0.090	0.120	.
(15) Countrywide Pure Premium:	6.142	1.612	7.754
(16) Countrywide Indicated Relativity:	2.398	1.400	.
(17) Countrywide Credibility:	0.220	0.230	.
(18) Countrywide Lost-Time Claims:	25,000	.	.
(19) Pure Premium Underlying Present Rate:	2.569	1.415	3.984
(20) Relativity to Underlying Present Rate:	1.062	1.343	.
(21) Credibility to Underlying Relativity:	0.690	0.650	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.280	1.272	.
(24) Balanced Formula Relativity:	1.286	1.269	1.280

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## Calculation of Class Relativities

Class(es): 5403 CARPENTRY NOC		Effective: 7/1/2020							Construction		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,339,492	13	201	1,871,113	3,808,842	385,651	1,810,490	7,876,095	4,240	1,640	5,880
2014	1,563,822	21	221	2,040,281	4,217,275	641,617	1,873,669	8,772,842	4,001	1,608	5,610
2015	1,767,930	15	229	3,445,769	4,527,782	729,674	1,974,754	10,677,978	4,510	1,530	6,040
2016	2,025,746	24	254	5,567,378	8,096,562	2,934,538	3,150,088	19,748,566	6,745	3,004	9,749
2017	2,200,181	12	276	2,886,556	6,311,749	1,113,299	3,699,251	14,010,854	4,181	2,187	6,368
<b>MA Total:</b>	<b>8,897,171</b>	<b>85</b>	<b>1,181</b>	<b>15,811,097</b>	<b>26,962,210</b>	<b>5,804,778</b>	<b>12,508,251</b>	<b>61,086,335</b>	<b>4,808</b>	<b>2,058</b>	<b>6,866</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.846	1.734	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	3.225	1.539	4.763
(16) Countrywide Indicated Relativity:	1.259	1.336	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	7290.0	.	.
(19) Pure Premium Underlying Present Rate:	4.137	1.518	5.655
(20) Relativity to Underlying Present Rate:	1.710	1.440	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.846	1.734	.
(24) Balanced Formula Relativity:	1.854	1.730	1.815

Class(es): 5437 CARPENTRY-INSTALL OF CABINET WORK OR INT TRIM		Effective: 7/1/2020							Construction		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,415,108	19	247	1,951,296	4,675,260	906,152	2,044,328	9,577,036	2,744	1,222	3,965
2014	2,590,019	15	245	2,183,471	5,005,074	683,797	1,946,663	9,819,006	2,775	1,016	3,791
2015	2,829,086	10	233	1,564,014	4,775,269	464,049	2,292,619	9,095,952	2,241	0,974	3,215
2016	2,952,964	7	227	2,015,317	3,779,942	821,955	2,014,011	8,631,225	1,963	0,960	2,923
2017	3,169,263	14	277	2,512,203	4,609,494	820,266	2,332,665	10,274,627	2,247	0,995	3,242
<b>MA Total:</b>	<b>13,956,440</b>	<b>65</b>	<b>1,229</b>	<b>10,226,300</b>	<b>22,845,040</b>	<b>3,696,220</b>	<b>10,630,287</b>	<b>47,397,846</b>	<b>2,370</b>	<b>1,027</b>	<b>3,396</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.910	0.865	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	3.154	1.379	4.534
(16) Countrywide Indicated Relativity:	1.232	1.198	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	4928.0	.	.
(19) Pure Premium Underlying Present Rate:	2.388	0.933	3.321
(20) Relativity to Underlying Present Rate:	0.987	0.886	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.910	0.865	.
(24) Balanced Formula Relativity:	0.914	0.863	0.898

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## Calculation of Class Relativities

Class(es): 5443 LATHING & DRIVERS		Effective: 7/1/2020							Construction		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,223	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	977	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	431	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	133	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	671	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>3,435</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.030	0.040	.
(15) Countrywide Pure Premium:	2.433	1.005	3.437
(16) Countrywide Indicated Relativity:	0.950	0.872	.
(17) Countrywide Credibility:	0.420	0.440	.
(18) Countrywide Lost-Time Claims:	132.00	.	.
(19) Pure Premium Underlying Present Rate:	1.647	0.745	2.392
(20) Relativity to Underlying Present Rate:	0.681	0.707	.
(21) Credibility to Underlying Relativity:	0.550	0.520	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.773	0.752	.
(24) Balanced Formula Relativity:	0.777	0.750	0.768

Class(es): 5445 WALLBOARD INSTALLATION WITHIN BUILDINGS & DR		Effective: 7/1/2020							Construction		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,928,284	9	197	2,271,543	5,018,839	363,658	2,116,012	9,770,051	3,781	1,286	5,067
2014	2,481,343	15	230	3,264,883	6,037,413	843,096	2,325,768	12,471,161	3,749	1,277	5,026
2015	2,270,090	14	157	3,950,523	5,244,777	1,440,298	2,010,641	12,646,240	4,051	1,520	5,571
2016	2,105,067	11	158	3,292,810	4,208,575	1,002,542	1,621,292	10,125,219	3,563	1,246	4,810
2017	2,810,069	15	164	2,266,616	6,772,063	664,594	2,658,017	12,361,291	3,217	1,182	4,399
<b>MA Total:</b>	<b>11,594,854</b>	<b>64</b>	<b>906</b>	<b>15,046,376</b>	<b>27,281,667</b>	<b>4,314,188</b>	<b>10,731,730</b>	<b>57,373,962</b>	<b>3,651</b>	<b>1,298</b>	<b>4,948</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.402	1.093	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	3.319	1.313	4.632
(16) Countrywide Indicated Relativity:	1.296	1.140	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	4622.0	.	.
(19) Pure Premium Underlying Present Rate:	3.354	1.150	4.505
(20) Relativity to Underlying Present Rate:	1.386	1.092	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.402	1.093	.
(24) Balanced Formula Relativity:	1.408	1.091	1.309

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction			
5462 GLAZIER-AWAY FROM SHOP & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	489,969	6	71	1,268,822	951,277	367,722	369,247	2,957,069	4,531	1,504	6,035	
2014	625,998	2	79	710,117	782,055	187,551	344,434	2,024,157	2,384	0,850	3,233	
2015	647,381	4	91	982,308	2,137,049	190,991	844,264	4,154,613	4,818	1,599	6,418	
2016	666,300	2	77	318,421	950,063	73,026	457,520	1,799,031	1,904	0,796	2,700	
2017	727,074	5	86	816,760	1,281,959	260,071	892,031	3,250,821	2,887	1,585	4,471	
<b>MA Total:</b>	<b>3,156,722</b>	<b>19</b>	<b>404</b>	<b>4,096,429</b>	<b>6,102,404</b>	<b>1,079,361</b>	<b>2,907,497</b>	<b>14,185,690</b>	<b>3,231</b>	<b>1,263</b>	<b>4,494</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.241	1.064	.
(14) Massachusetts Credibility:	0.690	0.830	.
(15) Countrywide Pure Premium:	3.182	1.435	4.618
(16) Countrywide Indicated Relativity:	1.243	1.246	.
(17) Countrywide Credibility:	0.160	0.090	.
(18) Countrywide Lost-Time Claims:	1519.0	.	.
(19) Pure Premium Underlying Present Rate:	3.387	1.187	4.574
(20) Relativity to Underlying Present Rate:	1.400	1.126	.
(21) Credibility to Underlying Relativity:	0.150	0.080	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.265	1.085	.
(24) Balanced Formula Relativity:	1.270	1.083	1.212

Class(es):		Effective: 7/1/2020							Construction			
5472 ASBESTOS REMOVAL OP: ASBESTOS CONTR-PIPE&BOILER WORK EXCL &DR												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	122,203	1	18	435,666	626,228	75,817	251,541	1,389,253	8,690	2,679	11,368	
2014	144,765	2	10	154,725	130,693	71,072	49,463	405,953	1,972	0,833	2,804	
2015	158,535	2	15	669,516	658,836	214,072	129,889	1,672,313	8,379	2,170	10,549	
2016	130,859	4	5	380,069	742,231	306,282	115,899	1,544,481	8,576	3,226	11,803	
2017	135,197	0	6	0	222,783	0	132,065	354,848	1,648	0,977	2,625	
<b>MA Total:</b>	<b>691,559</b>	<b>9</b>	<b>54</b>	<b>1,639,977</b>	<b>2,380,771</b>	<b>667,242</b>	<b>678,857</b>	<b>5,366,847</b>	<b>5,814</b>	<b>1,946</b>	<b>7,761</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.233	1.639	.
(14) Massachusetts Credibility:	0.430	0.520	.
(15) Countrywide Pure Premium:	3.027	1.311	4.338
(16) Countrywide Indicated Relativity:	1.182	1.138	.
(17) Countrywide Credibility:	0.290	0.240	.
(18) Countrywide Lost-Time Claims:	126.00	.	.
(19) Pure Premium Underlying Present Rate:	4.767	1.713	6.480
(20) Relativity to Underlying Present Rate:	1.970	1.625	.
(21) Credibility to Underlying Relativity:	0.280	0.240	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.855	1.516	.
(24) Balanced Formula Relativity:	1.862	1.513	1.753

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction			
5473 ASBESTOS REMOVAL OP: ASBESTOS CONTRCTR-NOC &DR												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	249,930	5	32	1,236,381	434,514	328,432	277,482	2,276,809	6,685	2,424	9,110	
2014	317,963	4	28	446,872	540,196	506,881	208,173	1,702,122	3,104	2,249	5,353	
2015	330,037	10	30	2,041,324	1,501,818	1,293,104	424,251	5,260,498	10,736	5,204	15,939	
2016	382,897	1	19	523,421	783,004	83,663	408,725	1,798,813	3,412	1,286	4,698	
2017	416,441	4	42	797,754	1,211,576	299,773	699,533	3,008,636	4,825	2,400	7,225	
<b>MA Total:</b>	<b>1,697,269</b>	<b>24</b>	<b>151</b>	<b>5,045,752</b>	<b>4,471,109</b>	<b>2,511,852</b>	<b>2,018,164</b>	<b>14,046,877</b>	<b>5,607</b>	<b>2,669</b>	<b>8,276</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.153	2.248	.
(14) Massachusetts Credibility:	0.660	0.920	.
(15) Countrywide Pure Premium:	4.702	2.135	6.837
(16) Countrywide Indicated Relativity:	1.836	1.853	.
(17) Countrywide Credibility:	0.170	0.040	.
(18) Countrywide Lost-Time Claims:	491.00	.	.
(19) Pure Premium Underlying Present Rate:	5.675	2.873	8.547
(20) Relativity to Underlying Present Rate:	2.345	2.726	.
(21) Credibility to Underlying Relativity:	0.170	0.040	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	2.132	2.251	.
(24) Balanced Formula Relativity:	2.141	2.247	2.174

Class(es):		Effective: 7/1/2020							Construction			
5474 PAINTING OR PAPERHANGING NOC & SHOP OPERS, DR												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	2,879,435	17	171	2,192,098	3,751,178	895,539	1,986,949	8,825,765	2,064	1,001	3,065	
2014	3,219,565	18	163	2,071,495	4,670,721	935,656	2,319,667	9,997,538	2,094	1,011	3,105	
2015	3,778,904	22	190	3,302,117	5,363,880	994,364	2,959,048	12,619,409	2,293	1,046	3,339	
2016	3,783,365	20	151	2,885,830	4,703,746	1,391,862	1,956,254	10,937,693	2,006	0,885	2,891	
2017	4,068,864	16	194	3,150,327	8,306,746	878,064	3,390,003	15,725,141	2,816	1,049	3,865	
<b>MA Total:</b>	<b>17,730,133</b>	<b>93</b>	<b>869</b>	<b>13,601,867</b>	<b>26,796,271</b>	<b>5,095,485</b>	<b>12,611,922</b>	<b>58,105,545</b>	<b>2,279</b>	<b>0,999</b>	<b>3,277</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.875	0.841	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	2.956	1.347	4.303
(16) Countrywide Indicated Relativity:	1.154	1.169	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	5752.0	.	.
(19) Pure Premium Underlying Present Rate:	2.120	1.021	3.141
(20) Relativity to Underlying Present Rate:	0.876	0.969	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.875	0.841	.
(24) Balanced Formula Relativity:	0.879	0.840	0.867



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5478 CARPET, LINOLEUM, VINYL, ASPHALT OR RUBBER FLOOR TILE INSTAL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	674,847	3	53	213,923	674,662	143,674	269,219	1,301,477	1,317	0,612	1,929
2014	713,435	6	58	724,529	727,907	234,414	356,988	2,043,838	2,036	0,829	2,865
2015	816,411	3	54	417,065	1,434,461	98,145	360,646	2,310,316	2,268	0,562	2,830
2016	765,244	4	61	435,161	2,424,109	251,512	704,068	3,814,850	3,736	1,249	4,985
2017	843,181	0	48	0	1,931,667	0	573,023	2,504,690	2,291	0,680	2,971
<b>MA Total:</b>	<b>3,813,117</b>	<b>16</b>	<b>274</b>	<b>1,790,677</b>	<b>7,192,805</b>	<b>727,745</b>	<b>2,263,943</b>	<b>11,975,171</b>	<b>2,356</b>	<b>0,785</b>	<b>3,141</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.905	0.661	.
(14) Massachusetts Credibility:	0.640	0.750	.
(15) Countrywide Pure Premium:	2.419	0.824	3.243
(16) Countrywide Indicated Relativity:	0.944	0.715	.
(17) Countrywide Credibility:	0.180	0.130	.
(18) Countrywide Lost-Time Claims:	1206.0	.	.
(19) Pure Premium Underlying Present Rate:	2.340	0.757	3.096
(20) Relativity to Underlying Present Rate:	0.967	0.718	.
(21) Credibility to Underlying Relativity:	0.180	0.120	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.923	0.675	.
(24) Balanced Formula Relativity:	0.927	0.674	0.848

Class(es):		Effective: 7/1/2020							Construction		
5479 INSULATION WORK NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	393,554	2	84	85,684	1,713,037	39,219	534,329	2,372,269	4,570	1,457	6,028
2014	489,797	8	101	1,196,731	591,028	274,875	315,670	2,378,304	3,650	1,206	4,856
2015	552,591	1	89	130,841	893,808	41,173	455,311	1,521,133	1,854	0,898	2,753
2016	535,612	2	66	332,631	1,513,080	208,771	472,865	2,527,348	3,446	1,273	4,719
2017	586,405	0	84	0	1,228,205	0	587,590	1,815,795	2,094	1,002	3,096
<b>MA Total:</b>	<b>2,557,959</b>	<b>13</b>	<b>424</b>	<b>1,745,886</b>	<b>5,939,158</b>	<b>564,039</b>	<b>2,365,766</b>	<b>10,614,849</b>	<b>3,004</b>	<b>1,145</b>	<b>4,150</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.154	0.965	.
(14) Massachusetts Credibility:	0.650	0.840	.
(15) Countrywide Pure Premium:	2.803	1.376	4.178
(16) Countrywide Indicated Relativity:	1.094	1.194	.
(17) Countrywide Credibility:	0.180	0.080	.
(18) Countrywide Lost-Time Claims:	1581.0	.	.
(19) Pure Premium Underlying Present Rate:	3.591	1.528	5.119
(20) Relativity to Underlying Present Rate:	1.484	1.450	.
(21) Credibility to Underlying Relativity:	0.170	0.080	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.199	1.022	.
(24) Balanced Formula Relativity:	1.204	1.020	1.147

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5480 PLASTERING NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	390,786	2	23	523,533	445,140	268,976	280,276	1,517,925	2,479	1,406	3,884
2014	422,667	3	18	314,227	105,099	66,059	55,483	540,868	0,992	0,288	1,280
2015	475,707	0	28	0	2,748,509	0	744,717	3,493,227	5,778	1,565	7,343
2016	549,467	1	30	289,167	1,113,878	49,933	464,232	1,917,211	2,553	0,936	3,489
2017	558,154	2	34	179,282	1,049,940	300,900	499,025	2,029,147	2,202	1,433	3,635
<b>MA Total:</b>	<b>2,396,780</b>	<b>8</b>	<b>133</b>	<b>1,306,209</b>	<b>5,462,566</b>	<b>685,869</b>	<b>2,043,733</b>	<b>9,498,377</b>	<b>2,824</b>	<b>1,139</b>	<b>3,963</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.085	0.959	.
(14) Massachusetts Credibility:	0.520	0.630	.
(15) Countrywide Pure Premium:	3.574	1.280	4.854
(16) Countrywide Indicated Relativity:	1.396	1.111	.
(17) Countrywide Credibility:	0.240	0.190	.
(18) Countrywide Lost-Time Claims:	146.00	.	.
(19) Pure Premium Underlying Present Rate:	2.192	0.796	2.988
(20) Relativity to Underlying Present Rate:	0.906	0.755	.
(21) Credibility to Underlying Relativity:	0.240	0.180	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.116	0.951	.
(24) Balanced Formula Relativity:	1.121	0.950	1.067

Class(es):		Effective: 7/1/2020							Construction		
5506 STREET OR ROAD CONSTRUCTION: PAVING OR REPAVING & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	507,855	0	38	0	136,586	0	194,621	331,207	0,269	0,383	0,652
2014	604,604	5	47	1,045,275	511,507	219,631	525,016	2,301,429	2,575	1,232	3,807
2015	648,708	2	37	754,286	664,338	129,685	334,119	1,882,429	2,187	0,715	2,902
2016	668,156	3	32	599,703	1,262,226	155,208	563,796	2,580,934	2,787	1,076	3,863
2017	682,534	7	49	2,438,672	444,688	874,941	214,401	3,972,702	4,224	1,596	5,821
<b>MA Total:</b>	<b>3,111,856</b>	<b>17</b>	<b>203</b>	<b>4,837,936</b>	<b>3,019,345</b>	<b>1,379,466</b>	<b>1,831,954</b>	<b>11,068,700</b>	<b>2,525</b>	<b>1,032</b>	<b>3,557</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.970	0.869	.
(14) Massachusetts Credibility:	0.630	0.810	.
(15) Countrywide Pure Premium:	3.137	1.478	4.615
(16) Countrywide Indicated Relativity:	1.225	1.283	.
(17) Countrywide Credibility:	0.190	0.100	.
(18) Countrywide Lost-Time Claims:	4464.0	.	.
(19) Pure Premium Underlying Present Rate:	2.719	1.125	3.844
(20) Relativity to Underlying Present Rate:	1.123	1.068	.
(21) Credibility to Underlying Relativity:	0.180	0.090	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.046	0.928	.
(24) Balanced Formula Relativity:	1.050	0.927	1.012

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5507 STREET OR ROAD CONSTRUCTION: SUB-SURFACE WORK & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	203,031	0	19	0	285,982	0	84,820	370,802	1,409	0,418	1,826
2014	238,372	0	19	0	650,493	0	104,787	755,280	2,729	0,440	3,168
2015	286,570	0	20	0	470,597	0	180,048	650,645	1,642	0,628	2,270
2016	185,186	0	14	0	2,106,343	0	464,731	2,571,074	11,374	2,510	13,884
2017	182,553	2	18	885,246	260,516	303,647	181,725	1,631,134	6,276	2,659	8,935
<b>MA Total:</b>	<b>1,095,713</b>	<b>2</b>	<b>90</b>	<b>885,246</b>	<b>3,773,931</b>	<b>303,647</b>	<b>1,016,111</b>	<b>5,978,935</b>	<b>4,252</b>	<b>1,204</b>	<b>5,457</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.633	1.014	.
(14) Massachusetts Credibility:	0.420	0.560	.
(15) Countrywide Pure Premium:	2.393	0.968	3.361
(16) Countrywide Indicated Relativity:	0.934	0.840	.
(17) Countrywide Credibility:	0.290	0.220	.
(18) Countrywide Lost-Time Claims:	1439.0	.	.
(19) Pure Premium Underlying Present Rate:	2.850	1.288	4.138
(20) Relativity to Underlying Present Rate:	1.178	1.223	.
(21) Credibility to Underlying Relativity:	0.290	0.220	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.298	1.022	.
(24) Balanced Formula Relativity:	1.304	1.020	1.215

Class(es):		Effective: 7/1/2020							Construction		
5509 STREET OR ROAD MAINTENANCE BY COUNTY OR MUNICIPAL EMP & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	49,458	0	12	0	8,021	0	6,986	15,008	0,162	0,141	0,303
2014	62,924	0	8	0	10,480	0	17,524	28,004	0,167	0,278	0,445
2015	62,088	1	17	7,042	287,383	17,468	161,714	473,607	4,742	2,886	7,628
2016	69,565	0	17	0	511,732	0	107,036	618,768	7,356	1,539	8,895
2017	57,168	1	6	289,650	214,768	79,998	71,609	656,026	8,823	2,652	11,475
<b>MA Total:</b>	<b>301,203</b>	<b>2</b>	<b>60</b>	<b>296,693</b>	<b>1,032,384</b>	<b>97,466</b>	<b>364,870</b>	<b>1,791,413</b>	<b>4,413</b>	<b>1,535</b>	<b>5,948</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.695	1.293	.
(14) Massachusetts Credibility:	0.210	0.320	.
(15) Countrywide Pure Premium:	2.154	1.284	3.438
(16) Countrywide Indicated Relativity:	0.841	1.115	.
(17) Countrywide Credibility:	0.400	0.340	.
(18) Countrywide Lost-Time Claims:	482.00	.	.
(19) Pure Premium Underlying Present Rate:	1.883	1.127	3.010
(20) Relativity to Underlying Present Rate:	0.778	1.070	.
(21) Credibility to Underlying Relativity:	0.390	0.340	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.996	1.156	.
(24) Balanced Formula Relativity:	1.000	1.154	1.048

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5538 SHEET METAL WORK-SHOP & OUTSIDE-NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,963,092	16	250	2,011,117	1,809,861	629,847	1,015,460	5,466,286	1,946	0,838	2,785
2014	2,228,677	17	284	3,041,399	2,829,678	1,066,762	1,881,667	8,819,506	2,634	1,323	3,957
2015	2,515,073	7	282	1,746,100	2,951,776	325,599	1,614,465	6,637,939	1,868	0,771	2,639
2016	2,631,060	9	253	2,106,337	4,253,571	612,728	2,058,144	9,030,781	2,417	1,015	3,432
2017	2,803,209	12	310	2,636,102	4,898,722	1,379,401	2,567,842	11,482,068	2,688	1,408	4,096
<b>MA Total:</b>	<b>12,141,111</b>	<b>61</b>	<b>1,379</b>	<b>11,541,056</b>	<b>16,743,608</b>	<b>4,014,337</b>	<b>9,137,578</b>	<b>41,436,579</b>	<b>2,330</b>	<b>1,083</b>	<b>3,413</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.895	0.912	.
(14) Massachusetts Credibility:	0.950	1.000	.
(15) Countrywide Pure Premium:	3.354	1.320	4.674
(16) Countrywide Indicated Relativity:	1.310	1.146	.
(17) Countrywide Credibility:	0.030	0.000	.
(18) Countrywide Lost-Time Claims:	300.00	.	.
(19) Pure Premium Underlying Present Rate:	1.954	0.868	2.822
(20) Relativity to Underlying Present Rate:	0.808	0.823	.
(21) Credibility to Underlying Relativity:	0.020	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.905	0.912	.
(24) Balanced Formula Relativity:	0.909	0.911	0.910

Class(es):		Effective: 7/1/2020							Construction		
5545 ROOFING NOC & YARD EMP, DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	150,685	3	36	345,855	604,662	161,884	484,571	1,596,972	6,308	4,290	10,598
2014	140,439	11	42	2,277,710	1,172,956	1,819,482	1,031,309	6,301,456	24,571	20,299	44,870
2015	214,239	13	31	2,626,443	2,104,999	1,492,869	1,148,590	7,372,901	22,085	12,329	34,414
2016	212,864	9	49	2,625,095	2,880,760	1,903,312	1,736,344	9,145,512	25,866	17,099	42,964
2017	184,466	10	30	2,308,796	1,334,944	1,757,230	860,535	6,261,504	19,753	14,191	33,944
<b>MA Total:</b>	<b>902,693</b>	<b>46</b>	<b>188</b>	<b>10,183,898</b>	<b>8,098,321</b>	<b>7,134,778</b>	<b>5,261,348</b>	<b>30,678,345</b>	<b>20,253</b>	<b>13,732</b>	<b>33,985</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	7.778	11.566	.
(14) Massachusetts Credibility:	0.780	1.000	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	6.361	9.073	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	16.113	10.192	26.305
(20) Relativity to Underlying Present Rate:	6.658	9.672	.
(21) Credibility to Underlying Relativity:	0.220	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	7.532	11.566	.
(24) Balanced Formula Relativity:	7.564	11.544	8.811

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5547 ROOFING-BUILT UP - YARD EMP & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	528,602	3	68	831,937	1,936,576	245,875	1,548,597	4,562,984	5,237	3,395	8,632
2014	613,150	13	63	2,870,428	581,687	1,538,885	468,884	5,459,884	5,630	3,275	8,905
2015	646,862	8	70	2,030,716	1,709,524	2,162,523	728,542	6,631,304	5,782	4,469	10,251
2016	662,932	8	65	1,344,965	4,090,230	1,009,773	2,071,302	8,516,270	8,199	4,648	12,846
2017	679,748	1	70	102,750	1,613,697	64,857	699,448	2,480,752	2,525	1,124	3,650
<b>MA Total:</b>	<b>3,131,294</b>	<b>33</b>	<b>336</b>	<b>7,180,795</b>	<b>9,931,713</b>	<b>5,021,913</b>	<b>5,516,773</b>	<b>27,651,195</b>	<b>5,465</b>	<b>3,366</b>	<b>8,831</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.099	2.835	.
(14) Massachusetts Credibility:	0.810	1.000	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	2.031	2.931	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	5.144	3.293	8.437
(20) Relativity to Underlying Present Rate:	2.126	3.125	.
(21) Credibility to Underlying Relativity:	0.190	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	2.104	2.835	.
(24) Balanced Formula Relativity:	2.113	2.829	2.337

Class(es):		Effective: 7/1/2020							Construction		
5606 CONTRACTOR-EXECUTIVE SUPERVISOR OR CONSTRUCT SUPERINTENDENT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,908,614	10	163	1,242,035	2,364,469	1,004,604	1,308,599	5,919,708	0.610	0.391	1.002
2014	6,626,672	10	179	1,988,572	2,140,377	953,608	1,330,688	6,413,245	0.623	0.345	0.968
2015	7,542,864	14	178	3,201,368	1,652,520	1,222,582	1,520,053	7,596,523	0.644	0.364	1.007
2016	8,125,654	12	132	2,482,402	3,470,411	967,875	2,060,676	8,981,365	0.733	0.373	1.105
2017	8,734,250	15	150	3,063,032	3,796,015	1,319,839	2,808,252	10,987,138	0.785	0.473	1.258
<b>MA Total:</b>	<b>36,938,054</b>	<b>61</b>	<b>802</b>	<b>11,977,410</b>	<b>13,423,793</b>	<b>5,468,508</b>	<b>9,028,269</b>	<b>39,897,979</b>	<b>0.688</b>	<b>0.392</b>	<b>1.080</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.264	0.331	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	0.530	0.241	0.771
(16) Countrywide Indicated Relativity:	0.207	0.209	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	3770.0	.	.
(19) Pure Premium Underlying Present Rate:	0.731	0.355	1.086
(20) Relativity to Underlying Present Rate:	0.302	0.337	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.264	0.331	.
(24) Balanced Formula Relativity:	0.265	0.330	0.285

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5610 CLEANER - DEBRIS REMOVAL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	365,358	2	30	312,029	747,500	34,015	309,470	1,403,014	2,900	0,940	3,840
2014	503,061	4	43	852,252	757,464	100,856	252,714	1,963,286	3,200	0,703	3,903
2015	584,074	2	47	179,005	1,646,013	9,804	452,476	2,287,298	3,125	0,791	3,916
2016	655,412	6	38	1,331,058	171,615	497,686	152,036	2,152,395	2,293	0,991	3,284
2017	655,469	0	38	0	764,166	0	278,041	1,042,207	1,166	0,424	1,590
<b>MA Total:</b>	<b>2,763,374</b>	<b>14</b>	<b>196</b>	<b>2,674,344</b>	<b>4,086,758</b>	<b>642,361</b>	<b>1,444,737</b>	<b>8,848,200</b>	<b>2,447</b>	<b>0,755</b>	<b>3,202</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.940	0.636	.
(14) Massachusetts Credibility:	0.640	0.720	.
(15) Countrywide Pure Premium:	2.360	1.070	3.431
(16) Countrywide Indicated Relativity:	0.922	0.929	.
(17) Countrywide Credibility:	0.180	0.140	.
(18) Countrywide Lost-Time Claims:	522.00	.	.
(19) Pure Premium Underlying Present Rate:	3.254	0.944	4.198
(20) Relativity to Underlying Present Rate:	1.345	0.896	.
(21) Credibility to Underlying Relativity:	0.180	0.140	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.009	0.714	.
(24) Balanced Formula Relativity:	1.014	0.712	0.919

Class(es):		Effective: 7/1/2020							Construction		
5645 CARPENTRY-DETACHED ONE OR TWO FAMILY DWELLINGS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	4,950,258	52	659	8,658,519	12,589,067	4,427,199	7,728,607	33,403,392	4,292	2,456	6,748
2014	5,446,691	49	671	7,277,927	11,430,867	3,812,473	7,580,917	30,102,184	3,435	2,092	5,527
2015	6,226,683	64	710	9,693,117	13,053,024	4,821,108	7,891,517	35,458,767	3,653	2,042	5,695
2016	6,634,951	36	674	5,837,269	15,757,336	2,274,998	10,144,793	34,014,395	3,255	1,872	5,127
2017	7,028,832	50	681	7,935,639	15,632,471	4,792,051	8,769,761	37,129,922	3,353	1,929	5,283
<b>MA Total:</b>	<b>30,287,414</b>	<b>251</b>	<b>3,395</b>	<b>39,402,470</b>	<b>68,462,765</b>	<b>20,127,829</b>	<b>42,115,596</b>	<b>170,108,660</b>	<b>3,561</b>	<b>2,055</b>	<b>5,616</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.368	1.731	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	5.441	2.741	8.183
(16) Countrywide Indicated Relativity:	2.125	2.380	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	13480	.	.
(19) Pure Premium Underlying Present Rate:	3.410	1.834	5.243
(20) Relativity to Underlying Present Rate:	1.409	1.740	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.368	1.731	.
(24) Balanced Formula Relativity:	1.374	1.728	1.484

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5701 WRECKING: BUILDING OR STRUCTURES-NOT MARINE- ALL OPERATIONS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	22,579	0	3	0	283,249	0	74,365	357,613	12,545	3,294	15,839
2014	52,257	0	10	0	169,895	0	99,036	268,930	3,251	1,895	5,146
2015	92,614	2	5	594,993	926,306	629,262	579,479	2,730,040	16,426	13,051	29,478
2016	77,673	0	13	0	117,764	0	50,528	168,293	1,516	0,651	2,167
2017	49,330	0	6	0	801,499	0	235,204	1,036,703	16,248	4,768	21,016
<b>MA Total:</b>	<b>294,453</b>	<b>2</b>	<b>37</b>	<b>594,993</b>	<b>2,298,713</b>	<b>629,262</b>	<b>1,038,611</b>	<b>4,561,579</b>	<b>9,827</b>	<b>5,664</b>	<b>15,492</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.774	4.771	.
(14) Massachusetts Credibility:	0.410	0.630	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	3.830	5.795	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	9.702	6.510	16.212
(20) Relativity to Underlying Present Rate:	4.009	6.178	.
(21) Credibility to Underlying Relativity:	0.590	0.370	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	3.913	5.291	.
(24) Balanced Formula Relativity:	3.929	5.281	4.353

Class(es):		Effective: 7/1/2020							Construction		
5703 BUILDING RAISING OR MOVING & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	8,169	0	1	0	74,503	0	34,988	109,492	9,121	4,283	13,404
2014	12,331	0	1	0	0	0	1,513	1,513	0,000	0,123	0,123
2015	11,512	0	0	0	0	0	0	0	0,000	0,000	0,000
2016	15,821	0	0	0	0	0	0	0	0,000	0,000	0,000
2017	14,884	0	1	0	14,174	0	7,206	21,380	0,952	0,484	1,436
<b>MA Total:</b>	<b>62,717</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>88,678</b>	<b>0</b>	<b>43,707</b>	<b>132,384</b>	<b>1,414</b>	<b>0,697</b>	<b>2,111</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.543	0.587	.
(14) Massachusetts Credibility:	0.180	0.230	.
(15) Countrywide Pure Premium:	8.852	3.804	12.656
(16) Countrywide Indicated Relativity:	3.456	3.303	.
(17) Countrywide Credibility:	0.240	0.260	.
(18) Countrywide Lost-Time Claims:	33.000	.	.
(19) Pure Premium Underlying Present Rate:	5.955	2.326	8.281
(20) Relativity to Underlying Present Rate:	2.461	2.207	.
(21) Credibility to Underlying Relativity:	0.580	0.510	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	2.355	2.119	.
(24) Balanced Formula Relativity:	2.365	2.116	2.287

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
5705 SALVAGE OPERATION - NO WRECKING OR ANY STRUCTURAL OPERATIONS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	248	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	242	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	1,927	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	1,952	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	247	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>4,615</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.070	0.090	.
(15) Countrywide Pure Premium:	1.449	0.673	2.122
(16) Countrywide Indicated Relativity:	0.566	0.584	.
(17) Countrywide Credibility:	0.150	0.160	.
(18) Countrywide Lost-Time Claims:	10.000	.	.
(19) Pure Premium Underlying Present Rate:	6.624	2.931	9.555
(20) Relativity to Underlying Present Rate:	2.737	2.781	.
(21) Credibility to Underlying Relativity:	0.780	0.750	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	2.220	2.180	.
(24) Balanced Formula Relativity:	2.229	2.175	2.212

Class(es):		Effective: 7/1/2020							Construction		
6003 PILE DRIVING & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	70,991	0	5	0	738,707	0	200,001	938,708	10,406	2,817	13,223
2014	67,323	1	9	248,899	46,269	205,704	14,176	515,048	4,384	3,266	7,650
2015	105,183	0	7	0	850,065	0	317,696	1,167,761	8,082	3,020	11,102
2016	89,447	1	11	25,156	287,302	2,953	187,930	503,341	3,493	2,134	5,627
2017	66,261	0	1	0	0	0	115	115	0.000	0.002	0.002
<b>MA Total:</b>	<b>399,206</b>	<b>2</b>	<b>33</b>	<b>274,055</b>	<b>1,922,343</b>	<b>208,658</b>	<b>719,918</b>	<b>3,124,974</b>	<b>5,502</b>	<b>2,326</b>	<b>7,828</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.113	1.959	.
(14) Massachusetts Credibility:	0.350	0.430	.
(15) Countrywide Pure Premium:	3.944	1.265	5.209
(16) Countrywide Indicated Relativity:	1.540	1.098	.
(17) Countrywide Credibility:	0.330	0.290	.
(18) Countrywide Lost-Time Claims:	129.00	.	.
(19) Pure Premium Underlying Present Rate:	4.960	1.811	6.771
(20) Relativity to Underlying Present Rate:	2.050	1.719	.
(21) Credibility to Underlying Relativity:	0.320	0.280	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.904	1.642	.
(24) Balanced Formula Relativity:	1.912	1.639	1.826



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
6204 DRILLING NOC & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	126,747	0	14	0	28,671	0	28,033	56,704	0.226	0.221	0.447
2014	139,839	2	16	9,425	86,228	11,458	68,874	175,985	0.684	0.574	1.258
2015	195,434	2	21	107,168	1,044,171	56,719	442,910	1,650,968	5.891	2.557	8.448
2016	170,168	1	10	21,114	416,823	7,265	118,068	563,270	2.574	0.737	3.310
2017	193,354	0	9	0	99,645	0	50,410	150,054	0.515	0.261	0.776
<b>MA Total:</b>	<b>825,542</b>	<b>5</b>	<b>70</b>	<b>137,707</b>	<b>1,675,538</b>	<b>75,441</b>	<b>708,295</b>	<b>2,596,981</b>	<b>2.196</b>	<b>0.949</b>	<b>3.146</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.844	0.800	.
(14) Massachusetts Credibility:	0.390	0.480	.
(15) Countrywide Pure Premium:	3.627	1.542	5.169
(16) Countrywide Indicated Relativity:	1.416	1.339	.
(17) Countrywide Credibility:	0.310	0.260	.
(18) Countrywide Lost-Time Claims:	802.00	.	.
(19) Pure Premium Underlying Present Rate:	3.144	1.185	4.329
(20) Relativity to Underlying Present Rate:	1.299	1.124	.
(21) Credibility to Underlying Relativity:	0.300	0.260	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.158	1.024	.
(24) Balanced Formula Relativity:	1.163	1.022	1.119

Class(es):		Effective: 7/1/2020							Construction		
6217 EXCAVATION & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3,220,635	15	258	2,434,627	4,035,688	886,701	2,518,298	9,875,314	2.009	1.057	3.066
2014	3,613,044	25	258	3,974,140	4,115,029	1,517,729	2,064,121	11,671,019	2.239	0.991	3.230
2015	4,100,090	18	269	4,199,600	5,831,427	1,327,382	2,379,203	13,737,612	2.447	0.904	3.351
2016	4,210,413	24	223	4,596,698	6,564,828	1,604,583	3,397,506	16,163,614	2.651	1.188	3.839
2017	4,612,848	23	256	5,064,985	7,387,336	1,799,038	3,449,198	17,700,556	2.699	1.138	3.837
<b>MA Total:</b>	<b>19,757,031</b>	<b>105</b>	<b>1,264</b>	<b>20,270,050</b>	<b>27,934,307</b>	<b>7,135,433</b>	<b>13,808,326</b>	<b>69,148,116</b>	<b>2.440</b>	<b>1.060</b>	<b>3.500</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.937	0.893	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	2.318	0.987	3.306
(16) Countrywide Indicated Relativity:	0.905	0.857	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	6275.0	.	.
(19) Pure Premium Underlying Present Rate:	2.069	0.912	2.980
(20) Relativity to Underlying Present Rate:	0.855	0.865	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.937	0.893	.
(24) Balanced Formula Relativity:	0.941	0.891	0.925

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction			
6229 IRRIGATION OR DRAINAGE SYSTEM CONSTRUCTION &DR												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	347,091	3	30	228,722	351,868	201,525	121,078	903,193	1,673	0,929	2,602	
2014	338,517	4	22	650,633	336,908	164,271	257,298	1,409,109	2,917	1,245	4,163	
2015	390,871	1	21	60,487	549,893	5,620	185,816	801,817	1,562	0,490	2,051	
2016	415,725	2	15	313,912	259,461	240,697	134,168	948,237	1,379	0,902	2,281	
2017	454,727	1	34	760,588	639,635	107,276	308,301	1,815,801	3,079	0,914	3,993	
<b>MA Total:</b>	<b>1,946,931</b>	<b>11</b>	<b>122</b>	<b>2,014,342</b>	<b>2,137,765</b>	<b>719,389</b>	<b>1,006,661</b>	<b>5,878,156</b>	<b>2,133</b>	<b>0,887</b>	<b>3,019</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.819	0.747	.
(14) Massachusetts Credibility:	0.460	0.580	.
(15) Countrywide Pure Premium:	2.287	1.176	3.462
(16) Countrywide Indicated Relativity:	0.893	1.021	.
(17) Countrywide Credibility:	0.270	0.210	.
(18) Countrywide Lost-Time Claims:	609.00	.	.
(19) Pure Premium Underlying Present Rate:	2.001	0.791	2.793
(20) Relativity to Underlying Present Rate:	0.827	0.751	.
(21) Credibility to Underlying Relativity:	0.270	0.210	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.841	0.805	.
(24) Balanced Formula Relativity:	0.845	0.804	0.832

Class(es):		Effective: 7/1/2020							Construction			
6233 OIL OR GAS PIPELINE CONSTRUCTION & DRIVERS												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	11,870	0	1	0	0	0	908	908	0.000	0.076	0.076	
2014	13,405	0	0	0	0	0	0	0	0.000	0.000	0.000	
2015	45,365	0	0	0	0	0	0	0	0.000	0.000	0.000	
2016	72,927	0	0	0	0	0	0	0	0.000	0.000	0.000	
2017	21,267	0	0	0	0	0	0	0	0.000	0.000	0.000	
<b>MA Total:</b>	<b>164,834</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>908</b>	<b>908</b>	<b>0.000</b>	<b>0.006</b>	<b>0.006</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.005	.
(14) Massachusetts Credibility:	0.150	0.170	.
(15) Countrywide Pure Premium:	1.610	0.597	2.208
(16) Countrywide Indicated Relativity:	0.629	0.519	.
(17) Countrywide Credibility:	0.430	0.420	.
(18) Countrywide Lost-Time Claims:	541.00	.	.
(19) Pure Premium Underlying Present Rate:	1.425	0.462	1.887
(20) Relativity to Underlying Present Rate:	0.589	0.438	.
(21) Credibility to Underlying Relativity:	0.420	0.410	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.518	0.398	.
(24) Balanced Formula Relativity:	0.520	0.397	0.482

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
6251 TUNNELING - NOT PNEUMATIC - ALL OPERATIONS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	235	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>235</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.010	0.020	.
(15) Countrywide Pure Premium:	1.399	0.641	2.040
(16) Countrywide Indicated Relativity:	0.546	0.557	.
(17) Countrywide Credibility:	0.240	0.260	.
(18) Countrywide Lost-Time Claims:	34.000	.	.
(19) Pure Premium Underlying Present Rate:	3.111	0.763	3.875
(20) Relativity to Underlying Present Rate:	1.286	0.724	.
(21) Credibility to Underlying Relativity:	0.750	0.720	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.095	0.666	.
(24) Balanced Formula Relativity:	1.100	0.665	0.964

Class(es):		Effective: 7/1/2020							Construction		
6252 SHAFT SINKING - ALL OPERATIONS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	20.692	0	1	0	0	0	326	326	0.000	0.016	0.016
2014	34.212	0	2	0	0	0	3,509	3,509	0.000	0.103	0.103
2015	26.212	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	80.775	1	6	14.476	172.428	2.070	123.975	312.949	2.314	1.560	3.874
2017	50.464	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>212.355</b>	<b>1</b>	<b>9</b>	<b>14.476</b>	<b>172.428</b>	<b>2.070</b>	<b>127.810</b>	<b>316.784</b>	<b>0.880</b>	<b>0.612</b>	<b>1.492</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.338	0.515	.
(14) Massachusetts Credibility:	0.260	0.330	.
(15) Countrywide Pure Premium:	2.695	0.792	3.488
(16) Countrywide Indicated Relativity:	1.052	0.688	.
(17) Countrywide Credibility:	0.340	0.340	.
(18) Countrywide Lost-Time Claims:	75.000	.	.
(19) Pure Premium Underlying Present Rate:	4.406	1.722	6.128
(20) Relativity to Underlying Present Rate:	1.821	1.634	.
(21) Credibility to Underlying Relativity:	0.400	0.330	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.174	0.943	.
(24) Balanced Formula Relativity:	1.179	0.941	1.105

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
6306 SEWER CONSTRUCTION - ALL OPERATIONS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	222,933	3	22	684,814	130,890	504,661	143,516	1,463,881	3,659	2,907	6,566
2014	245,910	3	30	512,195	497,427	289,995	185,878	1,485,495	4,106	1,935	6,041
2015	264,977	2	29	325,507	998,022	48,280	334,364	1,706,173	4,995	1,444	6,439
2016	276,027	5	26	1,346,851	943,660	237,116	229,131	2,756,758	8,298	1,689	9,987
2017	247,397	1	22	133,076	368,428	28,907	237,768	768,179	2,027	1,078	3,105
<b>MA Total:</b>	<b>1,257,245</b>	<b>14</b>	<b>129</b>	<b>3,002,444</b>	<b>2,938,426</b>	<b>1,108,961</b>	<b>1,130,656</b>	<b>8,180,487</b>	<b>4,725</b>	<b>1,781</b>	<b>6,507</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.815	1.500	.
(14) Massachusetts Credibility:	0.520	0.660	.
(15) Countrywide Pure Premium:	2.660	1.225	3.885
(16) Countrywide Indicated Relativity:	1.039	1.064	.
(17) Countrywide Credibility:	0.240	0.170	.
(18) Countrywide Lost-Time Claims:	1432.0	.	.
(19) Pure Premium Underlying Present Rate:	4.310	1.678	5.989
(20) Relativity to Underlying Present Rate:	1.781	1.593	.
(21) Credibility to Underlying Relativity:	0.240	0.170	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.620	1.442	.
(24) Balanced Formula Relativity:	1.627	1.439	1.568

Class(es):		Effective: 7/1/2020							Construction		
6319 GAS MAIN OR CONNECTION CONSTRUCTION & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	637,794	1	29	108,627	253,325	29,992	284,181	676,124	0.568	0.493	1.060
2014	707,483	3	30	272,593	606,774	116,142	231,158	1,226,668	1.243	0.491	1.734
2015	833,161	3	35	860,537	1,503,460	420,533	561,453	3,345,984	2.837	1.179	4.016
2016	969,569	2	53	355,822	1,412,831	88,455	624,512	2,481,620	1.824	0.735	2.560
2017	910,675	2	23	381,098	1,191,034	51,729	433,904	2,057,765	1.726	0.533	2.260
<b>MA Total:</b>	<b>4,058,682</b>	<b>11</b>	<b>170</b>	<b>1,978,676</b>	<b>4,967,426</b>	<b>706,851</b>	<b>2,135,208</b>	<b>9,788,161</b>	<b>1.711</b>	<b>0.700</b>	<b>2.412</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.657	0.590	.
(14) Massachusetts Credibility:	0.590	0.800	.
(15) Countrywide Pure Premium:	1.662	0.804	2.465
(16) Countrywide Indicated Relativity:	0.649	0.698	.
(17) Countrywide Credibility:	0.210	0.100	.
(18) Countrywide Lost-Time Claims:	1458.0	.	.
(19) Pure Premium Underlying Present Rate:	1.773	0.852	2.625
(20) Relativity to Underlying Present Rate:	0.733	0.808	.
(21) Credibility to Underlying Relativity:	0.200	0.100	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.671	0.622	.
(24) Balanced Formula Relativity:	0.673	0.621	0.657

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
6325 CONDUIT CONSTRUCTION - FOR CABLES OR WIRES & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	224,228	1	7	202,230	2,658	98,416	11,267	314,571	0.914	0.489	1.403
2014	245,517	1	14	104,789	327,018	24,382	178,692	634,882	1.759	0.827	2.586
2015	263,217	0	10	0	238,147	0	192,833	430,981	0.905	0.733	1.637
2016	261,444	2	8	220,634	882	16,392	18,653	256,561	0.847	0.134	0.981
2017	281,605	0	12	0	53,765	0	96,298	150,063	0.191	0.342	0.533
<b>MA Total:</b>	<b>1,276,011</b>	<b>4</b>	<b>51</b>	<b>527,653</b>	<b>622,471</b>	<b>139,190</b>	<b>497,743</b>	<b>1,787,057</b>	<b>0.901</b>	<b>0.499</b>	<b>1.401</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.346	0.420	.
(14) Massachusetts Credibility:	0.370	0.470	.
(15) Countrywide Pure Premium:	1.964	0.863	2.827
(16) Countrywide Indicated Relativity:	0.767	0.750	.
(17) Countrywide Credibility:	0.320	0.270	.
(18) Countrywide Lost-Time Claims:	1307.0	.	.
(19) Pure Premium Underlying Present Rate:	1.815	0.710	2.525
(20) Relativity to Underlying Present Rate:	0.750	0.673	.
(21) Credibility to Underlying Relativity:	0.310	0.260	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.606	0.575	.
(24) Balanced Formula Relativity:	0.609	0.574	0.598

Class(es):		Effective: 7/1/2020							Construction		
6400 FENCE ERECTION - ALL TYPES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	318,243	3	36	119,574	272,072	81,458	114,332	587,436	1.231	0.615	1.846
2014	314,443	1	42	392,719	275,314	237,643	123,418	1,029,094	2.124	1.148	3.273
2015	356,043	3	40	693,886	335,312	223,245	290,672	1,543,116	2.891	1.443	4.334
2016	386,842	4	47	755,552	342,072	292,360	759,224	2,149,207	2.837	2.718	5.556
2017	430,648	1	61	79,214	726,875	62,715	324,089	1,192,894	1.872	0.898	2.770
<b>MA Total:</b>	<b>1,806,220</b>	<b>12</b>	<b>226</b>	<b>2,040,945</b>	<b>1,951,645</b>	<b>897,421</b>	<b>1,611,736</b>	<b>6,501,746</b>	<b>2.210</b>	<b>1.389</b>	<b>3.600</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.849	1.170	.
(14) Massachusetts Credibility:	0.480	0.640	.
(15) Countrywide Pure Premium:	3.079	1.337	4.416
(16) Countrywide Indicated Relativity:	1.202	1.161	.
(17) Countrywide Credibility:	0.260	0.180	.
(18) Countrywide Lost-Time Claims:	1008.0	.	.
(19) Pure Premium Underlying Present Rate:	2.392	1.092	3.484
(20) Relativity to Underlying Present Rate:	0.988	1.036	.
(21) Credibility to Underlying Relativity:	0.260	0.180	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.977	1.144	.
(24) Balanced Formula Relativity:	0.981	1.142	1.032

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
6834 BOAT BUILDING OR REPAIRING & DRIVERS: MA ACT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	196,116	0	22	0	61,071	0	85,980	147,051	0.311	0.438	0.750
2014	219,374	0	19	0	12,273	0	24,093	36,366	0.056	0.110	0.166
2015	245,659	0	28	0	44,051	0	121,592	165,643	0.179	0.495	0.674
2016	266,057	2	29	65,634	548,403	153,656	406,129	1,173,822	2.308	2.104	4.412
2017	279,743	1	25	69,558	117,669	38,147	106,812	332,186	0.669	0.518	1.187
<b>MA Total:</b>	<b>1,206,949</b>	<b>3</b>	<b>123</b>	<b>135,191</b>	<b>783,466</b>	<b>191,803</b>	<b>744,607</b>	<b>1,855,067</b>	<b>0.761</b>	<b>0.776</b>	<b>1.537</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.316	0.625	.
(14) Massachusetts Credibility:	0.290	0.430	.
(15) Countrywide Pure Premium:	1.500	0.913	2.413
(16) Countrywide Indicated Relativity:	0.656	0.782	.
(17) Countrywide Credibility:	0.360	0.290	.
(18) Countrywide Lost-Time Claims:	1000.0	.	.
(19) Pure Premium Underlying Present Rate:	1.022	0.589	1.611
(20) Relativity to Underlying Present Rate:	0.469	0.560	.
(21) Credibility to Underlying Relativity:	0.350	0.280	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.492	0.652	.
(24) Balanced Formula Relativity:	0.490	0.656	0.547

Class(es):		Effective: 7/1/2020							Miscellaneous		
6836 MARINA & DRIVERS: MA ACT											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	441,967	2	71	294,408	1,157,172	140,245	969,389	2,561,214	3.284	2.511	5.795
2014	448,125	3	46	264,727	251,373	241,428	209,188	966,715	1.152	1.006	2.157
2015	480,536	0	57	0	222,373	0	247,669	470,042	0.463	0.515	0.978
2016	483,859	3	48	1,022,340	113,162	344,928	186,704	1,667,133	2.347	1.099	3.445
2017	543,485	1	88	216,150	314,159	149,865	412,399	1,092,573	0.976	1.035	2.010
<b>MA Total:</b>	<b>2,397,973</b>	<b>9</b>	<b>310</b>	<b>1,797,624</b>	<b>2,058,239</b>	<b>876,465</b>	<b>2,025,349</b>	<b>6,757,677</b>	<b>1.608</b>	<b>1.210</b>	<b>2.818</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.668	0.975	.
(14) Massachusetts Credibility:	0.470	0.730	.
(15) Countrywide Pure Premium:	1.608	1.089	2.697
(16) Countrywide Indicated Relativity:	0.703	0.932	.
(17) Countrywide Credibility:	0.270	0.140	.
(18) Countrywide Lost-Time Claims:	616.00	.	.
(19) Pure Premium Underlying Present Rate:	1.728	1.149	2.877
(20) Relativity to Underlying Present Rate:	0.793	1.093	.
(21) Credibility to Underlying Relativity:	0.260	0.130	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.710	0.984	.
(24) Balanced Formula Relativity:	0.708	0.990	0.804

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7219 TRUCKING: NOC - ALL EMP & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,845,116	52	505	6,399,190	9,105,405	2,770,144	4,778,266	23,053,005	5,450	2,653	8,103
2014	2,841,923	33	463	4,538,434	8,548,680	1,285,628	3,994,836	18,367,578	4,605	1,858	6,463
2015	3,113,630	43	411	7,266,620	8,511,856	2,300,479	3,865,386	21,944,343	5,068	1,980	7,048
2016	3,127,636	31	370	4,566,543	8,336,021	3,340,384	3,935,314	20,178,263	4,125	2,326	6,452
2017	3,146,633	32	398	6,222,710	8,767,551	1,860,264	3,456,467	20,306,991	4,764	1,690	6,454
<b>MA Total:</b>	<b>15,074,937</b>	<b>191</b>	<b>2,147</b>	<b>28,993,497</b>	<b>43,269,514</b>	<b>11,556,900</b>	<b>20,030,269</b>	<b>103,850,180</b>	<b>4,794</b>	<b>2,095</b>	<b>6,889</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.990	1.688	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	4.184	1.742	5.927
(16) Countrywide Indicated Relativity:	1.829	1.492	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	48975	.	.
(19) Pure Premium Underlying Present Rate:	4.532	1.834	6.365
(20) Relativity to Underlying Present Rate:	2.080	1.743	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	1.990	1.688	.
(24) Balanced Formula Relativity:	1.984	1.699	1.887

Class(es):		Effective: 7/1/2020							Miscellaneous		
7230 TRUCKING: PARCEL OR PACKAGE DELIVERY- ALL EMP & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	63,371	2	16	227,370	165,941	133,252	61,885	588,447	6,206	3,079	9,286
2014	53,922	1	11	71,084	723,949	24,627	73,083	892,743	14,744	1,812	16,556
2015	52,121	2	9	314,513	182,191	42,752	52,406	591,861	9,530	1,826	11,355
2016	73,897	2	11	73,672	183,391	13,461	131,777	402,301	3,479	1,965	5,444
2017	99,478	1	26	26,096	445,532	23,757	203,607	698,992	4,741	2,286	7,027
<b>MA Total:</b>	<b>342,790</b>	<b>8</b>	<b>73</b>	<b>712,735</b>	<b>1,701,004</b>	<b>237,849</b>	<b>522,757</b>	<b>3,174,344</b>	<b>7,041</b>	<b>2,219</b>	<b>9,260</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.924	1.788	.
(14) Massachusetts Credibility:	0.320	0.440	.
(15) Countrywide Pure Premium:	3.891	1.843	5.735
(16) Countrywide Indicated Relativity:	1.701	1.578	.
(17) Countrywide Credibility:	0.340	0.280	.
(18) Countrywide Lost-Time Claims:	507.00	.	.
(19) Pure Premium Underlying Present Rate:	4.732	2.252	6.983
(20) Relativity to Underlying Present Rate:	2.172	2.141	.
(21) Credibility to Underlying Relativity:	0.340	0.280	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	2.252	1.828	.
(24) Balanced Formula Relativity:	2.246	1.839	2.107

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7231 TRUCKING: MAIL, PARCEL OR PACKAGE DELIVERY-ALL EMP & DRIVERS											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	452,315	12	90	914,970	1,382,291	611,855	673,682	3,582,798	5,079	2,842	7,921
2014	484,082	18	95	1,339,664	982,258	417,641	584,097	3,323,661	4,797	2,069	6,866
2015	554,065	12	127	1,935,748	1,987,619	1,413,084	946,828	6,283,280	7,081	4,259	11,340
2016	668,100	26	124	3,520,771	1,452,668	1,932,310	1,107,980	8,013,729	7,444	4,551	11,995
2017	691,422	18	148	1,454,004	3,178,588	593,850	1,490,150	6,716,591	6,700	3,014	9,714
<b>MA Total:</b>	<b>2,849,983</b>	<b>86</b>	<b>584</b>	<b>9,165,157</b>	<b>8,983,424</b>	<b>4,968,740</b>	<b>4,802,738</b>	<b>27,920,059</b>	<b>6,368</b>	<b>3,429</b>	<b>9,797</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.644	2.762	.
(14) Massachusetts Credibility:	0.790	1.000	.
(15) Countrywide Pure Premium:	4.591	1.999	6.590
(16) Countrywide Indicated Relativity:	2.007	1.711	.
(17) Countrywide Credibility:	0.110	0.000	.
(18) Countrywide Lost-Time Claims:	4812.0	.	.
(19) Pure Premium Underlying Present Rate:	5.290	2.453	7.743
(20) Relativity to Underlying Present Rate:	2.428	2.332	.
(21) Credibility to Underlying Relativity:	0.100	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	2.552	2.762	.
(24) Balanced Formula Relativity:	2.545	2.779	2.625

Class(es):		Effective: 7/1/2020							Miscellaneous		
7360 FREIGHT HANDLING NOC: MA ACT											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	92,377	1	8	186,147	160,189	17,414	147,451	511,200	3,749	1,785	5,534
2014	103,693	0	20	0	30,373	0	42,753	73,126	0,293	0,412	0,705
2015	114,101	0	13	0	23,160	0	13,518	36,678	0,203	0,118	0,321
2016	103,752	0	14	0	188,474	0	72,558	261,032	1,817	0,699	2,516
2017	116,798	2	18	129,673	137,792	39,897	55,600	362,963	2,290	0,818	3,108
<b>MA Total:</b>	<b>530,721</b>	<b>3</b>	<b>73</b>	<b>315,820</b>	<b>539,988</b>	<b>57,311</b>	<b>331,880</b>	<b>1,244,999</b>	<b>1,613</b>	<b>0,733</b>	<b>2,346</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.670	0.591	.
(14) Massachusetts Credibility:	0.280	0.400	.
(15) Countrywide Pure Premium:	2.096	1.170	3.265
(16) Countrywide Indicated Relativity:	0.916	1.001	.
(17) Countrywide Credibility:	0.360	0.300	.
(18) Countrywide Lost-Time Claims:	1468.0	.	.
(19) Pure Premium Underlying Present Rate:	2.163	1.129	3.292
(20) Relativity to Underlying Present Rate:	0.993	1.073	.
(21) Credibility to Underlying Relativity:	0.360	0.300	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.875	0.859	.
(24) Balanced Formula Relativity:	0.872	0.864	0.869



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7370 TAXICAB CO: ALL OTHER EMP & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,210,842	13	317	891,623	913,215	502,941	820,199	3,127,977	1,491	1,093	2,583
2014	1,346,353	12	387	245,955	1,171,261	279,965	1,088,834	2,786,015	1,053	1,017	2,069
2015	1,397,906	12	299	477,712	1,465,804	238,719	1,137,874	3,320,109	1,390	0,985	2,375
2016	1,477,483	22	445	2,441,661	2,497,390	820,700	1,577,526	7,337,277	3,343	1,623	4,966
2017	1,708,385	16	529	1,974,675	2,486,952	482,381	1,786,043	6,730,050	2,612	1,328	3,939
<b>MA Total:</b>	<b>7,140,970</b>	<b>75</b>	<b>1,977</b>	<b>6,031,625</b>	<b>8,534,622</b>	<b>2,324,705</b>	<b>6,410,475</b>	<b>23,301,428</b>	<b>2,040</b>	<b>1,223</b>	<b>3,263</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.847	0.986	.
(14) Massachusetts Credibility:	0.680	1.000	.
(15) Countrywide Pure Premium:	1.903	1.219	3.122
(16) Countrywide Indicated Relativity:	0.832	1.044	.
(17) Countrywide Credibility:	0.160	0.000	.
(18) Countrywide Lost-Time Claims:	2629.0	.	.
(19) Pure Premium Underlying Present Rate:	1.433	0.935	2.368
(20) Relativity to Underlying Present Rate:	0.658	0.889	.
(21) Credibility to Underlying Relativity:	0.160	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.814	0.986	.
(24) Balanced Formula Relativity:	0.812	0.992	0.873

Class(es):		Effective: 7/1/2020							Miscellaneous		
7380 DRIVERS, CHAUFFEURS AND HELPERS-NOC-COMMERCIAL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	4,167,600	68	820	6,867,368	8,040,846	2,607,879	4,735,869	22,251,963	3,577	1,762	5,339
2014	3,945,342	53	815	6,595,676	6,390,657	2,025,313	3,783,644	18,795,290	3,292	1,472	4,764
2015	4,159,696	56	770	4,999,152	6,254,808	1,864,016	3,642,259	16,760,235	2,705	1,324	4,029
2016	4,101,623	56	745	5,428,207	8,104,992	2,349,217	5,206,215	21,088,630	3,299	1,842	5,142
2017	4,355,234	35	742	3,915,475	10,590,597	1,700,239	5,165,739	21,372,049	3,331	1,576	4,907
<b>MA Total:</b>	<b>20,729,494</b>	<b>268</b>	<b>3,892</b>	<b>27,805,878</b>	<b>39,381,899</b>	<b>10,546,664</b>	<b>22,533,726</b>	<b>100,268,168</b>	<b>3,241</b>	<b>1,596</b>	<b>4,837</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.346	1.286	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	2.757	1.356	4.113
(16) Countrywide Indicated Relativity:	1.205	1.161	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	27579	.	.
(19) Pure Premium Underlying Present Rate:	3.076	1.432	4.508
(20) Relativity to Underlying Present Rate:	1.412	1.362	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	1.346	1.286	.
(24) Balanced Formula Relativity:	1.342	1.294	1.325

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7382 BUS CO: ALL OTHER EMPLOYEES & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3,226,618	54	638	2,526,557	3,013,878	1,097,408	2,250,345	8,888,187	1,717	1,038	2,755
2014	3,263,260	45	655	2,641,865	2,754,540	1,497,447	2,054,638	8,948,490	1,654	1,089	2,742
2015	3,562,709	32	633	2,608,469	4,309,201	797,194	2,482,671	10,197,535	1,942	0,921	2,862
2016	3,839,864	41	710	3,602,507	3,956,080	1,375,474	2,840,197	11,774,258	1,968	1,098	3,066
2017	3,861,333	45	608	3,058,587	5,607,373	1,222,594	2,831,267	12,719,822	2,244	1,050	3,294
<b>MA Total:</b>	<b>17,753,783</b>	<b>217</b>	<b>3,244</b>	<b>14,437,985</b>	<b>19,641,072</b>	<b>5,990,118</b>	<b>12,459,118</b>	<b>52,528,293</b>	<b>1,920</b>	<b>1,039</b>	<b>2,959</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.797	0.837	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	1.932	1.168	3.100
(16) Countrywide Indicated Relativity:	0.845	1.000	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	7543.0	.	.
(19) Pure Premium Underlying Present Rate:	1.656	0.894	2.550
(20) Relativity to Underlying Present Rate:	0.760	0.850	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.797	0.837	.
(24) Balanced Formula Relativity:	0.795	0.842	0.811

Class(es):		Effective: 7/1/2020							Miscellaneous		
7403 AIRCRAFT OR HELICOP OP: AIR CARRIER-SCHD/ SUPPL: A/O EMP & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,226,142	13	296	1,598,388	2,651,340	333,241	1,645,426	6,228,395	3,466	1,614	5,080
2014	1,314,032	11	247	1,375,765	1,808,030	918,113	1,329,882	5,431,789	2,423	1,711	4,134
2015	1,837,252	14	342	930,154	2,567,797	632,256	1,732,413	5,862,620	1,904	1,287	3,191
2016	1,793,979	5	254	497,169	1,473,562	140,244	1,423,782	3,534,758	1,099	0,872	1,970
2017	1,936,874	13	258	736,640	2,007,657	438,940	1,372,656	4,555,893	1,417	0,935	2,352
<b>MA Total:</b>	<b>8,108,280</b>	<b>56</b>	<b>1,397</b>	<b>5,138,116</b>	<b>10,508,387</b>	<b>2,462,794</b>	<b>7,504,158</b>	<b>25,613,455</b>	<b>1,930</b>	<b>1,229</b>	<b>3,159</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.801	0.990	.
(14) Massachusetts Credibility:	0.850	1.000	.
(15) Countrywide Pure Premium:	2.230	1.162	3.392
(16) Countrywide Indicated Relativity:	0.975	0.995	.
(17) Countrywide Credibility:	0.080	0.000	.
(18) Countrywide Lost-Time Claims:	17198	.	.
(19) Pure Premium Underlying Present Rate:	2.227	1.253	3.480
(20) Relativity to Underlying Present Rate:	1.022	1.191	.
(21) Credibility to Underlying Relativity:	0.070	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.831	0.990	.
(24) Balanced Formula Relativity:	0.828	0.996	0.885

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## Calculation of Class Relativities

Class(es):									Effective: 7/1/2020			Miscellaneous	
7405 AIRCRAFT OR HELICOP OP: AIR CARRIER-SCHD/ SUPPL: FLYING CREW													
Converted Unlimited Losses													
Amount													
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)		
2013	1,618,054	4	77	316,383	799,996	155,196	289,801	1,561,376	0.690	0.275	0.965		
2014	2,062,734	6	68	48,083	1,081,438	43,535	499,039	1,672,095	0.548	0.263	0.811		
2015	3,120,307	8	103	1,468,103	541,534	691,390	542,794	3,243,822	0.644	0.396	1.040		
2016	2,924,810	1	94	17,219	780,054	4,759	526,435	1,328,467	0.273	0.182	0.454		
2017	3,158,686	9	155	1,265,138	1,581,171	405,018	940,422	4,191,749	0.901	0.426	1.327		
<b>MA Total:</b>	<b>12,884,591</b>	<b>28</b>	<b>497</b>	<b>3,114,925</b>	<b>4,784,195</b>	<b>1,299,899</b>	<b>2,798,491</b>	<b>11,997,510</b>	<b>0.613</b>	<b>0.318</b>	<b>0.931</b>		

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.255	0.256	.
(14) Massachusetts Credibility:	0.600	0.790	.
(15) Countrywide Pure Premium:	0.776	0.303	1.079
(16) Countrywide Indicated Relativity:	0.339	0.260	.
(17) Countrywide Credibility:	0.200	0.110	.
(18) Countrywide Lost-Time Claims:	5142.0	.	.
(19) Pure Premium Underlying Present Rate:	0.580	0.255	0.836
(20) Relativity to Underlying Present Rate:	0.266	0.243	.
(21) Credibility to Underlying Relativity:	0.200	0.100	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.274	0.255	.
(24) Balanced Formula Relativity:	0.273	0.257	0.268

Class(es):									Effective: 7/1/2020			Miscellaneous	
7420 AIRCRAFT OR HELICOP OP: PUBLIC EXHIB STUNT FLYING: FLY CREW													
Converted Unlimited Losses													
Amount													
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)		
2013	5,081	0	0	0	0	0	0	0	0.000	0.000	0.000		
2014	3,164	0	0	0	0	0	0	0	0.000	0.000	0.000		
2015	4,438	0	1	0	2,958	0	7,470	10,428	0.667	1.683	2.350		
2016	3,623	1	0	337,682	0	597,204	0	934,886	93.212	164.85	258.06		
2017	3,061	0	1	0	284,730	0	40,721	325,450	93.012	13.302	106.31		
<b>MA Total:</b>	<b>19,367</b>	<b>1</b>	<b>2</b>	<b>337,682</b>	<b>287,688</b>	<b>597,204</b>	<b>48,190</b>	<b>1,270,765</b>	<b>32.290</b>	<b>33.324</b>	<b>65.614</b>		

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	13.407	26.848	.
(14) Massachusetts Credibility:	0.100	0.100	.
(15) Countrywide Pure Premium:	6.067	1.109	7.175
(16) Countrywide Indicated Relativity:	2.652	0.949	.
(17) Countrywide Credibility:	0.230	0.250	.
(18) Countrywide Lost-Time Claims:	30.000	.	.
(19) Pure Premium Underlying Present Rate:	3.942	0.889	4.831
(20) Relativity to Underlying Present Rate:	1.810	0.845	.
(21) Credibility to Underlying Relativity:	0.670	0.650	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	3.163	3.471	.
(24) Balanced Formula Relativity:	3.154	3.493	3.269

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7421 AIRCRAFT OR HELICOP OP: TRANSPORT PERS IN EMPLR BUS: FLY CRW											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	265.053	0	9	0	568.592	0	307.516	876.108	2.145	1.160	3.305
2014	271.060	0	3	0	0	0	4.375	4.375	0.000	0.016	0.016
2015	328.713	1	1	239.032	5.766	76.602	663	322.063	0.745	0.235	0.980
2016	380.964	0	3	0	277.000	0	39.669	316.670	0.727	0.104	0.831
2017	399.147	0	7	0	0	0	18.252	18.252	0.000	0.046	0.046
<b>MA Total:</b>	<b>1,644.938</b>	<b>1</b>	<b>23</b>	<b>239.032</b>	<b>851.358</b>	<b>76.602</b>	<b>370.475</b>	<b>1,537.466</b>	<b>0.663</b>	<b>0.272</b>	<b>0.935</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.275	0.219	.
(14) Massachusetts Credibility:	0.280	0.340	.
(15) Countrywide Pure Premium:	0.647	0.310	0.957
(16) Countrywide Indicated Relativity:	0.283	0.266	.
(17) Countrywide Credibility:	0.360	0.330	.
(18) Countrywide Lost-Time Claims:	384.00	.	.
(19) Pure Premium Underlying Present Rate:	0.668	0.240	0.908
(20) Relativity to Underlying Present Rate:	0.307	0.228	.
(21) Credibility to Underlying Relativity:	0.360	0.330	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.289	0.237	.
(24) Balanced Formula Relativity:	0.288	0.239	0.272

Class(es):		Effective: 7/1/2020							Miscellaneous		
7425 AIRCRAFT OR HELICOP OP: NOC- HELICOPTERS: FLYING CREW											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	68.665	0	4	0	625	0	4.110	4.735	0.009	0.060	0.069
2014	70.934	0	2	0	2.201	0	3.012	5.213	0.031	0.042	0.073
2015	75.437	0	6	0	195.072	0	163.073	358.145	2.586	2.162	4.748
2016	83.601	0	3	0	0	0	3.528	3.528	0.000	0.042	0.042
2017	27.763	1	0	74.244	0	40.253	0	114.497	2.674	1.450	4.124
<b>MA Total:</b>	<b>326.399</b>	<b>1</b>	<b>15</b>	<b>74.244</b>	<b>197.898</b>	<b>40.253</b>	<b>173.723</b>	<b>486.119</b>	<b>0.834</b>	<b>0.656</b>	<b>1.489</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.346	0.528	.
(14) Massachusetts Credibility:	0.200	0.210	.
(15) Countrywide Pure Premium:	1.696	0.404	2.100
(16) Countrywide Indicated Relativity:	0.741	0.346	.
(17) Countrywide Credibility:	0.400	0.400	.
(18) Countrywide Lost-Time Claims:	146.00	.	.
(19) Pure Premium Underlying Present Rate:	1.411	0.362	1.773
(20) Relativity to Underlying Present Rate:	0.648	0.344	.
(21) Credibility to Underlying Relativity:	0.400	0.390	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.625	0.383	.
(24) Balanced Formula Relativity:	0.623	0.386	0.542

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7502 GAS COMPANY: GAS CO-NATURAL GAS-LOCAL DISTRIBUTION & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	129.354	0	13	0	14.849	0	20.536	35.385	0.115	0.159	0.274
2014	262.467	0	11	0	118.301	0	64.412	182.713	0.451	0.245	0.696
2015	219.283	2	12	376.631	77.278	96.032	93.398	643.339	2.070	0.864	2.934
2016	227.480	0	17	0	259.828	0	67.391	327.220	1.142	0.296	1.438
2017	267.378	1	22	194.814	177.482	16.074	122.667	511.038	1.392	0.519	1.911
<b>MA Total:</b>	<b>1,105,962</b>	<b>3</b>	<b>75</b>	<b>571,445</b>	<b>647,739</b>	<b>112,106</b>	<b>368,405</b>	<b>1,699,694</b>	<b>1.102</b>	<b>0.434</b>	<b>1.537</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.458	0.350	.
(14) Massachusetts Credibility:	0.250	0.350	.
(15) Countrywide Pure Premium:	0.847	0.427	1.274
(16) Countrywide Indicated Relativity:	0.370	0.366	.
(17) Countrywide Credibility:	0.380	0.330	.
(18) Countrywide Lost-Time Claims:	378.00	.	.
(19) Pure Premium Underlying Present Rate:	0.799	0.388	1.186
(20) Relativity to Underlying Present Rate:	0.367	0.368	.
(21) Credibility to Underlying Relativity:	0.370	0.320	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.391	0.361	.
(24) Balanced Formula Relativity:	0.390	0.363	0.381

Class(es):		Effective: 7/1/2020							Miscellaneous		
7515 OIL OR GAS PIPELINE OPERATION & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	12.168	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	7.723	2	11	187.914	26.565	265.385	49.510	529.374	27.772	40.774	68.545
2015	8.561	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	9.407	0	1	0	0	0	1.383	1.383	0.000	0.147	0.147
2017	4.220	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>42.079</b>	<b>2</b>	<b>12</b>	<b>187,914</b>	<b>26,565</b>	<b>265,385</b>	<b>50,893</b>	<b>530,757</b>	<b>5.097</b>	<b>7.516</b>	<b>12.613</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.116	6.056	.
(14) Massachusetts Credibility:	0.080	0.150	.
(15) Countrywide Pure Premium:	0.617	0.276	0.893
(16) Countrywide Indicated Relativity:	0.270	0.236	.
(17) Countrywide Credibility:	0.460	0.430	.
(18) Countrywide Lost-Time Claims:	377.00	.	.
(19) Pure Premium Underlying Present Rate:	1.000	1.190	2.190
(20) Relativity to Underlying Present Rate:	0.459	1.131	.
(21) Credibility to Underlying Relativity:	0.460	0.420	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.505	1.485	.
(24) Balanced Formula Relativity:	0.503	1.494	0.840

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous			
7520 WATERWORKS OPERATION & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	260.963	1	49	992	88.087	5.887	140.827	235.791	0.341	0.562	0.904	
2014	193.082	1	25	3,215	27.614	15.178	54.619	100.626	0.160	0.361	0.521	
2015	241.367	0	34	0	113.130	0	181.692	294.823	0.469	0.753	1.221	
2016	263.036	2	30	297.737	131.911	41.779	114.340	585.768	1.633	0.594	2.227	
2017	167.155	2	21	1,139.475	21.854	232.205	18.681	1,412.215	6.948	1.501	8.449	
<b>MA Total:</b>	<b>1,125.602</b>	<b>6</b>	<b>159</b>	<b>1,441.418</b>	<b>382.596</b>	<b>295.049</b>	<b>510.160</b>	<b>2,629.223</b>	<b>1.620</b>	<b>0.715</b>	<b>2.336</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.673	0.576	.
(14) Massachusetts Credibility:	0.320	0.440	.
(15) Countrywide Pure Premium:	1.515	0.908	2.423
(16) Countrywide Indicated Relativity:	0.662	0.777	.
(17) Countrywide Credibility:	0.340	0.280	.
(18) Countrywide Lost-Time Claims:	1895.0	.	.
(19) Pure Premium Underlying Present Rate:	1.421	0.673	2.093
(20) Relativity to Underlying Present Rate:	0.652	0.639	.
(21) Credibility to Underlying Relativity:	0.340	0.280	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.662	0.650	.
(24) Balanced Formula Relativity:	0.660	0.654	0.658

Class(es):		Effective: 7/1/2020							Construction			
7538 ELECTRIC LIGHT OR POWER LINE CONSTRUCTION & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	184.275	1	21	418.871	743.129	182.745	428.059	1,772.804	6.306	3.315	9.620	
2014	89.415	0	14	0	768.711	0	319.271	1,087.982	8.597	3.571	12.168	
2015	123.894	1	13	197.172	711.309	52.699	292.586	1,253.767	7.333	2.787	10.120	
2016	228.924	1	9	251.099	641.436	72.086	224.369	1,188.990	3.899	1.295	5.194	
2017	216.147	0	9	0	44.018	0	19.562	63.579	0.204	0.091	0.294	
<b>MA Total:</b>	<b>842.655</b>	<b>3</b>	<b>66</b>	<b>867.142</b>	<b>2,908.603</b>	<b>307.530</b>	<b>1,283.846</b>	<b>5,367.122</b>	<b>4.481</b>	<b>1.889</b>	<b>6.369</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.721	1.591	.
(14) Massachusetts Credibility:	0.390	0.520	.
(15) Countrywide Pure Premium:	2.439	1.116	3.554
(16) Countrywide Indicated Relativity:	0.952	0.969	.
(17) Countrywide Credibility:	0.310	0.240	.
(18) Countrywide Lost-Time Claims:	1226.0	.	.
(19) Pure Premium Underlying Present Rate:	3.119	1.382	4.501
(20) Relativity to Underlying Present Rate:	1.289	1.311	.
(21) Credibility to Underlying Relativity:	0.300	0.240	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.353	1.374	.
(24) Balanced Formula Relativity:	1.359	1.372	1.363

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7539 ELECTRIC LIGHT OR POWER CO NOC-ALL EMP & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,012,938	1	20	280,894	102,037	20,851	52,519	456,301	0.378	0.072	0.450
2014	1,003,814	0	29	0	117,763	0	155,328	273,091	0.117	0.155	0.272
2015	1,128,567	2	40	206,229	608,630	221,390	235,582	1,271,831	0.722	0.405	1.127
2016	1,274,073	2	58	543,272	483,053	413,049	594,538	2,033,912	0.806	0.791	1.596
2017	1,128,701	1	39	65,879	239,329	35,337	233,919	574,463	0.270	0.239	0.509
<b>MA Total:</b>	<b>5,548,093</b>	<b>6</b>	<b>186</b>	<b>1,096,275</b>	<b>1,550,812</b>	<b>690,626</b>	<b>1,271,885</b>	<b>4,609,598</b>	<b>0.477</b>	<b>0.354</b>	<b>0.831</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.198	0.285	.
(14) Massachusetts Credibility:	0.430	0.580	.
(15) Countrywide Pure Premium:	0.802	0.427	1.229
(16) Countrywide Indicated Relativity:	0.351	0.365	.
(17) Countrywide Credibility:	0.290	0.210	.
(18) Countrywide Lost-Time Claims:	1278.0	.	.
(19) Pure Premium Underlying Present Rate:	0.581	0.274	0.855
(20) Relativity to Underlying Present Rate:	0.267	0.260	.
(21) Credibility to Underlying Relativity:	0.280	0.210	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.262	0.297	.
(24) Balanced Formula Relativity:	0.261	0.298	0.274

Class(es):		Effective: 7/1/2020							Miscellaneous		
7580 SEWAGE DISPOSAL PLANT OPERATION & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	341,832	1	24	271,889	254,371	33,180	207,606	767,047	1.540	0.704	2.244
2014	296,448	4	23	274,104	83,282	69,874	48,121	475,380	1.206	0.398	1.604
2015	276,182	1	30	237,223	912,959	40,835	237,710	1,428,727	4.165	1.009	5.173
2016	221,081	2	25	734,986	97,801	90,980	88,695	1,012,462	3.767	0.813	4.580
2017	209,949	0	21	0	402,156	0	202,212	604,368	1.915	0.963	2.879
<b>MA Total:</b>	<b>1,345,492</b>	<b>8</b>	<b>123</b>	<b>1,518,202</b>	<b>1,750,569</b>	<b>234,869</b>	<b>784,344</b>	<b>4,287,984</b>	<b>2.429</b>	<b>0.758</b>	<b>3.187</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.009	0.610	.
(14) Massachusetts Credibility:	0.360	0.490	.
(15) Countrywide Pure Premium:	1.127	0.751	1.878
(16) Countrywide Indicated Relativity:	0.493	0.643	.
(17) Countrywide Credibility:	0.320	0.260	.
(18) Countrywide Lost-Time Claims:	689.00	.	.
(19) Pure Premium Underlying Present Rate:	1.609	0.740	2.349
(20) Relativity to Underlying Present Rate:	0.739	0.704	.
(21) Credibility to Underlying Relativity:	0.320	0.250	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.757	0.642	.
(24) Balanced Formula Relativity:	0.755	0.646	0.718

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7590 GARBAGE WORKS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	23,882	1	7	8,449	27,523	491	8,663	45,126	1,506	0,383	1,890
2014	29,485	1	8	26,639	25,679	8,390	18,323	79,032	1,774	0,906	2,680
2015	27,464	0	18	0	167,343	0	78,032	245,374	6,093	2,841	8,934
2016	26,800	4	21	163,438	419,808	181,404	288,142	1,052,792	21,763	17,521	39,284
2017	49,989	1	23	277,719	46,264	34,074	36,034	394,091	6,481	1,402	7,884
<b>MA Total:</b>	<b>157,620</b>	<b>7</b>	<b>77</b>	<b>476,245</b>	<b>686,616</b>	<b>224,359</b>	<b>429,195</b>	<b>1,816,415</b>	<b>7,378</b>	<b>4,146</b>	<b>11,524</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.063	3.341	.
(14) Massachusetts Credibility:	0.160	0.220	.
(15) Countrywide Pure Premium:	1.767	0.856	2.623
(16) Countrywide Indicated Relativity:	0.772	0.733	.
(17) Countrywide Credibility:	0.420	0.390	.
(18) Countrywide Lost-Time Claims:	471.00	.	.
(19) Pure Premium Underlying Present Rate:	1.806	0.835	2.642
(20) Relativity to Underlying Present Rate:	0.829	0.794	.
(21) Credibility to Underlying Relativity:	0.420	0.390	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	1.163	1.330	.
(24) Balanced Formula Relativity:	1.159	1.339	1.220

Class(es):		Effective: 7/1/2020							Miscellaneous		
7600 TELEPHONE OR TELEGRAPH CO: ALL OTHER EMP & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3,694,151	34	286	5,163,656	4,825,534	1,594,044	1,845,058	13,428,292	2,704	0,931	3,635
2014	3,550,290	10	127	1,881,931	1,365,709	580,432	840,237	4,668,309	0,915	0,400	1,315
2015	3,070,547	14	167	1,464,478	4,684,700	549,805	1,800,689	8,499,671	2,003	0,765	2,768
2016	3,592,825	26	224	3,939,819	5,494,209	1,643,896	2,037,413	13,115,337	2,626	1,025	3,650
2017	3,729,715	18	264	2,132,584	5,832,577	680,953	2,684,255	11,330,369	2,136	0,902	3,038
<b>MA Total:</b>	<b>17,637,528</b>	<b>102</b>	<b>1,068</b>	<b>14,582,468</b>	<b>22,202,729</b>	<b>5,049,129</b>	<b>9,207,653</b>	<b>51,041,979</b>	<b>2,086</b>	<b>0,808</b>	<b>2,894</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.866	0.651	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	2.466	1.101	3.568
(16) Countrywide Indicated Relativity:	1.078	0.943	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	12534	.	.
(19) Pure Premium Underlying Present Rate:	1.615	0.627	2.242
(20) Relativity to Underlying Present Rate:	0.741	0.596	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.866	0.651	.
(24) Balanced Formula Relativity:	0.863	0.655	0.793



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction			
7601 TELEPHONE, TELEGRAPH OR FIRE ALARM LINE CONSTRUCTION & DR												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		Total	MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	259,744	1	29	67,863	391,398	101,740	162,193	723,193	1,768	1,016	2,784	
2014	271,376	0	22	0	326,433	0	127,349	453,782	1,203	0,469	1,672	
2015	237,038	5	27	807,498	53,245	953,163	87,120	1,901,027	3,631	4,389	8,020	
2016	272,846	0	13	0	23,967	0	130,166	154,133	0,088	0,477	0,565	
2017	268,280	1	9	46,258	31,120	22,463	19,260	119,101	0,288	0,156	0,444	
<b>MA Total:</b>	<b>1,309,284</b>	<b>7</b>	<b>100</b>	<b>921,618</b>	<b>826,163</b>	<b>1,077,366</b>	<b>526,088</b>	<b>3,351,236</b>	<b>1,335</b>	<b>1,225</b>	<b>2,560</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.513	1.031	.
(14) Massachusetts Credibility:	0.470	0.680	.
(15) Countrywide Pure Premium:	6.042	3.048	9.090
(16) Countrywide Indicated Relativity:	2.359	2.646	.
(17) Countrywide Credibility:	0.200	0.160	.
(18) Countrywide Lost-Time Claims:	20.000	.	.
(19) Pure Premium Underlying Present Rate:	3.193	1.773	4.966
(20) Relativity to Underlying Present Rate:	1.319	1.683	.
(21) Credibility to Underlying Relativity:	0.330	0.160	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.148	1.394	.
(24) Balanced Formula Relativity:	1.153	1.391	1.228

Class(es):		Effective: 7/1/2020							Office and Clerical			
7610 RADIO OR TV BROADCAST STATION-ALL EMP & CL, DR												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		Total	MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	4,443,769	3	56	50,014	485,796	7,958	263,795	807,564	0.121	0.061	0.182	
2014	4,074,549	3	76	406,763	273,355	63,913	300,869	1,044,900	0.167	0.090	0.256	
2015	4,393,311	5	57	1,156,603	2,287,986	292,799	470,680	4,208,068	0.784	0.174	0.958	
2016	3,755,663	2	69	696,273	941,887	208,985	441,122	2,288,267	0.436	0.173	0.609	
2017	4,301,963	3	80	306,216	1,179,704	86,407	497,220	2,069,547	0.345	0.136	0.481	
<b>MA Total:</b>	<b>20,969,254</b>	<b>16</b>	<b>338</b>	<b>2,615,870</b>	<b>5,168,727</b>	<b>660,062</b>	<b>1,973,687</b>	<b>10,418,345</b>	<b>0.371</b>	<b>0.126</b>	<b>0.497</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	5.354	2.950	.
(14) Massachusetts Credibility:	0.520	0.650	.
(15) Countrywide Pure Premium:	0.168	0.096	0.263
(16) Countrywide Indicated Relativity:	2.804	2.487	.
(17) Countrywide Credibility:	0.240	0.180	.
(18) Countrywide Lost-Time Claims:	1847.0	.	.
(19) Pure Premium Underlying Present Rate:	0.254	0.096	0.350
(20) Relativity to Underlying Present Rate:	3.936	2.464	.
(21) Credibility to Underlying Relativity:	0.240	0.170	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	4.401	2.784	.
(24) Balanced Formula Relativity:	4.420	2.789	3.800

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
7704 FIREFIGHTERS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	17,642	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	15,028	0	4	0	3,111	0	7,480	10,591	0.207	0.498	0.705
2015	15,131	0	3	0	233,692	0	81,853	315,545	15.445	5.410	20.854
2016	15,648	0	2	0	342	0	2,678	3,019	0.022	0.171	0.193
2017	14,417	0	3	0	0	0	5,940	5,940	0.000	0.412	0.412
<b>MA Total:</b>	<b>77,865</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>237,145</b>	<b>0</b>	<b>97,951</b>	<b>335,095</b>	<b>3.046</b>	<b>1.258</b>	<b>4.304</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.265	1.013	.
(14) Massachusetts Credibility:	0.120	0.190	.
(15) Countrywide Pure Premium:	1.739	1.441	3.180
(16) Countrywide Indicated Relativity:	0.760	1.233	.
(17) Countrywide Credibility:	0.440	0.410	.
(18) Countrywide Lost-Time Claims:	839.00	.	.
(19) Pure Premium Underlying Present Rate:	1.900	1.165	3.065
(20) Relativity to Underlying Present Rate:	0.872	1.107	.
(21) Credibility to Underlying Relativity:	0.440	0.400	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.870	1.141	.
(24) Balanced Formula Relativity:	0.868	1.148	0.963

Class(es):		Effective: 7/1/2020							Miscellaneous		
7720 POLICE OFFICERS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,678,734	4	105	408,263	884,456	150,511	502,673	1,945,902	0.770	0.389	1.159
2014	1,667,253	4	132	139,386	408,959	122,241	302,400	972,986	0.329	0.255	0.584
2015	1,822,447	7	107	463,639	265,290	542,478	245,833	1,517,240	0.400	0.433	0.833
2016	1,815,445	9	99	843,971	399,224	504,996	389,178	2,137,369	0.685	0.493	1.177
2017	2,085,850	5	115	173,832	517,015	90,818	388,931	1,170,595	0.331	0.230	0.561
<b>MA Total:</b>	<b>9,069,729</b>	<b>29</b>	<b>558</b>	<b>2,029,090</b>	<b>2,474,944</b>	<b>1,411,044</b>	<b>1,829,014</b>	<b>7,744,093</b>	<b>0.497</b>	<b>0.357</b>	<b>0.854</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.206	0.288	.
(14) Massachusetts Credibility:	0.550	0.770	.
(15) Countrywide Pure Premium:	1.273	0.812	2.084
(16) Countrywide Indicated Relativity:	0.556	0.695	.
(17) Countrywide Credibility:	0.230	0.120	.
(18) Countrywide Lost-Time Claims:	11646	.	.
(19) Pure Premium Underlying Present Rate:	0.672	0.344	1.016
(20) Relativity to Underlying Present Rate:	0.308	0.327	.
(21) Credibility to Underlying Relativity:	0.220	0.110	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.309	0.341	.
(24) Balanced Formula Relativity:	0.308	0.343	0.320

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
7855 RAILROAD CONSTR: LAYING/RELAYING TRACK OR MAINT BY CONTR & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	13,133	0	1	0	5,701	0	5,015	10,716	0.434	0.382	0.816
2014	19,919	0	1	0	3,914	0	1,581	5,495	0.196	0.079	0.276
2015	60,790	0	6	0	107,468	0	24,717	132,184	1.768	0.407	2.174
2016	33,601	0	4	0	69,493	0	15,899	85,392	2.068	0.473	2.541
2017	55,224	0	1	0	0	0	14,442	14,442	0.000	0.262	0.262
<b>MA Total:</b>	<b>182,668</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>186,576</b>	<b>0</b>	<b>61,653</b>	<b>248,230</b>	<b>1.021</b>	<b>0.338</b>	<b>1.359</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.392	0.284	.
(14) Massachusetts Credibility:	0.190	0.230	.
(15) Countrywide Pure Premium:	2.140	0.925	3.065
(16) Countrywide Indicated Relativity:	0.836	0.803	.
(17) Countrywide Credibility:	0.410	0.390	.
(18) Countrywide Lost-Time Claims:	292.00	.	.
(19) Pure Premium Underlying Present Rate:	2.270	0.868	3.138
(20) Relativity to Underlying Present Rate:	0.938	0.824	.
(21) Credibility to Underlying Relativity:	0.400	0.380	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.792	0.692	.
(24) Balanced Formula Relativity:	0.796	0.690	0.763

Class(es):		Effective: 7/1/2020							Goods and Services		
8001 STORE: FLORISTS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	619,868	3	79	168,746	162,550	38,839	277,812	647,948	0.534	0.511	1.045
2014	624,081	5	52	500,271	238,238	432,979	111,463	1,282,951	1.183	0.872	2.056
2015	628,959	5	53	178,924	100,159	150,445	77,976	507,504	0.444	0.363	0.807
2016	654,670	6	83	178,185	291,257	115,844	307,655	892,941	0.717	0.647	1.364
2017	645,262	1	62	35,642	175,974	13,432	178,109	403,157	0.328	0.297	0.625
<b>MA Total:</b>	<b>3,172,838</b>	<b>20</b>	<b>329</b>	<b>1,061,770</b>	<b>968,178</b>	<b>751,539</b>	<b>953,015</b>	<b>3,734,501</b>	<b>0.640</b>	<b>0.537</b>	<b>1.177</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.775	1.152	.
(14) Massachusetts Credibility:	0.380	0.600	.
(15) Countrywide Pure Premium:	0.888	0.611	1.499
(16) Countrywide Indicated Relativity:	1.109	1.325	.
(17) Countrywide Credibility:	0.310	0.200	.
(18) Countrywide Lost-Time Claims:	1267.0	.	.
(19) Pure Premium Underlying Present Rate:	0.752	0.532	1.284
(20) Relativity to Underlying Present Rate:	1.002	1.291	.
(21) Credibility to Underlying Relativity:	0.310	0.200	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.949	1.214	.
(24) Balanced Formula Relativity:	0.942	1.215	1.041

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8002 AUTOMOBILE RENTAL CO: ALL OTHER EMP & COUNTER PERSONNEL, DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	81,323	0	5	0	8,936	0	10,474	19,410	0.110	0.129	0.239
2014	98,640	1	26	3,034	39,399	134	135,994	178,562	0.430	1.380	1.810
2015	81,010	1	17	132,655	5,715	170,046	13,514	321,930	1.708	2.266	3.974
2016	73,750	0	15	0	23,399	0	69,969	93,368	0.317	0.949	1.266
2017	86,443	0	12	0	231,162	0	143,587	374,749	2.674	1.661	4.335
<b>MA Total:</b>	<b>421,166</b>	<b>2</b>	<b>75</b>	<b>135,690</b>	<b>308,612</b>	<b>170,180</b>	<b>373,537</b>	<b>988,019</b>	<b>1.055</b>	<b>1.291</b>	<b>2.346</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.279	2.768	.
(14) Massachusetts Credibility:	0.150	0.250	.
(15) Countrywide Pure Premium:	0.848	0.598	1.446
(16) Countrywide Indicated Relativity:	1.059	1.298	.
(17) Countrywide Credibility:	0.430	0.380	.
(18) Countrywide Lost-Time Claims:	1824.0	.	.
(19) Pure Premium Underlying Present Rate:	0.596	0.431	1.027
(20) Relativity to Underlying Present Rate:	0.794	1.046	.
(21) Credibility to Underlying Relativity:	0.420	0.370	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.981	1.572	.
(24) Balanced Formula Relativity:	0.974	1.573	1.190

Class(es):		Effective: 7/1/2020							Goods and Services		
8006 STORE: GROCERY STORES-RETAIL-NO HANDLING OF FRESH MEATS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,639,417	10	316	834,413	603,730	489,007	699,785	2,626,934	0.545	0.450	0.995
2014	2,788,551	4	301	444,231	1,047,090	505,388	1,135,381	3,132,090	0.535	0.588	1.123
2015	3,016,394	9	268	487,921	1,137,977	481,348	968,367	3,075,613	0.539	0.481	1.020
2016	3,164,128	6	236	317,896	454,580	96,841	498,335	1,367,653	0.244	0.188	0.432
2017	3,377,585	9	268	886,957	1,058,643	296,476	954,205	3,196,280	0.576	0.370	0.946
<b>MA Total:</b>	<b>14,986,074</b>	<b>38</b>	<b>1,389</b>	<b>2,971,417</b>	<b>4,302,020</b>	<b>1,869,060</b>	<b>4,256,074</b>	<b>13,398,570</b>	<b>0.485</b>	<b>0.409</b>	<b>0.894</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.588	0.876	.
(14) Massachusetts Credibility:	0.610	0.970	.
(15) Countrywide Pure Premium:	0.855	0.515	1.370
(16) Countrywide Indicated Relativity:	1.068	1.116	.
(17) Countrywide Credibility:	0.200	0.020	.
(18) Countrywide Lost-Time Claims:	11464	.	.
(19) Pure Premium Underlying Present Rate:	0.526	0.366	0.893
(20) Relativity to Underlying Present Rate:	0.702	0.889	.
(21) Credibility to Underlying Relativity:	0.190	0.010	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.706	0.881	.
(24) Balanced Formula Relativity:	0.701	0.882	0.766

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8008 STORE: CLOTHING, WEARING APPAREL OR DRY GOODS - RETAIL											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3,481,033	4	247	152,173	669,717	52,845	359,499	1,234,234	0.236	0.118	0.355
2014	3,472,316	13	226	585,071	870,616	412,132	526,022	2,393,841	0.419	0.270	0.689
2015	3,408,450	5	210	144,899	728,411	182,303	473,431	1,529,043	0.256	0.192	0.449
2016	3,322,267	5	178	381,308	1,042,030	187,021	658,966	2,269,325	0.428	0.255	0.683
2017	3,325,999	7	170	461,515	636,257	269,571	389,236	1,756,578	0.330	0.198	0.528
<b>MA Total:</b>	<b>17,010,065</b>	<b>34</b>	<b>1,031</b>	<b>1,724,966</b>	<b>3,947,031</b>	<b>1,103,871</b>	<b>2,407,153</b>	<b>9,183,021</b>	<b>0.333</b>	<b>0.206</b>	<b>0.540</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.404	0.443	.
(14) Massachusetts Credibility:	0.540	0.800	.
(15) Countrywide Pure Premium:	0.459	0.303	0.762
(16) Countrywide Indicated Relativity:	0.573	0.657	.
(17) Countrywide Credibility:	0.230	0.100	.
(18) Countrywide Lost-Time Claims:	9001.0	.	.
(19) Pure Premium Underlying Present Rate:	0.341	0.199	0.540
(20) Relativity to Underlying Present Rate:	0.454	0.484	.
(21) Credibility to Underlying Relativity:	0.230	0.100	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.455	0.468	.
(24) Balanced Formula Relativity:	0.451	0.468	0.458

Class(es):		Effective: 7/1/2020							Goods and Services		
8010 STORE: HARDWARE											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,889,931	2	195	266,342	1,032,586	47,171	769,950	2,116,049	0.687	0.432	1.120
2014	1,944,998	7	176	1,431,600	1,040,153	751,511	705,631	3,928,895	1.271	0.749	2.020
2015	1,985,435	2	178	156,383	1,148,200	87,236	852,520	2,244,338	0.657	0.473	1.130
2016	1,986,882	8	180	885,188	996,078	421,625	744,063	3,046,955	0.947	0.587	1.534
2017	2,173,314	7	182	319,974	1,742,364	172,528	733,052	2,967,918	0.949	0.417	1.366
<b>MA Total:</b>	<b>9,980,559</b>	<b>26</b>	<b>911</b>	<b>3,059,487</b>	<b>5,959,381</b>	<b>1,480,071</b>	<b>3,805,217</b>	<b>14,304,155</b>	<b>0.904</b>	<b>0.530</b>	<b>1.433</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.095	1.136	.
(14) Massachusetts Credibility:	0.570	0.900	.
(15) Countrywide Pure Premium:	0.732	0.457	1.189
(16) Countrywide Indicated Relativity:	0.914	0.992	.
(17) Countrywide Credibility:	0.220	0.050	.
(18) Countrywide Lost-Time Claims:	5520.0	.	.
(19) Pure Premium Underlying Present Rate:	0.679	0.457	1.136
(20) Relativity to Underlying Present Rate:	0.905	1.109	.
(21) Credibility to Underlying Relativity:	0.210	0.050	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.015	1.127	.
(24) Balanced Formula Relativity:	1.008	1.128	1.051

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## Calculation of Class Relativities

Class(es): 8013 STORE: JEWELRY STORES		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,395,293	1	21	53,081	139,299	17,226	60,670	270,276	0.138	0.056	0.194
2014	1,389,400	1	30	18,287	218,983	47,678	119,978	404,926	0.171	0.121	0.291
2015	1,431,421	0	9	0	970	0	5,754	6,724	0.001	0.004	0.005
2016	1,349,924	0	20	0	77,615	0	109,350	186,964	0.057	0.081	0.138
2017	1,380,056	2	15	169,055	9,637	677,277	64,772	920,741	0.129	0.538	0.667
<b>MA Total:</b>	<b>6,946,094</b>	<b>4</b>	<b>95</b>	<b>240,423</b>	<b>446,504</b>	<b>742,182</b>	<b>360,523</b>	<b>1,789,632</b>	<b>0.099</b>	<b>0.159</b>	<b>0.258</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.120	0.340	.
(14) Massachusetts Credibility:	0.280	0.400	.
(15) Countrywide Pure Premium:	0.205	0.098	0.303
(16) Countrywide Indicated Relativity:	0.255	0.213	.
(17) Countrywide Credibility:	0.360	0.300	.
(18) Countrywide Lost-Time Claims:	813.00	.	.
(19) Pure Premium Underlying Present Rate:	0.155	0.086	0.241
(20) Relativity to Underlying Present Rate:	0.207	0.208	.
(21) Credibility to Underlying Relativity:	0.360	0.300	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.200	0.263	.
(24) Balanced Formula Relativity:	0.199	0.263	0.222

Class(es): 8017 STORE: RETAIL NOC		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	12,429,302	37	1,099	3,536,215	2,813,466	1,493,804	2,470,791	10,314,276	0.511	0.319	0.830
2014	13,398,318	35	1,128	2,083,543	3,500,071	1,220,562	2,977,426	9,781,602	0.417	0.313	0.730
2015	14,139,306	36	1,160	2,859,626	3,853,027	1,935,880	2,749,823	11,398,356	0.475	0.331	0.806
2016	11,580,496	16	783	1,295,575	3,460,866	466,521	2,946,381	8,169,343	0.411	0.295	0.705
2017	12,157,393	21	808	2,492,632	3,856,393	527,766	2,581,252	9,458,043	0.522	0.256	0.778
<b>MA Total:</b>	<b>63,704,815</b>	<b>145</b>	<b>4,978</b>	<b>12,267,591</b>	<b>17,483,822</b>	<b>5,644,534</b>	<b>13,725,673</b>	<b>49,121,619</b>	<b>0.467</b>	<b>0.304</b>	<b>0.771</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.566	0.652	.
(14) Massachusetts Credibility:	0.990	1.000	.
(15) Countrywide Pure Premium:	0.560	0.363	0.923
(16) Countrywide Indicated Relativity:	0.699	0.788	.
(17) Countrywide Credibility:	0.010	0.000	.
(18) Countrywide Lost-Time Claims:	31330	.	.
(19) Pure Premium Underlying Present Rate:	0.414	0.259	0.673
(20) Relativity to Underlying Present Rate:	0.551	0.629	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.567	0.652	.
(24) Balanced Formula Relativity:	0.563	0.652	0.596

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8018 STORE: WHOLESALE NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	3,413,993	27	718	3,111,008	3,337,356	1,216,152	2,050,440	9,714,957	1,889	0,957	2,846
2014	3,353,450	16	672	1,881,542	4,669,354	547,983	2,593,458	9,692,337	1,953	0,937	2,890
2015	3,665,234	20	618	1,465,962	4,766,088	528,488	2,296,184	9,056,722	1,700	0,771	2,471
2016	3,935,412	22	708	2,077,754	6,449,764	728,746	3,458,231	12,714,495	2,167	1,064	3,231
2017	4,280,690	37	862	2,370,472	6,408,267	898,451	3,217,154	12,894,343	2,051	0,961	3,012
<b>MA Total:</b>	<b>18,648,780</b>	<b>122</b>	<b>3,578</b>	<b>10,906,738</b>	<b>25,630,828</b>	<b>3,919,820</b>	<b>13,615,468</b>	<b>54,072,854</b>	<b>1,959</b>	<b>0,940</b>	<b>2,900</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.375	2.016	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	1.249	0.646	1.895
(16) Countrywide Indicated Relativity:	1.560	1.401	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	24344	.	.
(19) Pure Premium Underlying Present Rate:	1.518	0.746	2.263
(20) Relativity to Underlying Present Rate:	2.023	1.809	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.375	2.016	.
(24) Balanced Formula Relativity:	2.358	2.018	2.235

Class(es):		Effective: 7/1/2020							Goods and Services		
8021 STORE: MEAT, FISH OR POULTRY DEALER- WHOLESALE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	821,450	6	91	629,739	961,227	135,916	623,725	2,350,608	1,937	0,925	2,862
2014	909,778	8	125	392,157	1,090,318	52,155	522,738	2,057,368	1,629	0,632	2,261
2015	964,794	7	144	631,242	1,205,136	440,909	549,475	2,826,762	1,903	1,027	2,930
2016	1,084,915	7	156	752,385	2,836,645	132,780	790,880	4,512,690	3,308	0,851	4,159
2017	1,084,462	5	133	327,600	1,728,868	119,588	1,053,876	3,229,932	1,896	1,082	2,978
<b>MA Total:</b>	<b>4,865,400</b>	<b>33</b>	<b>649</b>	<b>2,733,123</b>	<b>7,822,194</b>	<b>881,348</b>	<b>3,540,694</b>	<b>14,977,360</b>	<b>2,169</b>	<b>0,909</b>	<b>3,078</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.630	1.949	.
(14) Massachusetts Credibility:	0.600	0.800	.
(15) Countrywide Pure Premium:	1.180	0.756	1.936
(16) Countrywide Indicated Relativity:	1.474	1.640	.
(17) Countrywide Credibility:	0.200	0.100	.
(18) Countrywide Lost-Time Claims:	3232.0	.	.
(19) Pure Premium Underlying Present Rate:	1.531	0.708	2.239
(20) Relativity to Underlying Present Rate:	2.040	1.718	.
(21) Credibility to Underlying Relativity:	0.200	0.100	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.280	1.895	.
(24) Balanced Formula Relativity:	2.264	1.896	2.131

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8031 STORE: MEAT, FISH OR POULTRY - RETAIL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	196.932	2	21	267.169	75.684	164.822	123.920	631.595	1.741	1.466	3.207
2014	199.354	0	23	0	25.003	0	43.212	68.215	0.125	0.217	0.342
2015	206.367	1	16	127.647	33.147	74.350	45.370	280.514	0.779	0.580	1.359
2016	195.326	1	24	125.718	3.173	21.794	30.819	181.504	0.660	0.269	0.929
2017	218.657	0	17	0	9.731	0	19.973	29.704	0.045	0.091	0.136
<b>MA Total:</b>	<b>1,016,635</b>	<b>4</b>	<b>101</b>	<b>520,533</b>	<b>146,738</b>	<b>260,967</b>	<b>263,294</b>	<b>1,191,532</b>	<b>0.656</b>	<b>0.516</b>	<b>1.172</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.796	1.106	.
(14) Massachusetts Credibility:	0.250	0.350	.
(15) Countrywide Pure Premium:	0.908	0.624	1.532
(16) Countrywide Indicated Relativity:	1.134	1.354	.
(17) Countrywide Credibility:	0.380	0.330	.
(18) Countrywide Lost-Time Claims:	584.00	.	.
(19) Pure Premium Underlying Present Rate:	0.874	0.432	1.307
(20) Relativity to Underlying Present Rate:	1.165	1.049	.
(21) Credibility to Underlying Relativity:	0.370	0.320	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.061	1.169	.
(24) Balanced Formula Relativity:	1.053	1.170	1.095

Class(es):		Effective: 7/1/2020							Goods and Services		
8032 STORE: CLOTHING, WEARING APPAREL OR DRY GOODS - WHOLESALE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	294.095	0	31	0	9.455	0	27.552	37.008	0.032	0.094	0.126
2014	321.832	0	27	0	79.733	0	111.832	191.566	0.248	0.347	0.595
2015	255.534	0	29	0	16.995	0	41.534	58.529	0.067	0.163	0.229
2016	282.762	0	27	0	70.489	0	125.958	196.447	0.249	0.445	0.695
2017	284.922	1	15	79.152	32.362	16.923	50.853	179.290	0.391	0.238	0.629
<b>MA Total:</b>	<b>1,439,145</b>	<b>1</b>	<b>129</b>	<b>79,152</b>	<b>209,035</b>	<b>16,923</b>	<b>357,731</b>	<b>662,840</b>	<b>0.200</b>	<b>0.260</b>	<b>0.461</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.243	0.558	.
(14) Massachusetts Credibility:	0.260	0.360	.
(15) Countrywide Pure Premium:	0.822	0.495	1.317
(16) Countrywide Indicated Relativity:	1.026	1.073	.
(17) Countrywide Credibility:	0.370	0.320	.
(18) Countrywide Lost-Time Claims:	1326.0	.	.
(19) Pure Premium Underlying Present Rate:	0.643	0.314	0.957
(20) Relativity to Underlying Present Rate:	0.857	0.762	.
(21) Credibility to Underlying Relativity:	0.370	0.320	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.760	0.788	.
(24) Balanced Formula Relativity:	0.754	0.789	0.767



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services			
8033 STORE: MEAT, GROCERY & PROVISION COMBINED RETAIL-NOC												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	621.958	3	55	255.517	85.672	60.535	109.158	510.883	0.549	0.273	0.821	
2014	893.772	2	122	101.122	901.623	73.460	346.742	1,422.948	1.122	0.470	1.592	
2015	878.585	3	114	226.297	331.078	38.168	250.060	845.604	0.634	0.328	0.962	
2016	749.024	3	66	163.892	482.731	31.196	234.765	912.584	0.863	0.355	1.218	
2017	796.271	1	58	42.285	527.241	21.655	239.119	830.301	0.715	0.327	1.043	
<b>MA Total:</b>	<b>3,939,611</b>	<b>12</b>	<b>415</b>	<b>789,115</b>	<b>2,328,346</b>	<b>225,014</b>	<b>1,179,845</b>	<b>4,522,320</b>	<b>0.791</b>	<b>0.357</b>	<b>1.148</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.959	0.765	.
(14) Massachusetts Credibility:	0.410	0.620	.
(15) Countrywide Pure Premium:	0.835	0.527	1.362
(16) Countrywide Indicated Relativity:	1.042	1.143	.
(17) Countrywide Credibility:	0.300	0.190	.
(18) Countrywide Lost-Time Claims:	21865	.	.
(19) Pure Premium Underlying Present Rate:	0.743	0.468	1.211
(20) Relativity to Underlying Present Rate:	0.990	1.135	.
(21) Credibility to Underlying Relativity:	0.290	0.190	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.993	0.907	.
(24) Balanced Formula Relativity:	0.986	0.908	0.958

Class(es):		Effective: 7/1/2020							Goods and Services			
8034 STORE: GROCERY STORES - WHOLESALE												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	621.782	1	76	89.927	429.442	15.551	247.433	782.353	0.835	0.423	1.258	
2014	648.976	4	97	277.833	953.142	22.564	469.270	1,722.810	1.897	0.758	2.655	
2015	535.081	8	61	903.924	900.856	203.045	564.622	2,572.446	3.373	1.435	4.808	
2016	355.499	1	44	108.072	315.335	10.418	233.793	667.618	1.191	0.687	1.878	
2017	440.083	0	70	0	387.569	0	171.003	558.573	0.881	0.389	1.269	
<b>MA Total:</b>	<b>2,601,422</b>	<b>14</b>	<b>348</b>	<b>1,379,756</b>	<b>2,986,345</b>	<b>251,578</b>	<b>1,686,120</b>	<b>6,303,800</b>	<b>1.678</b>	<b>0.745</b>	<b>2.423</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.034	1.597	.
(14) Massachusetts Credibility:	0.480	0.640	.
(15) Countrywide Pure Premium:	1.470	0.522	1.992
(16) Countrywide Indicated Relativity:	1.836	1.132	.
(17) Countrywide Credibility:	0.260	0.180	.
(18) Countrywide Lost-Time Claims:	212.00	.	.
(19) Pure Premium Underlying Present Rate:	1.672	0.766	2.439
(20) Relativity to Underlying Present Rate:	2.229	1.859	.
(21) Credibility to Underlying Relativity:	0.260	0.180	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.033	1.561	.
(24) Balanced Formula Relativity:	2.019	1.562	1.854

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## Calculation of Class Relativities

Class(es): 8039 STORE: DEPARTMENT - RETAIL		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	620,608	4	98	137,433	102,062	121,629	122,352	483,476	0.386	0.393	0.779
2014	612,113	2	80	118,272	174,591	56,829	207,383	557,074	0.478	0.432	0.910
2015	617,977	3	71	223,708	196,009	145,927	136,737	702,382	0.679	0.457	1.137
2016	3,688,344	18	449	1,449,687	1,210,256	623,731	1,081,550	4,365,224	0.721	0.462	1.184
2017	3,343,672	10	416	726,002	1,175,649	291,245	1,405,036	3,597,932	0.569	0.507	1.076
<b>MA Total:</b>	<b>8,882,714</b>	<b>37</b>	<b>1,114</b>	<b>2,655,102</b>	<b>2,858,567</b>	<b>1,239,360</b>	<b>2,953,058</b>	<b>9,706,088</b>	<b>0.621</b>	<b>0.472</b>	<b>1.093</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.752	1.012	.
(14) Massachusetts Credibility:	0.480	0.780	.
(15) Countrywide Pure Premium:	0.541	0.425	0.966
(16) Countrywide Indicated Relativity:	0.676	0.922	.
(17) Countrywide Credibility:	0.260	0.110	.
(18) Countrywide Lost-Time Claims:	4582.0	.	.
(19) Pure Premium Underlying Present Rate:	0.482	0.358	0.840
(20) Relativity to Underlying Present Rate:	0.643	0.868	.
(21) Credibility to Underlying Relativity:	0.260	0.110	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.704	0.986	.
(24) Balanced Formula Relativity:	0.699	0.987	0.803

Class(es): 8044 STORE: FURNITURE & DRIVERS		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	704,377	9	84	368,880	478,810	103,875	330,977	1,282,542	1.203	0.617	1.821
2014	846,948	9	103	628,642	707,057	206,741	502,971	2,045,411	1.577	0.838	2.415
2015	875,989	6	127	823,251	704,251	408,876	557,907	2,494,284	1.744	1.104	2.847
2016	818,410	5	115	732,415	1,273,572	176,959	512,365	2,695,312	2.451	0.842	3.293
2017	1,220,288	6	121	406,680	955,833	237,545	676,123	2,276,181	1.117	0.749	1.865
<b>MA Total:</b>	<b>4,466,012</b>	<b>35</b>	<b>550</b>	<b>2,959,867</b>	<b>4,119,524</b>	<b>1,133,996</b>	<b>2,580,343</b>	<b>10,793,730</b>	<b>1.585</b>	<b>0.832</b>	<b>2.417</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.921	1.783	.
(14) Massachusetts Credibility:	0.550	0.790	.
(15) Countrywide Pure Premium:	1.292	0.677	1.969
(16) Countrywide Indicated Relativity:	1.613	1.469	.
(17) Countrywide Credibility:	0.230	0.110	.
(18) Countrywide Lost-Time Claims:	7161.0	.	.
(19) Pure Premium Underlying Present Rate:	1.359	0.748	2.107
(20) Relativity to Underlying Present Rate:	1.811	1.814	.
(21) Credibility to Underlying Relativity:	0.220	0.100	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.826	1.752	.
(24) Balanced Formula Relativity:	1.813	1.753	1.791

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8046 STORE: AUTOMOBILE ACCESSORIES-RETAIL-NOC & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	475.001	4	38	320.951	19.010	156.075	44.121	540.156	0.716	0.421	1.137
2014	312.083	3	33	269.318	305.644	138.841	163.722	877.524	1.842	0.969	2.812
2015	293.733	4	33	231.997	55.645	34.930	97.211	419.783	0.979	0.450	1.429
2016	310.381	2	30	355.137	17.879	253.406	43.943	670.364	1.202	0.958	2.160
2017	298.247	1	27	277.070	212.161	94.741	203.334	787.305	1.640	0.999	2.640
<b>MA Total:</b>	<b>1,689,444</b>	<b>14</b>	<b>161</b>	<b>1,454,473</b>	<b>610,338</b>	<b>677,992</b>	<b>552,330</b>	<b>3,295,133</b>	<b>1.222</b>	<b>0.728</b>	<b>1.950</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.481	1.562	.
(14) Massachusetts Credibility:	0.300	0.450	.
(15) Countrywide Pure Premium:	0.897	0.595	1.492
(16) Countrywide Indicated Relativity:	1.120	1.291	.
(17) Countrywide Credibility:	0.350	0.280	.
(18) Countrywide Lost-Time Claims:	5963.0	.	.
(19) Pure Premium Underlying Present Rate:	0.801	0.488	1.289
(20) Relativity to Underlying Present Rate:	1.068	1.184	.
(21) Credibility to Underlying Relativity:	0.350	0.270	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.210	1.384	.
(24) Balanced Formula Relativity:	1.202	1.385	1.268

Class(es):		Effective: 7/1/2020							Goods and Services		
8048 STORE: FRUIT OR VEGETABLE -WHOLESALE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	296.936	2	36	238.437	602.038	32.329	200.305	1,073.110	2.830	0.783	3.614
2014	362.325	2	48	58.597	47.320	42.809	46.543	195.269	0.292	0.247	0.539
2015	417.111	2	47	265.327	1,218.130	144.179	660.291	2,287.927	3.557	1.929	5.485
2016	478.144	2	54	374.471	284.230	124.230	214.153	997.084	1.378	0.708	2.085
2017	525.899	3	73	287.770	380.121	54.090	277.202	999.182	1.270	0.630	1.900
<b>MA Total:</b>	<b>2,080,415</b>	<b>11</b>	<b>258</b>	<b>1,224,603</b>	<b>2,531,838</b>	<b>397,637</b>	<b>1,398,493</b>	<b>5,552,571</b>	<b>1.806</b>	<b>0.863</b>	<b>2.669</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.189	1.851	.
(14) Massachusetts Credibility:	0.400	0.530	.
(15) Countrywide Pure Premium:	0.608	0.500	1.108
(16) Countrywide Indicated Relativity:	0.759	1.085	.
(17) Countrywide Credibility:	0.260	0.240	.
(18) Countrywide Lost-Time Claims:	38.000	.	.
(19) Pure Premium Underlying Present Rate:	1.336	0.596	1.932
(20) Relativity to Underlying Present Rate:	1.780	1.445	.
(21) Credibility to Underlying Relativity:	0.340	0.230	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.678	1.574	.
(24) Balanced Formula Relativity:	1.666	1.575	1.633

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8058 BUILDING MATERIAL DEALER-NEW MATERIALS ONLY-STORE EMP											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	311,495	0	49	0	149,938	0	119,414	269,352	0.481	0.383	0.865
2014	312,387	4	52	239,910	83,401	160,281	108,806	592,398	1.035	0.861	1.896
2015	311,612	0	38	0	70,440	0	166,890	237,330	0.226	0.536	0.762
2016	299,558	2	34	217,177	551,001	180,517	200,562	1,149,256	2.564	1.272	3.837
2017	330,077	2	46	53,925	217,551	56,392	367,506	695,373	0.822	1.284	2.107
<b>MA Total:</b>	<b>1,565,128</b>	<b>8</b>	<b>219</b>	<b>511,012</b>	<b>1,072,331</b>	<b>397,190</b>	<b>963,178</b>	<b>2,943,710</b>	<b>1.012</b>	<b>0.869</b>	<b>1.881</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.226	1.864	.
(14) Massachusetts Credibility:	0.320	0.500	.
(15) Countrywide Pure Premium:	0.952	0.714	1.666
(16) Countrywide Indicated Relativity:	1.188	1.549	.
(17) Countrywide Credibility:	0.340	0.250	.
(18) Countrywide Lost-Time Claims:	5235.0	.	.
(19) Pure Premium Underlying Present Rate:	0.981	0.681	1.662
(20) Relativity to Underlying Present Rate:	1.308	1.652	.
(21) Credibility to Underlying Relativity:	0.340	0.250	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.241	1.732	.
(24) Balanced Formula Relativity:	1.232	1.733	1.413

Class(es):		Effective: 7/1/2020							Goods and Services		
8103 WOOL MERCHANT											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	0	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	991	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	1,075	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	1,660	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>3,725</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.000	0.000	.
(14) Massachusetts Credibility:	0.030	0.050	.
(15) Countrywide Pure Premium:	0.964	0.664	1.629
(16) Countrywide Indicated Relativity:	1.204	1.441	.
(17) Countrywide Credibility:	0.230	0.250	.
(18) Countrywide Lost-Time Claims:	30.000	.	.
(19) Pure Premium Underlying Present Rate:	1.325	0.697	2.022
(20) Relativity to Underlying Present Rate:	1.766	1.690	.
(21) Credibility to Underlying Relativity:	0.740	0.700	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.584	1.543	.
(24) Balanced Formula Relativity:	1.572	1.544	1.562

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8105 STORE: HIDE OR LEATHER DEALERS OR STORES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	9.887	2	1	374.513	163.203	53.485	74.368	665.568	54.387	12.932	67.319
2014	7.022	1	3	118.333	196.825	36.863	79.634	431.654	44.882	16.590	61.472
2015	7.057	0	1	0	133	0	224	356	0.019	0.032	0.051
2016	10.188	0	1	0	42.764	0	7.044	49.807	4.198	0.691	4.889
2017	10.092	1	1	232.363	64.696	24.319	24.639	346.017	29.436	4.851	34.287
<b>MA Total:</b>	<b>44.245</b>	<b>4</b>	<b>7</b>	<b>725.209</b>	<b>467.619</b>	<b>114.667</b>	<b>185.908</b>	<b>1,493.403</b>	<b>26.959</b>	<b>6.793</b>	<b>33.753</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	32.677	14.567	.
(14) Massachusetts Credibility:	0.160	0.200	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	7.897	5.953	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	5.972	2.474	8.445
(20) Relativity to Underlying Present Rate:	7.959	6.000	.
(21) Credibility to Underlying Relativity:	0.840	0.800	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	11.913	7.714	.
(24) Balanced Formula Relativity:	11.829	7.719	10.345

Class(es):		Effective: 7/1/2020							Goods and Services		
8106 IRON OR STEEL MERCHANT & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	147.634	1	38	65	246.123	930	536.787	783.904	1.668	3.642	5.310
2014	168.963	3	44	630.105	192.220	122.460	142.785	1,087.571	4.867	1.570	6.437
2015	153.954	1	43	206.703	313.695	58.738	335.866	915.003	3.380	2.563	5.943
2016	162.483	0	42	0	351.369	0	207.942	559.312	2.162	1.280	3.442
2017	152.402	1	33	102.435	370.048	98.516	223.918	794.917	3.100	2.116	5.216
<b>MA Total:</b>	<b>785.436</b>	<b>6</b>	<b>200</b>	<b>939.308</b>	<b>1,473.455</b>	<b>280.645</b>	<b>1,447.299</b>	<b>4,140.706</b>	<b>3.072</b>	<b>2.200</b>	<b>5.272</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.723	4.717	.
(14) Massachusetts Credibility:	0.360	0.520	.
(15) Countrywide Pure Premium:	2.125	1.152	3.277
(16) Countrywide Indicated Relativity:	2.654	2.499	.
(17) Countrywide Credibility:	0.320	0.240	.
(18) Countrywide Lost-Time Claims:	2570.0	.	.
(19) Pure Premium Underlying Present Rate:	2.661	1.494	4.155
(20) Relativity to Underlying Present Rate:	3.547	3.623	.
(21) Credibility to Underlying Relativity:	0.320	0.240	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	3.325	3.922	.
(24) Balanced Formula Relativity:	3.301	3.925	3.526

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services			
8107 MACHINERY DEALER- NOC- STORE OR YARD & DRIVERS												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	579,063	2	58	98,177	108,369	37,937	267,228	511,711	0.357	0.527	0.884	
2014	741,608	3	98	1,001,462	1,351,685	239,501	647,795	3,240,443	3.173	1.196	4.369	
2015	830,069	1	114	254,561	1,097,469	22,096	791,506	2,165,632	1.629	0.980	2.609	
2016	880,557	4	94	1,009,657	475,119	396,265	624,850	2,505,890	1.686	1.160	2.846	
2017	956,999	1	74	65,204	481,791	100,769	443,316	1,091,079	0.572	0.569	1.140	
<b>MA Total:</b>	<b>3,988,296</b>	<b>11</b>	<b>438</b>	<b>2,429,061</b>	<b>3,514,432</b>	<b>796,567</b>	<b>2,774,695</b>	<b>9,514,755</b>	<b>1.490</b>	<b>0.895</b>	<b>2.386</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.806	1.920	.
(14) Massachusetts Credibility:	0.490	0.730	.
(15) Countrywide Pure Premium:	1.354	0.649	2.004
(16) Countrywide Indicated Relativity:	1.691	1.409	.
(17) Countrywide Credibility:	0.260	0.140	.
(18) Countrywide Lost-Time Claims:	5733.0	.	.
(19) Pure Premium Underlying Present Rate:	1.165	0.675	1.840
(20) Relativity to Underlying Present Rate:	1.552	1.637	.
(21) Credibility to Underlying Relativity:	0.250	0.130	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.713	1.812	.
(24) Balanced Formula Relativity:	1.701	1.813	1.741

Class(es):		Effective: 7/1/2020							Goods and Services			
8111 PLUMBERS SUPPLIES DEALERS & DRIVERS												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	742,338	6	87	785,025	340,366	283,555	247,068	1,656,014	1.516	0.715	2.231	
2014	739,162	6	110	428,797	666,102	156,049	484,905	1,735,852	1.481	0.867	2.348	
2015	811,891	5	122	557,457	1,200,204	260,320	875,067	2,893,048	2.165	1.398	3.563	
2016	835,578	5	110	719,121	612,698	495,084	433,482	2,260,385	1.594	1.111	2.705	
2017	1,003,914	3	124	554,707	1,323,799	301,760	562,391	2,742,657	1.871	0.861	2.732	
<b>MA Total:</b>	<b>4,132,883</b>	<b>25</b>	<b>553</b>	<b>3,045,106</b>	<b>4,143,170</b>	<b>1,496,768</b>	<b>2,602,913</b>	<b>11,287,957</b>	<b>1.739</b>	<b>0.992</b>	<b>2.731</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.108	2.127	.
(14) Massachusetts Credibility:	0.500	0.750	.
(15) Countrywide Pure Premium:	0.818	0.456	1.274
(16) Countrywide Indicated Relativity:	1.021	0.989	.
(17) Countrywide Credibility:	0.250	0.130	.
(18) Countrywide Lost-Time Claims:	1286.0	.	.
(19) Pure Premium Underlying Present Rate:	1.191	0.710	1.902
(20) Relativity to Underlying Present Rate:	1.588	1.723	.
(21) Credibility to Underlying Relativity:	0.250	0.120	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.706	1.931	.
(24) Balanced Formula Relativity:	1.694	1.932	1.780

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8203 ICE DEALER & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	39,043	1	12	2,947	67,735	2,003	39,085	111,770	1,810	1,052	2,863
2014	39,245	0	13	0	393,423	0	223,559	616,982	10,025	5,696	15,721
2015	42,651	1	10	273,727	169,807	41,391	124,816	609,741	10,399	3,897	14,296
2016	45,974	0	5	0	4,609	0	8,291	12,900	0,100	0,180	0,281
2017	44,402	0	16	0	123,220	0	56,298	179,518	2,775	1,268	4,043
<b>MA Total:</b>	<b>211,315</b>	<b>2</b>	<b>56</b>	<b>276,674</b>	<b>758,795</b>	<b>43,394</b>	<b>452,048</b>	<b>1,530,911</b>	<b>4,900</b>	<b>2,345</b>	<b>7,245</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	5.939	5.028	.
(14) Massachusetts Credibility:	0.210	0.300	.
(15) Countrywide Pure Premium:	2.691	1.269	3.960
(16) Countrywide Indicated Relativity:	3.360	2.752	.
(17) Countrywide Credibility:	0.400	0.350	.
(18) Countrywide Lost-Time Claims:	368.00	.	.
(19) Pure Premium Underlying Present Rate:	2.749	1.446	4.195
(20) Relativity to Underlying Present Rate:	3.663	3.507	.
(21) Credibility to Underlying Relativity:	0.390	0.350	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	4.020	3.699	.
(24) Balanced Formula Relativity:	3.991	3.702	3.887

Class(es):		Effective: 7/1/2020							Goods and Services		
8204 BUILDING MATERIAL YARD & LOCAL MANAGERS, DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	21,974	0	4	0	372	0	23,690	24,062	0,017	1,078	1,095
2014	28,429	0	2	0	708	0	12,992	13,700	0,025	0,457	0,482
2015	56,005	5	8	1,359,112	70,979	815,805	65,741	2,311,637	25,535	15,741	41,276
2016	58,540	1	9	219,295	17,862	25,178	43,825	306,161	4,051	1,179	5,230
2017	63,555	1	7	37,375	21,396	13,691	9,211	81,674	0,925	0,360	1,285
<b>MA Total:</b>	<b>228,502</b>	<b>7</b>	<b>30</b>	<b>1,615,782</b>	<b>111,318</b>	<b>854,674</b>	<b>155,459</b>	<b>2,737,233</b>	<b>7,558</b>	<b>4,421</b>	<b>11,979</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	9.161	9.479	.
(14) Massachusetts Credibility:	0.190	0.330	.
(15) Countrywide Pure Premium:	2.110	1.081	3.191
(16) Countrywide Indicated Relativity:	2.635	2.344	.
(17) Countrywide Credibility:	0.410	0.340	.
(18) Countrywide Lost-Time Claims:	191.00	.	.
(19) Pure Premium Underlying Present Rate:	1.810	1.630	3.441
(20) Relativity to Underlying Present Rate:	2.413	3.954	.
(21) Credibility to Underlying Relativity:	0.400	0.330	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	3.786	5.230	.
(24) Balanced Formula Relativity:	3.759	5.234	4.292

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8215 HAY, GRAIN OR FEED DEALER & LOCAL MANAGERS, DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	60,322	2	9	262,693	65,866	168,853	16,207	513,619	5,447	3,068	8,515
2014	71,516	0	11	0	12,964	0	31,230	44,193	0,181	0,437	0,618
2015	77,051	0	6	0	47,982	0	83,356	131,338	0,623	1,082	1,705
2016	79,200	0	19	0	378,290	0	156,532	534,822	4,776	1,976	6,753
2017	75,007	0	5	0	49,817	0	32,397	82,214	0,664	0,432	1,096
<b>MA Total:</b>	<b>363,096</b>	<b>2</b>	<b>50</b>	<b>262,693</b>	<b>554,918</b>	<b>168,853</b>	<b>319,723</b>	<b>1,306,187</b>	<b>2,252</b>	<b>1,346</b>	<b>3,597</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.729	2.885	.
(14) Massachusetts Credibility:	0.210	0.320	.
(15) Countrywide Pure Premium:	1.606	0.895	2.501
(16) Countrywide Indicated Relativity:	2.005	1.942	.
(17) Countrywide Credibility:	0.400	0.340	.
(18) Countrywide Lost-Time Claims:	1837.0	.	.
(19) Pure Premium Underlying Present Rate:	1.574	0.973	2.547
(20) Relativity to Underlying Present Rate:	2.097	2.361	.
(21) Credibility to Underlying Relativity:	0.390	0.340	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.193	2.386	.
(24) Balanced Formula Relativity:	2.178	2.388	2.254

Class(es):		Effective: 7/1/2020							Construction		
8227 CONTRACTORS PERMANENT YARD											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	981,364	3	83	789,867	2,037,387	264,318	1,295,918	4,387,489	2,881	1,590	4,471
2014	1,080,540	6	96	1,901,243	1,214,205	1,037,097	688,277	4,840,822	2,883	1,597	4,480
2015	1,213,629	9	73	1,548,714	1,038,345	725,412	493,301	3,805,772	2,132	1,004	3,136
2016	1,243,282	2	65	926,573	1,241,611	220,819	703,843	3,092,846	1,744	0,744	2,488
2017	1,319,463	7	81	1,481,865	2,619,413	405,258	1,764,946	6,271,483	3,108	1,645	4,753
<b>MA Total:</b>	<b>5,838,277</b>	<b>27</b>	<b>398</b>	<b>6,648,263</b>	<b>8,150,961</b>	<b>2,652,903</b>	<b>4,946,286</b>	<b>22,398,413</b>	<b>2,535</b>	<b>1,302</b>	<b>3,836</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.974	1.096	.
(14) Massachusetts Credibility:	0.770	1.000	.
(15) Countrywide Pure Premium:	1.886	0.860	2.745
(16) Countrywide Indicated Relativity:	0.736	0.746	.
(17) Countrywide Credibility:	0.120	0.000	.
(18) Countrywide Lost-Time Claims:	2900.0	.	.
(19) Pure Premium Underlying Present Rate:	2.413	1.126	3.539
(20) Relativity to Underlying Present Rate:	0.997	1.068	.
(21) Credibility to Underlying Relativity:	0.110	0.000	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	0.948	1.096	.
(24) Balanced Formula Relativity:	0.952	1.094	0.996



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8232 LUMBER YARD-NEW MATERIALS ONLY: A/O EMP INCL YRD & WHSE & DR											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,176,147	14	248	2,692,854	2,044,790	1,040,906	1,295,315	7,073,865	4,028	1,986	6,014
2014	1,292,189	12	223	1,634,652	2,460,763	592,153	1,650,983	6,338,550	3,169	1,736	4,905
2015	1,352,846	17	233	2,347,963	1,965,636	1,123,363	1,354,247	6,791,210	3,189	1,831	5,020
2016	1,395,888	7	229	2,057,772	2,968,045	543,700	1,322,828	6,892,345	3,600	1,337	4,938
2017	1,527,191	6	234	599,994	1,935,947	746,652	1,511,698	4,794,291	1,661	1,479	3,139
<b>MA Total:</b>	<b>6,744,261</b>	<b>56</b>	<b>1,167</b>	<b>9,333,235</b>	<b>11,375,181</b>	<b>4,046,774</b>	<b>7,135,071</b>	<b>31,890,261</b>	<b>3,071</b>	<b>1,658</b>	<b>4,729</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.722	3.555	.
(14) Massachusetts Credibility:	0.870	1.000	.
(15) Countrywide Pure Premium:	2.202	1.128	3.330
(16) Countrywide Indicated Relativity:	2.750	2.446	.
(17) Countrywide Credibility:	0.070	0.000	.
(18) Countrywide Lost-Time Claims:	10185	.	.
(19) Pure Premium Underlying Present Rate:	2.882	1.551	4.433
(20) Relativity to Underlying Present Rate:	3.842	3.761	.
(21) Credibility to Underlying Relativity:	0.060	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	3.661	3.555	.
(24) Balanced Formula Relativity:	3.635	3.558	3.607

Class(es):		Effective: 7/1/2020							Goods and Services		
8233 COAL MERCHANT & LOCAL MANAGERS & DRIVERS											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	274,051	2	36	10,509	522,011	15,797	471,494	1,019,812	1,943	1,778	3,721
2014	275,466	1	19	472,473	402,686	36,439	149,207	1,060,806	3,177	0,674	3,851
2015	273,834	4	26	487,623	665,227	369,516	267,972	1,790,338	4,210	2,328	6,538
2016	276,760	3	22	321,115	149,774	673,202	95,550	1,239,641	1,701	2,778	4,479
2017	316,862	2	30	99,699	756,562	40,425	461,608	1,358,294	2,702	1,584	4,287
<b>MA Total:</b>	<b>1,416,973</b>	<b>12</b>	<b>133</b>	<b>1,391,420</b>	<b>2,496,261</b>	<b>1,135,378</b>	<b>1,445,831</b>	<b>6,468,890</b>	<b>2,744</b>	<b>1,822</b>	<b>4,565</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.325	3.906	.
(14) Massachusetts Credibility:	0.480	0.670	.
(15) Countrywide Pure Premium:	2.565	1.275	3.840
(16) Countrywide Indicated Relativity:	3.203	2.765	.
(17) Countrywide Credibility:	0.260	0.170	.
(18) Countrywide Lost-Time Claims:	1870.0	.	.
(19) Pure Premium Underlying Present Rate:	3.031	1.575	4.606
(20) Relativity to Underlying Present Rate:	4.040	3.820	.
(21) Credibility to Underlying Relativity:	0.260	0.160	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	3.479	3.699	.
(24) Balanced Formula Relativity:	3.455	3.701	3.544

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8235 SASH, DOOR OR ASSEMBLED MILLWORK DEALER & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	133,917	0	21	0	17,719	0	27,291	45,010	0.132	0.204	0.336
2014	140,195	0	27	0	244,786	0	80,989	325,775	1.746	0.578	2.324
2015	115,249	0	29	0	132,890	0	175,911	308,802	1.153	1.526	2.679
2016	125,943	1	39	2,498	564,845	8,262	323,232	898,837	4.505	2.632	7.137
2017	127,414	0	14	0	366,135	0	129,416	495,551	2.874	1.016	3.889
<b>MA Total:</b>	<b>642,718</b>	<b>1</b>	<b>130</b>	<b>2,498</b>	<b>1,326,375</b>	<b>8,262</b>	<b>736,840</b>	<b>2,073,975</b>	<b>2.068</b>	<b>1.159</b>	<b>3.227</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.506	2.486	.
(14) Massachusetts Credibility:	0.290	0.400	.
(15) Countrywide Pure Premium:	2.110	1.118	3.228
(16) Countrywide Indicated Relativity:	2.635	2.424	.
(17) Countrywide Credibility:	0.360	0.300	.
(18) Countrywide Lost-Time Claims:	576.00	.	.
(19) Pure Premium Underlying Present Rate:	1.961	0.973	2.934
(20) Relativity to Underlying Present Rate:	2.614	2.359	.
(21) Credibility to Underlying Relativity:	0.350	0.300	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.590	2.429	.
(24) Balanced Formula Relativity:	2.572	2.431	2.521

Class(es):		Effective: 7/1/2020							Goods and Services		
8263 JUNK DEALERS & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	85,748	0	19	0	18,067	0	58,695	76,762	0.211	0.685	0.895
2014	93,772	1	23	34,136	382,593	10,385	122,220	549,334	4.444	1.414	5.858
2015	94,041	0	25	0	273,078	0	98,069	371,147	2.904	1.043	3.947
2016	91,393	0	13	0	229,845	0	138,553	368,399	2.515	1.516	4.031
2017	88,879	0	14	0	181,264	0	169,213	350,477	2.039	1.904	3.943
<b>MA Total:</b>	<b>453,833</b>	<b>1</b>	<b>94</b>	<b>34,136</b>	<b>1,084,848</b>	<b>10,385</b>	<b>586,749</b>	<b>1,716,118</b>	<b>2.466</b>	<b>1.316</b>	<b>3.781</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.989	2.821	.
(14) Massachusetts Credibility:	0.240	0.380	.
(15) Countrywide Pure Premium:	2.522	1.551	4.072
(16) Countrywide Indicated Relativity:	3.149	3.363	.
(17) Countrywide Credibility:	0.380	0.310	.
(18) Countrywide Lost-Time Claims:	196.00	.	.
(19) Pure Premium Underlying Present Rate:	1.642	1.166	2.808
(20) Relativity to Underlying Present Rate:	2.189	2.828	.
(21) Credibility to Underlying Relativity:	0.380	0.310	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.745	2.991	.
(24) Balanced Formula Relativity:	2.726	2.994	2.823

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8264 BOTTLE DEALER-USED & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	285.175	2	52	155.611	979.913	16.608	652.281	1.804.413	3.982	2.346	6.327
2014	271.367	4	45	386.242	229.932	212.134	217.930	1.046.239	2.271	1.585	3.855
2015	314.761	3	51	398.936	347.134	87.270	216.095	1.049.435	2.370	0.964	3.334
2016	344.271	2	66	248.232	847.079	210.255	432.637	1.738.202	3.182	1.867	5.049
2017	406.758	3	51	656.702	334.000	199.841	176.590	1.367.133	2.436	0.925	3.361
<b>MA Total:</b>	<b>1,622,332</b>	<b>14</b>	<b>265</b>	<b>1,845,723</b>	<b>2,738,059</b>	<b>726,107</b>	<b>1,695,534</b>	<b>7,005,423</b>	<b>2,825</b>	<b>1,493</b>	<b>4,318</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.425	3.201	.
(14) Massachusetts Credibility:	0.450	0.650	.
(15) Countrywide Pure Premium:	1.978	1.247	3.225
(16) Countrywide Indicated Relativity:	2.470	2.705	.
(17) Countrywide Credibility:	0.280	0.180	.
(18) Countrywide Lost-Time Claims:	1286.0	.	.
(19) Pure Premium Underlying Present Rate:	2.247	1.268	3.514
(20) Relativity to Underlying Present Rate:	2.994	3.075	.
(21) Credibility to Underlying Relativity:	0.270	0.170	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	3.041	3.090	.
(24) Balanced Formula Relativity:	3.019	3.092	3.046

Class(es):		Effective: 7/1/2020							Goods and Services		
8279 STABLE OR BREEDING FARM & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	166.624	1	21	39.023	71.077	2.897	209.268	322.264	0.661	1.273	1.934
2014	170.919	1	14	90.146	82.890	20.145	123.871	317.052	1.012	0.843	1.855
2015	167.040	1	24	125.913	20.973	48.375	65.767	261.028	0.879	0.683	1.563
2016	178.452	1	26	75.944	135.758	9.257	241.042	462.001	1.186	1.403	2.589
2017	191.080	1	25	17.131	114.237	24.411	194.073	349.852	0.688	1.143	1.831
<b>MA Total:</b>	<b>874,116</b>	<b>5</b>	<b>110</b>	<b>348,156</b>	<b>424,934</b>	<b>105,085</b>	<b>834,020</b>	<b>1,712,196</b>	<b>0,884</b>	<b>1,074</b>	<b>1,959</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.072	2.304	.
(14) Massachusetts Credibility:	0.330	0.500	.
(15) Countrywide Pure Premium:	2.461	1.962	4.422
(16) Countrywide Indicated Relativity:	3.073	4.255	.
(17) Countrywide Credibility:	0.340	0.250	.
(18) Countrywide Lost-Time Claims:	949.00	.	.
(19) Pure Premium Underlying Present Rate:	1.993	1.206	3.199
(20) Relativity to Underlying Present Rate:	2.656	2.924	.
(21) Credibility to Underlying Relativity:	0.330	0.250	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.275	2.947	.
(24) Balanced Formula Relativity:	2.259	2.949	2.508

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## Calculation of Class Relativities

Class(es): 8291 STORAGE WAREHOUSE-COLD		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	120.802	1	32	126.500	214.936	46.927	101.351	489.714	2.826	1.227	4.054
2014	156.632	0	27	0	29.760	0	68.612	98.371	0.190	0.438	0.628
2015	156.003	1	29	22.224	106.241	9.562	115.240	253.266	0.823	0.800	1.623
2016	157.651	2	28	384.987	516.294	77.185	204.605	1.183.072	5.717	1.787	7.504
2017	179.489	1	31	117.945	534.287	66.565	435.874	1.154.670	3.634	2.799	6.433
<b>MA Total:</b>	<b>770.577</b>	<b>5</b>	<b>147</b>	<b>651.656</b>	<b>1,401,517</b>	<b>200,238</b>	<b>925,682</b>	<b>3,179,093</b>	<b>2,664</b>	<b>1,461</b>	<b>4,126</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.230	3.133	.
(14) Massachusetts Credibility:	0.290	0.420	.
(15) Countrywide Pure Premium:	1.621	0.818	2.439
(16) Countrywide Indicated Relativity:	2.024	1.774	.
(17) Countrywide Credibility:	0.360	0.290	.
(18) Countrywide Lost-Time Claims:	1039.0	.	.
(19) Pure Premium Underlying Present Rate:	1.627	0.899	2.526
(20) Relativity to Underlying Present Rate:	2.169	2.179	.
(21) Credibility to Underlying Relativity:	0.350	0.290	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.424	2.462	.
(24) Balanced Formula Relativity:	2.407	2.464	2.428

Class(es): 8292 STORAGE WAREHOUSE NOC		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	599.165	11	115	890.691	427.798	388.768	444.903	2.152.160	2.201	1.391	3.592
2014	689.589	4	107	303.126	1.194.232	65.691	791.120	2.354.168	2.171	1.242	3.414
2015	768.405	7	105	370.988	1.324.003	98.683	474.111	2.267.786	2.206	0.745	2.951
2016	710.772	6	125	539.197	647.230	329.239	477.996	1.993.661	1.669	1.136	2.805
2017	804.282	8	158	465.237	1.088.070	209.186	631.037	2.393.530	1.931	1.045	2.976
<b>MA Total:</b>	<b>3,572,212</b>	<b>36</b>	<b>610</b>	<b>2,569,238</b>	<b>4,681,332</b>	<b>1,091,567</b>	<b>2,819,168</b>	<b>11,161,306</b>	<b>2,030</b>	<b>1,095</b>	<b>3,124</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.460	2.348	.
(14) Massachusetts Credibility:	0.520	0.750	.
(15) Countrywide Pure Premium:	1.625	0.878	2.503
(16) Countrywide Indicated Relativity:	2.029	1.904	.
(17) Countrywide Credibility:	0.240	0.130	.
(18) Countrywide Lost-Time Claims:	7097.0	.	.
(19) Pure Premium Underlying Present Rate:	1.519	0.811	2.330
(20) Relativity to Underlying Present Rate:	2.024	1.966	.
(21) Credibility to Underlying Relativity:	0.240	0.120	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.252	2.244	.
(24) Balanced Formula Relativity:	2.236	2.246	2.240

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8293 STORAGE WAREHOUSE-FURNITURE & DRIVERS											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	495,658	6	102	757,269	1,340,368	399,691	669,538	3,166,866	4,232	2,157	6,389
2014	578,170	13	150	930,652	2,263,167	366,772	1,540,628	5,101,219	5,524	3,299	8,823
2015	595,646	16	120	1,690,770	1,729,223	752,944	712,982	4,885,919	5,742	2,461	8,203
2016	738,306	13	164	1,511,560	1,147,681	676,496	686,668	4,022,405	3,602	1,846	5,448
2017	760,740	13	144	810,378	1,122,231	443,718	1,124,513	3,500,840	2,540	2,061	4,602
<b>MA Total:</b>	<b>3,168,519</b>	<b>61</b>	<b>680</b>	<b>5,700,628</b>	<b>7,602,670</b>	<b>2,639,621</b>	<b>4,734,330</b>	<b>20,677,248</b>	<b>4,199</b>	<b>2,327</b>	<b>6,526</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	5.089	4.990	.
(14) Massachusetts Credibility:	0.730	1.000	.
(15) Countrywide Pure Premium:	4.213	2.053	6.266
(16) Countrywide Indicated Relativity:	5.261	4.452	.
(17) Countrywide Credibility:	0.140	0.000	.
(18) Countrywide Lost-Time Claims:	4355.0	.	.
(19) Pure Premium Underlying Present Rate:	3.867	2.059	5.926
(20) Relativity to Underlying Present Rate:	5.154	4.993	.
(21) Credibility to Underlying Relativity:	0.130	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	5.121	4.990	.
(24) Balanced Formula Relativity:	5.085	4.994	5.052

Class(es):		Effective: 7/1/2020							Goods and Services		
8350 GASOLINE OR OIL DEALER & DRIVERS											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,566,520	15	278	2,048,747	2,488,582	618,814	1,831,410	6,987,554	2,896	1,564	4,461
2014	1,605,704	19	274	1,550,503	3,847,894	737,767	1,843,579	7,979,744	3,362	1,608	4,970
2015	1,581,981	16	212	4,353,985	3,583,880	1,296,667	1,592,608	10,827,140	5,018	1,826	6,844
2016	1,605,503	14	202	2,407,523	2,611,041	957,406	1,580,286	7,556,255	3,126	1,581	4,706
2017	1,619,075	12	209	1,954,893	4,498,212	929,056	2,394,029	9,776,189	3,986	2,052	6,038
<b>MA Total:</b>	<b>7,978,782</b>	<b>76</b>	<b>1,175</b>	<b>12,315,651</b>	<b>17,029,609</b>	<b>4,539,710</b>	<b>9,241,912</b>	<b>43,126,883</b>	<b>3,678</b>	<b>1,727</b>	<b>5,405</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.458	3.704	.
(14) Massachusetts Credibility:	0.920	1.000	.
(15) Countrywide Pure Premium:	2.991	1.288	4.279
(16) Countrywide Indicated Relativity:	3.735	2.793	.
(17) Countrywide Credibility:	0.040	0.000	.
(18) Countrywide Lost-Time Claims:	3940.0	.	.
(19) Pure Premium Underlying Present Rate:	2.766	1.397	4.162
(20) Relativity to Underlying Present Rate:	3.686	3.388	.
(21) Credibility to Underlying Relativity:	0.040	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	4.398	3.704	.
(24) Balanced Formula Relativity:	4.367	3.706	4.128

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8380 AUTOMOBILE SERVICE OR REPAIR CENTER & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	7,895,269	38	1,085	4,070,723	7,359,502	1,436,086	5,001,483	17,867,794	1,448	0,815	2,263
2014	8,080,596	36	999	3,687,555	6,478,894	1,334,214	4,148,328	15,648,992	1,258	0,678	1,937
2015	8,512,170	46	1,000	5,716,463	7,839,915	2,076,251	4,161,960	19,794,589	1,593	0,733	2,325
2016	8,597,915	28	929	4,113,289	7,140,728	1,725,797	4,351,219	17,331,032	1,309	0,707	2,016
2017	8,857,671	29	902	3,953,973	8,594,124	2,196,344	4,325,750	19,070,192	1,417	0,736	2,153
<b>MA Total:</b>	<b>41,943,620</b>	<b>177</b>	<b>4,915</b>	<b>21,542,003</b>	<b>37,413,163</b>	<b>8,768,692</b>	<b>21,988,739</b>	<b>89,712,597</b>	<b>1,406</b>	<b>0,733</b>	<b>2,139</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.704	1.572	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	1.199	0.603	1.802
(16) Countrywide Indicated Relativity:	1.497	1.308	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	26673	.	.
(19) Pure Premium Underlying Present Rate:	1.245	0.653	1.898
(20) Relativity to Underlying Present Rate:	1.659	1.584	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.704	1.572	.
(24) Balanced Formula Relativity:	1.692	1.574	1.649

Class(es):		Effective: 7/1/2020							Goods and Services		
8381 GASOLINE STATION-RETAIL-SELF SERVICE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	178,080	0	8	0	560,621	0	251,248	811,869	3,148	1,411	4,559
2014	200,391	1	18	32,227	29,358	11,072	38,562	111,219	0,307	0,248	0,555
2015	179,806	1	6	3,715	130,192	216	95,396	229,520	0,745	0,532	1,276
2016	190,288	2	14	16,861	55,268	14,572	89,100	175,801	0,379	0,545	0,924
2017	168,934	1	8	99,430	193,057	40,878	61,866	395,231	1,731	0,608	2,340
<b>MA Total:</b>	<b>917,499</b>	<b>5</b>	<b>54</b>	<b>152,234</b>	<b>968,496</b>	<b>66,738</b>	<b>536,172</b>	<b>1,723,640</b>	<b>1,222</b>	<b>0,657</b>	<b>1,879</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.481	1.409	.
(14) Massachusetts Credibility:	0.230	0.370	.
(15) Countrywide Pure Premium:	0.772	0.452	1.224
(16) Countrywide Indicated Relativity:	0.963	0.981	.
(17) Countrywide Credibility:	0.390	0.320	.
(18) Countrywide Lost-Time Claims:	532.00	.	.
(19) Pure Premium Underlying Present Rate:	0.742	0.531	1.272
(20) Relativity to Underlying Present Rate:	0.988	1.287	.
(21) Credibility to Underlying Relativity:	0.380	0.310	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.092	1.234	.
(24) Balanced Formula Relativity:	1.084	1.235	1.139

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8385 BUS CO: GARAGE EMPLOYEES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	413,494	0	78	0	242,262	0	223,423	465,686	0.586	0.540	1.126
2014	419,724	3	78	250,769	1,233,173	195,275	430,135	2,109,352	3.536	1.490	5.026
2015	446,275	4	45	535,946	694,918	170,349	195,677	1,596,890	2.758	0.820	3.578
2016	472,893	1	58	113,075	819,087	19,047	331,526	1,282,735	1.971	0.741	2.713
2017	513,131	5	101	332,908	1,149,313	175,619	620,829	2,278,669	2.889	1.552	4.441
<b>MA Total:</b>	<b>2,265,517</b>	<b>13</b>	<b>360</b>	<b>1,232,698</b>	<b>4,138,754</b>	<b>560,290</b>	<b>1,801,591</b>	<b>7,733,333</b>	<b>2.371</b>	<b>1.043</b>	<b>3.413</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.874	2.236	.
(14) Massachusetts Credibility:	0.400	0.590	.
(15) Countrywide Pure Premium:	0.959	0.503	1.462
(16) Countrywide Indicated Relativity:	1.198	1.091	.
(17) Countrywide Credibility:	0.300	0.210	.
(18) Countrywide Lost-Time Claims:	1354.0	.	.
(19) Pure Premium Underlying Present Rate:	1.236	0.716	1.952
(20) Relativity to Underlying Present Rate:	1.647	1.737	.
(21) Credibility to Underlying Relativity:	0.300	0.200	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.003	1.896	.
(24) Balanced Formula Relativity:	1.989	1.897	1.955

Class(es):		Effective: 7/1/2020							Goods and Services		
8392 AUTOMOBILE STORAGE GARAGE OR PARKING STATION & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	509,864	2	48	42,089	154,837	7,306	96,803	301,035	0.386	0.204	0.590
2014	575,119	1	46	70,475	50,108	483,111	229,360	833,053	0.210	1.239	1.448
2015	611,938	3	46	365,285	71,060	72,846	109,524	618,715	0.713	0.298	1.011
2016	517,861	0	32	0	27,763	0	84,352	112,115	0.054	0.163	0.216
2017	452,777	1	46	21,884	337,692	17,078	152,984	529,638	0.794	0.376	1.170
<b>MA Total:</b>	<b>2,667,559</b>	<b>7</b>	<b>218</b>	<b>499,733</b>	<b>641,459</b>	<b>580,340</b>	<b>673,023</b>	<b>2,394,556</b>	<b>0.428</b>	<b>0.470</b>	<b>0.898</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.519	1.008	.
(14) Massachusetts Credibility:	0.320	0.510	.
(15) Countrywide Pure Premium:	0.976	0.622	1.598
(16) Countrywide Indicated Relativity:	1.219	1.349	.
(17) Countrywide Credibility:	0.340	0.250	.
(18) Countrywide Lost-Time Claims:	1478.0	.	.
(19) Pure Premium Underlying Present Rate:	0.612	0.411	1.023
(20) Relativity to Underlying Present Rate:	0.815	0.997	.
(21) Credibility to Underlying Relativity:	0.340	0.240	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.858	1.090	.
(24) Balanced Formula Relativity:	0.852	1.091	0.938

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## Calculation of Class Relativities

Class(es): 8393 AUTOMOBILE BODY REPAIR		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,042,224	7	161	1,098,207	1,380,090	229,691	691,460	3,399,447	1,214	0,451	1,665
2014	2,193,528	7	174	644,782	671,442	80,773	569,991	1,966,988	0,600	0,297	0,897
2015	2,004,763	2	126	238,606	806,133	80,661	407,579	1,532,980	0,521	0,244	0,765
2016	2,023,359	3	114	139,897	829,317	96,627	621,126	1,686,966	0,479	0,355	0,834
2017	2,186,423	4	98	104,380	402,751	76,803	309,265	893,199	0,232	0,177	0,409
<b>MA Total:</b>	<b>10,450,296</b>	<b>23</b>	<b>673</b>	<b>2,225,872</b>	<b>4,089,733</b>	<b>564,554</b>	<b>2,599,421</b>	<b>9,479,580</b>	<b>0.604</b>	<b>0.303</b>	<b>0.907</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.733	0.649	.
(14) Massachusetts Credibility:	0.640	0.820	.
(15) Countrywide Pure Premium:	0.879	0.345	1.224
(16) Countrywide Indicated Relativity:	1.097	0.749	.
(17) Countrywide Credibility:	0.180	0.090	.
(18) Countrywide Lost-Time Claims:	2924.0	.	.
(19) Pure Premium Underlying Present Rate:	0.859	0.345	1.204
(20) Relativity to Underlying Present Rate:	1.145	0.838	.
(21) Credibility to Underlying Relativity:	0.180	0.090	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.872	0.675	.
(24) Balanced Formula Relativity:	0.866	0.676	0.797

Class(es): 8601 ARCHITECT OR ENGINEER-CONSULTING		Effective: 7/1/2020							Office and Clerical		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	13,405,562	1	151	554,666	574,025	126,357	500,365	1,755,413	0.084	0.047	0.131
2014	14,253,416	8	160	513,329	1,030,073	174,159	604,156	2,321,717	0.108	0.055	0.163
2015	15,127,832	6	157	516,056	890,610	221,262	881,199	2,509,127	0.093	0.073	0.166
2016	15,299,126	6	158	917,030	1,571,578	223,455	908,433	3,620,497	0.163	0.074	0.237
2017	15,814,145	5	175	332,576	552,364	208,407	608,019	1,701,366	0.056	0.052	0.108
<b>MA Total:</b>	<b>73,900,081</b>	<b>26</b>	<b>801</b>	<b>2,833,657</b>	<b>4,618,649</b>	<b>953,641</b>	<b>3,502,172</b>	<b>11,908,119</b>	<b>0.101</b>	<b>0.060</b>	<b>0.161</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.454	1.416	.
(14) Massachusetts Credibility:	0.600	0.880	.
(15) Countrywide Pure Premium:	0.111	0.060	0.171
(16) Countrywide Indicated Relativity:	1.854	1.561	.
(17) Countrywide Credibility:	0.200	0.060	.
(18) Countrywide Lost-Time Claims:	2017.0	.	.
(19) Pure Premium Underlying Present Rate:	0.101	0.059	0.160
(20) Relativity to Underlying Present Rate:	1.558	1.523	.
(21) Credibility to Underlying Relativity:	0.200	0.060	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	1.555	1.431	.
(24) Balanced Formula Relativity:	1.562	1.434	1.513



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8710 FIELD BONDED WAREHOUSING - ALL EMP & CLERICAL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	8,440	0	1	0	14,276	0	3,468	17,744	1,691	0,411	2,102
2014	7,314	0	0	0	0	0	0	0	0,000	0,000	0,000
2015	2,259	0	1	0	7,828	0	2,212	10,040	3,465	0,979	4,444
2016	1,000	0	0	0	0	0	0	0	0,000	0,000	0,000
2017	1,453	0	0	0	0	0	0	0	0,000	0,000	0,000
<b>MA Total:</b>	<b>20,467</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>22,103</b>	<b>0</b>	<b>5,681</b>	<b>27,784</b>	<b>1,080</b>	<b>0,278</b>	<b>1,358</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.309	0.595	.
(14) Massachusetts Credibility:	0.070	0.100	.
(15) Countrywide Pure Premium:	0.504	0.279	0.783
(16) Countrywide Indicated Relativity:	0.629	0.606	.
(17) Countrywide Credibility:	0.200	0.210	.
(18) Countrywide Lost-Time Claims:	20,000	.	.
(19) Pure Premium Underlying Present Rate:	2.029	0.875	2.904
(20) Relativity to Underlying Present Rate:	2.704	2.122	.
(21) Credibility to Underlying Relativity:	0.730	0.690	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.191	1.651	.
(24) Balanced Formula Relativity:	2.176	1.652	1.987

Class(es):		Effective: 7/1/2020							Goods and Services		
8720 INSPECTION OF RISKS FOR INSURANCE OR VALUATION PURPOSES NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,690,087	7	57	102,354	61,073	56,480	162,061	381,968	0,097	0,129	0,226
2014	1,791,775	2	42	111,607	133,444	7,731	153,153	405,935	0,137	0,090	0,227
2015	1,829,717	4	49	1,327,365	893,910	266,420	376,765	2,864,459	1,214	0,352	1,566
2016	1,813,831	2	45	245,683	256,587	49,010	245,057	796,337	0,277	0,162	0,439
2017	2,061,932	2	53	160,216	390,862	34,567	412,450	998,095	0,267	0,217	0,484
<b>MA Total:</b>	<b>9,187,342</b>	<b>17</b>	<b>246</b>	<b>1,947,226</b>	<b>1,735,876</b>	<b>414,207</b>	<b>1,349,486</b>	<b>5,446,795</b>	<b>0,401</b>	<b>0,192</b>	<b>0,593</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.486	0.412	.
(14) Massachusetts Credibility:	0.460	0.630	.
(15) Countrywide Pure Premium:	0.452	0.264	0.716
(16) Countrywide Indicated Relativity:	0.565	0.572	.
(17) Countrywide Credibility:	0.270	0.190	.
(18) Countrywide Lost-Time Claims:	1402.0	.	.
(19) Pure Premium Underlying Present Rate:	0.430	0.208	0.639
(20) Relativity to Underlying Present Rate:	0.574	0.505	.
(21) Credibility to Underlying Relativity:	0.270	0.180	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.531	0.459	.
(24) Balanced Formula Relativity:	0.527	0.459	0.503

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Office and Clerical		
8721 REAL ESTATE APPRAISAL CO - OUTSIDE EMPLOYEES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	275,524	2	1	124,088	0	9,019	30	133,137	0.450	0.033	0.483
2014	328,957	0	2	0	0	0	794	794	0.000	0.002	0.002
2015	284,195	0	1	0	0	0	45	45	0.000	0.000	0.000
2016	292,653	0	4	0	2,697	0	19,125	21,822	0.009	0.065	0.075
2017	323,499	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>1,504,827</b>	<b>2</b>	<b>8</b>	<b>124,088</b>	<b>2,697</b>	<b>9,019</b>	<b>19,994</b>	<b>155,799</b>	<b>0.084</b>	<b>0.019</b>	<b>0.104</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.215	0.453	.
(14) Massachusetts Credibility:	0.150	0.270	.
(15) Countrywide Pure Premium:	0.093	0.058	0.151
(16) Countrywide Indicated Relativity:	1.563	1.501	.
(17) Countrywide Credibility:	0.360	0.370	.
(18) Countrywide Lost-Time Claims:	89,000	.	.
(19) Pure Premium Underlying Present Rate:	0.152	0.154	0.306
(20) Relativity to Underlying Present Rate:	2.348	3.963	.
(21) Credibility to Underlying Relativity:	0.490	0.360	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	1.895	2.104	.
(24) Balanced Formula Relativity:	1.903	2.108	1.981

Class(es):		Effective: 7/1/2020							Office and Clerical		
8742 SALESPERSONS, COLLECTORS OR MESSENGERS-OUTSIDE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	96,997,220	29	509	3,465,819	3,434,895	1,108,728	2,481,507	10,490,949	0.071	0.037	0.108
2014	101,741,424	32	524	2,567,890	2,431,111	1,986,103	2,206,391	9,191,495	0.049	0.041	0.090
2015	107,257,436	19	568	1,203,822	4,291,311	808,902	3,229,894	9,533,929	0.051	0.038	0.089
2016	110,882,425	25	451	1,493,064	4,769,260	666,035	2,693,502	9,621,862	0.056	0.030	0.087
2017	115,561,256	19	526	1,205,631	2,254,234	599,307	2,689,897	6,749,069	0.030	0.028	0.058
<b>MA Total:</b>	<b>532,439,762</b>	<b>124</b>	<b>2,578</b>	<b>9,936,226</b>	<b>17,180,811</b>	<b>5,169,076</b>	<b>13,301,190</b>	<b>45,587,303</b>	<b>0.051</b>	<b>0.035</b>	<b>0.086</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.734	0.815	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	0.097	0.057	0.154
(16) Countrywide Indicated Relativity:	1.622	1.486	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	14882	.	.
(19) Pure Premium Underlying Present Rate:	0.055	0.035	0.090
(20) Relativity to Underlying Present Rate:	0.852	0.896	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	0.734	0.815	.
(24) Balanced Formula Relativity:	0.738	0.816	0.768

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
8745 NEWS AGENT OR DISTRIB OF MAGAZINE-NOT RETAIL & SALES,DR											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	123.877	2	34	446.967	86.648	384.598	138.023	1,056.235	4.308	4.219	8.526
2014	124.555	4	21	308.688	104.484	432.294	143.265	988.731	3.317	4.621	7.938
2015	129.116	0	30	0	899.167	0	309.246	1,208.413	6.964	2.395	9.359
2016	113.391	1	15	56.915	122.985	8.212	44.513	232.626	1.587	0.465	2.052
2017	81.736	0	12	0	136.272	0	78.567	214.839	1.667	0.961	2.628
<b>MA Total:</b>	<b>572.676</b>	<b>7</b>	<b>112</b>	<b>812.569</b>	<b>1,349.557</b>	<b>825.104</b>	<b>713.614</b>	<b>3,700.845</b>	<b>3.775</b>	<b>2.687</b>	<b>6.462</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.576	5.762	.
(14) Massachusetts Credibility:	0.320	0.530	.
(15) Countrywide Pure Premium:	1.646	0.973	2.619
(16) Countrywide Indicated Relativity:	2.056	2.111	.
(17) Countrywide Credibility:	0.340	0.240	.
(18) Countrywide Lost-Time Claims:	299.00	.	.
(19) Pure Premium Underlying Present Rate:	2.683	2.189	4.872
(20) Relativity to Underlying Present Rate:	3.576	5.309	.
(21) Credibility to Underlying Relativity:	0.340	0.230	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	3.379	4.781	.
(24) Balanced Formula Relativity:	3.355	4.785	3.871

Class(es):		Effective: 7/1/2020							Goods and Services		
8747 DISPLAY SHOWROOMS - ALL TYPES											
Converted Unlimited Losses											
Amount											
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	137.333	1	1	283.444	1.185	17.887	502	303.018	2.073	0.134	2.206
2014	143.668	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	137.365	0	2	0	2.969	0	13.810	16.778	0.022	0.101	0.122
2016	147.459	0	2	0	7.737	0	5.105	12.843	0.052	0.035	0.087
2017	178.852	0	1	0	0	0	147	147	0.000	0.001	0.001
<b>MA Total:</b>	<b>744.676</b>	<b>1</b>	<b>6</b>	<b>283.444</b>	<b>11.891</b>	<b>17.887</b>	<b>19.564</b>	<b>332.785</b>	<b>0.397</b>	<b>0.050</b>	<b>0.447</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.481	0.108	.
(14) Massachusetts Credibility:	0.170	0.220	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	0.573	0.419	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	0.433	0.174	0.607
(20) Relativity to Underlying Present Rate:	0.578	0.422	.
(21) Credibility to Underlying Relativity:	0.830	0.780	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.561	0.353	.
(24) Balanced Formula Relativity:	0.557	0.353	0.483

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## Calculation of Class Relativities

Class(es): 8748 AUTOMOBILE SALESPERSONS		Effective: 7/1/2020							Office and Clerical		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,767,272	7	97	786,371	442,717	249,688	242,030	1,720,807	0.444	0.178	0.622
2014	3,099,104	10	93	1,069,957	790,172	340,209	607,692	2,808,031	0.600	0.306	0.906
2015	3,102,988	2	66	94,272	986,264	39,136	371,799	1,491,472	0.348	0.132	0.481
2016	3,136,856	1	61	116,192	452,745	40,961	339,474	949,372	0.181	0.121	0.303
2017	3,217,247	7	86	625,737	1,031,693	184,280	685,380	2,527,090	0.515	0.270	0.785
<b>MA Total:</b>	<b>15,323,467</b>	<b>27</b>	<b>403</b>	<b>2,692,530</b>	<b>3,703,591</b>	<b>854,275</b>	<b>2,246,375</b>	<b>9,496,771</b>	<b>0.417</b>	<b>0.202</b>	<b>0.620</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	6.019	4.753	.
(14) Massachusetts Credibility:	0.500	0.710	.
(15) Countrywide Pure Premium:	0.175	0.101	0.276
(16) Countrywide Indicated Relativity:	2.934	2.617	.
(17) Countrywide Credibility:	0.250	0.150	.
(18) Countrywide Lost-Time Claims:	1876.0	.	.
(19) Pure Premium Underlying Present Rate:	0.309	0.166	0.475
(20) Relativity to Underlying Present Rate:	4.784	4.278	.
(21) Credibility to Underlying Relativity:	0.250	0.140	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	4.939	4.366	.
(24) Balanced Formula Relativity:	4.960	4.374	4.737

Class(es): 8800 MAILING OR ADDRESSING CO & CLERICAL		Effective: 7/1/2020							Office and Clerical		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	412,553	2	14	131,758	60,978	36,777	52,562	282,075	0.467	0.217	0.684
2014	370,892	0	14	0	68,021	0	37,141	105,162	0.183	0.100	0.284
2015	404,358	1	15	152,963	41,600	18,887	47,950	261,400	0.481	0.165	0.646
2016	389,109	0	6	0	4,921	0	27,088	32,010	0.013	0.070	0.082
2017	345,228	0	12	0	159,914	0	98,282	258,196	0.463	0.285	0.748
<b>MA Total:</b>	<b>1,922,140</b>	<b>3</b>	<b>61</b>	<b>284,721</b>	<b>335,434</b>	<b>55,663</b>	<b>263,023</b>	<b>938,842</b>	<b>0.323</b>	<b>0.166</b>	<b>0.488</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.653	3.894	.
(14) Massachusetts Credibility:	0.270	0.370	.
(15) Countrywide Pure Premium:	0.573	0.363	0.935
(16) Countrywide Indicated Relativity:	9.577	9.409	.
(17) Countrywide Credibility:	0.370	0.320	.
(18) Countrywide Lost-Time Claims:	816.00	.	.
(19) Pure Premium Underlying Present Rate:	0.516	0.258	0.775
(20) Relativity to Underlying Present Rate:	7.985	6.657	.
(21) Credibility to Underlying Relativity:	0.360	0.310	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	7.674	6.515	.
(24) Balanced Formula Relativity:	7.707	6.528	7.258

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Office and Clerical		
8803 AUDITORS, ACCOUNTANT OR FACTORY COST OR OFF SYSTEMZR-TRAV											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	29,068,523	3	48	209,362	323,966	100,769	208,316	842,413	0.018	0.011	0.029
2014	30,896,052	4	46	973,286	330,755	393,036	251,268	1,948,344	0.042	0.021	0.063
2015	32,200,931	1	41	51,180	315,495	66,930	214,011	647,615	0.011	0.009	0.020
2016	30,848,901	0	48	0	656,655	0	569,679	1,226,335	0.021	0.018	0.040
2017	31,627,618	3	37	351,414	59,768	85,083	254,129	750,393	0.013	0.011	0.024
<b>MA Total:</b>	<b>154,642,024</b>	<b>11</b>	<b>220</b>	<b>1,585,242</b>	<b>1,686,639</b>	<b>645,818</b>	<b>1,497,403</b>	<b>5,415,101</b>	<b>0.021</b>	<b>0.014</b>	<b>0.035</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.305	0.326	.
(14) Massachusetts Credibility:	0.410	0.610	.
(15) Countrywide Pure Premium:	0.020	0.011	0.031
(16) Countrywide Indicated Relativity:	0.330	0.286	.
(17) Countrywide Credibility:	0.300	0.200	.
(18) Countrywide Lost-Time Claims:	865.00	.	.
(19) Pure Premium Underlying Present Rate:	0.019	0.011	0.030
(20) Relativity to Underlying Present Rate:	0.297	0.286	.
(21) Credibility to Underlying Relativity:	0.290	0.190	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	0.310	0.310	.
(24) Balanced Formula Relativity:	0.312	0.311	0.311

Class(es):		Effective: 7/1/2020							Office and Clerical		
8810 CLERICAL OFFICE EMPLOYEES NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	461,836,793	71	1,820	4,864,438	9,015,718	2,609,488	6,798,026	23,287,670	0.030	0.020	0.050
2014	487,268,308	85	1,974	8,268,603	11,084,252	2,557,176	9,031,047	30,941,078	0.040	0.024	0.063
2015	529,742,504	76	1,726	8,101,060	8,161,225	3,421,919	7,556,489	27,240,692	0.031	0.021	0.051
2016	549,577,578	73	1,641	7,717,601	7,505,723	2,735,515	7,101,424	25,060,263	0.028	0.018	0.046
2017	579,396,855	77	1,799	7,295,569	11,049,603	2,864,839	9,620,673	30,830,684	0.032	0.022	0.053
<b>MA Total:</b>	<b>2,607,822,038</b>	<b>382</b>	<b>8,960</b>	<b>36,247,271</b>	<b>46,816,520</b>	<b>14,188,938</b>	<b>40,107,659</b>	<b>137,360,388</b>	<b>0.032</b>	<b>0.021</b>	<b>0.053</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.459	0.489	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	0.041	0.027	0.068
(16) Countrywide Indicated Relativity:	0.685	0.704	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	37458	.	.
(19) Pure Premium Underlying Present Rate:	0.031	0.018	0.050
(20) Relativity to Underlying Present Rate:	0.486	0.475	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	0.459	0.489	.
(24) Balanced Formula Relativity:	0.461	0.490	0.472

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Office and Clerical		
8820 ATTORNEY-ALL EMP & CLERICAL, MESSENGERS, DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	24,532,045	2	73	343,404	603,699	46,709	432,331	1,426,143	0.039	0.020	0.058
2014	24,326,195	2	67	437,111	884,833	241,461	555,753	2,119,158	0.054	0.033	0.087
2015	24,387,293	6	65	717,118	260,543	254,269	434,210	1,666,139	0.040	0.028	0.068
2016	26,503,297	5	42	45,076	302,936	37,087	322,848	707,947	0.013	0.014	0.027
2017	27,689,648	5	55	125,596	744,316	113,302	346,026	1,329,239	0.031	0.017	0.048
<b>MA Total:</b>	<b>127,438,477</b>	<b>20</b>	<b>302</b>	<b>1,668,305</b>	<b>2,796,326</b>	<b>692,827</b>	<b>2,091,168</b>	<b>7,248,626</b>	<b>0.035</b>	<b>0.022</b>	<b>0.057</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.505	0.513	.
(14) Massachusetts Credibility:	0.500	0.730	.
(15) Countrywide Pure Premium:	0.038	0.023	0.062
(16) Countrywide Indicated Relativity:	0.642	0.609	.
(17) Countrywide Credibility:	0.250	0.140	.
(18) Countrywide Lost-Time Claims:	1505.0	.	.
(19) Pure Premium Underlying Present Rate:	0.039	0.021	0.060
(20) Relativity to Underlying Present Rate:	0.596	0.546	.
(21) Credibility to Underlying Relativity:	0.250	0.130	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	0.562	0.531	.
(24) Balanced Formula Relativity:	0.565	0.532	0.552

Class(es):		Effective: 7/1/2020							Goods and Services		
8824 ASSISTED LIVING RESIDENCES: PERSONAL CARE EMPLOYEES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	648,464	4	134	99,815	314,986	22,052	251,118	687,970	0.640	0.421	1.061
2014	825,467	4	171	135,116	439,122	42,626	259,516	876,379	0.696	0.366	1.062
2015	907,845	2	215	107,766	996,786	92,773	663,846	1,861,171	1.217	0.833	2.050
2016	1,015,694	5	188	117,445	477,386	107,192	392,780	1,094,802	0.586	0.492	1.078
2017	1,313,722	6	272	313,344	728,182	172,139	512,801	1,726,466	0.793	0.521	1.314
<b>MA Total:</b>	<b>4,711,191</b>	<b>21</b>	<b>980</b>	<b>773,486</b>	<b>2,956,461</b>	<b>436,782</b>	<b>2,080,059</b>	<b>6,246,788</b>	<b>0.792</b>	<b>0.534</b>	<b>1.326</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.960	1.146	.
(14) Massachusetts Credibility:	0.440	0.610	.
(15) Countrywide Pure Premium:	1.207	0.777	1.983
(16) Countrywide Indicated Relativity:	1.507	1.684	.
(17) Countrywide Credibility:	0.280	0.200	.
(18) Countrywide Lost-Time Claims:	10759	.	.
(19) Pure Premium Underlying Present Rate:	0.758	0.376	1.134
(20) Relativity to Underlying Present Rate:	1.010	0.913	.
(21) Credibility to Underlying Relativity:	0.280	0.190	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.127	1.209	.
(24) Balanced Formula Relativity:	1.119	1.210	1.152

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services			
8826 ASSISTED LIVING RESIDENCES: ALL OTHER EMPLOYEES, SALESPERSONS &												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	602.199	1	113	3.435	192.016	10.161	175.482	381.095	0.325	0.308	0.633	
2014	825.117	3	136	193.894	202.115	71.514	187.316	654.839	0.480	0.314	0.794	
2015	871.671	4	161	272.806	618.487	34.116	323.901	1,249.310	1.023	0.411	1.433	
2016	986.402	3	143	390.323	336.068	100.393	257.112	1,083.896	0.736	0.362	1.099	
2017	1,092.034	3	165	122.954	287.889	59.352	243.121	713.316	0.376	0.277	0.653	
<b>MA Total:</b>	<b>4,377.423</b>	<b>14</b>	<b>718</b>	<b>983.411</b>	<b>1,636.575</b>	<b>275.538</b>	<b>1,186.932</b>	<b>4,082.456</b>	<b>0.599</b>	<b>0.334</b>	<b>0.933</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.725	0.716	.
(14) Massachusetts Credibility:	0.430	0.600	.
(15) Countrywide Pure Premium:	0.941	0.649	1.590
(16) Countrywide Indicated Relativity:	1.176	1.407	.
(17) Countrywide Credibility:	0.290	0.200	.
(18) Countrywide Lost-Time Claims:	3252.0	.	.
(19) Pure Premium Underlying Present Rate:	0.758	0.376	1.134
(20) Relativity to Underlying Present Rate:	1.010	0.913	.
(21) Credibility to Underlying Relativity:	0.280	0.200	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.936	0.894	.
(24) Balanced Formula Relativity:	0.929	0.894	0.916

Class(es):		Effective: 7/1/2020							Goods and Services			
8829 CONVALESCENT OR NURSING HOME-ALL EMPLOYEES												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	9,893.555	47	1,817	3,377.669	5,894.912	1,218.941	3,774.347	14,265.869	0.937	0.505	1.442	
2014	10,715.612	64	2,026	4,919.048	6,477.378	1,510.579	4,463.556	17,370.562	1.064	0.558	1.621	
2015	9,520.491	41	1,676	3,190.305	7,200.817	1,338.712	4,128.534	15,858.368	1.091	0.574	1.666	
2016	9,663.506	58	1,593	4,996.438	8,820.438	1,067.626	4,609.468	19,493.970	1.430	0.587	2.017	
2017	10,382.503	39	1,496	4,946.780	10,092.486	1,738.150	4,789.070	21,566.485	1.449	0.629	2.077	
<b>MA Total:</b>	<b>50,175.667</b>	<b>249</b>	<b>8,608</b>	<b>21,430.240</b>	<b>38,486.031</b>	<b>6,874.008</b>	<b>21,764.975</b>	<b>88,555.254</b>	<b>1.194</b>	<b>0.571</b>	<b>1.765</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.447	1.224	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	0.925	0.545	1.470
(16) Countrywide Indicated Relativity:	1.156	1.182	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	20899	.	.
(19) Pure Premium Underlying Present Rate:	1.005	0.487	1.492
(20) Relativity to Underlying Present Rate:	1.339	1.181	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.447	1.224	.
(24) Balanced Formula Relativity:	1.437	1.225	1.360

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## Calculation of Class Relativities

Class(es): 8831 PET GROOMING & DRIVERS		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,741,235	6	623	666,466	595,108	80,537	914,257	2,256,368	0.460	0.363	0.823
2014	2,861,655	2	601	77,983	526,915	96,740	1,112,977	1,814,616	0.211	0.423	0.634
2015	3,125,595	13	628	1,078,973	332,275	321,414	1,144,865	2,877,527	0.452	0.469	0.921
2016	3,123,411	5	567	381,196	632,610	352,150	1,155,108	2,521,065	0.325	0.483	0.807
2017	3,688,353	9	694	387,210	1,100,241	193,029	1,372,292	3,052,772	0.403	0.424	0.828
<b>MA Total:</b>	<b>15,540,248</b>	<b>35</b>	<b>3,113</b>	<b>2,591,830</b>	<b>3,187,150</b>	<b>1,043,870</b>	<b>5,699,499</b>	<b>12,522,348</b>	<b>0.372</b>	<b>0.434</b>	<b>0.806</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.451	0.930	.
(14) Massachusetts Credibility:	0.510	0.970	.
(15) Countrywide Pure Premium:	0.426	0.388	0.815
(16) Countrywide Indicated Relativity:	0.533	0.842	.
(17) Countrywide Credibility:	0.250	0.020	.
(18) Countrywide Lost-Time Claims:	4744.0	.	.
(19) Pure Premium Underlying Present Rate:	0.320	0.354	0.674
(20) Relativity to Underlying Present Rate:	0.427	0.858	.
(21) Credibility to Underlying Relativity:	0.240	0.010	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.465	0.928	.
(24) Balanced Formula Relativity:	0.462	0.929	0.631

Class(es): 8832 PHYSICIAN & CLERICAL		Effective: 7/1/2020							Office and Clerical		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	53,334,152	39	1,341	3,304,530	3,055,448	1,206,196	3,416,168	10,982,343	0.119	0.087	0.206
2014	54,380,094	33	1,190	3,263,446	3,005,572	1,381,771	2,214,527	9,865,316	0.115	0.066	0.181
2015	55,165,373	25	1,176	3,078,488	5,359,173	1,782,731	3,096,320	13,316,713	0.153	0.088	0.241
2016	56,855,187	34	1,288	3,795,506	7,302,397	1,198,093	3,611,439	15,907,435	0.195	0.085	0.280
2017	57,789,960	30	1,295	3,625,515	5,221,286	925,167	3,236,543	13,008,510	0.153	0.072	0.225
<b>MA Total:</b>	<b>277,524,766</b>	<b>161</b>	<b>6,290</b>	<b>17,067,486</b>	<b>23,943,876</b>	<b>6,493,959</b>	<b>15,574,997</b>	<b>63,080,317</b>	<b>0.148</b>	<b>0.080</b>	<b>0.227</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.131	1.868	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	0.095	0.056	0.151
(16) Countrywide Indicated Relativity:	1.589	1.445	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	13881	.	.
(19) Pure Premium Underlying Present Rate:	0.130	0.072	0.201
(20) Relativity to Underlying Present Rate:	2.005	1.850	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	2.131	1.868	.
(24) Balanced Formula Relativity:	2.140	1.871	2.038



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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Office and Clerical		
8833 HOSPITAL: PROFESSIONAL EMPLOYEES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	7,789,989	27	788	2,393,797	3,739,911	796,194	1,835,046	8,764,948	0.787	0.338	1.125
2014	8,554,257	21	890	1,468,450	3,481,894	343,596	1,621,782	6,915,722	0.579	0.230	0.808
2015	8,862,942	16	826	1,609,554	3,063,301	364,166	1,857,109	6,894,131	0.527	0.251	0.778
2016	9,957,925	30	942	2,872,926	4,119,724	1,061,495	2,425,125	10,479,270	0.702	0.350	1.052
2017	10,807,904	21	839	2,366,987	3,677,539	775,666	1,778,390	8,598,581	0.559	0.236	0.796
<b>MA Total:</b>	<b>45,973,017</b>	<b>115</b>	<b>4,285</b>	<b>10,711,715</b>	<b>18,082,370</b>	<b>3,341,116</b>	<b>9,517,451</b>	<b>41,652,652</b>	<b>0.626</b>	<b>0.280</b>	<b>0.906</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	9.032	6.569	.
(14) Massachusetts Credibility:	0.980	1.000	.
(15) Countrywide Pure Premium:	0.275	0.169	0.444
(16) Countrywide Indicated Relativity:	4.600	4.378	.
(17) Countrywide Credibility:	0.010	0.000	.
(18) Countrywide Lost-Time Claims:	18008	.	.
(19) Pure Premium Underlying Present Rate:	0.561	0.276	0.837
(20) Relativity to Underlying Present Rate:	8.678	7.109	.
(21) Credibility to Underlying Relativity:	0.010	0.000	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	8.984	6.569	.
(24) Balanced Formula Relativity:	9.023	6.582	8.094

Class(es):		Effective: 7/1/2020							Goods and Services		
8835 NURSING-HOME HEALTH, PUBLIC & TRAVELING-ALL EMPLOYEES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	7,555,110	52	847	3,235,069	3,089,771	974,349	1,975,854	9,275,043	0.837	0.390	1.228
2014	9,021,485	61	941	3,946,962	4,937,649	1,006,448	3,014,591	12,905,651	0.985	0.446	1.431
2015	10,618,896	59	963	4,221,020	7,146,061	1,694,928	3,398,425	16,460,433	1.070	0.480	1.550
2016	10,750,248	49	907	3,110,642	5,369,613	1,176,166	3,305,253	12,961,675	0.789	0.417	1.206
2017	10,349,237	48	834	6,983,518	8,827,992	1,529,378	3,517,838	20,858,725	1.528	0.488	2.015
<b>MA Total:</b>	<b>48,294,977</b>	<b>269</b>	<b>4,492</b>	<b>21,497,211</b>	<b>29,371,087</b>	<b>6,381,269</b>	<b>15,211,960</b>	<b>72,461,527</b>	<b>1.053</b>	<b>0.447</b>	<b>1.500</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.277	0.959	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	0.971	0.481	1.453
(16) Countrywide Indicated Relativity:	1.213	1.044	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	17530	.	.
(19) Pure Premium Underlying Present Rate:	1.009	0.429	1.439
(20) Relativity to Underlying Present Rate:	1.345	1.041	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.277	0.959	.
(24) Balanced Formula Relativity:	1.268	0.959	1.156

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Office and Clerical		
8868 COLLEGE: PROFESSIONAL EMPLOYEES & CLERICAL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	36,950,557	76	3,180	4,275,498	6,176,821	1,635,205	7,276,302	19,363,826	0.283	0.241	0.524
2014	39,544,570	99	3,231	5,711,705	6,845,171	2,189,242	6,462,575	21,208,693	0.318	0.219	0.536
2015	42,009,143	68	3,319	4,648,380	7,800,260	1,703,494	7,330,139	21,482,273	0.296	0.215	0.511
2016	43,576,573	69	3,329	6,776,833	8,361,474	2,779,245	7,222,168	25,139,720	0.347	0.230	0.577
2017	45,053,203	76	3,517	6,175,811	13,083,821	2,314,690	9,145,842	30,720,163	0.427	0.254	0.682
<b>MA Total:</b>	<b>207,134,046</b>	<b>388</b>	<b>16,576</b>	<b>27,588,228</b>	<b>42,267,547</b>	<b>10,621,876</b>	<b>37,437,025</b>	<b>117,914,675</b>	<b>0.337</b>	<b>0.232</b>	<b>0.569</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	4.863	5.450	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	0.098	0.084	0.182
(16) Countrywide Indicated Relativity:	1.638	2.188	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	16726	.	.
(19) Pure Premium Underlying Present Rate:	0.297	0.209	0.506
(20) Relativity to Underlying Present Rate:	4.595	5.389	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	4.863	5.450	.
(24) Balanced Formula Relativity:	4.884	5.460	5.103

Class(es):		Effective: 7/1/2020							Goods and Services		
9014 BUILDINGS - OPERATION BY CONTRACTORS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,555,110	29	474	2,291,377	4,779,094	875,421	2,593,158	10,539,050	1.273	0.624	1.897
2014	6,087,691	28	450	3,237,676	3,499,311	1,338,319	1,656,919	9,732,225	1.107	0.492	1.599
2015	6,775,187	28	524	2,654,123	3,838,925	919,982	2,593,973	10,007,003	0.958	0.519	1.477
2016	7,059,378	36	586	2,211,984	4,945,060	592,669	3,212,485	10,962,197	1.014	0.539	1.553
2017	7,195,483	32	574	3,331,009	7,001,828	1,929,766	4,736,190	16,998,793	1.436	0.926	2.362
<b>MA Total:</b>	<b>32,672,849</b>	<b>153</b>	<b>2,608</b>	<b>13,726,169</b>	<b>24,064,218</b>	<b>5,656,156</b>	<b>14,792,725</b>	<b>58,239,268</b>	<b>1.157</b>	<b>0.626</b>	<b>1.782</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.402	1.342	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	1.329	0.728	2.058
(16) Countrywide Indicated Relativity:	1.660	1.580	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	18647	.	.
(19) Pure Premium Underlying Present Rate:	1.145	0.537	1.682
(20) Relativity to Underlying Present Rate:	1.526	1.303	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.402	1.342	.
(24) Balanced Formula Relativity:	1.392	1.343	1.374

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
9015 BUILDINGS-OPERATION BY OWNER OR LESSEE											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,565,723	27	796	2,717,212	6,231,913	737,704	4,211,552	13,898,380	1,608	0,889	2,497
2014	5,881,961	42	823	5,050,643	5,399,685	2,614,014	3,469,075	16,533,417	1,777	1,034	2,811
2015	6,102,121	24	775	2,986,541	6,701,307	1,253,858	4,332,322	15,274,028	1,588	0,915	2,503
2016	6,407,613	33	664	4,345,149	4,665,151	1,006,813	3,232,595	13,249,710	1,406	0,662	2,068
2017	6,581,900	35	710	4,495,360	6,864,222	1,832,421	3,429,507	16,621,510	1,726	0,799	2,525
<b>MA Total:</b>	<b>30,539,318</b>	<b>161</b>	<b>3,768</b>	<b>19,594,906</b>	<b>29,862,278</b>	<b>7,444,810</b>	<b>18,675,051</b>	<b>75,577,045</b>	<b>1,619</b>	<b>0,855</b>	<b>2,475</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.963	1.834	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	1.436	0.744	2.180
(16) Countrywide Indicated Relativity:	1.793	1.613	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	15044	.	.
(19) Pure Premium Underlying Present Rate:	1.441	0.765	2.206
(20) Relativity to Underlying Present Rate:	1.921	1.856	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.963	1.834	.
(24) Balanced Formula Relativity:	1.949	1.835	1.908

Class(es):		Effective: 7/1/2020							Goods and Services		
9016 AMUSEMENT PARK OR EXHIBITION OPERATION & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	595,743	5	102	285,086	408,359	177,840	192,827	1,064,113	1,164	0,622	1,786
2014	610,525	0	97	0	286,907	0	436,381	723,288	0,470	0,715	1,185
2015	629,829	2	88	47,389	409,190	6,222	389,748	852,550	0,725	0,629	1,354
2016	689,717	1	81	46,354	352,809	28,640	313,446	741,249	0,579	0,496	1,075
2017	770,597	1	92	87,487	233,194	31,155	285,738	637,574	0,416	0,411	0,827
<b>MA Total:</b>	<b>3,296,411</b>	<b>9</b>	<b>460</b>	<b>466,316</b>	<b>1,690,459</b>	<b>243,858</b>	<b>1,618,140</b>	<b>4,018,774</b>	<b>0,654</b>	<b>0,565</b>	<b>1,219</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.793	1.211	.
(14) Massachusetts Credibility:	0.390	0.690	.
(15) Countrywide Pure Premium:	1.006	0.723	1.729
(16) Countrywide Indicated Relativity:	1.257	1.568	.
(17) Countrywide Credibility:	0.310	0.160	.
(18) Countrywide Lost-Time Claims:	1856.0	.	.
(19) Pure Premium Underlying Present Rate:	0.800	0.707	1.507
(20) Relativity to Underlying Present Rate:	1.066	1.716	.
(21) Credibility to Underlying Relativity:	0.300	0.150	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.019	1.344	.
(24) Balanced Formula Relativity:	1.011	1.345	1.132

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 Subsection G - Class Relativities  
 7/1/2020

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
9019 BRIDGE OR VEHICULAR TUNNEL OPERATION & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	37,338	1	0	638,063	0	67,889	0	705,953	17,089	1,818	18,907
2014	28,412	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	32,438	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	34,723	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	31,783	0	0	0	0	0	0	0	0.000	0.000	0.000
<b>MA Total:</b>	<b>164,694</b>	<b>1</b>	<b>0</b>	<b>638,063</b>	<b>0</b>	<b>67,889</b>	<b>0</b>	<b>705,953</b>	<b>3,874</b>	<b>0,412</b>	<b>4,286</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.609	0.332	.
(14) Massachusetts Credibility:	0.150	0.180	.
(15) Countrywide Pure Premium:	1.816	1.149	2.965
(16) Countrywide Indicated Relativity:	0.794	0.984	.
(17) Countrywide Credibility:	0.360	0.380	.
(18) Countrywide Lost-Time Claims:	89,000	.	.
(19) Pure Premium Underlying Present Rate:	1.410	0.536	1.946
(20) Relativity to Underlying Present Rate:	0.647	0.510	.
(21) Credibility to Underlying Relativity:	0.490	0.440	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.844	0.658	.
(24) Balanced Formula Relativity:	0.842	0.662	0.781

Class(es):		Effective: 7/1/2020							Goods and Services		
9033 HOUSING AUTHORITY & CLERICAL, SALES, DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	213,437	1	41	261	341,468	13,834	223,851	579,415	1,601	1,114	2,715
2014	217,562	0	35	0	33,433	0	66,761	100,194	0,154	0,307	0,461
2015	217,398	2	25	339,961	481,681	72,545	158,171	1,052,359	3,779	1,061	4,841
2016	230,630	0	17	0	138,228	0	74,397	212,625	0,599	0,323	0,922
2017	225,817	1	19	82,447	235,858	12,577	165,855	496,736	1,410	0,790	2,200
<b>MA Total:</b>	<b>1,104,844</b>	<b>4</b>	<b>137</b>	<b>422,669</b>	<b>1,230,668</b>	<b>98,956</b>	<b>689,035</b>	<b>2,441,329</b>	<b>1,496</b>	<b>0,713</b>	<b>2,210</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.814	1.529	.
(14) Massachusetts Credibility:	0.320	0.440	.
(15) Countrywide Pure Premium:	1.049	0.488	1.537
(16) Countrywide Indicated Relativity:	1.310	1.059	.
(17) Countrywide Credibility:	0.340	0.280	.
(18) Countrywide Lost-Time Claims:	721,00	.	.
(19) Pure Premium Underlying Present Rate:	1.429	0.692	2.121
(20) Relativity to Underlying Present Rate:	1.905	1.678	.
(21) Credibility to Underlying Relativity:	0.340	0.280	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.673	1.439	.
(24) Balanced Formula Relativity:	1.661	1.440	1.582

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
9040 HOSPITAL: ALL OTHER EMPLOYEES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	621,328	5	191	310,518	623,416	254,797	620,038	1,808,769	1,503	1,408	2,911
2014	673,405	5	172	629,293	309,805	239,337	328,351	1,506,786	1,395	0,843	2,238
2015	756,686	4	232	386,485	440,479	191,254	342,768	1,360,987	1,093	0,706	1,799
2016	758,763	1	171	344,416	674,377	118,422	409,815	1,547,030	1,343	0,696	2,039
2017	788,699	5	152	502,356	1,120,539	441,985	367,302	2,432,183	2,058	1,026	3,084
<b>MA Total:</b>	<b>3,598,881</b>	<b>20</b>	<b>918</b>	<b>2,173,069</b>	<b>3,168,616</b>	<b>1,245,795</b>	<b>2,068,275</b>	<b>8,655,755</b>	<b>1,484</b>	<b>0,921</b>	<b>2,405</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.799	1.975	.
(14) Massachusetts Credibility:	0.500	0.740	.
(15) Countrywide Pure Premium:	1.304	0.830	2.133
(16) Countrywide Indicated Relativity:	1.628	1.799	.
(17) Countrywide Credibility:	0.250	0.130	.
(18) Countrywide Lost-Time Claims:	6213.0	.	.
(19) Pure Premium Underlying Present Rate:	1.327	0.798	2.125
(20) Relativity to Underlying Present Rate:	1.769	1.936	.
(21) Credibility to Underlying Relativity:	0.250	0.130	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.749	1.947	.
(24) Balanced Formula Relativity:	1.736	1.948	1.813

Class(es):		Effective: 7/1/2020							Goods and Services		
9052 HOTEL: ALL OTHER EMPLOYEES & SALES, DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	6,171,286	30	691	1,998,114	2,824,021	518,618	1,782,672	7,123,425	0,781	0,373	1,154
2014	6,293,499	26	645	1,291,747	3,422,416	415,117	2,036,630	7,165,910	0,749	0,390	1,139
2015	6,707,467	24	689	1,868,496	3,347,700	585,503	2,089,609	7,891,308	0,778	0,399	1,176
2016	6,909,105	26	628	1,709,112	3,557,693	586,398	1,946,473	7,799,675	0,762	0,367	1,129
2017	7,356,476	25	638	2,320,589	5,047,323	664,935	2,708,738	10,741,585	1,002	0,459	1,460
<b>MA Total:</b>	<b>33,437,834</b>	<b>131</b>	<b>3,291</b>	<b>9,188,058</b>	<b>18,199,153</b>	<b>2,770,571</b>	<b>10,564,122</b>	<b>40,721,904</b>	<b>0,819</b>	<b>0,399</b>	<b>1,218</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.993	0.855	.
(14) Massachusetts Credibility:	0.970	1.000	.
(15) Countrywide Pure Premium:	0.882	0.532	1.414
(16) Countrywide Indicated Relativity:	1.102	1.153	.
(17) Countrywide Credibility:	0.020	0.000	.
(18) Countrywide Lost-Time Claims:	19355	.	.
(19) Pure Premium Underlying Present Rate:	0.758	0.376	1.134
(20) Relativity to Underlying Present Rate:	1.010	0.913	.
(21) Credibility to Underlying Relativity:	0.010	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.995	0.855	.
(24) Balanced Formula Relativity:	0.988	0.856	0.940

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
9058 HOTEL: RESTAURANT EMPLOYEES											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,307,649	7	433	665,669	1,514,871	171,774	961,981	3,314,295	0.945	0.491	1.436
2014	2,503,691	5	358	539,752	1,569,305	98,071	1,002,546	3,209,673	0.842	0.440	1.282
2015	2,550,024	9	361	477,395	1,501,172	140,846	835,844	2,955,259	0.776	0.383	1.159
2016	2,279,081	5	292	254,554	1,027,877	89,406	681,944	2,053,782	0.563	0.338	0.901
2017	2,291,820	11	329	613,337	1,136,132	216,946	817,016	2,783,432	0.763	0.451	1.215
<b>MA Total:</b>	<b>11,932,265</b>	<b>37</b>	<b>1,773</b>	<b>2,550,708</b>	<b>6,749,357</b>	<b>717,043</b>	<b>4,299,332</b>	<b>14,316,440</b>	<b>0.779</b>	<b>0.420</b>	<b>1.200</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.945	0.901	.
(14) Massachusetts Credibility:	0.620	0.880	.
(15) Countrywide Pure Premium:	0.560	0.359	0.919
(16) Countrywide Indicated Relativity:	0.699	0.779	.
(17) Countrywide Credibility:	0.190	0.060	.
(18) Countrywide Lost-Time Claims:	6545.0	.	.
(19) Pure Premium Underlying Present Rate:	0.684	0.369	1.053
(20) Relativity to Underlying Present Rate:	0.912	0.895	.
(21) Credibility to Underlying Relativity:	0.190	0.060	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.892	0.894	.
(24) Balanced Formula Relativity:	0.885	0.894	0.889

Class(es):		Effective: 7/1/2020							Goods and Services		
9060 CLUB-COUNTRY, GOLF, FISHING OR YACHT & CLERICAL											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	2,972,869	5	329	376,459	799,716	151,239	920,321	2,247,735	0.396	0.360	0.756
2014	3,120,144	3	303	280,494	920,059	414,559	727,926	2,343,038	0.385	0.366	0.751
2015	3,281,438	4	281	287,563	976,785	266,443	1,003,506	2,534,297	0.385	0.387	0.772
2016	3,465,460	4	285	230,990	1,083,837	216,197	919,293	2,450,317	0.379	0.328	0.707
2017	3,617,514	5	289	342,774	1,082,772	347,036	1,274,550	3,047,132	0.394	0.448	0.842
<b>MA Total:</b>	<b>16,457,425</b>	<b>21</b>	<b>1,487</b>	<b>1,518,280</b>	<b>4,863,168</b>	<b>1,395,474</b>	<b>4,845,597</b>	<b>12,622,519</b>	<b>0.388</b>	<b>0.379</b>	<b>0.767</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.470	0.813	.
(14) Massachusetts Credibility:	0.570	0.920	.
(15) Countrywide Pure Premium:	0.570	0.419	0.989
(16) Countrywide Indicated Relativity:	0.711	0.909	.
(17) Countrywide Credibility:	0.220	0.040	.
(18) Countrywide Lost-Time Claims:	4886.0	.	.
(19) Pure Premium Underlying Present Rate:	0.405	0.296	0.701
(20) Relativity to Underlying Present Rate:	0.539	0.719	.
(21) Credibility to Underlying Relativity:	0.210	0.040	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.538	0.813	.
(24) Balanced Formula Relativity:	0.534	0.814	0.635

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## Calculation of Class Relativities

Class(es): 9061 CLUB NOC & CLERICAL		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	739,596	1	40	63,474	126,965	58,441	148,539	397,419	0.257	0.280	0.537
2014	744,555	0	48	0	564,444	0	679,846	1,244,290	0.758	0.913	1.671
2015	735,005	1	27	348,924	16,926	29,317	39,459	434,627	0.498	0.094	0.591
2016	733,757	2	23	244,519	80,956	50,909	91,180	467,563	0.444	0.194	0.637
2017	724,614	1	29	941	111,117	2,898	68,877	183,834	0.155	0.099	0.254
<b>MA Total:</b>	<b>3,677,526</b>	<b>5</b>	<b>167</b>	<b>657,857</b>	<b>900,408</b>	<b>141,566</b>	<b>1,027,902</b>	<b>2,727,733</b>	<b>0.424</b>	<b>0.318</b>	<b>0.742</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.514	0.682	.
(14) Massachusetts Credibility:	0.320	0.490	.
(15) Countrywide Pure Premium:	0.501	0.321	0.823
(16) Countrywide Indicated Relativity:	0.626	0.697	.
(17) Countrywide Credibility:	0.340	0.260	.
(18) Countrywide Lost-Time Claims:	665.00	.	.
(19) Pure Premium Underlying Present Rate:	0.417	0.269	0.686
(20) Relativity to Underlying Present Rate:	0.556	0.652	.
(21) Credibility to Underlying Relativity:	0.340	0.250	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.566	0.678	.
(24) Balanced Formula Relativity:	0.562	0.679	0.604

Class(es): 9063 YMCA, YWCA, YMHA OR YWHA, INSTITUTION-ALL EMPLOYEES & CLERICAL		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,094,628	7	329	273,716	1,040,296	402,368	961,565	2,677,945	0.258	0.268	0.526
2014	5,701,462	8	329	546,033	1,002,851	253,216	961,998	2,764,099	0.272	0.213	0.485
2015	6,261,898	4	383	103,333	522,127	98,490	1,168,729	1,892,679	0.100	0.202	0.302
2016	6,808,125	6	394	121,945	1,542,817	117,589	1,569,035	3,351,386	0.245	0.248	0.492
2017	6,961,299	6	356	325,713	1,360,212	175,168	1,412,216	3,273,308	0.242	0.228	0.470
<b>MA Total:</b>	<b>30,827,411</b>	<b>31</b>	<b>1,791</b>	<b>1,370,739</b>	<b>5,468,303</b>	<b>1,046,831</b>	<b>6,073,543</b>	<b>13,959,416</b>	<b>0.222</b>	<b>0.231</b>	<b>0.453</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.269	0.495	.
(14) Massachusetts Credibility:	0.620	1.000	.
(15) Countrywide Pure Premium:	0.315	0.246	0.561
(16) Countrywide Indicated Relativity:	0.393	0.534	.
(17) Countrywide Credibility:	0.190	0.000	.
(18) Countrywide Lost-Time Claims:	3662.0	.	.
(19) Pure Premium Underlying Present Rate:	0.270	0.204	0.474
(20) Relativity to Underlying Present Rate:	0.359	0.495	.
(21) Credibility to Underlying Relativity:	0.190	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.310	0.495	.
(24) Balanced Formula Relativity:	0.307	0.496	0.375

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## Calculation of Class Relativities

Class(es): 9079 RESTAURANT NOC		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	25,501,892	75	3,341	3,838,027	8,998,053	1,579,608	6,946,596	21,362,283	0.503	0.334	0.838
2014	26,296,842	81	3,114	5,518,573	8,678,799	2,310,298	6,755,939	23,263,610	0.540	0.345	0.885
2015	28,415,506	77	3,079	5,665,615	9,835,245	2,800,787	7,468,030	25,769,677	0.546	0.361	0.907
2016	29,885,723	55	2,863	4,422,104	9,449,351	1,437,120	8,170,404	23,478,979	0.464	0.321	0.786
2017	31,213,213	58	2,775	3,793,869	10,859,441	1,393,249	8,898,816	24,945,375	0.469	0.330	0.799
<b>MA Total:</b>	<b>141,313,176</b>	<b>346</b>	<b>15,172</b>	<b>23,238,187</b>	<b>47,820,888</b>	<b>9,521,063</b>	<b>38,239,786</b>	<b>118,819,924</b>	<b>0.503</b>	<b>0.338</b>	<b>0.841</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.609	0.725	.
(14) Massachusetts Credibility:	1.000	1.000	.
(15) Countrywide Pure Premium:	0.423	0.325	0.748
(16) Countrywide Indicated Relativity:	0.528	0.705	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	3200.0	.	.
(19) Pure Premium Underlying Present Rate:	0.478	0.310	0.788
(20) Relativity to Underlying Present Rate:	0.637	0.752	.
(21) Credibility to Underlying Relativity:	0.000	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.609	0.725	.
(24) Balanced Formula Relativity:	0.605	0.725	0.649

Class(es): 9089 BILLIARD HALL		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	5,382	0	0	0	0	0	0	0	0.000	0.000	0.000
2014	3,744	0	0	0	0	0	0	0	0.000	0.000	0.000
2015	5,885	0	0	0	0	0	0	0	0.000	0.000	0.000
2016	3,488	0	0	0	0	0	0	0	0.000	0.000	0.000
2017	6,717	0	1	0	255	0	183	438	0.038	0.027	0.065
<b>MA Total:</b>	<b>25,216</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>255</b>	<b>0</b>	<b>183</b>	<b>438</b>	<b>0.010</b>	<b>0.007</b>	<b>0.017</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.012	0.016	.
(14) Massachusetts Credibility:	0.040	0.070	.
(15) Countrywide Pure Premium:	0.381	0.288	0.668
(16) Countrywide Indicated Relativity:	0.475	0.624	.
(17) Countrywide Credibility:	0.150	0.160	.
(18) Countrywide Lost-Time Claims:	10.000	.	.
(19) Pure Premium Underlying Present Rate:	0.374	0.268	0.642
(20) Relativity to Underlying Present Rate:	0.499	0.650	.
(21) Credibility to Underlying Relativity:	0.810	0.770	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.476	0.602	.
(24) Balanced Formula Relativity:	0.472	0.602	0.519



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## Calculation of Class Relativities

Class(es): 9093 BOWLING LANE		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	167,732	1	20	1,724	16,176	23,105	16,485	57,490	0.107	0.236	0.343
2014	195,554	0	18	0	208,654	0	113,986	322,640	1.067	0.583	1.650
2015	236,174	2	24	79,016	52,287	69,251	33,004	233,558	0.556	0.433	0.989
2016	242,701	1	27	65,105	27,982	2,299	51,471	146,857	0.384	0.222	0.605
2017	266,587	3	29	157,401	14,619	144,086	40,031	356,136	0.645	0.691	1.336
<b>MA Total:</b>	<b>1,108,749</b>	<b>7</b>	<b>118</b>	<b>303,245</b>	<b>319,718</b>	<b>238,742</b>	<b>254,977</b>	<b>1,116,682</b>	<b>0.562</b>	<b>0.445</b>	<b>1.007</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.681	0.955	.
(14) Massachusetts Credibility:	0.200	0.350	.
(15) Countrywide Pure Premium:	0.491	0.406	0.897
(16) Countrywide Indicated Relativity:	0.613	0.881	.
(17) Countrywide Credibility:	0.400	0.330	.
(18) Countrywide Lost-Time Claims:	434.00	.	.
(19) Pure Premium Underlying Present Rate:	0.425	0.385	0.809
(20) Relativity to Underlying Present Rate:	0.566	0.933	.
(21) Credibility to Underlying Relativity:	0.400	0.320	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.608	0.923	.
(24) Balanced Formula Relativity:	0.603	0.924	0.719

Class(es): 9101 COLLEGE: ALL OTHER EMPLOYEES		Effective: 7/1/2020							Goods and Services		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,485,264	10	504	842,376	863,747	169,470	862,479	2,738,073	1.149	0.695	1.843
2014	1,515,707	7	631	425,693	1,086,233	282,354	1,210,514	3,004,793	0.998	0.985	1.982
2015	1,538,010	13	635	657,120	2,809,903	253,868	1,663,145	5,384,036	2.254	1.246	3.501
2016	1,594,092	17	786	1,350,481	2,682,151	399,390	1,945,508	6,377,530	2.530	1.471	4.001
2017	1,739,770	21	787	2,124,835	2,099,484	509,898	1,722,889	6,457,105	2.428	1.283	3.711
<b>MA Total:</b>	<b>7,872,844</b>	<b>68</b>	<b>3,343</b>	<b>5,400,504</b>	<b>9,541,517</b>	<b>1,614,980</b>	<b>7,404,535</b>	<b>23,961,536</b>	<b>1.898</b>	<b>1.146</b>	<b>3.044</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.300	2.457	.
(14) Massachusetts Credibility:	0.660	1.000	.
(15) Countrywide Pure Premium:	1.346	0.897	2.243
(16) Countrywide Indicated Relativity:	1.681	1.946	.
(17) Countrywide Credibility:	0.170	0.000	.
(18) Countrywide Lost-Time Claims:	13411	.	.
(19) Pure Premium Underlying Present Rate:	1.245	0.923	2.168
(20) Relativity to Underlying Present Rate:	1.659	2.240	.
(21) Credibility to Underlying Relativity:	0.170	0.000	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.086	2.457	.
(24) Balanced Formula Relativity:	2.071	2.458	2.211

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous			
9102 PARK NOC- ALL EMPLOYEES & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	190.477	2	29	301.231	137.618	120.573	57.373	616.795	2.304	0.934	3.238	
2014	244.451	1	47	229.277	65.448	187.084	67.806	549.615	1.206	1.043	2.248	
2015	271.296	1	28	85	43.699	5.943	72.172	121.899	0.161	0.288	0.449	
2016	325.868	0	35	0	48.307	0	41.107	89.414	0.148	0.126	0.274	
2017	353.758	0	49	0	97.756	0	85.731	183.487	0.276	0.242	0.519	
<b>MA Total:</b>	<b>1,385.851</b>	<b>4</b>	<b>188</b>	<b>530.592</b>	<b>392.829</b>	<b>313.601</b>	<b>324.189</b>	<b>1,561.211</b>	<b>0.666</b>	<b>0.460</b>	<b>1.127</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.277	0.371	.
(14) Massachusetts Credibility:	0.320	0.480	.
(15) Countrywide Pure Premium:	1.345	0.935	2.280
(16) Countrywide Indicated Relativity:	0.588	0.801	.
(17) Countrywide Credibility:	0.340	0.260	.
(18) Countrywide Lost-Time Claims:	7831.0	.	.
(19) Pure Premium Underlying Present Rate:	1.175	0.703	1.879
(20) Relativity to Underlying Present Rate:	0.540	0.669	.
(21) Credibility to Underlying Relativity:	0.340	0.260	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.472	0.560	.
(24) Balanced Formula Relativity:	0.470	0.563	0.502

Class(es):		Effective: 7/1/2020							Miscellaneous			
9154 THEATER NOC: ALL OTHER EMPLOYEES												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	682.326	0	92	0	191.297	0	229.427	420.725	0.280	0.336	0.617	
2014	645.332	0	63	0	611.528	0	221.859	833.387	0.948	0.344	1.291	
2015	662.833	1	62	6.720	387.121	2.186	389.095	785.121	0.594	0.590	1.184	
2016	695.650	1	88	199.812	129.658	83.968	241.159	654.597	0.474	0.467	0.941	
2017	836.756	1	99	3.499	394.032	2.884	351.320	751.736	0.475	0.423	0.898	
<b>MA Total:</b>	<b>3,522.897</b>	<b>3</b>	<b>404</b>	<b>210.031</b>	<b>1,713.636</b>	<b>89.037</b>	<b>1,432.861</b>	<b>3,445.565</b>	<b>0.546</b>	<b>0.432</b>	<b>0.978</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.227	0.348	.
(14) Massachusetts Credibility:	0.390	0.610	.
(15) Countrywide Pure Premium:	0.702	0.516	1.217
(16) Countrywide Indicated Relativity:	0.307	0.441	.
(17) Countrywide Credibility:	0.310	0.200	.
(18) Countrywide Lost-Time Claims:	1527.0	.	.
(19) Pure Premium Underlying Present Rate:	0.748	0.500	1.249
(20) Relativity to Underlying Present Rate:	0.344	0.476	.
(21) Credibility to Underlying Relativity:	0.300	0.190	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.287	0.391	.
(24) Balanced Formula Relativity:	0.286	0.393	0.322

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Office and Clerical		
9156 THEATER NOC: PLAYERS, ENTERTAINERS OR MUSICIANS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	331,496	1	77	5,341	155,644	8,710	207,953	377,649	0.486	0.654	1.139
2014	345,310	1	78	5,612	127,036	3,045	195,403	331,097	0.384	0.575	0.959
2015	339,749	1	86	11,306	153,063	26,921	216,959	408,250	0.484	0.718	1.202
2016	370,079	0	100	0	315,920	0	263,298	579,218	0.854	0.711	1.565
2017	361,374	1	83	15,761	703,643	13,399	336,224	1,069,028	1.991	0.967	2.958
<b>MA Total:</b>	<b>1,748,008</b>	<b>4</b>	<b>424</b>	<b>38,021</b>	<b>1,455,307</b>	<b>52,076</b>	<b>1,219,838</b>	<b>2,765,241</b>	<b>0.854</b>	<b>0.728</b>	<b>1.582</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	12.320	17.090	.
(14) Massachusetts Credibility:	0.270	0.460	.
(15) Countrywide Pure Premium:	0.727	0.514	1.240
(16) Countrywide Indicated Relativity:	12.153	13.323	.
(17) Countrywide Credibility:	0.370	0.270	.
(18) Countrywide Lost-Time Claims:	832.00	.	.
(19) Pure Premium Underlying Present Rate:	0.590	0.485	1.075
(20) Relativity to Underlying Present Rate:	9.124	12.480	.
(21) Credibility to Underlying Relativity:	0.360	0.270	.
(22) Industry Group Converted Pure Premium:	0.069	0.043	0.112
(23) Formula Relativity:	11.108	14.828	.
(24) Balanced Formula Relativity:	11.155	14.856	12.563

Class(es):		Effective: 7/1/2020							Miscellaneous		
9178 ATHLETIC TEAM OR PARK: NON-CONTACT SPORTS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical			MA Indicated Pure Premiums		
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	17,177	0	52	0	488,283	0	364,729	853,012	28.427	21.234	49.661
2014	37,959	0	68	0	77,658	0	236,161	313,819	2.046	6.222	8.267
2015	36,469	1	65	80,036	85,766	2,491	209,081	377,374	4.546	5.801	10.348
2016	33,943	0	75	0	310,765	0	605,710	916,475	9.155	17.845	27.000
2017	16,735	0	80	0	41,057	0	289,577	330,634	2.453	17.304	19.757
<b>MA Total:</b>	<b>142,283</b>	<b>1</b>	<b>340</b>	<b>80,036</b>	<b>1,003,529</b>	<b>2,491</b>	<b>1,705,259</b>	<b>2,791,314</b>	<b>7.616</b>	<b>12.003</b>	<b>19.618</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	3.162	9.670	.
(14) Massachusetts Credibility:	0.200	0.440	.
(15) Countrywide Pure Premium:	0.895	1.949	2.844
(16) Countrywide Indicated Relativity:	0.391	1.669	.
(17) Countrywide Credibility:	0.400	0.280	.
(18) Countrywide Lost-Time Claims:	540.00	.	.
(19) Pure Premium Underlying Present Rate:	3.593	5.534	9.127
(20) Relativity to Underlying Present Rate:	1.649	5.261	.
(21) Credibility to Underlying Relativity:	0.400	0.280	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	1.449	6.195	.
(24) Balanced Formula Relativity:	1.444	6.234	3.073

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
9179 ATHLETIC TEAM OR PARK: CONTACT SPORTS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	29,955	5	111	148,002	640,726	119,352	520,202	1,428,282	26,331	21,351	47,681
2014	30,667	1	111	28,730	1,143,643	1,014	802,137	1,975,525	38,230	26,190	64,419
2015	26,083	4	103	196,526	1,581,329	582,365	885,539	3,245,759	68,161	56,278	124,44
2016	18,213	1	54	793	466,331	28	474,965	942,117	25,648	26,080	51,729
2017	21,062	0	77	0	72,431	0	567,577	640,008	3,439	26,947	30,386
<b>MA Total:</b>	<b>125,980</b>	<b>11</b>	<b>456</b>	<b>374,051</b>	<b>3,904,460</b>	<b>702,760</b>	<b>3,250,419</b>	<b>8,231,690</b>	<b>33,962</b>	<b>31,379</b>	<b>65,341</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	14.101	25.282	.
(14) Massachusetts Credibility:	0.360	0.570	.
(15) Countrywide Pure Premium:	2.889	2.209	5.097
(16) Countrywide Indicated Relativity:	1.263	1.891	.
(17) Countrywide Credibility:	0.320	0.220	.
(18) Countrywide Lost-Time Claims:	1595.0	.	.
(19) Pure Premium Underlying Present Rate:	16.354	11.846	28.199
(20) Relativity to Underlying Present Rate:	7.507	11.263	.
(21) Credibility to Underlying Relativity:	0.320	0.210	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	7.883	17.192	.
(24) Balanced Formula Relativity:	7.859	17.298	11.069

Class(es):		Effective: 7/1/2020							Miscellaneous		
9180 AMUSEMENT DEVICE OPERATION NOC-NOT TRAV & DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	185,482	0	41	0	136,789	0	262,968	399,758	0.737	1,418	2,155
2014	175,481	0	35	0	124,941	0	283,436	408,377	0.712	1,615	2,327
2015	198,278	1	38	27,188	126,456	1,737	336,791	492,171	0.775	1,707	2,482
2016	203,530	1	44	4,127	534,902	19,409	240,129	798,567	2,648	1,275	3,924
2017	218,128	2	54	31,950	167,828	56,654	248,546	504,978	0.916	1,399	2,315
<b>MA Total:</b>	<b>980,898</b>	<b>4</b>	<b>212</b>	<b>63,265</b>	<b>1,090,916</b>	<b>77,800</b>	<b>1,371,870</b>	<b>2,603,852</b>	<b>1.177</b>	<b>1,478</b>	<b>2,655</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.489	1.191	.
(14) Massachusetts Credibility:	0.320	0.630	.
(15) Countrywide Pure Premium:	2.401	2.394	4.795
(16) Countrywide Indicated Relativity:	1.050	2.049	.
(17) Countrywide Credibility:	0.340	0.190	.
(18) Countrywide Lost-Time Claims:	2061.0	.	.
(19) Pure Premium Underlying Present Rate:	1.545	1.903	3.448
(20) Relativity to Underlying Present Rate:	0.709	1.810	.
(21) Credibility to Underlying Relativity:	0.340	0.180	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.754	1.465	.
(24) Balanced Formula Relativity:	0.752	1.474	0.998

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous			
9182 ATHLETIC TEAM OR PARK: OPERATIONS & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	247,268	3	83	276,951	684,538	92,874	222,717	1,277,080	3,888	1,276	5,165	
2014	297,302	3	53	346,231	157,450	196,768	145,033	845,482	1,694	1,150	2,844	
2015	306,206	2	40	27,043	195,349	43,100	174,442	439,934	0,726	0,710	1,437	
2016	274,308	0	34	0	223,750	0	227,096	450,847	0,816	0,828	1,644	
2017	247,447	1	42	390,564	742,264	366,476	509,687	2,008,991	4,578	3,541	8,119	
<b>MA Total:</b>	<b>1,372,532</b>	<b>9</b>	<b>252</b>	<b>1,040,789</b>	<b>2,003,350</b>	<b>699,218</b>	<b>1,278,977</b>	<b>5,022,335</b>	<b>2,218</b>	<b>1,441</b>	<b>3,659</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.921	1.161	.
(14) Massachusetts Credibility:	0.330	0.530	.
(15) Countrywide Pure Premium:	0.635	0.659	1.293
(16) Countrywide Indicated Relativity:	0.277	0.564	.
(17) Countrywide Credibility:	0.340	0.240	.
(18) Countrywide Lost-Time Claims:	445.00	.	.
(19) Pure Premium Underlying Present Rate:	1.245	0.892	2.138
(20) Relativity to Underlying Present Rate:	0.572	0.848	.
(21) Credibility to Underlying Relativity:	0.330	0.230	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.587	0.946	.
(24) Balanced Formula Relativity:	0.585	0.952	0.710

Class(es):		Effective: 7/1/2020							Goods and Services			
9220 CEMETERY OPERATION & DRIVERS												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	197,407	0	32	0	45,059	0	61,810	106,869	0,228	0,313	0,541	
2014	198,182	1	33	45,520	71,915	6,548	105,940	229,922	0,593	0,568	1,160	
2015	192,924	1	28	10,852	350,891	5,675	129,689	497,107	1,875	0,702	2,577	
2016	200,731	1	25	215,581	155,849	54,289	135,866	561,584	1,850	0,947	2,798	
2017	196,367	0	32	0	423,545	0	278,442	701,987	2,157	1,418	3,575	
<b>MA Total:</b>	<b>985,610</b>	<b>3</b>	<b>150</b>	<b>271,952</b>	<b>1,047,258</b>	<b>66,512</b>	<b>711,746</b>	<b>2,097,468</b>	<b>1,338</b>	<b>0,790</b>	<b>2,128</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.622	1.693	.
(14) Massachusetts Credibility:	0.300	0.420	.
(15) Countrywide Pure Premium:	2.172	1.216	3.388
(16) Countrywide Indicated Relativity:	2.712	2.637	.
(17) Countrywide Credibility:	0.350	0.290	.
(18) Countrywide Lost-Time Claims:	663.00	.	.
(19) Pure Premium Underlying Present Rate:	1.357	0.711	2.067
(20) Relativity to Underlying Present Rate:	1.808	1.724	.
(21) Credibility to Underlying Relativity:	0.350	0.290	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.069	1.976	.
(24) Balanced Formula Relativity:	2.054	1.977	2.026

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Miscellaneous		
9402 STREET CLEANING & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	758,066	5	65	692,112	670,647	218,435	413,121	1,994,315	1,798	0,833	2,631
2014	963,210	8	68	272,313	1,986,734	115,990	556,388	2,931,425	2,345	0,698	3,043
2015	901,771	2	68	89,229	1,970,942	55,148	825,387	2,940,705	2,285	0,976	3,261
2016	953,380	1	70	13,086	1,122,215	18,032	1,018,888	2,172,221	1,191	1,088	2,278
2017	1,104,523	6	88	951,311	2,082,752	639,276	853,662	4,527,001	2,747	1,352	4,099
<b>MA Total:</b>	<b>4,680,951</b>	<b>22</b>	<b>359</b>	<b>2,018,051</b>	<b>7,833,290</b>	<b>1,046,881</b>	<b>3,667,446</b>	<b>14,565,668</b>	<b>2,105</b>	<b>1,007</b>	<b>3,112</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.874	0.811	.
(14) Massachusetts Credibility:	0.660	0.860	.
(15) Countrywide Pure Premium:	2.556	1.438	3.994
(16) Countrywide Indicated Relativity:	1.117	1.231	.
(17) Countrywide Credibility:	0.170	0.070	.
(18) Countrywide Lost-Time Claims:	2106.0	.	.
(19) Pure Premium Underlying Present Rate:	2.083	0.885	2.968
(20) Relativity to Underlying Present Rate:	0.956	0.841	.
(21) Credibility to Underlying Relativity:	0.170	0.070	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	0.929	0.843	.
(24) Balanced Formula Relativity:	0.926	0.848	0.900

Class(es):		Effective: 7/1/2020							Miscellaneous		
9403 GARBAGE, ASHES OR REFUSE COLLECTION & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	1,057,111	18	271	2,591,169	2,357,334	1,067,447	1,267,475	7,283,425	4,681	2,209	6,890
2014	1,082,258	11	234	1,680,888	2,929,749	313,971	1,584,167	6,508,775	4,260	1,754	6,014
2015	1,147,249	11	261	2,026,421	3,601,836	964,422	2,043,691	8,636,370	4,906	2,622	7,528
2016	1,124,339	10	211	2,519,498	4,075,592	613,861	2,011,838	9,220,789	5,866	2,335	8,201
2017	1,249,618	17	271	2,489,986	6,960,827	1,240,423	2,936,177	13,627,414	7,563	3,342	10,905
<b>MA Total:</b>	<b>5,660,575</b>	<b>67</b>	<b>1,248</b>	<b>11,307,963</b>	<b>19,925,337</b>	<b>4,200,124</b>	<b>9,843,348</b>	<b>45,276,772</b>	<b>5,518</b>	<b>2,481</b>	<b>7,999</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.291	1.999	.
(14) Massachusetts Credibility:	0.980	1.000	.
(15) Countrywide Pure Premium:	3.937	1.983	5.919
(16) Countrywide Indicated Relativity:	1.721	1.697	.
(17) Countrywide Credibility:	0.010	0.000	.
(18) Countrywide Lost-Time Claims:	7757.0	.	.
(19) Pure Premium Underlying Present Rate:	4.531	2.061	6.592
(20) Relativity to Underlying Present Rate:	2.080	1.959	.
(21) Credibility to Underlying Relativity:	0.010	0.000	.
(22) Industry Group Converted Pure Premium:	2.408	1.241	3.650
(23) Formula Relativity:	2.283	1.999	.
(24) Balanced Formula Relativity:	2.276	2.011	2.186

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
9410 MUNICIPAL, TOWN, COUNTY OR STATE EMP NOC											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	51,775	1	9	290,702	3,110	162,477	3,509	459,798	5,675	3,206	8,881
2014	51,706	0	17	0	261,057	0	92,374	353,431	5,049	1,787	6,835
2015	49,238	0	24	0	318,843	0	267,399	586,242	6,476	5,431	11,906
2016	47,525	0	19	0	275,243	0	63,760	339,003	5,791	1,342	7,133
2017	48,376	0	19	0	106,875	0	66,609	173,484	2,209	1,377	3,586
<b>MA Total:</b>	<b>248,621</b>	<b>1</b>	<b>88</b>	<b>290,702</b>	<b>965,127</b>	<b>162,477</b>	<b>493,652</b>	<b>1,911,958</b>	<b>5,051</b>	<b>2,639</b>	<b>7,690</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	6.122	5.659	.
(14) Massachusetts Credibility:	0.160	0.250	.
(15) Countrywide Pure Premium:	0.996	0.571	1.567
(16) Countrywide Indicated Relativity:	1.244	1.239	.
(17) Countrywide Credibility:	0.420	0.380	.
(18) Countrywide Lost-Time Claims:	870.00	.	.
(19) Pure Premium Underlying Present Rate:	1.205	0.783	1.987
(20) Relativity to Underlying Present Rate:	1.606	1.898	.
(21) Credibility to Underlying Relativity:	0.420	0.370	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	2.176	2.588	.
(24) Balanced Formula Relativity:	2.161	2.590	2.316

Class(es):		Effective: 7/1/2020							Manufacturing		
9501 SIGN PAINTING OR LETTERING-INSIDE & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	303,750	1	25	55,143	402,933	3,357	285,041	746,474	1,508	0,949	2,458
2014	304,396	0	37	0	54,653	0	90,680	145,332	0,180	0,298	0,477
2015	330,033	1	30	3,442	19,737	6,003	64,225	93,408	0,070	0,213	0,283
2016	369,499	2	39	328,765	297,237	22,889	154,679	803,569	1,694	0,481	2,175
2017	400,950	1	30	58,653	287,808	114,008	123,582	584,052	0,864	0,593	1,457
<b>MA Total:</b>	<b>1,708,629</b>	<b>5</b>	<b>161</b>	<b>446,004</b>	<b>1,062,367</b>	<b>146,257</b>	<b>718,207</b>	<b>2,372,835</b>	<b>0,883</b>	<b>0,506</b>	<b>1,389</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.909	0.989	.
(14) Massachusetts Credibility:	0.320	0.470	.
(15) Countrywide Pure Premium:	1.186	0.659	1.845
(16) Countrywide Indicated Relativity:	1.328	1.408	.
(17) Countrywide Credibility:	0.340	0.270	.
(18) Countrywide Lost-Time Claims:	1369.0	.	.
(19) Pure Premium Underlying Present Rate:	0.927	0.530	1.457
(20) Relativity to Underlying Present Rate:	1.053	1.182	.
(21) Credibility to Underlying Relativity:	0.340	0.260	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.101	1.152	.
(24) Balanced Formula Relativity:	1.086	1.137	1.104

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services			
9519 HOUSEHOLD APPLIANCES-ELECTRICAL-INSTALL, SERV OR REPAIR & DR												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	851,336	9	107	564,238	1,062,931	153,509	557,381	2,338,059	1,911	0,835	2,746	
2014	791,848	4	76	526,207	360,166	89,285	301,853	1,277,511	1,119	0,494	1,613	
2015	919,949	6	80	389,314	494,651	116,956	368,358	1,369,279	0,961	0,528	1,488	
2016	859,788	1	49	2,425	160,019	2,157	218,291	382,892	0,189	0,256	0,445	
2017	878,736	1	67	29,451	962,591	11,406	607,716	1,611,165	1,129	0,705	1,834	
<b>MA Total:</b>	<b>4,301,657</b>	<b>21</b>	<b>379</b>	<b>1,511,636</b>	<b>3,040,359</b>	<b>373,312</b>	<b>2,053,600</b>	<b>6,978,906</b>	<b>1,058</b>	<b>0,564</b>	<b>1,622</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.283	1.210	.
(14) Massachusetts Credibility:	0.590	0.800	.
(15) Countrywide Pure Premium:	2.139	0.884	3.023
(16) Countrywide Indicated Relativity:	2.671	1.918	.
(17) Countrywide Credibility:	0.210	0.100	.
(18) Countrywide Lost-Time Claims:	2436.0	.	.
(19) Pure Premium Underlying Present Rate:	1.724	0.810	2.534
(20) Relativity to Underlying Present Rate:	2.298	1.966	.
(21) Credibility to Underlying Relativity:	0.200	0.100	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	1.777	1.356	.
(24) Balanced Formula Relativity:	1.765	1.357	1.617

Class(es):		Effective: 7/1/2020							Manufacturing			
9521 HOUSE FURNISHINGS INSTALLATION-NOC												
Converted Unlimited Losses												
Amount												
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	208,418	1	14	359,733	28,603	57,582	24,784	470,703	1,863	0,395	2,258	
2014	216,443	1	23	8,133	124,432	6,630	92,860	232,056	0,612	0,460	1,072	
2015	277,869	1	20	106,457	297,974	9,870	133,309	547,610	1,455	0,515	1,971	
2016	275,642	1	31	263,061	449,041	434,798	206,658	1,353,557	2,583	2,327	4,911	
2017	311,607	2	34	77,318	226,355	26,694	133,668	464,035	0,975	0,515	1,489	
<b>MA Total:</b>	<b>1,289,978</b>	<b>6</b>	<b>122</b>	<b>814,702</b>	<b>1,126,405</b>	<b>535,574</b>	<b>591,279</b>	<b>3,067,960</b>	<b>1,505</b>	<b>0,874</b>	<b>2,378</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.550	1.707	.
(14) Massachusetts Credibility:	0.340	0.450	.
(15) Countrywide Pure Premium:	1.593	0.756	2.349
(16) Countrywide Indicated Relativity:	1.784	1.613	.
(17) Countrywide Credibility:	0.330	0.280	.
(18) Countrywide Lost-Time Claims:	693.00	.	.
(19) Pure Premium Underlying Present Rate:	1.378	0.641	2.019
(20) Relativity to Underlying Present Rate:	1.565	1.431	.
(21) Credibility to Underlying Relativity:	0.330	0.270	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	1.632	1.606	.
(24) Balanced Formula Relativity:	1.611	1.585	1.602



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## Calculation of Class Relativities

Class(es): 9522 UPHOLSTERING		Effective: 7/1/2020							Manufacturing		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	139,128	0	16	0	137,738	0	82,700	220,438	0.990	0.594	1.584
2014	131,340	2	18	89,385	33,670	9,126	52,133	184,314	0.937	0.466	1.403
2015	145,716	0	13	0	1,222	0	3,695	4,917	0.008	0.025	0.034
2016	115,056	0	8	0	10,529	0	8,935	19,464	0.092	0.078	0.169
2017	121,508	0	5	0	0	0	6,841	6,841	0.000	0.056	0.056
<b>MA Total:</b>	<b>652,747</b>	<b>2</b>	<b>60</b>	<b>89,385</b>	<b>183,160</b>	<b>9,126</b>	<b>154,304</b>	<b>435,975</b>	<b>0.418</b>	<b>0.250</b>	<b>0.668</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.430	0.489	.
(14) Massachusetts Credibility:	0.210	0.280	.
(15) Countrywide Pure Premium:	0.964	0.502	1.466
(16) Countrywide Indicated Relativity:	1.080	1.072	.
(17) Countrywide Credibility:	0.400	0.360	.
(18) Countrywide Lost-Time Claims:	1810.0	.	.
(19) Pure Premium Underlying Present Rate:	0.851	0.392	1.243
(20) Relativity to Underlying Present Rate:	0.966	0.875	.
(21) Credibility to Underlying Relativity:	0.390	0.360	.
(22) Industry Group Converted Pure Premium:	0.971	0.512	1.482
(23) Formula Relativity:	0.899	0.838	.
(24) Balanced Formula Relativity:	0.887	0.827	0.866

Class(es): 9533 SCAFFOLDING: SCAFFOLD INST, RPR OR REMOVAL- BUILT UP FROM GROUN		Effective: 7/1/2020							Construction		
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	63,659	1	6	129,556	241,140	349,991	70,021	790,707	5.823	6.598	12.421
2014	56,454	1	4	26,753	157,193	13,477	87,116	284,538	3.258	1.782	5.040
2015	59,658	0	10	0	297,317	0	75,359	372,676	4.984	1.263	6.247
2016	58,633	1	8	305,203	573,946	65,532	275,871	1,220,552	14.994	5.823	20.817
2017	65,778	0	10	0	644,538	0	191,535	836,073	9.799	2.912	12.711
<b>MA Total:</b>	<b>304,182</b>	<b>3</b>	<b>38</b>	<b>461,511</b>	<b>1,914,134</b>	<b>429,000</b>	<b>699,903</b>	<b>3,504,547</b>	<b>7.810</b>	<b>3.711</b>	<b>11.521</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	2.999	3.126	.
(14) Massachusetts Credibility:	0.360	0.470	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	2.737	2.637	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	6.934	2.963	9.896
(20) Relativity to Underlying Present Rate:	2.865	2.812	.
(21) Credibility to Underlying Relativity:	0.640	0.530	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	2.914	2.959	.
(24) Balanced Formula Relativity:	2.926	2.954	2.935

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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction		
9534 MOBILE CRANE & HOIST SERV CONTR-NOC-ALL OP -INCL YRD EMP &DR											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	246,744	1	14	409,104	62,353	138,072	252,236	861,765	1,911	1,582	3,493
2014	272,846	4	15	1,696,039	383,835	383,648	208,406	2,671,928	7,623	2,170	9,793
2015	314,972	0	6	0	226,298	0	251,633	477,931	0,718	0,799	1,517
2016	361,773	2	21	486,115	931,966	57,808	408,910	1,884,799	3,920	1,290	5,210
2017	437,697	0	21	0	1,576,051	0	490,270	2,066,321	3,601	1,120	4,721
<b>MA Total:</b>	<b>1,634,031</b>	<b>7</b>	<b>77</b>	<b>2,591,258</b>	<b>3,180,502</b>	<b>579,528</b>	<b>1,611,455</b>	<b>7,962,744</b>	<b>3,532</b>	<b>1,341</b>	<b>4,873</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.357	1.129	.
(14) Massachusetts Credibility:	0.480	0.640	.
(15) Countrywide Pure Premium:	2.615	0.818	3.433
(16) Countrywide Indicated Relativity:	1.021	0.710	.
(17) Countrywide Credibility:	0.260	0.180	.
(18) Countrywide Lost-Time Claims:	501.00	.	.
(19) Pure Premium Underlying Present Rate:	2.693	1.217	3.910
(20) Relativity to Underlying Present Rate:	1.113	1.155	.
(21) Credibility to Underlying Relativity:	0.260	0.180	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.206	1.058	.
(24) Balanced Formula Relativity:	1.211	1.057	1.163

Class(es):		Effective: 7/1/2020							Construction		
9549 ADVERTISING CO & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	30,660	0	8	0	11,260	0	6,643	17,903	0,367	0,217	0,584
2014	14,630	0	1	0	3,661	0	5,216	8,877	0,250	0,357	0,607
2015	15,820	0	2	0	0	0	1,284	1,284	0,000	0,081	0,081
2016	16,020	0	1	0	10,216	0	1,351	11,567	0,638	0,084	0,722
2017	6,455	0	1	0	0	0	626	626	0,000	0,097	0,097
<b>MA Total:</b>	<b>83,585</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>25,136</b>	<b>0</b>	<b>15,120</b>	<b>40,256</b>	<b>0,301</b>	<b>0,181</b>	<b>0,482</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.115	0.152	.
(14) Massachusetts Credibility:	0.150	0.180	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	1.120	0.835	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	2.837	0.938	3.775
(20) Relativity to Underlying Present Rate:	1.172	0.890	.
(21) Credibility to Underlying Relativity:	0.850	0.820	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.014	0.757	.
(24) Balanced Formula Relativity:	1.018	0.756	0.936

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Section IX - Classification Pricing  
 Subsection G - Class Relativities  
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Section IX - G  
 Exhibit 189

## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Construction			
9552 SIGN MFG-ERECTION, REPAIR OR MAINT & SHOP, DR												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	129,658	0	23	0	517,982	0	146,267	664,249	3,995	1,128	5,123	
2014	165,766	4	26	798,830	58,859	467,000	68,231	1,392,920	5,174	3,229	8,403	
2015	170,970	2	23	351,991	384,477	189,873	236,076	1,162,418	4,308	2,491	6,799	
2016	166,687	0	14	0	569,357	0	366,471	935,828	3,416	2,199	5,614	
2017	176,490	1	17	142,481	171,270	399,155	112,984	825,891	1,778	2,902	4,680	
<b>MA Total:</b>	<b>809,571</b>	<b>7</b>	<b>103</b>	<b>1,293,301</b>	<b>1,701,946</b>	<b>1,056,028</b>	<b>930,029</b>	<b>4,981,305</b>	<b>3,700</b>	<b>2,453</b>	<b>6,153</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	1.421	2.066	.
(14) Massachusetts Credibility:	0.410	0.570	.
(15) Countrywide Pure Premium:	0.000	0.000	0.000
(16) Countrywide Indicated Relativity:	1.434	1.606	.
(17) Countrywide Credibility:	0.000	0.000	.
(18) Countrywide Lost-Time Claims:	0.000	.	.
(19) Pure Premium Underlying Present Rate:	3.634	1.804	5.438
(20) Relativity to Underlying Present Rate:	1.502	1.712	.
(21) Credibility to Underlying Relativity:	0.590	0.430	.
(22) Industry Group Converted Pure Premium:	2.604	1.187	3.791
(23) Formula Relativity:	1.468	1.914	.
(24) Balanced Formula Relativity:	1.475	1.910	1.611

Class(es):		Effective: 7/1/2020							Goods and Services			
9586 BARBER SHOP, BEAUTY PARLOR, HAIR STYLING SALON												
		Converted Unlimited Losses										
		Amount										
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums				
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)	
2013	4,389,883	6	74	75,404	179,943	15,919	185,442	456,708	0.058	0.046	0.104	
2014	4,604,461	2	67	454,819	453,794	96,402	232,326	1,237,341	0.197	0.071	0.269	
2015	4,832,930	1	86	21,372	794,038	5,618	426,738	1,247,766	0.169	0.089	0.258	
2016	5,120,563	3	82	89,965	288,851	23,744	359,667	762,226	0.074	0.075	0.149	
2017	5,404,502	0	79	0	1,098,781	0	369,840	1,468,621	0.203	0.068	0.272	
<b>MA Total:</b>	<b>24,352,339</b>	<b>12</b>	<b>388</b>	<b>641,561</b>	<b>2,815,407</b>	<b>141,682</b>	<b>1,574,013</b>	<b>5,172,663</b>	<b>0.142</b>	<b>0.070</b>	<b>0.212</b>	

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.172	0.151	.
(14) Massachusetts Credibility:	0.460	0.590	.
(15) Countrywide Pure Premium:	0.214	0.113	0.327
(16) Countrywide Indicated Relativity:	0.267	0.246	.
(17) Countrywide Credibility:	0.270	0.210	.
(18) Countrywide Lost-Time Claims:	1698.0	.	.
(19) Pure Premium Underlying Present Rate:	0.158	0.066	0.224
(20) Relativity to Underlying Present Rate:	0.210	0.161	.
(21) Credibility to Underlying Relativity:	0.270	0.200	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.208	0.173	.
(24) Balanced Formula Relativity:	0.206	0.173	0.194

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Section IX - Classification Pricing  
 Subsection G - Class Relativities  
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## Calculation of Class Relativities

Class(es):		Effective: 7/1/2020							Goods and Services		
9620 FUNERAL DIRECTOR & DRIVERS											
		Converted Unlimited Losses									
		Amount									
		Claim Count		Indemnity		Medical		MA Indicated Pure Premiums			
Policy Period (1)	Exposure (2)	Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)	Likely (7)	Not-Likely (8)	Total (9)	Indemnity (10)	Medical (11)	Total (12)
2013	664,230	2	10	3,269	36,961	14,283	115,018	169,531	0.061	0.195	0.255
2014	664,027	0	16	0	203,790	0	78,442	282,232	0.307	0.118	0.425
2015	656,254	1	14	4,204	227,743	5,781	244,144	481,872	0.353	0.381	0.734
2016	704,217	0	10	0	0	0	16,790	16,790	0.000	0.024	0.024
2017	713,634	1	13	57,235	47,768	21,262	117,571	243,836	0.147	0.195	0.342
<b>MA Total:</b>	<b>3,402,362</b>	<b>4</b>	<b>63</b>	<b>64,709</b>	<b>516,262</b>	<b>41,325</b>	<b>571,966</b>	<b>1,194,262</b>	<b>0.171</b>	<b>0.180</b>	<b>0.351</b>

	Pure Premium Relativities		
	Indemnity	Medical	Total
(13) Massachusetts Indicated Relativity:	0.207	0.387	.
(14) Massachusetts Credibility:	0.270	0.410	.
(15) Countrywide Pure Premium:	0.557	0.344	0.901
(16) Countrywide Indicated Relativity:	0.695	0.747	.
(17) Countrywide Credibility:	0.370	0.300	.
(18) Countrywide Lost-Time Claims:	554.00	.	.
(19) Pure Premium Underlying Present Rate:	0.315	0.190	0.506
(20) Relativity to Underlying Present Rate:	0.420	0.462	.
(21) Credibility to Underlying Relativity:	0.360	0.290	.
(22) Industry Group Converted Pure Premium:	0.825	0.466	1.291
(23) Formula Relativity:	0.464	0.517	.
(24) Balanced Formula Relativity:	0.461	0.517	0.481

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Section IX - Classification Pricing  
 Subsection H - Industry Group Rate Change and Rate Level Factors  
 7/1/2020

Section IX - H  
 Exhibit 1

## Calculation of Industry Group Rate Change and Limits

	Industry Group				
	Manufacturing	Construction	Office & Clerical	Goods & Services	Miscellaneous
(1) Industry Group Differential	1.010	0.989	0.981	1.006	1.022
(2) Experience and Benefit Level Change - Overall	-6.8%	-6.8%	-6.8%	-6.8%	-6.8%
(3) Target Rate Change = (1) x [1.000 + (2)] - 1.000	-5.9%	-7.8%	-8.6%	-6.2%	-4.8%
(4) Maximum Rate Change = (3) + (9)	10.6%	9.7%	8.9%	10.8%	10.7%
(5) Minimum Rate Change = (3) - (9)	-22.4%	-25.3%	-26.1%	-23.2%	-20.3%
(6) Present Average Rate	1.814	4.742	0.143	1.591	4.412
(7) Uncapped Rate Level Factor = [1.000 + (3)] x (6)	1.707	4.370	0.130	1.492	4.201
(8) Capped Rate Level Factor	1.743	4.369	0.132	1.492	4.238
(9) Swing %	16.5%	17.5%	17.5%	17.0%	15.5%

In addition, the WCRIBMA is limiting the increase in average rates for any class to \$15.00 and no average rate shall exceed \$90.00 per \$100.00 of payroll.

**Notes:**

- (1): Exhibit 2.
- (2): Indicated Rate Change, from Section I-A, Exhibit 1.
- (6): Rates by class consistent with the 07/01/18 stipulation, weighted by five years of exposure.
- (8): Proposed average uncapped rates are capped by an iterative process using rate levels to determine if the required change is achieved.
- (9): Per Stipulation

Calculation of Massachusetts Industry Group Differentials  
 Excluding Large Deductibles

Industry Group (1)	Expected Losses (2)	Converted Unlimited Losses (3)	Industry Group Differential = (3) / (2) (4)	Lost-Time Cases (5)	Full Standard for Credibility Lost-Time Cases (6)	Credibility (7)	Credibility Weighted (8)	Balanced Industry Group Differential = (8) / 1.104 (9)
Manufacturing	417,050,933	465,383,975	1.116	9,515	12,000	0.890	1.115	1.010
Construction	1,190,730,580	1,299,526,522	1.091	13,328	12,000	1.000	1.091	0.989
Office & Clerical	421,327,644	455,669,349	1.082	11,158	12,000	0.964	1.082	0.981
Goods & Services	1,086,337,329	1,206,651,815	1.111	31,134	12,000	1.000	1.111	1.006
Miscellaneous	492,115,493	555,996,216	1.130	9,996	12,000	0.913	1.128	1.022
All	3,607,561,979	3,983,227,877	1.104			1.000	1.104	1.000

Notes:

(2): Five Years of Exposure x Pure Premium Underlying Present Rate from Section IX - F.

(3): Section IX - C. Goods and Services includes Per Capita classes.

(7) =  $\text{Min} ( 1.0 , [(5)/(6)]^{0.5} )$

(8) =  $[(7) \times (4)] + [( 1.0 - (7) ) \times (4) \text{ Total}]$

(8) Total =  $\text{sum} [ (2) \times (8) ] / (2) \text{ Total}$

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Section IX - Classification Pricing  
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Section IX - I  
 Exhibit 1

## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
0005	1.474	1.411	1.451	1.492	2.16
0008	1.471	1.835	1.602	1.492	2.39
0016	2.162	2.245	2.192	1.492	3.27
0034	1.782	2.176	1.924	1.492	2.87
0035	1.114	1.241	1.160	1.492	1.73
0036	1.782	2.176	1.924	1.492	2.87
0042	2.146	2.362	2.224	1.492	3.32
0046	1.540	2.131	1.753	1.492	2.62
0050	0.882	0.864	0.877	4.370	3.83
0079	1.328	2.003	1.572	1.492	2.35
0083	2.153	2.202	2.171	1.492	3.24
0106	1.863	2.763	2.169	4.201	9.11
0113	1.782	2.176	1.924	1.492	2.87
0170	1.782	2.176	1.924	1.492	2.87
0908	106.933	87.456	99.899	1.492	74.52
0909	177.779	318.470	228.585	1.492	170.52
0912	177.779	318.470	228.585	1.492	341.03
0913	106.933	87.456	99.899	1.492	149.04
0917	1.729	1.321	1.581	1.492	2.36
0918	0.345	0.212	0.297	1.492	0.44
1430	2.267	2.009	2.178	1.707	3.72
1438	1.838	1.652	1.774	1.707	3.03
1463	5.131	7.806	6.054	1.707	10.33
1624	0.787	0.883	0.820	4.201	3.44
1655	0.567	0.543	0.559	4.201	2.35
1701	1.234	1.132	1.199	1.707	2.05
1710	0.787	0.883	0.820	4.201	3.44
1747	1.508	1.625	1.549	1.707	2.64
1748	1.388	2.092	1.631	1.707	2.78
1853	0.832	0.470	0.707	1.707	1.21
1924	1.242	1.110	1.196	1.707	2.04
1925	2.180	26.831	10.688	1.707	18.24
2003	2.017	1.781	1.936	1.707	3.30
2014	2.105	1.834	2.011	1.707	3.43
2021	1.267	1.237	1.257	1.707	2.15
2039	1.908	1.922	1.913	1.707	3.26
2041	1.356	1.159	1.288	1.707	2.20
2070	2.015	1.671	1.896	1.707	3.24
2081	1.302	1.713	1.444	1.707	2.46
2089	1.528	1.220	1.422	1.707	2.43
2095	1.711	1.326	1.578	1.707	2.69
2101	1.528	1.220	1.422	1.707	2.43

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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
2111	1.147	1.154	1.150	1.707	1.96
2114	1.528	1.220	1.422	1.707	2.43
2115	3.184	2.486	2.943	1.707	5.02
2121	0.758	0.734	0.750	1.707	1.28
2130	0.779	0.757	0.771	1.707	1.32
2131	1.541	1.517	1.533	1.707	2.62
2143	1.297	1.067	1.218	1.707	2.08
2150	2.046	2.059	2.050	1.707	3.50
2156	2.240	2.368	2.284	1.707	3.90
2157	2.277	1.762	2.099	1.707	3.58
2172	1.043	0.709	0.928	1.707	1.58
2211	3.112	3.212	3.146	1.707	5.37
2220	1.185	1.195	1.189	1.707	2.03
2260	3.045	2.481	2.851	1.707	4.87
2288	1.839	1.808	1.828	1.707	3.12
2305	2.049	1.742	1.943	1.707	3.32
2362	0.740	1.084	0.859	1.707	1.47
2380	1.109	1.140	1.119	1.707	1.91
2402	1.155	1.228	1.181	1.707	2.02
2413	1.748	1.757	1.751	1.707	2.99
2416	1.335	1.275	1.314	1.707	2.24
2417	1.101	0.818	1.003	1.707	1.71
2501	1.051	1.026	1.042	1.707	1.78
2503	0.689	0.512	0.628	1.707	1.07
2570	2.199	1.720	2.034	1.707	3.47
2576	1.062	1.181	1.103	1.707	1.88
2585	1.419	1.557	1.466	1.707	2.50
2586	0.978	1.094	1.018	1.707	1.74
2587	1.584	1.193	1.443	1.492	2.15
2623	2.589	2.580	2.586	1.707	4.41
2651	0.792	0.854	0.813	1.707	1.39
2660	1.089	1.175	1.119	1.707	1.91
2683	1.063	1.260	1.131	1.707	1.93
2688	0.933	1.094	0.988	1.707	1.69
2702	2.753	2.689	2.731	4.201	11.47
2710	3.107	3.431	3.219	1.707	5.49
2731	1.505	1.765	1.595	1.707	2.72
2747	3.005	2.761	2.920	1.707	4.98
2790	0.897	0.843	0.878	1.707	1.50
2802	1.919	1.974	1.938	1.707	3.31
2835	0.732	0.808	0.758	1.707	1.29
2836	1.114	1.038	1.088	1.707	1.86



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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
2841	1.853	2.281	2.001	1.707	3.42
2883	1.787	1.651	1.740	1.707	2.97
2923	0.865	0.834	0.854	1.707	1.46
2942	0.863	0.975	0.902	1.707	1.54
3018	1.381	1.251	1.337	1.707	2.28
3022	1.783	1.951	1.841	1.707	3.14
3027	1.616	2.125	1.792	1.707	3.06
3028	1.459	1.601	1.508	1.707	2.57
3030	3.201	3.053	3.150	1.707	5.38
3040	2.747	1.951	2.472	1.707	4.22
3041	1.420	1.452	1.431	1.707	2.44
3042	2.350	2.321	2.340	1.707	3.99
3066	1.181	1.260	1.208	1.707	2.06
3076	1.117	1.049	1.094	1.707	1.87
3081	2.349	3.135	2.620	1.707	4.47
3082	2.349	3.135	2.620	1.707	4.47
3085	2.416	2.278	2.368	1.707	4.04
3110	4.180	4.387	4.251	1.707	7.26
3111	1.006	0.943	0.984	1.707	1.68
3113	0.827	0.852	0.836	1.707	1.43
3114	1.666	1.629	1.653	1.707	2.82
3118	0.935	0.753	0.872	1.707	1.49
3119	0.370	0.459	0.401	1.707	0.68
3120	0.719	0.592	0.675	1.707	1.15
3122	1.163	1.326	1.219	1.707	2.08
3127	0.951	0.987	0.964	1.707	1.64
3131	0.715	0.800	0.744	1.707	1.27
3132	1.285	1.475	1.351	1.707	2.31
3145	0.876	0.827	0.859	1.707	1.47
3146	1.134	1.256	1.176	1.707	2.01
3169	1.252	1.776	1.432	1.707	2.45
3179	0.642	0.540	0.607	1.707	1.04
3180	1.220	1.115	1.184	1.707	2.02
3188	1.271	1.215	1.252	1.707	2.14
3200	1.068	1.088	1.075	1.707	1.83
3220	1.593	1.532	1.572	1.707	2.68
3255	1.036	1.028	1.033	1.707	1.76
3257	1.152	1.225	1.177	1.707	2.01
3270	1.255	1.184	1.231	1.707	2.10
3300	1.478	2.012	1.662	1.707	2.84
3315	1.524	1.478	1.508	1.707	2.57
3336	1.734	1.352	1.602	1.707	2.74

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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
3365	0.997	1.119	1.035	4.370	4.52
3372	1.050	1.112	1.072	1.707	1.83
3373	2.103	1.579	1.922	1.707	3.28
3381	1.096	1.019	1.070	1.707	1.83
3383	0.810	0.975	0.867	1.707	1.48
3385	0.349	0.380	0.360	1.707	0.61
3400	1.252	1.776	1.432	1.707	2.45
3507	1.490	1.275	1.416	1.707	2.42
3515	1.468	1.512	1.483	1.707	2.53
3558	0.344	0.563	0.420	1.707	0.72
3571	0.393	0.357	0.381	1.707	0.65
3574	0.864	0.869	0.866	1.707	1.48
3612	0.698	0.788	0.730	1.707	1.25
3620	1.704	2.042	1.821	1.707	3.11
3629	0.864	0.869	0.866	1.707	1.48
3632	0.864	0.869	0.866	1.707	1.48
3634	0.777	0.657	0.736	1.707	1.26
3635	1.414	1.787	1.543	1.707	2.63
3638	0.864	0.869	0.866	1.707	1.48
3642	0.586	0.568	0.579	1.707	0.99
3643	0.806	0.775	0.795	1.707	1.36
3647	1.140	1.072	1.117	1.707	1.91
3648	0.597	0.691	0.630	1.707	1.08
3681	0.376	0.317	0.356	1.707	0.61
3685	0.359	0.296	0.337	1.707	0.58
3724	1.076	1.072	1.075	4.370	4.70
3726	0.915	0.669	0.838	4.370	3.66
3807	1.252	1.776	1.432	1.707	2.45
3808	1.704	1.793	1.734	1.707	2.96
3821	2.961	3.436	3.133	1.492	4.67
3826	2.529	3.387	2.825	1.707	4.82
3830	0.864	0.869	0.866	1.707	1.48
3841	0.725	0.739	0.730	1.707	1.25
4000	1.130	1.139	1.133	4.201	4.76
4021	1.858	1.917	1.878	1.707	3.21
4024	1.776	1.629	1.725	1.707	2.94
4034	2.805	3.080	2.900	1.707	4.95
4036	1.049	1.099	1.066	1.707	1.82
4038	1.864	1.066	1.589	1.707	2.71
4053	1.150	1.224	1.175	1.707	2.01
4062	0.959	0.948	0.955	1.707	1.63
4112	0.209	0.220	0.213	1.707	0.36

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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
4113	1.150	1.224	1.175	1.707	2.01
4114	1.461	1.046	1.318	1.707	2.25
4130	1.607	1.443	1.551	1.707	2.65
4133	0.789	0.690	0.755	1.707	1.29
4150	0.446	0.334	0.407	1.707	0.69
4239	1.105	1.081	1.097	1.707	1.87
4243	1.616	1.337	1.520	1.707	2.59
4244	1.427	1.153	1.332	1.707	2.27
4250	0.916	0.909	0.914	1.707	1.56
4251	1.200	0.843	1.077	1.707	1.84
4273	1.622	1.499	1.580	1.707	2.70
4279	1.155	1.051	1.119	1.707	1.91
4283	0.954	0.821	0.908	1.707	1.55
4299	0.927	0.948	0.934	1.707	1.60
4304	2.323	2.390	2.346	1.707	4.01
4307	0.777	0.870	0.809	1.707	1.38
4308	1.544	0.384	1.144	1.707	1.95
4351	0.471	0.469	0.470	1.707	0.80
4352	0.736	0.565	0.677	1.707	1.16
4360	0.324	0.300	0.316	1.707	0.54
4361	4.539	5.657	4.964	0.130	0.65
4362	0.327	0.300	0.317	1.492	0.47
4410	1.391	1.872	1.557	1.707	2.66
4432	0.346	0.445	0.380	1.707	0.65
4439	2.565	3.384	2.848	1.707	4.86
4452	1.445	1.320	1.402	1.707	2.39
4459	1.452	1.389	1.431	1.707	2.44
4470	1.082	1.055	1.073	1.707	1.83
4484	0.996	1.165	1.054	1.707	1.80
4493	1.006	0.981	0.997	1.707	1.70
4511	0.177	0.162	0.172	1.492	0.26
4512	0.059	0.055	0.058	1.492	0.09
4557	0.926	0.814	0.888	1.707	1.51
4558	0.747	0.863	0.787	1.707	1.34
4583	1.433	1.272	1.377	1.707	2.35
4611	0.388	0.384	0.387	1.707	0.66
4635	2.326	3.028	2.568	1.707	4.38
4653	0.950	0.819	0.905	1.707	1.54
4665	4.697	4.414	4.599	1.707	7.85
4692	0.277	0.239	0.264	1.707	0.45
4693	0.425	0.473	0.441	1.707	0.75
4720	0.917	0.898	0.910	1.707	1.55

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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
4740	0.486	0.455	0.475	1.707	0.81
4741	1.201	0.946	1.113	1.707	1.90
4771	1.787	1.063	1.537	1.707	2.62
4777	1.433	1.272	1.377	1.707	2.35
4825	0.259	0.219	0.245	1.707	0.42
4828	0.508	0.474	0.496	1.707	0.85
4829	0.508	0.474	0.496	1.707	0.85
4902	0.863	0.975	0.902	1.707	1.54
4923	0.324	0.300	0.316	1.707	0.54
5020	1.021	0.787	0.948	4.370	4.14
5022	2.128	1.995	2.086	4.370	9.12
5037	3.772	3.163	3.582	4.370	15.65
5040	4.915	4.030	4.638	4.370	20.27
5057	4.168	6.500	4.899	4.370	21.41
5059	5.037	5.636	5.224	4.370	22.83
5102	1.555	1.154	1.429	4.370	6.25
5146	1.524	1.504	1.518	4.370	6.63
5160	0.538	0.516	0.531	4.370	2.32
5183	0.667	0.640	0.658	4.370	2.88
5188	0.934	0.677	0.853	4.370	3.73
5190	0.464	0.511	0.479	4.370	2.09
5191	0.513	0.463	0.495	1.492	0.74
5192	1.680	1.596	1.650	1.492	2.46
5213	2.505	2.280	2.434	4.370	10.64
5215	0.914	0.800	0.878	4.370	3.84
5221	1.517	1.239	1.430	4.370	6.25
5222	2.340	1.741	2.152	4.370	9.41
5223	0.853	0.855	0.854	4.370	3.73
5348	0.970	0.748	0.900	4.370	3.93
5402	1.286	1.269	1.280	4.370	5.60
5403	1.854	1.730	1.815	4.370	7.93
5437	0.914	0.863	0.898	4.370	3.92
5443	0.777	0.750	0.768	4.370	3.36
5445	1.408	1.091	1.309	4.370	5.72
5462	1.270	1.083	1.212	4.370	5.30
5472	1.862	1.513	1.753	4.370	7.66
5473	2.141	2.247	2.174	4.370	9.50
5474	0.879	0.840	0.867	4.370	3.79
5478	0.927	0.674	0.848	4.370	3.70
5479	1.204	1.020	1.147	4.370	5.01
5480	1.121	0.950	1.067	4.370	4.66
5506	1.050	0.927	1.012	4.370	4.42

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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
5507	1.304	1.020	1.215	4.370	5.31
5508	0.882	0.864	0.877	4.370	3.83
5509	1.000	1.154	1.048	4.370	4.58
5538	0.909	0.911	0.910	4.370	3.98
5545	7.564	11.544	8.811	4.370	38.50
5547	2.113	2.829	2.337	4.370	10.21
5606	0.265	0.330	0.285	4.370	1.25
5610	1.014	0.712	0.919	4.370	4.02
5645	1.374	1.728	1.484	4.370	6.49
5701	3.929	5.281	4.353	4.370	19.02
5703	2.365	2.116	2.287	4.370	9.99
5705	2.229	2.175	2.212	4.370	9.67
6003	1.912	1.639	1.826	4.370	7.98
6005	0.882	0.864	0.877	4.370	3.83
6204	1.163	1.022	1.119	4.370	4.89
6217	0.941	0.891	0.925	4.370	4.04
6229	0.845	0.804	0.832	4.370	3.64
6233	0.520	0.397	0.482	4.370	2.10
6251	1.100	0.665	0.964	4.370	4.21
6252	1.179	0.941	1.105	4.370	4.83
6306	1.627	1.439	1.568	4.370	6.85
6319	0.673	0.621	0.657	4.370	2.87
6325	0.609	0.574	0.598	4.370	2.61
6400	0.981	1.142	1.032	4.370	4.51
6504	1.528	1.220	1.422	1.707	2.43
6834	0.490	0.656	0.547	4.201	2.30
6836	0.708	0.990	0.804	4.201	3.38
7219	1.984	1.699	1.887	4.201	7.93
7230	2.246	1.839	2.107	4.201	8.85
7231	2.545	2.779	2.625	4.201	11.03
7360	0.872	0.864	0.869	4.201	3.65
7370	0.812	0.992	0.873	4.201	3.67
7380	1.342	1.294	1.325	4.201	5.57
7382	0.795	0.842	0.811	4.201	3.41
7403	0.828	0.996	0.885	4.201	3.72
7405	0.273	0.257	0.268	4.201	1.12
7420	3.154	3.493	3.269	4.201	13.73
7421	0.288	0.239	0.272	4.201	1.14
7422	0.288	0.239	0.272	4.201	1.14
7425	0.623	0.386	0.542	4.201	2.28
7431	0.288	0.239	0.272	4.201	1.14
7502	0.390	0.363	0.381	4.201	1.60

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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
7515	0.503	1.494	0.840	4.201	3.53
7520	0.660	0.654	0.658	4.201	2.77
7538	1.359	1.372	1.363	4.370	5.96
7539	0.261	0.298	0.274	4.201	1.15
7580	0.755	0.646	0.718	4.201	3.02
7590	1.159	1.339	1.220	4.201	5.13
7600	0.863	0.655	0.793	4.201	3.33
7601	1.153	1.391	1.228	4.370	5.37
7610	4.420	2.789	3.800	0.130	0.50
7704	0.868	1.148	0.963	4.201	4.05
7720	0.308	0.343	0.320	4.201	1.34
7855	0.796	0.690	0.763	4.370	3.33
8001	0.942	1.215	1.041	1.492	1.55
8002	0.974	1.573	1.190	1.492	1.78
8006	0.701	0.882	0.766	1.492	1.14
8008	0.451	0.468	0.458	1.492	0.68
8010	1.008	1.128	1.051	1.492	1.57
8013	0.199	0.263	0.222	1.492	0.33
8017	0.563	0.652	0.596	1.492	0.89
8018	2.358	2.018	2.235	1.492	3.33
8021	2.264	1.896	2.131	1.492	3.18
8031	1.053	1.170	1.095	1.492	1.63
8032	0.754	0.789	0.767	1.492	1.14
8033	0.986	0.908	0.958	1.492	1.43
8034	2.019	1.562	1.854	1.492	2.77
8039	0.699	0.987	0.803	1.492	1.20
8044	1.813	1.753	1.791	1.492	2.67
8046	1.202	1.385	1.268	1.492	1.89
8048	1.666	1.575	1.633	1.492	2.44
8058	1.232	1.733	1.413	1.492	2.11
8103	1.572	1.544	1.562	1.492	2.33
8105	11.829	7.719	10.345	1.492	15.43
8106	3.301	3.925	3.526	1.492	5.26
8107	1.701	1.813	1.741	1.492	2.60
8111	1.694	1.932	1.780	1.492	2.66
8203	3.991	3.702	3.887	1.492	5.80
8204	3.759	5.234	4.292	1.492	6.40
8215	2.178	2.388	2.254	1.492	3.36
8227	0.952	1.094	0.996	4.370	4.35
8232	3.635	3.558	3.607	1.492	5.38
8233	3.455	3.701	3.544	1.492	5.29
8235	2.572	2.431	2.521	1.492	3.76

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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
8263	2.726	2.994	2.823	1.492	4.21
8264	3.019	3.092	3.046	1.492	4.54
8265	3.455	3.701	3.544	1.492	5.29
8279	2.259	2.949	2.508	1.492	3.74
8291	2.407	2.464	2.428	1.492	3.62
8292	2.236	2.246	2.240	1.492	3.34
8293	5.085	4.994	5.052	1.492	7.54
8350	4.367	3.706	4.128	1.492	6.16
8380	1.692	1.574	1.649	1.492	2.46
8381	1.084	1.235	1.139	1.492	1.70
8385	1.989	1.897	1.955	1.492	2.92
8392	0.852	1.091	0.938	1.492	1.40
8393	0.866	0.676	0.797	1.492	1.19
8500	3.455	3.701	3.544	1.492	5.29
8601	1.562	1.434	1.513	0.130	0.20
8710	2.176	1.652	1.987	1.492	2.96
8719	2.176	1.652	1.987	1.492	2.96
8720	0.527	0.459	0.503	1.492	0.75
8721	1.903	2.108	1.981	0.130	0.26
8742	0.738	0.816	0.768	0.130	0.10
8745	3.355	4.785	3.871	1.492	5.78
8747	0.557	0.353	0.483	1.492	0.72
8748	4.960	4.374	4.737	0.130	0.62
8800	7.707	6.528	7.258	0.130	0.95
8803	0.312	0.311	0.311	0.130	0.04
8810	0.461	0.490	0.472	0.130	0.06
8820	0.565	0.532	0.552	0.130	0.07
8824	1.119	1.210	1.152	1.492	1.72
8826	0.929	0.894	0.916	1.492	1.37
8829	1.437	1.225	1.360	1.492	2.03
8831	0.462	0.929	0.631	1.492	0.94
8832	2.140	1.871	2.038	0.130	0.27
8833	9.023	6.582	8.094	0.130	1.06
8835	1.268	0.959	1.156	1.492	1.73
8868	4.884	5.460	5.103	0.130	0.67
8901	0.461	0.490	0.472	0.130	0.06
9014	1.392	1.343	1.374	1.492	2.05
9015	1.949	1.835	1.908	1.492	2.85
9016	1.011	1.345	1.132	1.492	1.69
9019	0.842	0.662	0.781	4.201	3.28
9033	1.661	1.440	1.582	1.492	2.36
9040	1.736	1.948	1.813	1.492	2.70

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## Calculation of Average Uncapped Rates All Industry Groups

Class (1)	Balanced Formula Relativity			Uncapped Rate Level Factor (5)	Proposed Average Uncapped Rate (6)
	Indemnity (2)	Medical (3)	Total (4)		
9052	0.988	0.856	0.940	1.492	1.40
9058	0.885	0.894	0.889	1.492	1.33
9060	0.534	0.814	0.635	1.492	0.95
9061	0.562	0.679	0.604	1.492	0.90
9063	0.307	0.496	0.375	1.492	0.56
9079	0.605	0.725	0.649	1.492	0.97
9089	0.472	0.602	0.519	1.492	0.77
9093	0.603	0.924	0.719	1.492	1.07
9101	2.071	2.458	2.211	1.492	3.30
9102	0.470	0.563	0.502	4.201	2.11
9154	0.286	0.393	0.322	4.201	1.35
9156	11.155	14.856	12.563	0.130	1.64
9178	1.444	6.234	3.073	4.201	12.91
9179	7.859	17.298	11.069	4.201	46.50
9180	0.752	1.474	0.998	4.201	4.19
9182	0.585	0.952	0.710	4.201	2.98
9186	0.752	1.474	0.998	4.201	4.19
9220	2.054	1.977	2.026	1.492	3.02
9402	0.926	0.848	0.900	4.201	3.78
9403	2.276	2.011	2.186	4.201	9.18
9410	2.161	2.590	2.316	1.492	3.45
9501	1.086	1.137	1.104	1.707	1.88
9505	1.086	1.137	1.104	1.707	1.88
9519	1.765	1.357	1.617	1.492	2.41
9521	1.611	1.585	1.602	1.707	2.73
9522	0.887	0.827	0.866	1.707	1.48
9533	2.926	2.954	2.935	4.370	12.82
9534	1.211	1.057	1.163	4.370	5.08
9549	1.018	0.756	0.936	4.370	4.09
9552	1.475	1.910	1.611	4.370	7.04
9586	0.206	0.173	0.194	1.492	0.29
9620	0.461	0.517	0.481	1.492	0.72

Notes:

(2), (3), (4): Section IX - G.

(5): Section IX - H, Exhibit 1.

(6) = (4) x (5)



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Section IX - Classification Pricing  
Subsection J - Average Rates and Proposed Premium Change  
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## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
0005	2.12	2.16	2.16
0008	2.24	2.39	2.39
0016	3.72	3.27	3.27
0034	3.65	2.87	2.87
0035	2.00	1.73	1.73
0036	3.65	2.87	2.87
0042	3.71	3.32	3.32
0046	1.78	2.62	1.97
0050	4.56	3.83	3.83
0079	3.26	2.35	2.50
0083	3.31	3.24	3.24
0106	10.50	9.11	9.19
0113	3.65	2.87	2.87
0170	3.65	2.87	2.87
0908	77.65	74.52	74.50
0909	162.95	170.52	170.47
0912	325.91	341.03	340.94
0913	155.29	149.04	149.00
0917	2.87	2.36	2.36
0918	0.53	0.44	0.44
1430	6.53	3.72	5.07
1438	3.09	3.03	3.09
1463	9.18	10.33	10.16
1624	3.76	3.44	3.47
1655	3.45	2.35	2.75
1701	2.70	2.05	2.09
1710	3.76	3.44	3.47
1747	3.05	2.64	2.70
1748	2.85	2.78	2.84
1853	1.41	1.21	1.23
1924	2.09	2.04	2.09
1925	4.90	18.24	5.42
2003	3.59	3.30	3.37
2014	3.25	3.43	3.51
2021	2.29	2.15	2.19
2039	3.15	3.26	3.33
2041	2.69	2.20	2.24
2070	3.85	3.24	3.31
2081	3.14	2.46	2.52
2089	2.82	2.43	2.48
2095	3.33	2.69	2.75
2101	2.82	2.43	2.48
2111	2.01	1.96	2.00
2114	2.82	2.43	2.48
2115	4.29	5.02	4.75
2121	1.20	1.28	1.31
2130	1.69	1.32	1.34
2131	2.50	2.62	2.67

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## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
2143	1.84	2.08	2.03
2150	4.30	3.50	3.57
2156	4.52	3.90	3.98
2157	3.64	3.58	3.66
2172	1.85	1.58	1.62
2211	6.22	5.37	5.48
2220	2.37	2.03	2.07
2260	5.68	4.87	4.97
2288	2.93	3.12	3.19
2305	2.80	3.32	3.10
2362	1.55	1.47	1.50
2380	2.34	1.91	1.95
2402	2.21	2.02	2.06
2413	3.27	2.99	3.05
2416	2.56	2.24	2.29
2417	2.69	1.71	2.09
2501	1.86	1.78	1.82
2503	1.23	1.07	1.09
2570	5.51	3.47	4.28
2576	1.80	1.88	1.92
2585	2.87	2.50	2.56
2586	1.68	1.74	1.77
2587	3.42	2.15	2.63
2623	4.78	4.41	4.51
2651	1.43	1.39	1.42
2660	1.83	1.91	1.95
2683	1.74	1.93	1.93
2688	2.18	1.69	1.72
2702	13.40	11.47	11.57
2710	6.66	5.49	5.61
2731	3.06	2.72	2.78
2747	5.57	4.98	5.09
2790	1.60	1.50	1.53
2802	3.83	3.31	3.38
2835	1.76	1.29	1.37
2836	1.85	1.86	1.90
2841	3.32	3.42	3.49
2883	3.02	2.97	3.03
2923	1.63	1.46	1.49
2942	1.84	1.54	1.57
3018	2.59	2.28	2.33
3022	3.48	3.14	3.21
3027	5.05	3.06	3.92
3028	2.72	2.57	2.63
3030	5.72	5.38	5.49
3040	4.72	4.22	4.31
3041	3.55	2.44	2.76
3042	5.60	3.99	4.35

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## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
3066	2.26	2.06	2.11
3076	2.16	1.87	1.91
3081	4.79	4.47	4.57
3082	4.79	4.47	4.57
3085	4.67	4.04	4.13
3110	8.71	7.26	7.41
3111	1.89	1.68	1.72
3113	1.44	1.43	1.46
3114	2.55	2.82	2.82
3118	1.77	1.49	1.52
3119	0.74	0.68	0.70
3120	1.40	1.15	1.18
3122	2.01	2.08	2.13
3127	1.00	1.64	1.11
3131	1.45	1.27	1.30
3132	2.97	2.31	2.35
3145	1.52	1.47	1.50
3146	1.97	2.01	2.05
3169	2.54	2.45	2.50
3179	1.13	1.04	1.06
3180	2.66	2.02	2.06
3188	1.93	2.14	2.14
3200	1.94	1.83	1.87
3220	2.83	2.68	2.74
3255	2.12	1.76	1.80
3257	2.51	2.01	2.05
3270	1.94	2.10	2.15
3300	3.96	2.84	3.07
3315	2.97	2.57	2.63
3336	3.39	2.74	2.79
3365	5.79	4.52	4.52
3372	2.16	1.83	1.87
3373	3.66	3.28	3.35
3381	2.21	1.83	1.86
3383	1.57	1.48	1.51
3385	0.67	0.61	0.63
3400	2.54	2.45	2.50
3507	2.53	2.42	2.47
3515	2.80	2.53	2.59
3558	0.83	0.72	0.73
3571	0.79	0.65	0.66
3574	1.59	1.48	1.51
3612	1.66	1.25	1.29
3620	4.53	3.11	3.52
3629	1.59	1.48	1.51
3632	1.59	1.48	1.51
3634	1.40	1.26	1.28
3635	2.64	2.63	2.69

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## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
3638	1.59	1.48	1.51
3642	1.10	0.99	1.01
3643	1.47	1.36	1.39
3647	1.88	1.91	1.95
3648	1.25	1.08	1.10
3681	0.67	0.61	0.62
3685	0.61	0.58	0.59
3724	5.14	4.70	4.70
3726	8.50	3.66	6.35
3807	2.54	2.45	2.50
3808	2.68	2.96	2.96
3821	4.28	4.67	4.67
3826	3.44	4.82	3.80
3830	1.59	1.48	1.51
3841	1.28	1.25	1.27
4000	4.69	4.76	4.80
4021	3.62	3.21	3.27
4024	2.87	2.94	3.01
4034	6.09	4.95	5.06
4036	2.29	1.82	1.86
4038	2.74	2.71	2.77
4053	1.99	2.01	2.05
4062	1.69	1.63	1.67
4112	0.48	0.36	0.37
4113	1.99	2.01	2.05
4114	2.16	2.25	2.30
4130	2.91	2.65	2.70
4133	1.55	1.29	1.32
4150	0.61	0.69	0.68
4239	2.23	1.87	1.91
4243	3.08	2.59	2.65
4244	2.26	2.27	2.32
4250	1.79	1.56	1.59
4251	2.17	1.84	1.88
4273	2.51	2.70	2.75
4279	2.06	1.91	1.95
4283	1.96	1.55	1.58
4299	1.78	1.60	1.63
4304	4.46	4.01	4.09
4307	1.53	1.38	1.41
4308	1.35	1.95	1.50
4351	0.87	0.80	0.82
4352	1.27	1.16	1.18
4360	0.74	0.54	0.57
4361	0.68	0.65	0.65
4362	0.53	0.47	0.47
4410	2.57	2.66	2.71
4432	0.85	0.65	0.66

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## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
4439	3.47	4.86	3.84
4452	2.87	2.39	2.44
4459	2.50	2.44	2.49
4470	1.97	1.83	1.87
4484	1.91	1.80	1.84
4493	2.03	1.70	1.74
4511	0.29	0.26	0.26
4512	0.09	0.09	0.09
4557	1.66	1.51	1.55
4558	1.30	1.34	1.37
4583	3.08	2.35	2.40
4611	0.90	0.66	0.70
4635	4.28	4.38	4.48
4653	1.78	1.54	1.58
4665	7.22	7.85	7.98
4692	0.58	0.45	0.46
4693	0.87	0.75	0.77
4720	1.83	1.55	1.59
4740	1.12	0.81	0.87
4741	2.20	1.90	1.94
4771	6.47	2.62	5.02
4777	3.08	2.35	2.40
4825	0.52	0.42	0.43
4828	1.03	0.85	0.87
4829	1.03	0.85	0.87
4902	1.84	1.54	1.57
4923	0.74	0.54	0.57
5020	4.26	4.14	4.14
5022	9.71	9.12	9.11
5037	17.05	15.65	15.65
5040	24.25	20.27	20.26
5057	21.84	21.41	21.40
5059	16.87	22.83	18.50
5102	6.19	6.25	6.24
5146	6.64	6.63	6.63
5160	2.78	2.32	2.32
5183	2.96	2.88	2.88
5188	4.37	3.73	3.73
5190	2.19	2.09	2.09
5191	0.76	0.74	0.74
5192	2.75	2.46	2.46
5213	12.09	10.64	10.64
5215	4.37	3.84	3.84
5221	7.04	6.25	6.25
5222	8.68	9.41	9.40
5223	4.23	3.73	3.73
5348	4.19	3.93	3.93
5402	6.34	5.60	5.59

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## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
5403	7.72	7.93	7.93
5437	4.54	3.92	3.92
5443	3.27	3.36	3.36
5445	6.15	5.72	5.72
5462	6.24	5.30	5.29
5472	8.85	7.66	7.66
5473	10.66	9.50	9.50
5474	4.30	3.79	3.79
5478	4.22	3.70	3.70
5479	7.00	5.01	5.22
5480	4.08	4.66	4.47
5506	5.25	4.42	4.42
5507	5.66	5.31	5.31
5508	4.56	3.83	3.83
5509	3.86	4.58	4.23
5538	3.86	3.98	3.97
5545	36.06	38.50	38.49
5547	11.57	10.21	10.21
5606	1.49	1.25	1.25
5610	5.72	4.02	4.27
5645	7.18	6.49	6.49
5701	22.23	19.02	19.02
5703	14.73	9.99	11.00
5705	12.55	9.67	9.67
6003	9.24	7.98	7.98
6005	4.56	3.83	3.83
6204	5.91	4.89	4.89
6217	4.07	4.04	4.04
6229	3.81	3.64	3.63
6233	2.91	2.10	2.17
6251	5.28	4.21	4.21
6252	8.37	4.83	6.25
6306	8.18	6.85	6.85
6319	3.59	2.87	2.87
6325	3.45	2.61	2.61
6400	4.76	4.51	4.51
6504	2.82	2.43	2.48
6834	2.23	2.30	2.32
6836	3.41	3.38	3.41
7219	8.79	7.93	8.00
7230	8.74	8.85	8.93
7231	8.87	11.03	9.82
7360	4.55	3.65	3.68
7370	3.28	3.67	3.63
7380	6.23	5.57	5.62
7382	3.53	3.41	3.44
7403	4.82	3.72	3.84
7405	1.15	1.12	1.13

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## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
7420	6.65	13.73	7.36
7421	1.30	1.14	1.15
7422	1.30	1.14	1.15
7425	2.44	2.28	2.30
7431	1.30	1.14	1.15
7502	2.17	1.60	1.73
7515	2.39	3.53	2.64
7520	2.89	2.77	2.79
7538	6.15	5.96	5.95
7539	1.18	1.15	1.16
7580	3.25	3.02	3.04
7590	3.65	5.13	4.04
7600	3.09	3.33	3.36
7601	5.60	5.37	5.36
7610	0.26	0.50	0.28
7704	2.53	4.05	2.80
7720	1.40	1.34	1.36
7855	4.29	3.33	3.33
8001	1.76	1.55	1.55
8002	1.41	1.78	1.56
8006	1.23	1.14	1.14
8008	0.74	0.68	0.68
8010	1.56	1.57	1.57
8013	0.33	0.33	0.33
8017	0.92	0.89	0.89
8018	3.10	3.33	3.33
8021	3.06	3.18	3.18
8031	1.79	1.63	1.63
8032	1.31	1.14	1.14
8033	1.66	1.43	1.43
8034	3.34	2.77	2.76
8039	1.15	1.20	1.20
8044	2.94	2.67	2.67
8046	1.77	1.89	1.89
8048	2.64	2.44	2.44
8058	2.28	2.11	2.11
8103	2.77	2.33	2.33
8105	5.75	15.43	6.38
8106	5.69	5.26	5.26
8107	2.52	2.60	2.60
8111	2.61	2.66	2.65
8203	5.74	5.80	5.80
8204	4.69	6.40	5.20
8215	3.49	3.36	3.36
8227	4.84	4.35	4.35
8232	6.07	5.38	5.38
8233	6.31	5.29	5.29
8235	4.02	3.76	3.76

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Section IX - J  
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## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
8263	4.01	4.21	4.21
8264	4.81	4.54	4.54
8265	6.31	5.29	5.29
8279	4.38	3.74	3.74
8291	3.46	3.62	3.62
8292	3.19	3.34	3.34
8293	8.11	7.54	7.54
8350	5.70	6.16	6.16
8380	2.60	2.46	2.46
8381	1.75	1.70	1.70
8385	2.67	2.92	2.92
8392	1.40	1.40	1.40
8393	1.65	1.19	1.26
8500	6.31	5.29	5.29
8601	0.22	0.20	0.20
8710	3.09	2.96	2.96
8719	3.09	2.96	2.96
8720	0.87	0.75	0.75
8721	0.23	0.26	0.26
8742	0.13	0.10	0.10
8745	4.65	5.78	5.15
8747	0.83	0.72	0.72
8748	0.63	0.62	0.62
8800	1.07	0.95	0.96
8803	0.04	0.04	0.04
8810	0.07	0.06	0.06
8820	0.08	0.07	0.07
8824	1.55	1.72	1.72
8826	1.55	1.37	1.37
8829	2.04	2.03	2.03
8831	0.93	0.94	0.94
8832	0.28	0.27	0.27
8833	1.16	1.06	1.06
8835	1.97	1.73	1.72
8868	0.71	0.67	0.67
8901	0.07	0.06	0.06
9014	2.30	2.05	2.05
9015	3.02	2.85	2.85
9016	2.07	1.69	1.69
9019	2.69	3.28	2.97
9033	2.90	2.36	2.36
9040	2.91	2.70	2.70
9052	1.55	1.40	1.40
9058	1.44	1.33	1.33
9060	0.96	0.95	0.95
9061	0.94	0.90	0.90
9063	0.65	0.56	0.56
9079	1.08	0.97	0.97



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Exhibit 1

## Comparison of Average Rates All Industry Groups

Class (1)	Present Average Capped Rate (2)	Proposed Average Uncapped Rate (3)	Proposed Average Capped Rate (4)
9089	0.88	0.77	0.77
9093	1.11	1.07	1.07
9101	2.98	3.30	3.30
9102	2.60	2.11	2.13
9154	1.68	1.35	1.37
9156	1.50	1.64	1.63
9178	12.73	12.91	13.02
9179	29.73	46.50	32.92
9180	4.50	4.19	4.23
9182	2.96	2.98	3.01
9186	4.50	4.19	4.23
9220	2.83	3.02	3.02
9402	4.10	3.78	3.81
9403	9.11	9.18	9.27
9410	2.73	3.45	3.02
9501	2.07	1.88	1.92
9505	2.07	1.88	1.92
9519	3.47	2.41	2.66
9521	2.86	2.73	2.79
9522	1.76	1.48	1.51
9533	13.53	12.82	12.82
9534	5.35	5.08	5.08
9549	5.14	4.09	4.09
9552	7.44	7.04	7.04
9586	0.31	0.29	0.29
9620	0.69	0.72	0.72

Notes:

(2) = (4) from Section IX - J, Exhibit 1 of the 07/01/2018 stipulation.

(3): Section IX - I.

(4): Total Balanced Formula Relativity (from Section IX - I, Exhibit 1) x Capped Rate Level Factors and subject to maximum and minimum caps (from Section IX - H, Exhibit 1.)

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Section IX - Classification Pricing  
Subsection J - Average Rates and Proposed Premium Change  
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Section IX - J  
Exhibit 2

## Summary of Proposed Premium Change All Industry Groups

Industry Group (1)	Present Premium (2)	Proposed Premium (3)	Proposed Change (4)	Target Change (5)	Capped Rate Level Factor (6)
Manufacturing	569,381,923	535,880,172	-5.9%	-5.9%	1.743
Construction	1,625,579,492	1,498,039,276	-7.8%	-7.8%	4.369
Office & Clerical	581,030,799	531,003,618	-8.6%	-8.6%	0.132
Goods & Services	1,486,387,142	1,394,096,628	-6.2%	-6.2%	1.492
Miscellaneous	672,200,144	640,006,862	-4.8%	-4.8%	4.238
All Groups	4,934,579,500	4,599,026,556	-6.8%		

Notes:

(2) = Exposure x Present Average Rates from Exhibit 1.

(3) = Exposure x Proposed Average Capped Rates from Exhibit 1.

(4) = [(3) - (2)] / (2)

(5): Section IX - H, Exhibit 1.

(6): Section IX - H, Exhibit 1. Proposed average uncapped rates are capped by an iterative process using rate levels to determine if the required change is achieved.

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Section IX - Classification Pricing  
Subsection K - Adjustments to Derive Final Manual Rates  
7/1/2020

Section IX - K  
Exhibit 1

## Calculation of Proposed Manual Rates

The proposed manual rates in Section IX - A, Exhibit 1 are derived from the proposed average capped rates in Section IX - J, Exhibit 1 as follows:

Proposed Manual Rate = [Proposed Average Rate / (Factor 1 x Factor 2 x Factor 3)] x [1.000 / (1.000 - Factor 4)]

(1)	Factor 1 =	0.997	The offset for Merit Rating and Average Experience Modification
(2)	Factor 2 =	1.053	The offset for ARAP
(3)	Factor 3 =	0.967	For eligible classes, the offset for the Construction Classification Premium Adjustment Program
(4)	Factor 4 =	-0.0054	The loading from the filing of recoupment of amounts paid to the Insolvency Fund

### Notes:

- (1): Exhibit 2.
- (2): Exhibit 3.
- (3): Exhibit 4.
- (4): Exhibit 5, Page 1.

Offset for Experience & Merit Rating

Policy Year (1)	Age (2)	Rating Category (3)	Number of Policies (4)	% of Policies = (4) / Total (4) (5)	Manual Premium (6)	% of Manual = (6) / Total (6) (7)	Standard Premium (8)	Historical Average Mod = (8) / (6) (9)	Selected Average Mod (10)
2013	66	Non Rated	88,399	43%	21,044,129	2%	21,042,225	1.000	
		Merit Rated	78,744	38%	147,031,464	15%	143,913,784	0.979	
		Intrastate Rated	19,592	10%	434,888,376	43%	446,997,406	1.028	
		Interstate Rated	18,985	9%	401,543,086	40%	372,761,291	0.928	
		Total	205,720	100%	1,004,507,055	100%	984,714,706	0.980	
2014	54	Non Rated	93,326	44%	22,203,492	2%	22,197,398	1.000	
		Merit Rated	79,807	37%	150,879,178	14%	147,469,063	0.977	
		Intrastate Rated	20,625	10%	466,139,280	43%	470,219,476	1.009	
		Interstate Rated	20,334	9%	439,524,734	41%	403,186,057	0.917	
		Total	214,092	100%	1,078,746,684	100%	1,043,071,994	0.967	
2015	42	Non Rated	97,482	44%	23,296,046	2%	23,287,775	1.000	
		Merit Rated	80,259	36%	154,880,296	13%	151,389,610	0.977	
		Intrastate Rated	22,278	10%	498,235,994	43%	497,884,943	0.999	
		Interstate Rated	21,639	10%	477,785,788	41%	438,227,250	0.917	
		Total	221,658	100%	1,154,198,124	100%	1,110,789,578	0.962	
2016	30	Non Rated	100,752	44%	22,943,440	2%	22,937,175	1.000	
		Merit Rated	80,590	35%	157,342,069	13%	153,821,737	0.978	
		Intrastate Rated	23,452	10%	528,803,874	44%	528,591,178	1.000	
		Interstate Rated	23,395	10%	492,851,416	41%	453,991,474	0.921	
		Total	228,189	100%	1,201,940,799	100%	1,159,341,564	0.965	
2017	18	Non Rated	98,939	43%	23,279,972	2%	23,273,269	1.000	
		Merit Rated	79,747	35%	158,025,185	12%	154,496,276	0.978	
		Intrastate Rated	24,405	11%	560,248,438	44%	559,229,645	0.998	
		Interstate Rated	24,976	11%	536,020,849	42%	492,828,029	0.919	
		Total	228,067	100%	1,277,574,444	100%	1,229,827,219	0.963	
Total		Non Rated	478,898	44%	112,767,079	2%	112,737,842	1.000	1.000
		Merit Rated	399,147	36%	768,158,192	13%	751,090,470	0.978	0.978
		Intrastate Rated	110,352	10%	2,488,315,962	44%	2,502,922,648	1.006	1.000
		Interstate Rated	109,329	10%	2,347,725,873	41%	2,160,994,101	0.920	1.000
		Total	1,097,726	100%	5,716,967,106	100%	5,527,745,061	0.967	0.997

Notes:

Unit Statistical Plan data, excluding Large Deductibles and SIGs.  
 Non Rated, Merit Rated and Intrastate Rated categories are estimated based on manual premium.  
 (10): Set to 1.000 for Non Rated and Interstate Rated and Intrastate Rated.

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 Exhibit 3

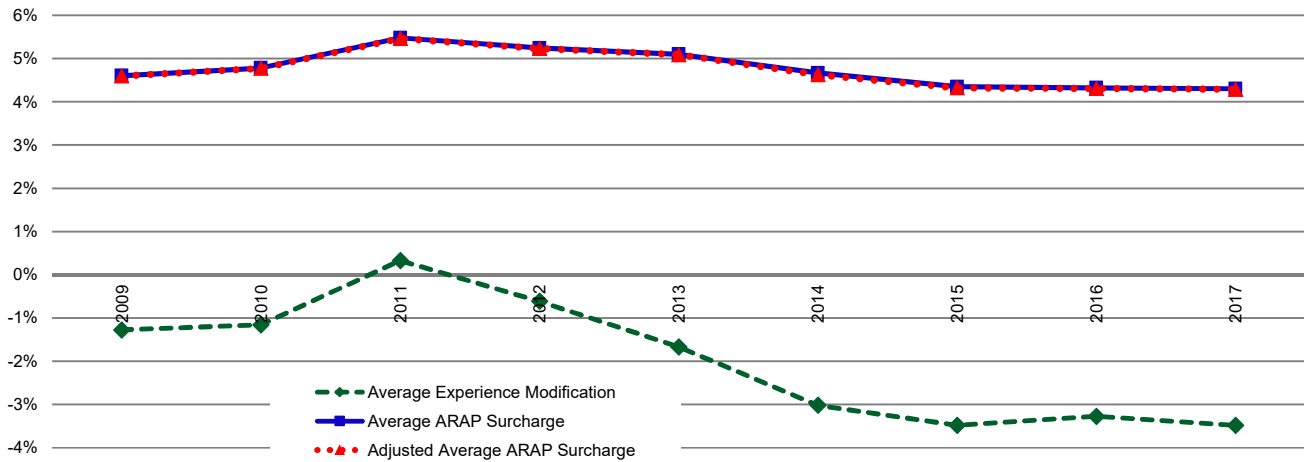
## Offset for ARAP Estimate of Average ARAP Surcharge for Prospective Effective Period

### Historical Average Experience Modification and ARAP Surcharge

Policy Year (1)	Manual Premium (2)	Standard Premium (3)	ARAP Premium (4)	Adjusted ARAP Premium (5)	Average ARAP Surcharge =(4) / (3) (6)	Average Experience Modification =(3) / (2) - 1.000 (7)	Adjusted Average ARAP Surcharge =(5) / [(3)+(4)-(5)] (8)
2009	802,162,104	791,916,957	36,467,853	36,389,208	4.6%	-1.3%	4.6%
2010	870,439,876	860,369,383	41,142,127	41,055,216	4.8%	-1.2%	4.8%
2011	914,835,972	917,838,669	50,256,579	50,160,670	5.5%	0.3%	5.5%
2012	943,228,958	937,458,017	49,160,807	49,039,440	5.2%	-0.6%	5.2%
2013	1,001,429,321	984,714,706	50,226,560	50,118,307	5.1%	-1.7%	5.1%
2014	1,075,515,151	1,043,071,994	48,660,831	48,283,294	4.7%	-3.0%	4.6%
2015	1,150,861,001	1,110,789,578	48,300,350	48,021,491	4.3%	-3.5%	4.3%
2016	1,198,587,020	1,159,341,564	50,085,298	49,954,194	4.3%	-3.3%	4.3%
2017	1,274,198,347	1,229,827,219	52,872,306	52,764,752	4.3%	-3.5%	4.3%

### Regression of Average ARAP Surcharge on Average Experience Modification

(9) R-Squared	0.802
(10) Slope	0.274
(11) Intercept	0.053
(12) Projected Average ARAP Surcharge = (11)	0.053



### Notes:

- (2)-(4): Unit Statistical Plan data, excluding Large Deductibles and SIGs. ARAP adjusted from company level to DSR level.
- (5): (4) adjusted to maximum ARAP surcharge factor of 1.25.

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Exhibit 4

## Construction Class Premium Adjustment Program

Policy Year (1)	Manual Premium for Eligible Class Codes (2)	Construction Credit (3)	Percent (4)
2016	422,523,160	14,283,334	3.4%
2017	460,013,428	15,355,258	3.3%
(5) Selected Average Credit for Eligible Class Codes in Prospective Effective Period			3.3%

**Note:**

(2),(3): Unit Statistical Plan data, excluding Large Deductibles and SIGs.

(4): (3) / (2)

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## Loading for Recoupment of Insolvency Fund Assessments

### Unanticipated Insolvency Assessment Recoupments

(1)	Estimated Written Premium for the Policy Period beginning 7/1/19 and ending 6/30/20, absent Insolvency loads	1,018,558,814
(2)	Unanticipated Insolvency Assessment Recoupment Rate (As a % of premium absent insolvency loads)	0.26%
(3)	Unanticipated Insolvency Assessment Recoupments	2,648,253
(4)	Interest Adjustment Factor	1.018
(5)	Adjusted Unanticipated Insolvency Assessment Recoupments	2,696,708

### Net Assessments

(6)	Amount Sufficient to Recoup Assessment	(2,540,237)
(7)	Net Assessments	(5,236,945)

### Loading for Recoupment

(8)	Estimated Written Premium in the Prospective Effective Period, absent insolvency loads	966,199,822
(9)	Indicated Loading for Recoupment of Insolvency Fund Assessments	<b>-0.54%</b>

#### Notes:

- (1): Page 2.
- (2): loading for insolvency fund in 07/01/2018 effective rates.
- (3) = (1) x (2)
- (4): 1.8% is the risk-free rate of interest, shown in Section VII-J, Exhibit 1, Page 1 compounded from the expected collection date of the unanticipated insolvency assessment recoupments to the average date the assessment will be recouped or returned.
- (5) = (3) x (4)
- (6): Page 3.
- (7) = (6) - (5)
- (8): Page 2.
- (9) = (7) / [ (7) + (8) ]

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Page 2

## Expected Workers' Compensation Written Premium in Prospective Effective Period

(1)	2018 Calendar Year Written Premium, absent insolvency loads	1,072,190,537
(2)	Estimated Exposure Growth Factor from Calendar Year 2018 to Policy Period ending 6/30/20	1.027
(3)	Rate Change from Calendar Year 2018 Written to the Policy Period ending 6/30/20	-7.5%
(4)	Estimated Written Premium for the Policy Period ending 6/30/20, absent Insolvency Loads = (1) x (2) x [ 1.0 + (3) ]	1,018,558,814
(5)	Estimated Exposure Growth Factor from the Policy Period ending 6/30/20 to the Prospective Effective Period	1.018
(6)	Average Indicated Rate Change	-6.8%
(7)	Estimated Written Premium in Prospective Effective Period, absent insolvency loads = (4) x (5) x [ 1.0 + (6) ]	966,199,822

### Notes:

(1): Adjusted to remove any loading for recoupment of insolvency fund assessments.

(2): Assumes a 1.8% (from Section V-H, Exhibit 3).

(3): The 7/1/18 rate change was -12.9%.

(5): Assumes a 1.8% annual change (from Section V-H, Exhibit 3) compounded for 1 year.

(6): Section I-A, Exhibit 1.



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## Insolvency Fund Assessments Yet to Be Reflected in the Rates by Workers' Compensation Carriers

Assessment Base Year  (1)	Workers' Compensation Calendar Year Written Premium  (2)	Assessment Base  (3)	Percentage Charged to Workers' Compensation = (2) / (3)  (4)	11/18/2019	
				Assessment  (5)	Assessment Charged to Workers' Compensation = (4) x (5)  (6)
2002	1,270,355,928	9,481,535,538	13.40%		
2003	1,248,676,750	10,132,906,831	12.32%		
2004	1,222,962,359	10,622,095,111	11.51%		
2005	1,335,681,276	10,811,968,884	12.35%		
2006	1,355,363,793	10,785,092,254	12.57%		
2007	1,318,054,939	10,488,212,970	12.57%		
2008	1,018,962,508	10,672,774,843	9.55%		
2009	969,294,389	9,681,198,602	10.01%		
2010	944,881,049	n/a			
2011	1,058,311,174	n/a			
2012	1,112,222,053	10,857,336,715	10.24%	(20,000,000)	(2,048,794)
(7)	Estimated Total Assessment Charged to Workers' Compensation Carriers				(2,048,794)
(8)	Interest Adjustment Factor				1.027
(9)	Interested-Adjusted Assessment = (7) x (8)				(2,105,044)
(10)	Adjusted Total Assessments				(2,105,044)
(11)	Premium Discount				5.3%
(12)	Premium Tax Rate				2.2%
(13)	Commission Rate				9.7%
(14)	Amounts Sufficient to Recoup Assessment = (10) / [ 1.0 - (11) - (12) - (13) ]				(2,540,237)

**Notes:**

(2),(3): Information from Guaranty Fund Management Services.

(5): Information from Guaranty Fund Management Services, see Page 3.

(7) = Sum (6)

(8): 1.8% is the risk-free rate of interest, shown in Section VII-,J Exhibit 1, Page 1 compounded from the expected payment date of the assessment to the average date the assessment will be recouped or returned.

(11): Section VI-E, Exhibit 1.

(12): Section VI-A, Exhibit 1.

(13): The average commission is 9.2% (Section VI-G, Exhibit 1).

Since the average premium discount is 5.3% (Section VI-E, Exhibit 1), the average commission as a percent of net premium is

9.2% / ( 1.0 - 5.3% ) = 9.7%. The assessments of each insurer are in the proportion that the net direct written premiums of the insurer for the calendar year preceding the assessment bears to the net direct written premiums of all insurers for the calendar year preceding the assessment. MGL. Ch. 175D.

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## Insolvency Fund Assessments Yet to Be Reflected in the Rates

<b>Assessment Date</b>	<b>Insolvent Company</b>	<b>Assessment by Base Year</b>
<b>11/18/2019</b>	<b>Assessment by Account</b>	<b>2012</b>
		(20,000,000)
		<b>(20,000,000)</b>

**Notes:**

From Massachusetts Insurers Insolvency Fund Annual Assessment Levied Report

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 Page 1

## Pricing Example for Class 2660 Boot Or Shoe Mfg Noc

Calculation of MA Indicated Relativity:

		(A). Limited Losses (Unit Statistical Plan data, excluding Large Deductibles)							
	Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	0	0	1,519	0
	2014	0	0	0	0	0	3,528	0	0
	2015	0	0	0	0	79,225	0	337	0
	2016	0	0	0	0	0	0	427	0
	2017	0	0	0	0	0	0	1,058	0
Medical	2013	0	0	0	0	0	0	7,158	0
	2014	0	0	0	0	0	1,781	0	326
	2015	0	0	0	0	22,860	0	1,274	113
	2016	0	0	0	0	0	0	749	2,254
	2017	0	0	0	0	0	0	2,419	313

		(B). Primary Conversion Factors (Section IX - B, Exhibit 1, Page 1)							
	Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0.925	0.921	0.926	0.953	0.949	0.909	0.905	0.000
	2014	0.886	0.885	0.888	0.912	0.911	0.873	0.873	0.000
	2015	1.010	1.003	1.018	1.041	1.033	1.004	0.996	0.000
	2016	1.173	1.145	1.181	1.203	1.174	1.167	1.139	0.000
	2017	1.756	1.543	1.766	1.791	1.574	1.749	1.536	0.000
Medical	2013	0.800	0.843	0.800	0.800	0.843	0.800	0.843	0.695
	2014	0.744	0.785	0.744	0.744	0.785	0.744	0.785	0.763
	2015	0.822	0.865	0.822	0.822	0.865	0.822	0.865	0.805
	2016	0.886	0.900	0.886	0.886	0.900	0.886	0.900	0.847
	2017	0.935	0.911	0.935	0.935	0.911	0.935	0.911	0.843

		(C). Converted Limited Losses [ (A) x (B) ]							
	Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	0	0	1,374	0
	2014	0	0	0	0	0	3,082	0	0
	2015	0	0	0	0	81,837	0	336	0
	2016	0	0	0	0	0	0	486	0
	2017	0	0	0	0	0	0	1,626	0
Medical	2013	0	0	0	0	0	0	6,032	0
	2014	0	0	0	0	0	1,325	0	249
	2015	0	0	0	0	19,772	0	1,102	91
	2016	0	0	0	0	0	0	674	1,910
	2017	0	0	0	0	0	0	2,205	264

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 Page 2

Pricing Example for Class 2660  
 Boot Or Shoe Mfg Noc

Calculation of MA Indicated Relativity:

		(D). Unadjusted Excess Losses [ (Excess Factor -1.0) x (C) ]							
	Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	0	0	175	0
	2014	0	0	0	0	0	393	0	0
	2015	0	0	0	0	10,426	0	43	0
	2016	0	0	0	0	0	0	62	0
	2017	0	0	0	0	0	0	207	0
Medical	2013	0	0	0	0	0	0	768	0
	2014	0	0	0	0	0	169	0	32
	2015	0	0	0	0	2,519	0	140	12
	2016	0	0	0	0	0	0	86	243
	2017	0	0	0	0	0	0	281	34

		(E). Adjusted Excess Losses							
	Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	0	0	123	0
	2014	0	0	0	0	0	275	0	0
	2015	0	0	0	0	7,298	0	30	0
	2016	0	0	0	0	0	0	43	0
	2017	0	0	0	0	0	0	145	0
Medical	2013	0	0	0	0	0	0	821	0
	2014	0	0	0	0	0	287	0	32
	2015	0	0	0	0	5,647	0	153	12
	2016	0	0	0	0	0	0	104	243
	2017	0	0	0	0	0	0	343	34

		(F). Secondary Conversion Factors				
		Fatal	Permanent Total	Permanent Partial	Temporary Total	Medical Only
Indemnity		0.949	0.883	1.235	1.247	0.000
Medical		1.187	0.889	1.243	1.255	1.187

		(G). Converted Unlimited Losses							
	Policy Year	Fatal		Permanent Total	Permanent Partial		Temporary Total		Medical Only
		LD	NLD		LD	NLD	LD	NLD	
Indemnity	2013	0	0	0	0	0	0	1,867	0
	2014	0	0	0	0	0	4,187	0	0
	2015	0	0	0	0	110,113	0	456	0
	2016	0	0	0	0	0	0	661	0
	2017	0	0	0	0	0	0	2,209	0
Medical	2013	0	0	0	0	0	0	8,601	0
	2014	0	0	0	0	0	2,023	0	333
	2015	0	0	0	0	31,598	0	1,575	122
	2016	0	0	0	0	0	0	977	2,556
	2017	0	0	0	0	0	0	3,198	353

		(H). Total				
Policy Year	Exposure	Indemnity		Medical		
		LD	NLD	LD	NLD	
2013	44,048	0	1,867	0	8,601	
2014	46,156	4,187	0	2,023	333	
2015	44,779	0	110,569	0	33,295	
2016	37,929	0	661	0	3,533	
2017	52,045	0	2,209	0	3,551	
<b>Total</b>	<b>224,957</b>	<b>4,187</b>	<b>115,306</b>	<b>2,023</b>	<b>49,313</b>	

	Indemnity	Medical
(I). Indicated Pure Premium	0.531	0.228
(J). Manufacturing Industry Group Pure Premium	0.971	0.512
(K). MA Indicated Relativity	0.547	0.446

Notes:

(E): Indemnity Adjusted Excess Losses = Indemnity Unadjusted Excess Losses x 0.7

Medical Adjusted Excess Losses = Medical Unadjusted Excess Losses + 0.3 x Indemnity Unadjusted Excess Losses

(F): Section IX-B, Exhibit 1, Page 3.

(G) = [ (C) + (E) ] x (F)

(I) = Total Losses / Total Exposure

(J): Industry Group Pure Premium from Section IX - C, Exhibit 1, Page 2.

(K) = (I) / (J)

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## Pricing Example for Class 2660 Boot Or Shoe Mfg Noc

Calculation of Countrywide Relativity

State (1)	State Code (2)	Losses				Lost-Time Claims		Payroll (9)
		Indemnity		Medical		Likely (7)	Not-Likely (8)	
		Likely (3)	Not-Likely (4)	Likely (5)	Not-Likely (6)			
Alabama	1	0	0	0	0	0	0	713
Arizona	2	0	0	0	16,381	0	0	7,661,571
Arkansas	3	1,232	54,903	1,945	127,115	1	12	65,090,031
Colorado	5	0	0	0	480	0	0	5,241,983
Connecticut	6	0	0	0	0	0	0	87,392
D.C.	8	0	0	0	0	0	0	0
Florida	9	12,846	0	17,921	5,199	1	0	6,021,247
Georgia	10	0	32,538	0	13,078	0	1	2,781,296
Idaho	11	0	0	0	0	0	0	941,482
Illinois	12	32,326	90,325	35,729	157,226	1	11	17,316,279
Indiana	13	0	6,849	0	38,742	0	2	1,617,045
Iowa	14	0	0	0	0	0	0	664,271
Kansas	15	0	0	0	0	0	0	0
Kentucky	16	0	0	0	0	0	0	2,005
Louisiana	17	0	0	0	0	0	0	0
Maine	18	364,752	1,204,120	1,095,533	1,306,597	10	80	140,160,592
Maryland	19	0	0	0	0	0	0	184,413
Michigan	21	0	125,983	0	186,396	0	8	61,910,183
Minnesota	22	0	131,016	0	133,723	0	5	6,338,812
Mississippi	23	0	0	0	0	0	0	0
Missouri	24	79,493	644,604	140,933	1,425,967	3	64	76,146,874
Montana	25	0	0	0	0	0	0	690,502
Nebraska	26	0	0	0	89	0	0	761,216
Nevada	27	0	624	0	1,648	0	1	648,534
New Hampshire	28	0	549	0	28,684	0	1	1,025,511
New Mexico	30	0	0	0	0	0	0	0
North Carolina	32	21,182	29,814	29,916	92,762	2	5	22,350,219
Oklahoma	35	0	0	0	0	0	0	0
Oregon	36	498,680	317,979	151,204	359,423	4	30	71,548,218
Rhode Island	38	0	0	0	0	0	0	100,735
South Carolina	39	0	0	0	0	0	0	0
South Dakota	40	0	0	0	0	0	0	0
Tennessee	41	0	61,070	0	204,716	0	6	25,595,130
Utah	43	0	0	0	3,693	0	0	2,554,381
Vermont	44	0	0	0	0	0	0	0
Virginia	45	44,129	14,679	68,555	14,903	1	1	8,752,249
West Virginia	47	0	0	0	0	0	0	82,806
Wisconsin	48	216,861	509,078	960,376	1,595,980	6	43	76,170,487
Hawaii	52	0	158	0	2,862	0	1	2,370,690
Alaska	54	0	0	0	0	0	0	0
Total		1,271,501	3,224,289	2,502,112	5,715,664	29	271	604,816,867

Note:  
 (3) - (9): Data are total for latest three policy years. See Section IX-D, Exhibit 3.

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 Exhibit 2  
 Page 2

Pricing Example for Class 2660  
 Boot Or Shoe Mfg Noc

Calculation of Countrywide Relativity

State (1)	State Code (2)	Manufacturing Pitch Factors		Pure Premiums, on MA Level		Total (7)
		Indemnity (3)	Medical (4)	Indemnity (5)	Medical (6)	
Alabama	1	2.311	0.610	0.000	0.000	
Arizona	2	3.368	0.499	0.000	0.107	
Arkansas	3	3.860	1.170	0.333	0.232	
Colorado	5	1.913	0.626	0.000	0.006	
Connecticut	6	0.979	0.497	0.000	0.000	
D.C.	8	0.791	0.483	0.000	0.000	
Florida	9	1.967	0.421	0.420	0.162	
Georgia	10	1.461	0.707	1.710	0.332	
Idaho	11	1.474	0.408	0.000	0.000	
Illinois	12	1.052	0.480	0.745	0.535	
Indiana	13	4.022	0.710	1.704	1.701	
Iowa	14	1.136	0.386	0.000	0.000	
Kansas	15	2.411	0.610	0.000	0.000	
Kentucky	16	1.988	0.816	0.000	0.000	
Louisiana	17	1.943	0.576	0.000	0.000	
Maine	18	1.319	0.601	1.476	1.030	
Maryland	19	1.482	0.734	0.000	0.000	
Michigan	21	2.321	0.832	0.472	0.251	
Minnesota	22	1.585	0.705	3.276	1.488	
Mississippi	23	1.783	0.698	0.000	0.000	
Missouri	24	1.352	0.528	1.285	1.087	
Montana	25	1.399	0.393	0.000	0.000	
Nebraska	26	1.968	0.493	0.000	0.006	
Nevada	27	1.071	0.554	0.103	0.141	
New Hampshire	28	2.280	0.530	0.122	1.483	
New Mexico	30	0.931	0.356	0.000	0.000	
North Carolina	32	1.675	0.972	0.382	0.533	
Oklahoma	35	1.307	0.529	0.000	0.000	
Oregon	36	2.231	0.896	2.546	0.639	
Rhode Island	38	0.633	0.613	0.000	0.000	
South Carolina	39	0.938	0.667	0.000	0.000	
South Dakota	40	3.275	0.579	0.000	0.000	
Tennessee	41	3.204	0.757	0.765	0.605	
Utah	43	4.331	0.790	0.000	0.114	
Vermont	44	0.818	0.368	0.000	0.000	
Virginia	45	2.459	0.536	1.652	0.511	
West Virginia	47	2.706	0.826	0.000	0.000	
Wisconsin	48	2.182	0.448	2.080	1.504	
Hawaii	52	0.869	0.397	0.006	0.048	
Alaska	54	1.279	0.202	0.000	0.000	
(8)	Average of (5), (6) weighted by Payroll from Page 1, respectively			1.294	0.787	2.082
(9)	CW Manufacturing Pure Premium			0.882	0.463	1.345
(10)	CW Relativity = (8) / (9)			1.467	1.701	1.547
(11)	CW Relativity, balanced to unity			1.449	1.681	

**Notes:**

- (3), (4) = (MA Total Unlimited Losses) / [(State Pure Premium) x (MA Total Exposure)] for Industry Code 1. See Section IX - D, Exhibit 2.
- (5) = 100 x [ State Indemnity Losses / State Payroll ] x (3), where State Indemnity Losses and State Payroll from page 1.
- (6) = 100 x [ State Medical Losses / State Payroll ] x (4), where State Medical Losses and State Payroll from page 1.
- (9) = (8) weighted by MA five year Manufacturing Exposure
- (11): Relativities balanced to unity (weighted by MA exposure) over Manufacturing Industry Group.

# IX 000296 STIP

Section IX - Classification Pricing  
 Subsection L - Pricing Example  
 7/1/2020

Section IX - L  
 Exhibit 3

## Pricing Example for Class 2660 Boot Or Shoe Mfg Noc

Calculation of Credibility and Balanced Formula Relativity:

- (1) MA Indicated Relativity
- (2) Countrywide Indicated Relativity
- (3) Relativity to Underlying Present Rate

Injury Type	
Indemnity	Medical
0.547	0.446
1.449	1.681
0.917	1.072

Calculation of MA Credibility:

The MA Credibilities are calculated using the formula  $Z=(E / F)^{0.4}$  where E are expected losses for that injury type.

- (4) Adopted Relativity
- (5) Industry Group Pure Premium Underlying Present Rate Factor
- (6) Pure Premium Underlying Present Rate  
= (4) x (5)
- (7) Expected Losses  
= (6) x [(Total Exposure from Exhibit 1)]
- (8) Full Credibility Standards
- (9) MA Credibility  
= Minimum of {100%, [(7) / (8)]<sup>0.4</sup>}

Injury Type	
Indemnity	Medical
0.925	1.081
0.873	0.444
0.808	0.480
181,705	108,008
27,200,000	6,000,000
13%	20%

Calculation of Countrywide Credibility

The Countrywide Credibilities are calculated using the formula  $Z=(E / F)^{0.4}$  where E are the countrywide claim counts for that injury type. The countrywide credibility is limited to no more than half of the complement of the credibility assigned to the Massachusetts data.

- (10) Countrywide Lost-Time Claims
- (11) Countrywide Claim Count Standard
- (12) Countrywide Credibility  
= Minimum of {[(10) / (11)]<sup>0.4</sup>, 0.5 x [100% - (9)]}
- (13) Credibility to Underlying Present Rate  
= 100% - (9) - (12)
- (14) Formula Relativity  
= [(1) x (9)] + [(2) x (12)] + [(3) x (13)]
- (15) Off Balance Factor

Injury Type	
Indemnity	Medical
300	300
1,150	1,000
44%	40%
43%	40%
1.103	1.191
1.013	1.013

- (16) Balanced Formula Relativity

Injury Type		
Indemnity	Medical	Total
1.089	1.175	1.119

Notes:

- (1): Exhibit 1, Page 2.
- (2): Exhibit 2, Page 2.
- (3): Relativity of (6) to Industry Group average, using 5 year Schedule Z exposure as weights.
- (4): Section IX-F, Exhibit 1.
- (5): Section IX-E, Exhibit 1.
- (8), (11): Section IX-D, Exhibit 1, Page 1.
- (10): Exhibit 2, Page 1.
- (15): Factor to balance Formula relativities across industry group to unity using 5 year Schedule Z exposure by injury type.
- (16) = (14) / (15) , Total Balanced Formula Relativity is the weighted average of Partial Relativities using the MA Industry Group Pure Premium as weights.

# IX 000297 STIP

Section IX - Classification Pricing  
Subsection L - Pricing Example  
7/1/2020

Section IX - L  
Exhibit 4

## Pricing Example for Class 2660 Boot Or Shoe Mfg Noc

Calculation of Proposed Average Rate and Proposed Manual Rate:

(1) Total Balanced Formula Relativity	1.119
(2) Capped Rate Level Factor	1.743
(3) Proposed Average Capped Rate = (1) x (2)	1.95
(4) Offset for Merit Rating	0.997
(5) Offset for ARAP	1.053
(6) Offset for Construction Classification Premium Adjustment Program	1.000
(7) Provision for Insolvency Fund Assessment Recoupment	-0.0054
(8) Proposed Manual Rate = $\{(3) / [(4) \times (5) \times (6)]\} \times \{1.000 / [1.000 - (7)]\}$	1.85
(9) Minimum Premium	224
(10) Loss Constant	0
(11) Expected Loss Rate	0.96
(12) D-Ratio	0.15

### Notes:

(1): Exhibit 3.

(2): Section IX-H, Exhibit 1. Proposed average uncapped rates are capped by an iterative process using rate levels to determine if the required change is achieved. Class 2660 is in the Manufacturing Industry Group.

(4), (5), (6), (7): Section IX-K, Exhibit 1. Class 2660 is not eligible for the Construction Credit program.

(9) =  $\{[(8) \times 35.0] + (10) + \text{Expense Constant}\}$  subject to a maximum of \$500

Where Expense Constant = 159 if  $(8) \times 35 + (10) < 200$

= 250 if  $(8) \times 35 + (10) \geq 200$  and  $< 1000$ .

= 338 if  $(8) \times 35 + (10) \geq 1000$ .

(10): No loss constant for Manufacturing classes, \$50 for Construction classes, \$20 for all other classes.

(11) = (3) x Ratio of Experience Rating ELR to Average Rate, from Section X - A, Exhibit 1. Class 2660 is in Hazard Group B.

(12): See text of Section X for an explanation of the calculation of D-Ratios.



Calculation of ELR Factors

Unit Report / Policy Effective Dates (1)	Hazard Group (2)	Permissible Loss Ratio (3)	Exp Rating LER by Hazard Group (4)	Law Factor (5)	Loss Trend / Payroll Trend (6)	Loss Development to 10th Report (7)	Loss Development from 10th Report to Ult (8)	Investment Income Offset (9)	Ratio of Exp Rating ELR to Average Rate (10)
1st Report 7/1/2018 to 6/30/2019	A	0.638	0.011	1.013	0.942	1.426	1.047	1.038	0.426
	B	0.638	0.040	1.013	0.942	1.448	1.052	1.032	0.408
	C	0.638	0.043	1.013	0.942	1.461	1.056	1.035	0.401
	D	0.638	0.044	1.013	0.942	1.462	1.056	1.032	0.401
	E	0.638	0.087	1.013	0.942	1.470	1.060	1.014	0.386
	F	0.638	0.135	1.013	0.942	1.479	1.063	1.007	0.365
	G	0.638	0.197	1.013	0.942	1.493	1.069	0.969	0.347
2nd Report 7/1/2017 to 6/30/2018	A	0.638	0.017	1.019	0.914	1.154	1.047	1.038	0.537
	B	0.638	0.059	1.019	0.914	1.171	1.052	1.032	0.507
	C	0.638	0.064	1.019	0.914	1.181	1.056	1.035	0.496
	D	0.638	0.066	1.019	0.914	1.183	1.056	1.032	0.496
	E	0.638	0.129	1.019	0.914	1.189	1.060	1.014	0.466
	F	0.638	0.199	1.019	0.914	1.196	1.063	1.007	0.428
	G	0.638	0.291	1.019	0.914	1.208	1.069	0.969	0.388
3rd Report 7/1/2016 to 6/30/2017	A	0.638	0.023	1.026	0.888	1.051	1.047	1.038	0.599
	B	0.638	0.080	1.026	0.888	1.067	1.052	1.032	0.557
	C	0.638	0.086	1.026	0.888	1.076	1.056	1.035	0.544
	D	0.638	0.088	1.026	0.888	1.077	1.056	1.032	0.544
	E	0.638	0.173	1.026	0.888	1.083	1.060	1.014	0.498
	F	0.638	0.268	1.026	0.888	1.090	1.063	1.007	0.440
	G	0.638	0.391	1.026	0.888	1.100	1.069	0.969	0.375

1st - 3rd Report Average	A	0.521
	B	0.491
	C	0.480
	D	0.480
	E	0.450
	F	0.411
	G	0.370

Notes:

- (1): Unit Stat Reports used to experience rate a policy taking effect during the prospective effective period.
- (3): Section VI-J, Exhibit 1, (10).
- (4): Exhibit 2, (10) - (12).
- (5): Section IV-A, Exhibit 1.
- (6): Section V-A, Exhibit 1, Page 1. Net Trend applied from USR policy effective period to prospective effective period.
- (7): Exhibit 4, Page 1, (6).
- (8): Exhibit 5, Page 1, (7).
- (9): Exhibit 6, (7).
- (10) = { (3) x [ 1.0 - (4) ] } / [ (5) x (6) x (7) x (8) x (9) ]

X 000006 STIP

Loss Elimination Ratios for Losses in Excess of Experience Rating Caps  
 By Hazard Group

Hazard Group	Adjusted Total Losses	Adjusted Excess Losses	Implied Loss Elimination Ratio = (3) / (2)	Expected Losses	Expected Losses Wgtd LER	Balanced LER Differential	Selected LER Differential
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A	66,266,725	1,175,014	0.018	88,497,773	0.018	0.15	0.15
B	231,885,194	14,364,607	0.062	279,432,198	0.062	0.51	0.51
C	436,736,483	29,315,172	0.067	569,141,019	0.067	0.55	0.55
D	197,679,601	13,533,799	0.068	271,267,872	0.068	0.56	0.56
E	298,782,620	40,264,612	0.135	422,652,336	0.135	1.10	1.10
F	419,386,479	87,395,993	0.208	557,166,994	0.208	1.71	1.71
G	77,129,278	23,449,909	0.304	101,697,010	0.304	2.49	2.49
Total	1,727,866,381	209,499,107	0.121	2,289,855,203	0.122	1.00	1.00

Loss Elimination Ratio by Hazard Group

Hazard Group	First Report	Second Report	Third Report
(9)	(10)	(11)	(12)
A	0.011	0.017	0.023
B	0.040	0.059	0.080
C	0.043	0.064	0.086
D	0.044	0.066	0.088
E	0.087	0.129	0.173
F	0.135	0.199	0.268
G	0.197	0.291	0.391
Total	0.079	0.117	0.157

Notes:

- (2): Unit Statistical Plan losses, PYs 2015 - 2017. Adjusted by factors from Section X - B, Exhibit 1, Page 2.
- (3): Adjusted losses above per claim limit of \$300,000
- (5): PYs 2015 - 2017, exposure times pure premium underlying present rates.
- (6): Total = (6) Weighted by (5)
- (7) = (6) / [ Total for (6) ]
- (10) - (12) = [ Exhibit 3, (5) ] x (8)

X 000007 STIP

Loss Elimination Ratio  
 Factor to Reflect the State Accident Limitation of \$300,000

Report (1)	Injury Type (2)	Adjusted Total Losses (3)	Adjusted Excess Losses (4)	Loss Elimination Ratio = (4) / (3) (5)
1st	Fatal	6,650,014	2,329,179	0.350
1st	Permanent Total	12,452,598	9,292,664	0.746
1st	Permanent Partial	176,333,910	14,848,765	0.084
1st	Temporary Total	266,051,174	12,237,605	0.046
1st	Medical Only	28,720,521	0	0.000
1st	Total	490,208,216	38,708,213	0.079
2nd	Fatal	10,855,577	5,165,143	0.476
2nd	Permanent Total	31,499,932	18,145,283	0.576
2nd	Permanent Partial	281,698,620	36,880,686	0.131
2nd	Temporary Total	234,855,040	8,237,026	0.035
2nd	Medical Only	26,685,721	0	0.000
2nd	Total	585,594,890	68,428,139	0.117
3rd	Fatal	16,999,636	8,214,097	0.483
3rd	Permanent Total	70,864,438	43,721,536	0.617
3rd	Permanent Partial	327,974,055	40,995,726	0.125
3rd	Temporary Total	209,668,325	9,431,396	0.045
3rd	Medical Only	26,556,820	0	0.000
3rd	Total	652,063,275	102,362,756	0.157

Notes:

Unit Statistical Plan losses have been adjusted by multiplying by law amendment changes and severity trend factors from Section X - B, Exhibit 1, Page 2.

(4): Adjusted losses above per claim limit of \$300,000

# X 000009 STIP

Section X - Experience Rating  
 Subsection A - Expected Loss Rates  
 7/1/2020

Section X - A  
 Exhibit 4  
 Page 1

## Hazard Group Development Factors to Tenth Report

Development to 10th Report (1)	Hazard Group (2)	Losses at Latest Report (3)	Selected Relativity (4)	Balanced Relativity = (4) / TT(4) (5)	Selected Dev. Factor to 10th Report (6)
1st to 10th	A	18,431,965	0.974	0.974	1.426
1st to 10th	B	64,541,588	0.988	0.988	1.448
1st to 10th	C	125,747,925	0.997	0.997	1.461
1st to 10th	D	54,523,263	0.998	0.998	1.462
1st to 10th	E	76,361,833	1.003	1.003	1.470
1st to 10th	F	115,487,347	1.010	1.010	1.479
1st to 10th	G	14,492,624	1.019	1.019	1.493
1st to 10th	Total	469,586,545	1.000	1.000	1.465
2nd to 10th	A	20,448,445	0.974	0.973	1.154
2nd to 10th	B	75,931,019	0.988	0.988	1.171
2nd to 10th	C	142,361,564	0.997	0.997	1.181
2nd to 10th	D	68,299,056	0.998	0.998	1.183
2nd to 10th	E	93,846,812	1.003	1.003	1.189
2nd to 10th	F	142,564,612	1.010	1.009	1.196
2nd to 10th	G	23,008,575	1.019	1.019	1.208
2nd to 10th	Total	566,460,083	1.000	1.000	1.185
3rd to 10th	A	24,954,828	0.974	0.973	1.051
3rd to 10th	B	82,961,839	0.988	0.988	1.067
3rd to 10th	C	152,488,462	0.997	0.996	1.076
3rd to 10th	D	67,579,651	0.998	0.998	1.077
3rd to 10th	E	114,918,379	1.003	1.003	1.083
3rd to 10th	F	145,795,399	1.010	1.009	1.090
3rd to 10th	G	39,656,455	1.019	1.019	1.100
3rd to 10th	Total	628,355,013	1.001	1.000	1.080

**Notes:**

(3): See Exhibit 4 Pages 3-5.

(4): See Page 2 for State Classifications for selection. The entry in the "Total" row is the weighted average using incurred losses at latest report in column (3) as the weights.

(6) = (5) x (Total LDF from page (3) - (5))

Hazard Group Reported Loss Development Relativities to Tenth Report

Relativities for State Classification Rates

Hazard Group (1)	Development			Average Relativity (5)	Selected (6)
	3rd Report to 10th Report (2)	2nd Report to 10th Report (3)	1st Report to 10th Report (4)		
A	0.994	0.976	0.952	0.974	0.974
B	0.994	0.989	0.982	0.988	0.988
C	0.997	0.998	0.996	0.997	0.997
D	1.001	0.995	0.999	0.998	0.998
E	1.002	1.009	0.999	1.003	1.003
F	1.005	1.006	1.018	1.010	1.010
G	1.001	1.015	1.042	1.019	1.019

Relativities for F-Class Rates

Hazard Group (7)	Development			Average Relativity (11)	Selected (12)
	3rd Report to 10th Report (8)	2nd Report to 10th Report (9)	1st Report to 10th Report (10)		
C	0.996	0.993	0.990	0.993	0.993
E	1.001	1.005	0.992	0.999	0.999
F	1.004	1.002	1.011	1.006	1.006
G	0.999	1.010	1.036	1.015	1.015

Notes:

(2) - (4): Pages 3 through 5. = [(12) for Hazard Group] / [(12) for Hazard Groups A-G Total]

(5): Average of (2) - (4)

(8) - (10): Pages 3 through 5. = [(12) for Hazard Group] / [(12) for Hazard Groups C,E,F,G Total]

(11): Average of (8) - (10)

X 000010 STIP

Loss Development of Schedule Z to Tenth Report by Hazard Group

Policy Year 2017 at 18 Months  
 First Report to Tenth Report

Hazard Group	Indemnity Losses Likely To Develop		Indemnity Losses Not Likely To Develop		Medical Losses Likely To Develop		Medical Losses Not Likely To Develop		Total Losses		
	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Total Reported Losses =(2)+(4)+(6)+(8)	Total Developed Losses =(3)+(5)+(7)+(9)	Develop. Factor = (11) / (10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A	2,014,822	3,908,407	6,790,844	11,489,591	1,207,547	1,458,241	8,418,752	8,835,718	18,431,965	25,691,957	1.394
B	10,012,998	19,423,487	23,696,471	40,092,625	5,940,413	7,173,681	24,891,706	26,124,548	64,541,588	92,814,340	1.438
C	21,575,484	41,852,713	46,938,154	79,415,783	13,897,325	16,782,499	43,336,962	45,483,364	125,747,925	183,534,359	1.460
D	8,246,472	15,996,732	22,203,509	37,566,647	5,900,772	7,125,810	18,172,510	19,072,562	54,523,263	79,761,750	1.463
E	12,228,661	23,721,491	29,624,215	50,121,916	10,325,331	12,468,936	24,183,626	25,381,398	76,361,833	111,693,741	1.463
F	21,322,092	41,361,176	44,841,713	75,868,764	20,285,285	24,496,640	29,038,257	30,476,470	115,487,347	172,203,051	1.491
G	3,604,103	6,991,337	5,109,647	8,645,134	2,678,705	3,234,821	3,100,169	3,253,715	14,492,624	22,125,007	1.527
A, B, C, D, E, F, G	79,004,632	153,255,342	179,204,553	303,200,460	60,235,378	72,740,628	151,141,982	158,627,775	469,586,545	687,824,205	1.465
C, E, F, G	58,730,340	113,926,717	126,513,729	214,051,597	47,186,646	56,982,896	99,659,014	104,594,947	332,089,729	489,556,157	1.474

Notes:

(2), (4), (6), (8): Unit Statistical Plan Data.

(3), (5), (7), (9): Unit Statistical Plan Data x Loss Development Factors to 10th report from Exhibit 5, Page 5.

X 000011 STTP

Loss Development of Schedule Z to Tenth Report by Hazard Group

Policy Year 2016 at 30 Months  
 Second Report to Tenth Report

Hazard Group	Indemnity Losses Likely To Develop		Indemnity Losses Not Likely To Develop		Medical Losses Likely To Develop		Medical Losses Not Likely To Develop		Total Losses		
	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Total Reported Losses =(2)+(4)+(6)+(8)	Total Developed Losses =(3)+(5)+(7)+(9)	Develop. Factor = (11) / (10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A	3,521,496	4,581,996	7,480,668	9,369,769	1,230,688	1,374,301	8,215,593	8,327,878	20,448,445	23,653,943	1.157
B	14,285,546	18,587,643	29,727,709	37,234,880	8,273,766	9,239,255	23,643,998	23,967,147	75,931,019	89,028,925	1.172
C	32,478,815	42,259,820	55,916,642	70,037,333	12,858,926	14,359,471	41,107,181	41,669,004	142,361,564	168,325,628	1.182
D	15,449,699	20,102,381	25,334,483	31,732,228	8,129,231	9,077,854	19,385,643	19,650,592	68,299,056	80,563,055	1.180
E	23,580,434	30,681,689	39,231,387	49,138,532	9,271,868	10,353,829	21,763,123	22,060,566	93,846,812	112,234,616	1.196
F	34,219,996	44,525,358	52,652,170	65,948,480	29,308,782	32,728,908	26,383,664	26,744,257	142,564,612	169,947,003	1.192
G	5,485,587	7,137,573	9,896,350	12,395,486	3,923,922	4,381,816	3,702,716	3,753,322	23,008,575	27,668,197	1.203
A, B, C, D, E, F, G	129,021,573	167,876,459	220,239,409	275,856,708	72,997,183	81,515,433	144,201,918	146,172,766	566,460,083	671,421,367	1.185
C, E, F, G	95,764,832	124,604,441	157,696,549	197,519,831	55,363,498	61,824,023	92,956,684	94,227,149	401,781,563	478,175,444	1.190

Notes:

(2), (4), (6), (8): Unit Statistical Plan Data.

(3), (5), (7), (9): Unit Statistical Plan Data x Loss Development Factors to 10th report from Exhibit 5, Page 5.

X 000012 STIP

Loss Development of Schedule Z to Tenth Report by Hazard Group

Policy Year 2015 at 42 Months  
 Third Report to Tenth Report

Hazard Group	Indemnity Losses Likely To Develop		Indemnity Losses Not Likely To Develop		Medical Losses Likely To Develop		Medical Losses Not Likely To Develop		Total Losses		
	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Reported Losses	Losses Developed to 10th Report	Total Reported Losses =(2)+(4)+(6)+(8)	Total Developed Losses =(3)+(5)+(7)+(9)	Develop. Factor = (11) / (10)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A	5,408,995	6,058,825	9,371,533	10,364,881	2,550,994	2,693,836	7,623,306	7,662,350	24,954,828	26,779,891	1.073
B	16,548,120	18,536,191	30,818,548	34,085,199	12,580,740	13,285,192	23,014,431	23,132,304	82,961,839	89,038,886	1.073
C	36,146,244	40,488,810	59,648,400	65,970,908	15,166,867	16,016,127	41,526,951	41,739,639	152,488,462	164,215,485	1.077
D	17,568,924	19,679,633	26,871,016	29,719,244	7,356,920	7,768,867	15,782,791	15,863,626	67,579,651	73,031,369	1.081
E	30,974,117	34,695,310	43,251,176	47,835,640	18,857,632	19,913,555	21,835,454	21,947,288	114,918,379	124,391,793	1.082
F	44,261,804	49,579,364	57,618,791	63,726,168	16,875,172	17,820,088	27,039,632	27,178,121	145,795,399	158,303,741	1.086
G	10,112,350	11,327,236	10,055,533	11,121,382	16,012,923	16,909,558	3,475,649	3,493,450	39,656,455	42,851,626	1.081
A, B, C, D, E, F, G	161,020,554	180,365,369	237,634,997	262,823,422	89,401,248	94,407,222	140,298,214	141,016,778	628,355,013	678,612,791	1.080
C, E, F, G	121,494,515	136,090,720	170,573,900	188,654,098	66,912,594	70,659,328	93,877,686	94,358,499	452,858,695	489,762,644	1.081

Notes:

(2), (4), (6), (8): Unit Statistical Plan Data.

(3), (5), (7), (9): Unit Statistical Plan Data x Loss Development Factors to 10th report from Exhibit 5, Page 5.

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Loss Development Factors From 10th to Ultimate

Hazard Group	Losses Developed to 10th Report				Indicated Development Factor to Ultimate	Balanced Selected Factor
	Indemnity		Medical			
	Likely to Develop	Not Likely to Develop	Likely to Develop	Not Likely to Develop		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A	14,549,227	31,224,241	5,526,378	24,825,946	1.047	1.047
B	56,547,321	111,412,704	29,698,128	73,223,999	1.052	1.052
C	124,601,343	215,424,024	47,158,097	128,892,008	1.056	1.056
D	55,778,746	99,018,118	23,972,531	54,586,780	1.056	1.056
E	89,098,490	147,096,088	42,736,319	69,389,252	1.060	1.060
F	135,465,898	205,543,413	75,045,636	84,398,848	1.063	1.063
G	25,456,146	32,162,002	24,526,195	10,500,487	1.069	1.069
TOTAL	501,497,171	841,880,589	248,663,283	445,817,319	1.058	1.058

Notes:

(2) - (5): Exhibit 4, Pages 3-5.

(6): Weighted Average of Development Factors from Page 2.

(Likely to Dev. Ind. 1.158, Not Likely to Dev. Ind. 1.024, Likely to Dev. Med. 1.062, Not Likely to Dev. Med. 1.009)

(7): Factors are balanced to the total development factor from Page 2.

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# X 000015 STIP

Section X - Experience Rating  
 Subsection A - Expected Loss Rates  
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 Exhibit 5  
 Page 2

## Calculation of Development Category Development Factors from 10th to Ultimate

Policy Year (1)	Unit Stat Plan Losses Developed to 10th Rept. (2)	Aggregate Financial Develop. Factor 10th to Ult. (3)	Differential in Loss Development (4)	Unit Stat Plan Losses Adjusted to Financial Agg. Ult. Loss Level = (2) x (3) x (4) (5)	Development Factor 10th to Ult. = (5) / (2) (6)
<b>Indemnity</b>					
2017	456,455,802	1.050	1.023	490,167,068	1.074
2016	443,733,168	1.050	1.023	476,504,812	1.074
2015	443,188,791	1.050	1.023	475,920,230	1.074
<b>Total</b>	<b>1,343,377,760</b>			<b>1,442,592,110</b>	<b>1.074</b>
<b>Medical</b>					
2017	231,368,403	1.028	1.000	237,788,605	1.028
2016	227,688,199	1.028	1.000	234,006,280	1.028
2015	235,424,000	1.028	1.000	241,956,740	1.028
<b>Total</b>	<b>694,480,602</b>			<b>713,751,625</b>	<b>1.028</b>
<b>Ind.+ Med.</b>					
2017	687,824,205			727,955,673	1.058
2016	671,421,367			710,511,091	1.058
2015	678,612,791			717,876,970	1.058
<b>Total</b>	<b>2,037,858,363</b>			<b>2,156,343,735</b>	<b>1.058</b>

(7)	Unit Stat Plan Indem. Losses Developed to 10th Report (8)	Development Factor 10th to Ult. (9)	(10)	Unit Stat Plan Med. Losses Developed to 10th Report (11)	Development Factor 10th to Ult. (12)
a. Likely to Develop	501,497,171	1.158	a. Likely to Develop	248,663,283	1.062
b. Not Likely to Develop	841,880,589	1.024	b. Not Likely to Develop	445,817,319	1.009
<b>c. Total</b>	<b>1,343,377,760</b>	<b>1.074</b>	<b>c. Total</b>	<b>694,480,602</b>	<b>1.028</b>

**Notes:**

(2): Page 4.

(3): Page 3.

(4): Page 8.

(8),(11): Page 4.

(9), (12): Likely to Develop Factor = 1 + (Total Losses/Likely to Develop Losses) x ("Appropriate Column 6 Factor" - 1) x 0.8

(9), (12): Not Likely to Develop Factor = 1 + (Total Losses/Not Likely to Develop Losses) x ("Appropriate Column 6 Factor" - 1) x (1 - 0.8)

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Section X - Experience Rating  
Subsection A - Expected Loss Rates  
7/1/2020

Section X - A  
Exhibit 5  
Page 3

Calculation of Development Factor from USR at 10th report to Aggregate Financial Ultimate Level

	<u>Indemnity</u>	<u>Medical</u>
(1) Development Factor based on Paid + Case 132 Months to Ult.	1.027	1.029
(2) Est. Ultimate Losses (Prior to Escalation Adj.) based on Paid + Case Develop. Method		
(a) PY2016	446,948,897	229,517,208
(b) PY2017	458,208,856	234,927,108
(c) Average	452,578,877	232,222,158
(3) Est. Ultimate Losses (Prior to Escalation Adj.) based on Paid Develop. Method		
(a) PY2016	462,748,309	226,735,491
(b) PY2017	481,964,909	236,229,946
(c) Average	472,356,609	231,482,719
(4) Ratio of Est. Ultimate Losses based on average of Paid and Paid + Case indications to Est. Ultimate Losses based on Paid + Case = { [ (2c) + (3c) ] / 2.000 } / (2c)	1.022	0.998
(5) Development Factor to bring Unit Statistical Plan Data 10th report to Aggregate Financial Ultimate Level = (1) x (4)	1.050	1.028

Notes:

- (1): 132 Months to 252 Months LDF from Section II-B, Exhibit 1.  
x 252 Months to Ult LDF from Section II-C, Exhibit 2, Page 1.  
(2),(3): Section II-A, Exhibit 1.

Losses Developed to 10th Report

Policy Year (1)	Loss Development Category (2)	Paid + Case			
		Reported Schedule Z Losses		Losses Developed to 10th Report	
		Indemnity (3)	Medical (4)	Indemnity (5)	Medical (6)
2017	Likely	79,004,632	60,235,378	153,255,342	72,740,628
2017	Not Likely	179,204,553	151,141,982	303,200,460	158,627,775
2017	TOTALS	258,209,185	211,377,360	456,455,802	231,368,403
2016	Likely	129,021,573	72,997,183	167,876,459	81,515,433
2016	Not Likely	220,239,409	144,201,918	275,856,708	146,172,766
2016	TOTALS	349,260,982	217,199,101	443,733,168	227,688,199
2015	Likely	161,020,554	89,401,248	180,365,369	94,407,222
2015	Not Likely	237,634,997	140,298,214	262,823,422	141,016,778
2015	TOTALS	398,655,551	229,699,462	443,188,791	235,424,000

Notes:

(3),(4): Sum of Unit Statistical Plan Data.

(5),(6): Unit Statistical Plan Data x Loss Development Factors to 10th report from Exhibit 5,

Page 5.

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# X 000018 STIP

Section X - Experience Rating  
 Subsection A - Expected Loss Rates  
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 Exhibit 5  
 Page 5

## Summary of Development Factors Industry

		Likely to Develop								
		Development Factors From:								
		18-30	30-42	42-54	54-66	66-78	78-90	90-102	102-114	114-126
		<b>(1) Indemnity Paid + Case Losses</b>								
5yr Weighted Average		1.491	1.162	1.068	1.025	1.010	1.002	1.001	1.006	1.003
Cumulative		1.940	1.301	1.120	1.049	1.023	1.013	1.011	1.010	1.003
		<b>(2) Medical Paid + Case Losses</b>								
5yr Weighted Average		1.081	1.057	1.020	0.999	0.990	1.008	1.014	0.994	1.030
Cumulative		1.208	1.117	1.056	1.036	1.036	1.047	1.039	1.024	1.030
		Not-Likely to Develop								
		Development Factors From:								
		18-30	30-42	42-54	54-66	66-78	78-90	90-102	102-114	114-126
		<b>(3) Indemnity Paid + Case Losses</b>								
5yr Weighted Average		1.351	1.132	1.059	1.024	1.012	1.002	1.004	1.000	1.002
Cumulative		1.692	1.253	1.106	1.045	1.020	1.008	1.006	1.003	1.002
		<b>(4) Medical Paid + Case Losses</b>								
5yr Weighted Average		1.035	1.009	1.009	1.000	0.997	1.000	0.999	1.000	1.000
Cumulative		1.050	1.014	1.005	0.996	0.996	0.999	0.999	1.000	1.000

Notes:  
 (1),(2): Page 6.  
 (3),(4): Page 7.

# X 000019 STIP

Section X - Experience Rating  
 Subsection A - Expected Loss Rates  
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 Exhibit 5  
 Page 6

## Calculation of Likely to Develop Development Factors Industry

Policy Year	Likely to Develop					
	Unlimited Indemnity Paid + Case Losses			Unlimited Medical Paid + Case Losses		
	Evaluated at month		Link Ratio	Evaluated at month		Link Ratio
	18	30		18	30	
2012	72,592,949	110,154,027	1.517	67,440,687	80,243,708	1.190
2013	75,447,306	108,428,019	1.437	56,729,552	58,412,964	1.030
2014	91,728,472	134,224,683	1.463	88,396,095	89,641,025	1.014
2015	82,330,125	124,160,083	1.508	74,142,912	79,646,484	1.074
2016	78,991,564	121,001,106	1.532	58,835,910	65,732,913	1.117
Weighted Average			1.491			1.081
	30	42		30	42	
2011	109,071,188	129,441,450	1.187	69,129,682	78,720,145	1.139
2012	116,050,975	133,411,210	1.150	82,148,744	83,328,048	1.014
2013	116,194,590	132,513,621	1.140	60,914,924	62,761,312	1.030
2014	143,223,586	167,374,457	1.169	93,863,650	98,771,578	1.052
2015	130,491,509	151,678,656	1.162	81,532,681	86,287,197	1.058
Weighted Average			1.162			1.057
	42	54		42	54	
2010	128,649,774	135,971,767	1.057	68,242,188	71,437,322	1.047
2011	134,290,248	147,228,955	1.096	80,467,196	82,586,012	1.026
2012	141,366,615	151,161,530	1.069	86,378,260	89,488,941	1.036
2013	139,218,862	148,178,637	1.064	64,627,115	63,815,175	0.987
2014	174,606,387	184,348,097	1.056	101,458,080	101,739,214	1.003
Weighted Average			1.068			1.020
	54	66		54	66	
2009	137,899,884	141,780,302	1.028	69,366,355	68,936,702	0.994
2010	139,203,913	143,821,420	1.033	72,663,773	73,562,700	1.012
2011	153,927,635	157,073,907	1.020	85,572,549	84,737,956	0.990
2012	160,072,635	164,117,097	1.025	91,904,791	90,800,024	0.988
2013	155,468,977	158,659,993	1.021	65,825,124	67,082,391	1.019
Weighted Average			1.025			0.999
	66	78		66	78	
2008	147,209,691	147,616,547	1.003	62,180,762	61,454,082	0.988
2009	143,003,812	144,893,753	1.013	69,253,666	68,032,178	0.982
2010	146,293,316	145,897,691	0.997	74,728,785	76,162,770	1.019
2011	160,483,394	163,789,405	1.021	86,097,304	87,065,780	1.011
2012	171,455,546	173,933,228	1.014	92,820,231	88,389,239	0.952
Weighted Average			1.010			0.990
	78	90		78	90	
2007	166,676,186	168,263,320	1.010	78,360,429	81,327,947	1.038
2008	148,815,195	148,382,645	0.997	61,766,844	60,186,275	0.974
2009	146,177,245	145,924,671	0.998	68,389,319	68,582,870	1.003
2010	148,210,924	148,736,255	1.004	76,807,744	78,973,462	1.028
2011	165,376,684	165,660,045	1.002	87,353,078	86,485,174	0.990
Weighted Average			1.002			1.008
	90	102		90	102	
2006	176,920,736	177,890,848	1.005	89,553,673	96,484,091	1.077
2007	168,573,320	167,495,002	0.994	81,512,166	80,771,074	0.991
2008	149,073,543	149,080,438	1.000	60,583,065	59,919,449	0.989
2009	149,409,557	149,058,409	0.998	69,343,516	69,881,377	1.008
2010	148,495,068	149,873,827	1.009	78,573,467	77,997,459	0.993
Weighted Average			1.001			1.014
	102	114		102	114	
2005	179,562,899	180,497,859	1.005	90,620,737	89,093,107	0.983
2006	179,190,854	181,060,586	1.010	96,843,838	98,818,269	1.020
2007	167,832,664	168,286,340	1.003	80,791,981	80,638,159	0.998
2008	148,613,968	149,257,000	1.004	59,604,481	59,447,227	0.997
2009	149,229,129	150,415,101	1.008	69,825,760	67,299,222	0.964
Weighted Average			1.006			0.994
	114	126		114	126	
2004	196,792,062	196,917,701	1.001	100,260,313	100,476,987	1.002
2005	180,497,859	180,793,941	1.002	89,093,107	89,473,888	1.004
2006	180,330,402	180,524,178	1.001	98,586,453	97,044,058	0.984
2007	168,286,340	169,602,704	1.008	80,638,159	94,835,773	1.176
2008	149,517,000	150,491,753	1.007	59,472,227	59,217,046	0.996
Weighted Average			1.003			1.030

Note:  
 Unit Statistical Plan Data, Excluding Large Deductible Policies.

# X 000020 STIP

Section X - Experience Rating  
 Subsection A - Expected Loss Rates  
 7/1/2020

Section X - A  
 Exhibit 5  
 Page 7

## Calculation of Not-Likely to Develop Development Factors Industry

Not-Likely to Develop						
Policy Year	Unlimited Indemnity Paid + Case Losses			Unlimited Medical Paid + Case Losses		
	Evaluated at month		Link Ratio	Evaluated at month		Link Ratio
	18	30		18	30	
2012	136,991,457	186,664,031	1.363	127,389,350	133,099,299	1.045
2013	152,427,947	198,591,886	1.303	136,353,826	139,584,850	1.024
2014	156,555,405	212,882,105	1.360	140,638,878	144,512,812	1.028
2015	168,723,700	225,664,011	1.337	141,130,694	145,004,317	1.027
2016	164,142,835	228,259,876	1.391	143,769,681	151,466,188	1.054
Weighted Average			1.351			1.035
	30	42		30	42	
2011	182,423,875	207,424,945	1.137	132,619,060	133,793,821	1.009
2012	180,767,083	205,297,031	1.136	131,194,263	133,535,146	1.018
2013	190,825,315	214,867,981	1.126	137,082,890	137,525,412	1.003
2014	203,883,202	232,139,898	1.139	140,290,187	141,855,862	1.011
2015	219,332,585	246,976,895	1.126	143,118,120	143,412,265	1.002
Weighted Average			1.132			1.009
	42	54		42	54	
2010	186,837,849	197,547,930	1.057	126,570,211	127,383,313	1.006
2011	202,576,147	213,336,342	1.053	132,046,770	133,277,846	1.009
2012	197,341,626	209,682,267	1.063	130,484,934	131,056,604	1.004
2013	208,162,740	221,047,784	1.062	135,659,609	137,605,660	1.014
2014	224,907,968	238,251,348	1.059	139,169,360	140,637,827	1.011
Weighted Average			1.059			1.009
	54	66		54	66	
2009	181,501,319	182,639,419	1.006	121,128,153	120,791,673	0.997
2010	194,315,784	199,697,316	1.028	126,156,862	127,082,177	1.007
2011	206,637,662	212,100,667	1.026	130,291,309	130,083,727	0.998
2012	200,771,162	206,396,339	1.028	128,640,754	126,769,187	0.985
2013	213,757,444	220,076,085	1.030	135,595,711	136,896,691	1.010
Weighted Average			1.024			1.000
	66	78		66	78	
2008	186,887,497	188,184,396	1.007	118,176,397	116,862,121	0.989
2009	181,415,909	184,329,980	1.016	120,474,709	121,019,428	1.005
2010	197,179,370	199,817,729	1.013	125,857,559	125,527,173	0.997
2011	208,691,180	209,715,937	1.005	128,724,379	128,111,560	0.995
2012	199,057,890	202,505,083	1.017	124,748,980	124,898,671	1.001
Weighted Average			1.012			0.997
	78	90		78	90	
2007	178,385,335	179,591,974	1.007	124,234,760	123,665,002	0.995
2008	186,985,748	186,856,470	0.999	116,549,359	116,820,041	1.002
2009	183,046,488	183,915,034	1.005	120,662,287	120,663,813	1.000
2010	197,504,496	196,982,144	0.997	124,882,199	125,327,244	1.004
2011	208,128,658	208,703,874	1.003	127,824,262	127,843,423	1.000
Weighted Average			1.002			1.000
	90	102		90	102	
2006	167,463,961	168,536,777	1.006	112,548,671	112,259,572	0.997
2007	179,281,974	179,969,621	1.004	123,480,783	123,564,406	1.001
2008	186,165,572	186,474,061	1.002	116,423,251	115,988,622	0.996
2009	180,430,148	180,632,763	1.001	119,903,167	119,916,873	1.000
2010	197,223,331	198,160,537	1.005	125,727,239	125,657,898	0.999
Weighted Average			1.004			0.999
	102	114		102	114	
2005	176,656,210	176,662,285	1.000	114,469,714	114,588,846	1.001
2006	167,236,771	167,322,886	1.001	111,899,825	112,370,808	1.004
2007	179,631,959	179,728,191	1.001	123,543,499	123,029,750	0.996
2008	186,940,531	187,245,197	1.002	116,303,590	116,528,878	1.002
2009	180,462,043	180,218,461	0.999	119,972,490	119,744,664	0.998
Weighted Average			1.000			1.000
	114	126		114	126	
2004	172,286,453	172,802,563	1.003	112,376,378	112,415,845	1.000
2005	176,662,285	176,795,303	1.001	114,588,846	114,565,630	1.000
2006	168,053,070	168,914,320	1.005	112,602,624	112,666,572	1.001
2007	179,728,191	180,208,721	1.003	123,029,750	122,785,675	0.998
2008	186,985,197	187,091,798	1.001	116,503,878	116,471,507	1.000
Weighted Average			1.002			1.000

Note:  
 Unit Statistical Plan Data, Excluding Large Deductible Policies.

Escalation Adjustment for Indemnity Losses Only

Loss Development Method (1)	Policy Year (2)	Differential in Loss Development (3)
Paid Plus Case	2017	1.008
	2016	1.008
	2015	1.008
Paid	2017	1.038
	2016	1.038
	2015	1.038
Average of Paid and Paid Plus Case	2017	1.023
	2016	1.023
	2015	1.023

Notes:

(3): Section II-D, Exhibit 1, Page 1 and Exhibit 2, Page 1.

X 000021 STIP



# X 00022 STIP

Section X - Experience Rating  
 Subsection A - Expected Loss Rates  
 7/1/2020

Section X - A  
 Exhibit 6

## Investment Income Offset

Hazard Code (1)	Injury Type (2)	Indemnity		Medical		Total Investment Income Offset (7)
		Developed Losses at Ultimate (3)	Investment Income Offset (4)	Developed Losses at Ultimate (5)	Investment Income Offset (6)	
A	Fatal	253,641	0.799	1,564	1.000	
A	Permanent Total	1,245,962	0.744	249,371	0.749	
A	Permanent Partial	21,903,715	1.041	9,150,353	1.047	
A	Temporary Total	25,418,310	1.051	14,694,968	1.057	
A	Medical Only	0		6,822,136	1.000	
A	TOTAL	48,821,628	1.037	30,918,392	1.039	1.038
B	Fatal	2,431,014	0.799	147,846	1.000	
B	Permanent Total	3,637,481	0.744	6,916,943	0.749	
B	Permanent Partial	85,229,760	1.041	31,443,082	1.047	
B	Temporary Total	88,270,151	1.051	48,414,573	1.057	
B	Medical Only	0		18,499,983	1.000	
B	TOTAL	179,568,406	1.036	105,422,427	1.024	1.032
C	Fatal	4,338,469	0.799	148,580	1.000	
C	Permanent Total	10,937,958	0.744	4,013,684	0.749	
C	Permanent Partial	185,207,009	1.041	63,238,637	1.047	
C	Temporary Total	164,399,120	1.051	84,940,086	1.057	
C	Medical Only	0		27,792,948	1.000	
C	TOTAL	364,882,556	1.034	180,133,935	1.038	1.035
D	Fatal	4,267,652	0.799	450,109	1.000	
D	Permanent Total	5,080,334	0.744	2,374,723	0.749	
D	Permanent Partial	84,247,530	1.041	33,848,522	1.047	
D	Temporary Total	72,390,825	1.051	35,597,772	1.057	
D	Medical Only	0		8,265,761	1.000	
D	TOTAL	165,986,340	1.030	80,536,889	1.038	1.032
E	Fatal	3,530,143	0.799	232,555	1.000	
E	Permanent Total	19,184,198	0.744	16,749,931	0.749	
E	Permanent Partial	127,232,295	1.041	37,932,416	1.047	
E	Temporary Total	103,855,809	1.051	49,510,443	1.057	
E	Medical Only	0		10,974,382	1.000	
E	TOTAL	253,802,445	1.019	115,399,727	1.004	1.014
F	Fatal	20,366,439	0.799	1,923,321	1.000	
F	Permanent Total	31,745,153	0.744	20,019,690	0.749	
F	Permanent Partial	188,498,281	1.041	70,032,916	1.047	
F	Temporary Total	126,736,092	1.051	65,119,242	1.057	
F	Medical Only	0		7,761,733	1.000	
F	TOTAL	367,345,965	1.005	164,856,902	1.012	1.007
G	Fatal	4,187,582	0.799	20,191	1.000	
G	Permanent Total	6,231,591	0.744	15,776,629	0.749	
G	Permanent Partial	35,214,189	1.041	11,695,639	1.047	
G	Temporary Total	16,778,745	1.051	8,346,245	1.057	
G	Medical Only	0		803,107	1.000	
G	TOTAL	62,412,107	0.998	36,641,810	0.920	0.969

**Notes:**

(3),(5): From Exhibit 4, Pages 3-5, Developed to Ultimate.

(4),(6): Section IX-B, Exhibit 4.

(7) = Average of (4) and (6) weighted by (3) and (5).

Calculation of Statewide Partial "D" Ratios by Benefit Type

Benefit Type (1)	Adjusted Primary Losses (2)	Adjusted Total Losses (3)	Partial D-Ratio = (2) / (3) (4)
Indemnity	94,168,254	945,935,952	0.100
Medical	143,196,079	572,431,322	0.250

Notes:

Data at the individual claim level for PYs 2015 - 2017 have been adjusted by the factors shown on Page 2. The Adjusted Primary Losses are capped at \$5,000 per claim. The Adjusted Total Losses are capped at \$300,000 per claim. If losses are capped, the proportions for capped indemnity and capped medical losses are consistent with the proportions for unlimited indemnity and unlimited medical.

Severity Trend and State Benefit Level Adjustment Factors

Policy Year	Indemnity By Injury Type				Medical by Injury Type				
	Fatal	Permanent Total	Permanent Partial	Temporary Total	Fatal	Permanent Total	Permanent Partial	Temporary Total	Medical Only

(1) Severity Trend Factors

2015	1.032	1.032	1.032	1.032	1.023	1.023	1.023	1.023	1.046
2016	1.018	1.018	1.018	1.018	1.034	1.034	1.034	1.034	1.060
2017	1.039	1.039	1.039	1.039	1.034	1.034	1.034	1.034	1.034

(2) State Benefit Level Adjustment Factors

2015	1.009	1.011	1.016	1.007	1.000	1.000	1.000	1.000	1.000
2016	1.010	1.012	1.019	1.008	1.000	1.000	1.000	1.000	1.000
2017	1.010	1.013	1.019	1.008	1.000	1.000	1.000	1.000	1.000

(3) Combined Severity Trend and State Benefit Level Adjustment Factors

2015	1.041	1.043	1.049	1.039	1.023	1.023	1.023	1.023	1.046
2016	1.028	1.030	1.036	1.026	1.034	1.034	1.034	1.034	1.060
2017	1.049	1.052	1.058	1.047	1.034	1.034	1.034	1.034	1.034

Notes:

(1): Exhibit 2.

(2): Section IV-A, Exhibit 1. PY 2015 to CPY 2016\_07. PY 2016 to CPY 2017\_07. PY 2017 to CPY 2018\_07.

(3) = (1) x (2)

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Severity Trend Factors

(1)			(2) Historical Values		
Schedule Z Policy Year			Indemnity Severity	Lost Time Medical Severity	Medical Only Severity
01/01/2015	-	12/31/2015	29,773	11,494	887
01/01/2016	-	12/31/2016	30,644	11,625	906
01/01/2017	-	12/31/2017	30,789	11,890	949
(3) Selected Annual Trend			2.6%	2.3%	2.3%
(4) Trend Period Length [Years between (1) and (5)]				1.496	

(5)			(6) Trend Factors from Sched Z PYs to Pol Eff Periods		
Policy Effective Period			Indemnity Severity	Lost Time Medical Severity	Medical Only Severity
07/01/2016	-	06/30/2017	1.032	1.023	1.046
07/01/2017	-	06/30/2018	1.018	1.034	1.060
07/01/2018	-	06/30/2019	1.039	1.034	1.034

Notes:

(2): Section V-A Exhibit 2, Pages 1, 3, and 5.

(3): Section V-A Exhibit 1, Page 1.

(6): For 7/1/2016 effective period, average of 1/1/2016 and 1/1/2017 divided by 1/1/2015.

For 7/1/2017 effective period, 1/1/2017 divided by 1/1/2017, then (3) for .5 years.

For 7/1/2018 effective period, (3) for (4).

Calculation of ELR Factors

Unit Report / Policy Effective Dates (1)	Hazard Group (2)	Permissible Loss and LBA Ratio (3)	Weighted LBA (4)	Exp Rating LER by Hazard Group (5)	Law Factor (6)	Loss Trend / Payroll Trend (7)	Loss Development to Ultimate Report (8)	Investment Income Offset (9)	Ratio of Exp Rating ELR to Average Rate (10)
1st Report	C	0.638	0.062	0.043	1.004	0.942	1.709	1.035	0.344
7/1/2018	E	0.638	0.062	0.087	1.004	0.942	1.713	1.014	0.334
to	F	0.638	0.062	0.135	1.004	0.942	1.718	1.007	0.318
6/30/2019	G	0.638	0.062	0.197	1.004	0.942	1.724	0.969	0.305
2nd Report	C	0.638	0.062	0.064	1.006	0.914	1.292	1.035	0.457
7/1/2017	E	0.638	0.062	0.129	1.006	0.914	1.294	1.014	0.433
to	F	0.638	0.062	0.199	1.006	0.914	1.296	1.007	0.401
6/30/2018	G	0.638	0.062	0.291	1.006	0.914	1.298	0.969	0.368
3rd Report	C	0.638	0.062	0.086	1.008	0.888	1.167	1.035	0.508
7/1/2016	E	0.638	0.062	0.173	1.008	0.888	1.168	1.014	0.469
to	F	0.638	0.062	0.268	1.008	0.888	1.169	1.007	0.418
6/30/2017	G	0.638	0.062	0.391	1.008	0.888	1.170	0.969	0.361
1st - 3rd Report Average	C E F G								0.436 0.412 0.379 0.345

Notes:

- (1): Unit Stat Reports used to experience rate a policy taking effect during the prospective effective period.
- (3), (5), (7), (9): Section X-A, Exhibit 1.
- (4): Loss Based Assessment weighted by federal indemnity losses as a % of losses.
- (6): State Factors from Section IV-A, Exhibit 1 and Federal Factors from Section IV-F, Exhibit 1 weighted by Adjusted Reported Losses from Section VIII-C, Exhibit 1, Pages 2 and 4.
- (8): Exhibit 2.
- (10) =  $[(3) / \{ 1.0 + (4) \}] \times [ 1.0 - (5) ] / [(6) \times (7) \times (8) \times (9) ]$

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# X 000027 STIP

Section X - Experience Rating  
 Subsection C - Expected Loss Rates for F-Class  
 7/1/2020

Section X - C  
 Exhibit 2

## Hazard Group Development Factors to Ultimate

Development to Ultimate (1)	Hazard Group (2)	Losses at Latest Report (3)	Selected Relativity (4)	Balanced Relativity = (4) / TT(4) (5)	Selected Dev. Factor to Ultimate (6)
1st	C	125,747,925	0.993	0.993	1.709
1st	E	76,361,833	0.999	0.999	1.713
1st	F	115,487,347	1.006	1.006	1.718
1st	G	14,492,624	1.015	1.015	1.724
1st	Total	332,089,729	1.000	1.000	1.713
2nd	C	142,361,564	0.993	0.993	1.292
2nd	E	93,846,812	0.999	0.999	1.294
2nd	F	142,564,612	1.006	1.005	1.296
2nd	G	23,008,575	1.015	1.015	1.298
2nd	Total	401,781,563	1.000	1.000	1.294
3rd	C	152,488,462	0.993	0.992	1.167
3rd	E	114,918,379	0.999	0.999	1.168
3rd	F	145,795,399	1.006	1.005	1.169
3rd	G	39,656,455	1.015	1.014	1.170
3rd	Total	452,858,695	1.001	1.000	1.168

**Notes:**

(3): See Section X-A, Exhibit 4, Page 1.

(4): See Section X-A, Exhibit 4, Page 2 for F-Classes for selection. The entry in the "Total" row is the weighted average using incurred losses at latest report in column (3) as the weights.

(6) = 1.00 + (5) x (Total LDF from Exhibit 3 - 1.00)

Loss Development Factors For Use in Calculation of Reciprocals

Report (1)	Benefit Type (2)	Injury Type (3)	State Loss Development Factor to Ultimate (4)	Federal Loss Development Factor to Ultimate (5)	Average Loss Development Factor to Ultimate (6)	Distribution of Ultimate Losses (7)	Adjusted Distribution = (7) / (6) (8)	LDF to Ultimate to Derive ELR = TT(7) / TT(8) (9)
1st	Indemnity	Likely to Develop	2.247	2.480	2.480	30.0%	12.1%	
1st	Indemnity	Not Likely to Develop	1.732	1.785	1.785	35.9%	20.1%	
1st	Medical	Likely to Develop	1.282	1.703	1.703	13.2%	7.8%	
1st	Medical	Not Likely to Develop	1.059	1.136	1.136	20.9%	18.4%	
1st	Total					100.0%	58.4%	1.713
2nd	Indemnity	Likely to Develop	1.507	1.528	1.528	30.0%	19.6%	
2nd	Indemnity	Not Likely to Develop	1.282	1.241	1.241	35.9%	28.9%	
2nd	Medical	Likely to Develop	1.186	1.435	1.435	13.2%	9.2%	
2nd	Medical	Not Likely to Develop	1.022	1.071	1.071	20.9%	19.5%	
2nd	Total					100.0%	77.3%	1.294
3rd	Indemnity	Likely to Develop	1.297	1.329	1.329	30.0%	22.5%	
3rd	Indemnity	Not Likely to Develop	1.132	1.095	1.095	35.9%	32.8%	
3rd	Medical	Likely to Develop	1.121	1.288	1.288	13.2%	10.3%	
3rd	Medical	Not Likely to Develop	1.014	1.044	1.044	20.9%	20.0%	
3rd	Total					100.0%	85.6%	1.168

Notes:

(4): Section X-A, Exhibit 5, Page 5 and Section X-A, Exhibit 5, Page 2.

(5): Section VIII-E, Exhibit 1, Page 1.

(6): Average of (4) and (5) weighted by % of Total Reported Losses from Section VIII-C, Exhibit 1 Page 2 and Page 4.

Federal losses are 100.0% of total reported indemnity losses and 100.0% of total reported medical losses.

(7): Section IV-E, Exhibit 2, Page 2.

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# X 000029 STIP

Section X - Experience Rating  
 Subsection D - State Reference Point  
 7/1/2020

Section X - D  
 Exhibit 1

## State Reference Point

Report (1)	Policy Year (2)	Reported Claims (3)	Reported Losses (4)	Average Claim Cost = (4) / (3) (5)
1st	2017	43,184	469,586,545	10,874
2nd	2016	42,230	566,460,083	13,414
3rd	2015	43,615	628,355,013	14,407
Total		129,029	1,664,401,641	12,899
(6) Indicated State Reference Point = [ Total (5) ] x 250				3,224,860
(7) Average Annual Severity Trend				2.46%
(8) Length of Trending Period in Years				1.496
(9) Trend Factor = [ 1.000 + (7) ] ^ (8)				1.037
(10) Trended State Reference Point = (6) x (9)				3,344,377
(11) Selected State Reference Point				3,000,000
(12) G = (11) / 250,000				12.00
(13) State Per Claim Accident Limitation = (11) x 0.1				300,000
(14) Multiple State Claim Accident Limitation = (13) x 2				600,000

**Notes:**

(3), (4): Unit Statistical Plan Data, Excluding Large Deductible Policies.

(7): Credibility Weighted Severity Trends from Section V-A, Exhibit 1, Page 1 weighted by Injury Type Weights at Ultimate from Section IV-E, Exhibit 2, Pages 1 and 2.

(8): Section X-B, Exhibit 2.

(11): Current State Reference Point is 2,500,000. Propose to cap change at 20%.



# X 000030 STIP

Section X - Experience Rating  
 Subsection E - Manual Pages  
 7/1/2020

Section X - E  
 Exhibit 1

**EXPERIENCE RATING PLAN MANUAL**

**MASSACHUSETTS**

*Proposed Effective July 1, 2020*

**TABLE OF EXPECTED LOSS RATES AND DISCOUNT RATIOS**

CLASS CODE	EXP LOSS RATE	DISC RATIO	CLASS CODE	EXP LOSS RATE	DISC RATIO	CLASS CODE	EXP LOSS RATE	DISC RATIO	CLASS CODE	EXP LOSS RATE	DISC RATIO	CLASS CODE	EXP LOSS RATE	DISC RATIO
0005	1.04	.15	2115	2.14	.14	3041	1.32	.15	3634	0.63	.15	4439	1.73	.16
0008	1.15	.16	2121	0.63	.15	3042	2.09	.15	3635	1.29	.16	4452	1.17	.15
0016	1.47	.16	2130	0.65	.15	3066	1.01	.15	3638	0.74	.15	4459	1.20	.15
0034	1.38	.16	2131	1.28	.15	3076	0.94	.15	3642	0.48	.15	4470	0.90	.15
0035	0.85	.16	2143	1.00	.15	3081D	2.06	.16	3643	0.67	.15	4484	0.88	.16
0036	1.38	.16	2150	1.72	.15	3082D	2.06	.16	3647	0.93	.15	4493	0.83	.15
0042	1.59	.16	2156	1.91	.15	3085D	1.86	.15	3648	0.54	.16	4511	0.12	.15
0046	0.95	.17	2157	1.76	.14	3110	3.56	.15	3681	0.30	.15	4512	0.04	.15
0050	1.84	.15	2172	0.78	.14	3111	0.82	.15	3685	0.29	.15	4557	0.76	.15
0059D	.	.	2211	2.47	.15	3113	0.70	.15	3724	1.93	.15	4558	0.66	.16
0065D	.	.	2220	0.99	.15	3114	1.35	.15	3726	2.35	.14	4583	0.99	.15
0066D	.	.	2260	2.24	.15	3118	0.75	.14	3807	1.23	.16	4611	0.34	.15
0067D	.	.	2288	1.56	.15	3119	0.36	.16	3808	1.42	.15	4635	1.66	.16
0079	1.13	.17	2305	1.49	.15	3120	0.61	.15	3821	2.24	.16	4653	0.77	.15
0083	1.55	.15	2362	0.72	.17	3122	1.04	.16	3826	1.83	.16	4665	3.59	.15
0106	3.78	.16	2380	0.94	.15	3127	0.53	.15	3830	0.72	.15	4692	0.23	.15
0113	1.38	.16	2402	0.93	.15	3131	0.62	.16	3841	0.61	.15	4693	0.37	.16
0170	1.38	.16	2413	1.47	.15	3132	1.13	.16	4000	1.97	.15	4720	0.76	.15
0771	.	.	2416	1.10	.15	3145	0.72	.15	4021	1.47	.15	4740	0.39	.15
0908	35.76	.15	2417	1.00	.14	3146	0.98	.16	4024	1.35	.15	4741	0.93	.14
0909	83.70	.18	2501	0.87	.15	3169	1.20	.16	4034	2.27	.15	4771	1.86	.14
0912	167.40	.18	2503	0.54	.14	3179	0.52	.15	4036	0.84	.15	4777	0.89	.15
0913	71.52	.15	2570	2.10	.14	3180	1.01	.15	4038	1.44	.13	4825	0.19	.15
0917	1.16	.15	2576	0.94	.16	3188	1.05	.15	4053	0.98	.15	4828	0.42	.15
0918	0.21	.14	2585	1.25	.15	3200	0.90	.15	4062	0.80	.15	4829	0.36	.15
1430	2.28	.15	2586	0.85	.16	3220	1.31	.15	4112	0.18	.15	4902	0.77	.16
1438	1.27	.15	2587	1.29	.14	3223	(a)	(a)	4113	0.98	.15	4923	0.28	.15
1463	4.17	.17	2623	2.16	.15	3255	0.94	.15	4114	1.10	.14	5020	1.86	.14
1624D	1.43	.15	2651	0.70	.15	3257	0.98	.15	4130	1.30	.15	5022	3.75	.14
1655	1.24	.15	2660	0.96	.15	3270	1.03	.15	4133	0.65	.15	5037	5.79	.14
1701	0.94	.15	2683	0.95	.16	3300	1.47	.16	4150	0.35	.14	5040	7.50	.14
1710D	1.56	.15	2688	0.85	.16	3305	(a)	(a)	4239	0.86	.15	5057	7.92	.16
1747	1.21	.15	2702	4.28	.15	3315	1.29	.15	4243	1.27	.15	5059	6.84	.15
1748	1.28	.17	2710	2.31	.16	3336	1.26	.14	4244	1.11	.14	5102	2.57	.14
1853	0.59	.13	2731	1.25	.16	3365	2.04	.15	4250	0.76	.15	5146	2.98	.15
1924	1.02	.15	2747	2.65	.15	3372	0.90	.15	4251	0.90	.14	5160	0.95	.15
1925	2.60	.23	2790	0.75	.15	3373	1.61	.14	4273	1.32	.15	5183	1.29	.15
2003	1.62	.15	2802	1.62	.15	3381	0.89	.15	4279	0.94	.15	5188	1.68	.14
2014	1.58	.15	2835	0.71	.16	3383	0.74	.16	4283	0.76	.15	5190	0.94	.15
2021	1.05	.15	2836	0.99	.15	3385	0.31	.15	4299	0.80	.15	5191	0.35	.15
2039	1.64	.15	2841	1.71	.16	3400	1.20	.16	4304	1.96	.15	5192	1.18	.15
2041	1.10	.15	2883	1.46	.15	3507	1.18	.15	4307	0.73	.16	5213	4.37	.14
2070	1.59	.15	2923	0.73	.15	3515	1.24	.15	4308	0.73	.12	5215	1.84	.14
2081	1.21	.16	2942	0.82	.16	3558	0.35	.17	4351	0.39	.15	5221	2.81	.14
2089	1.19	.14	3018	1.05	.15	3571	0.33	.15	4352	0.58	.14	5222	3.86	.14
2095	1.32	.14	3022	1.58	.15	3574	0.74	.15	4360	0.28	.15	5223	1.68	.15
2101	1.22	.14	3027	1.76	.16	3612	0.62	.16	4361	0.32	.17	5348	1.77	.14
2105	(a)	(a)	3028	1.26	.15	3620	1.58	.16	4362	0.23	.15	5402	2.75	.15
2111	0.98	.15	3030	2.47	.15	3629	0.74	.15	4410	1.30	.16	5403	3.26	.14
2114	1.22	.14	3040	1.94	.14	3632	0.72	.15	4432	0.35	.16	5437	1.77	.15

(a) Expected Loss Rates and Discount Ratios for each individual risk must be obtained by Home Office from the WCRIBMA  
 D Supplement Disease Loading

# X 000031 STIP

Section X - Experience Rating  
 Subsection E - Manual Pages  
 7/1/2020

Section X - E  
 Exhibit 2

**MASSACHUSETTS**  
 Page 2

**EXPERIENCE RATING PLAN MANUAL**

*Proposed Effective July 1, 2020*

**TABLE OF EXPECTED LOSS RATES AND DISCOUNT RATIOS**

CLASS CODE	EXP LOSS RATE	DISC RATIO	CLASS CODE	EXP LOSS RATE	DISC RATIO	CLASS CODE	EXP LOSS RATE	DISC RATIO	CLASS CODE	EXP LOSS RATE	DISC RATIO	CLASS CODE	EXP LOSS RATE	DISC RATIO
5443	1.61	.15	7016M	1.12	.79	7704	1.15	.16	8719	1.10	.15	9179	16.16	.18
5445	2.35	.14	7024M	1.40	.79	7720	0.61	.15	8720	0.34	.15	9180	1.90	.18
5462	2.38	.14	7038M	2.12	.76	7855	1.50	.14	8721	0.12	.16	9182	1.44	.17
5472	2.83	.14	7046M	3.02	.58	8001	0.76	.16	8726F	1.85	.18	9186	1.74	.18
5473	3.51	.15	7047M	1.76	.69	8002	0.75	.17	8734M	0.21	.54	9220	1.45	.15
5474	1.56	.15	7050M	3.32	.67	8006	0.55	.16	8737M	0.17	.54	9402	1.72	.15
5478	1.67	.14	7090M	2.65	.76	8008	0.34	.16	8738M	0.26	.53	9403	3.81	.15
5479	2.51	.14	7098M	3.55	.58	8010	0.77	.16	8742	0.05	.16	9410	1.45	.16
5480	1.84	.14	7099M	4.45	.51	8013	0.16	.16	8745	2.47	.17	9501	0.92	.15
5506	1.64	.14	7133	(a)	(a)	8017	0.44	.16	8747	0.35	.14	9505	0.92	.15
5507	2.18	.14	7151M	3.96	.52	8018	1.64	.15	8748	0.30	.15	9519	1.20	.15
5508D	1.72	.15	7152M	6.22	.52	8021	1.53	.15	8800	0.50	.15	9521	1.26	.15
5509	1.74	.15	7153M	4.96	.52	8031	0.78	.16	8803	0.02	.16	9522	0.72	.15
5538	1.79	.15	7219	3.29	.15	8032	0.56	.16	8805M	0.09	.60	9533	5.27	.15
5545	14.24	.16	7230	4.29	.14	8033	0.69	.15	8810	0.03	.16	9534	2.09	.14
5547	3.78	.16	7231	4.72	.15	8034	1.33	.15	8814M	0.07	.60	9549	1.84	.14
5606	0.51	.15	7309F	3.83	.16	8039	0.59	.17	8815M	0.11	.59	9552	3.17	.16
5610	2.05	.14	7313F	4.64	.13	8044	1.28	.15	8820	0.03	.15	9586	0.15	.15
5645	2.67	.15	7317F	6.08	.16	8046	0.91	.16	8824	0.82	.16	9620	0.34	.16
5701	7.04	.16	7327F	8.66	.16	8048	1.20	.15	8826	0.67	.15			
5703	4.95	.14	7333M	4.51	.70	8058	1.01	.17	8829	0.97	.15			
5705	4.35	.15	7335M	5.30	.70	8103	1.12	.15	8831	0.45	.18			
6003	3.59	.14	7337M	6.65	.61	8105	3.13	.14	8832	0.13	.15			
6005	1.72	.15	7350F	7.90	.14	8106	2.37	.16	8833	0.51	.15			
6204	2.01	.14	7360	1.66	.15	8107	1.17	.16	8835	0.83	.14			
6217	1.66	.15	7370	1.74	.16	8111	1.27	.16	8837	(a)	(a)			
6229	1.49	.15	7380	2.70	.15	8203	2.78	.15	8868	0.33	.16			
6233	0.89	.14	7382	1.65	.15	8204	2.34	.17	8901	0.03	.16			
6251D	1.73	.13	7394M	5.80	.84	8215	1.51	.16	9014	0.98	.15			
6252D	2.31	.14	7395M	7.41	.84	8227	1.61	.15	9015	1.37	.15			
6306	2.82	.14	7398M	9.29	.74	8232	2.42	.15	9016	0.81	.16			
6319	1.18	.14	7403	1.73	.16	8233	2.38	.16	9019	1.34	.14			
6325	1.07	.15	7405	0.51	.15	8235	1.80	.15	9033	1.13	.15			
6400	2.16	.15	7420	2.72	.15	8263	2.02	.16	9040	1.33	.16			
6504	1.22	.14	7421	0.47	.14	8264	2.04	.15	9044	0.62	.15			
6702M	(a)	(a)	7422	0.43	.14	8265	2.17	.16	9052	0.69	.15			
6703M	(a)	(a)	7425	0.85	.14	8279	1.54	.16	9058	0.69	.15			
6704M	(a)	(a)	7431	0.43	.14	8291	1.74	.15	9060	0.46	.17			
6801F	2.96	.15	7445	.	.	8292	1.60	.15	9061	0.47	.16			
6811	2.57	.15	7453	.	.	8293	3.39	.15	9062	0.47	.16			
6824F	4.12	.17	7502	0.78	.15	8350	2.53	.15	9063	0.27	.17			
6826F	2.50	.16	7515	0.98	.19	8380	1.18	.15	9077F	2.51	.20			
6834	1.11	.16	7520	1.34	.15	8381	0.82	.16	9079	0.50	.16			
6836	1.53	.16	7538	2.20	.15	8385	1.31	.15	9089	0.38	.16			
6843F	3.66	.16	7539	0.48	.16	8392	0.67	.16	9093	0.53	.17			
6854	3.18	.16	7580	1.37	.15	8393	0.61	.15	9101	1.62	.16			
6872F	5.13	.16	7590	1.94	.16	8500	2.38	.16	9102	1.02	.16			
6874F	5.60	.15	7600	1.51	.14	8601	0.10	.15	9154	0.66	.16			
6882	4.45	.16	7601	2.20	.15	8709F	1.80	.16	9156	0.78	.17			
6884	4.86	.15	7610	0.13	.14	8710	1.33	.15	9178	6.79	.20			

- (a) Expected Loss Rates and Discount Ratios for each individual risk must be obtained by Home Office from the WCRIBMA
- D Supplement Disease Loading
- F Expected Loss Rates and Discount Ratios for risks covered under the United States Longshore and Harbor Workers' Compensation Act.
- M Expected Loss Rates and Discount Ratios for risks subject to Admiralty Law or Federal Employers Liability Act (FELA).

# X 000032 STIP

**EXPERIENCE RATING PLAN MANUAL**

*Proposed Effective July 1, 2020*

**TABLE OF WEIGHTING VALUES**

Expected Losses	Weighting Values	Expected Losses	Weighting Values	Expected Losses	Weighting Values
0 - 2,513	0.04	710,921 - 767,041	0.24	2,930,567 - 3,168,376	0.44
2,514 - 10,158	0.05	767,042 - 826,145	0.25	3,168,377 - 3,433,581	0.45
10,159 - 17,967	0.06	826,146 - 888,479	0.26	3,433,582 - 3,731,206	0.46
17,968 - 73,730	0.07	888,480 - 954,322	0.27	3,731,207 - 4,067,586	0.47
73,731 - 107,328	0.08	954,323 - 1,023,982	0.28	4,067,587 - 4,450,819	0.48
107,329 - 139,368	0.09	1,023,983 - 1,097,803	0.29	4,450,820 - 4,891,427	0.49
139,369 - 171,481	0.10	1,097,804 - 1,176,173	0.30	4,891,428 - 5,403,342	0.50
171,482 - 204,224	0.11	1,176,174 - 1,259,530	0.31	5,403,343 - 6,005,399	0.51
204,225 - 237,884	0.12	1,259,531 - 1,348,367	0.32	6,005,400 - 6,723,708	0.52
237,885 - 272,651	0.13	1,348,368 - 1,443,245	0.33	6,723,709 - 7,595,543	0.53
272,652 - 308,672	0.14	1,443,246 - 1,544,805	0.34	7,595,544 - 8,676,014	0.54
308,673 - 346,077	0.15	1,544,806 - 1,653,780	0.35	8,676,015 - 10,050,198	0.55
346,078 - 384,992	0.16	1,653,781 - 1,771,016	0.36	10,050,199 - 11,856,701	0.56
384,993 - 425,539	0.17	1,771,017 - 1,897,490	0.37	11,856,702 - 14,337,622	0.57
425,540 - 467,848	0.18	1,897,491 - 2,034,341	0.38	14,337,623 - 17,957,315	0.58
467,849 - 512,054	0.19	2,034,342 - 2,182,903	0.39	17,957,316 - 23,733,409	0.59
512,055 - 558,300	0.20	2,182,904 - 2,344,747	0.40	23,733,410 - 34,410,411	0.60
558,301 - 606,744	0.21	2,344,748 - 2,521,740	0.41	34,410,412 - 60,821,914	0.61
606,745 - 657,556	0.22	2,521,741 - 2,716,115	0.42	60,821,915 - 235,137,723	0.62
657,557 - 710,920	0.23	2,716,116 - 2,930,566	0.43	235,137,723 - 999,999,999	0.63

- |   |           |
|---|-----------|
| (a) State Per Claim Accident Limitation   | \$300,000 |
| (b) State Multiple Claim Accident Limitation  | \$600,000 |
| (c) U.S. Longshore and Harbor Workers' Act Per Claim Accident Limitation                      | \$130,000 |
| (d) U.S. Longshore and Harbor Workers' Act Multiple Claim Accident Limitation                 | \$260,000 |
| (e) Employers Liability Accident Limitation   | \$55,000  |
| (f) USL&HW Act-Expected Loss Factor-Non-F Classes   | 15.2%     |
| (g) Cap on Modifications = $1 + (0.00005) [(Expected Losses) + (2) (Expected Losses) / (12)]$ |           |

# X 00033 STIP

**MASSACHUSETTS EXPERIENCE RATING PLAN MANUAL**

Page 4

*Proposed Effective July 1, 2020*

**TABLE OF BALLAST VALUES**

Expected Losses	Ballast Values	Expected Losses	Ballast Values	Expected Losses	Ballast Values
0 - 61,204	30,000	1,726,453 - 1,776,411	205,000	3,475,724 - 3,525,713	380,000
61,205 - 98,560	35,000	1,776,412 - 1,826,373	210,000	3,525,714 - 3,575,703	385,000
98,561 - 141,779	40,000	1,826,374 - 1,876,337	215,000	3,575,704 - 3,625,693	390,000
141,780 - 187,841	45,000	1,876,338 - 1,926,302	220,000	3,625,694 - 3,675,684	395,000
187,842 - 235,338	50,000	1,926,303 - 1,976,269	225,000	3,675,685 - 3,725,674	400,000
235,339 - 283,629	55,000	1,976,270 - 2,026,238	230,000	3,725,675 - 3,775,665	405,000
283,630 - 332,394	60,000	2,026,239 - 2,076,208	235,000	3,775,666 - 3,825,657	410,000
332,395 - 381,463	65,000	2,076,209 - 2,126,180	240,000	3,825,658 - 3,875,648	415,000
381,464 - 430,738	70,000	2,126,181 - 2,176,153	245,000	3,875,649 - 3,925,640	420,000
430,739 - 480,158	75,000	2,176,154 - 2,226,127	250,000	3,925,641 - 3,975,632	425,000
480,159 - 529,683	80,000	2,226,128 - 2,276,103	255,000	3,975,633 - 4,025,624	430,000
529,684 - 579,287	85,000	2,276,104 - 2,326,079	260,000	4,025,625 - 4,075,617	435,000
579,288 - 628,953	90,000	2,326,080 - 2,376,056	265,000	4,075,618 - 4,125,609	440,000
628,954 - 678,667	95,000	2,376,057 - 2,426,035	270,000	4,125,610 - 4,175,602	445,000
678,668 - 728,420	100,000	2,426,036 - 2,476,014	275,000	4,175,603 - 4,225,595	450,000
728,421 - 778,203	105,000	2,476,015 - 2,525,994	280,000	4,225,596 - 4,275,588	455,000
778,204 - 828,012	110,000	2,525,995 - 2,575,975	285,000	4,275,589 - 4,325,581	460,000
828,013 - 877,843	115,000	2,575,976 - 2,625,956	290,000	4,325,582 - 4,375,574	465,000
877,844 - 927,692	120,000	2,625,957 - 2,675,938	295,000	4,375,575 - 4,425,568	470,000
927,693 - 977,555	125,000	2,675,939 - 2,725,921	300,000	4,425,569 - 4,475,562	475,000
977,556 - 1,027,432	130,000	2,725,922 - 2,775,905	305,000	4,475,563 - 4,525,555	480,000
1,027,433 - 1,077,321	135,000	2,775,906 - 2,825,889	310,000	4,525,556 - 4,575,549	485,000
1,077,322 - 1,127,219	140,000	2,825,890 - 2,875,873	315,000	4,575,550 - 4,625,543	490,000
1,127,220 - 1,177,125	145,000	2,875,874 - 2,925,858	320,000	4,625,544 - 4,675,538	495,000
1,177,126 - 1,227,039	150,000	2,925,859 - 2,975,844	325,000	4,675,539 - 4,725,532	500,000
1,227,040 - 1,276,960	155,000	2,975,845 - 3,025,830	330,000	4,725,533 - 4,775,526	505,000
1,276,961 - 1,326,887	160,000	3,025,831 - 3,075,817	335,000	4,775,527 - 4,825,521	510,000
1,326,888 - 1,376,819	165,000	3,075,818 - 3,125,804	340,000	4,825,522 - 4,875,515	515,000
1,376,820 - 1,426,755	170,000	3,125,805 - 3,175,791	345,000	4,875,516 - 4,925,510	520,000
1,426,756 - 1,476,696	175,000	3,175,792 - 3,225,779	350,000	4,925,511 - 4,975,505	525,000
1,476,697 - 1,526,641	180,000	3,225,780 - 3,275,767	355,000		
1,526,642 - 1,576,589	185,000	3,275,768 - 3,325,755	360,000		
1,576,590 - 1,626,541	190,000	3,325,756 - 3,375,744	365,000		
1,626,542 - 1,676,495	195,000	3,375,745 - 3,425,733	370,000		
1,676,496 - 1,726,452	200,000	3,425,734 - 3,475,723	375,000		

For Expected Losses (E) greater than \$4,975,505, the Ballast Value is calculated using the following formula (rounded to the nearest 1):

$$\text{Ballast} = (0.1E + 2,500GE / (E + 700G))$$

G = 12

# XI 000004 STIP

Section XI - Miscellaneous Rating Values  
Subsection B - Massachusetts Benefits Deductible Program Credits  
7/1/2020

Section XI-B  
Exhibit 1

## Massachusetts Benefits Deductible Program Premium Credits

Deductible Level (1)	Loss Elimination Ratio (2)	Expected Loss Ratio (3)	Safety Factor (4)	Variable Expense Ratio (5)	Underwriting Profit Provision (6)	Premium Credit (7)
500	2.5%	0.638	0.90	0.196	-0.008	1.8%
1,000	4.2%	0.638	0.90	0.196	-0.008	3.0%
2,000	6.5%	0.638	0.90	0.196	-0.008	4.6%
2,500	7.4%	0.638	0.90	0.196	-0.008	5.2%
5,000	11.0%	0.638	0.90	0.196	-0.008	7.8%

Notes:

(2): Based on Unit Statistical Data

(3): Section VI-J, Exhibit 1.

(4) = 0.9 from 9/1/2007 Stipulation.

(5): Section VI-A, Exhibit 1.

(6): Section VII-A, Exhibit 1.

(7) =  $[(2) \times (3) \times (4)] / [1.0 - (5) - (6)]$

# XI 000007 STIP

Section XI - Miscellaneous Rating Values  
 Subsection C - Massachusetts Benefits Claim and Aggregate Deductible Program Credits  
 7/1/2020

Section XI-C  
 Exhibit 1

## Massachusetts Benefits Claim and Aggregate Deductible Program Premium Credit for \$2,500 Per Claim Deductible with Aggregate Limit

Estimated Annual Standard Premium (1)	Expected Number of Claims Per Year = Midpoint of (1) / \$24,980 (2)	Aggregate Limit (3)	Selected Adjustment Factor for Aggregate Limit (4)	Premium Credit = (4) x 5.2% (5)
0 - 75,000	1.5	\$10,000	0.99	5.1%
75,000 - 100,000	3.5	\$10,000	0.97	5.0%
100,000 - 125,000	4.5	\$10,000	0.95	4.9%
125,000 - 150,000	5.5	\$10,000	0.93	4.8%
150,000 - 200,000	7.0	\$10,000	0.88	4.6%
Over 200,000	8 or more	5% of the 'Basis for the Aggregate Limit at Policy Inception'	0.83	4.3%

Notes:

- (2): Based on \$24,980 in standard premium (no ARAP) per expected claim.
- (4): Selected based on the simulation results shown in Exhibit 2.
- (5): The 5.2% is based on the \$2,500 per claim deductible without any aggregate limit, from Section XI-B, Exhibit 1.

# XI 000008 STIP

Section XI - Miscellaneous Rating Values  
 Subsection C - Massachusetts Benefits Claim and Aggregate Deductible Program Credits  
 7/1/2020

Section XI-C  
 Exhibit 2

## Results of Simulation Model

Expected Number of Claims Per Year (1)	Number of Simulated Risks (2)	LER with No Aggregate Limit (3)	LER with \$10,000 Aggregate Limit (4)	LER with 5% of the Basis for Aggregate Limit (5)	Ratio of LERs (\$10,000 limit) = (4) / (3) (6)	Ratio of LERs (5% limit) = (5) / (3) (7)
1	1,000,000	7.32%	7.32%	3.59%	1.00	0.49
2	1,000,000	7.31%	7.30%	4.79%	1.00	0.66
3	1,000,000	7.39%	7.32%	5.29%	0.99	0.72
4	1,000,000	7.33%	7.14%	5.53%	0.97	0.75
5	1,000,000	7.32%	6.95%	5.72%	0.95	0.78
6	1,000,000	7.35%	6.72%	5.88%	0.91	0.80
7	1,000,000	7.36%	6.44%	6.00%	0.88	0.82
8	1,000,000	7.34%	6.09%	6.08%	0.83	0.83
9	1,000,000	7.34%	5.74%	6.15%	0.78	0.84
10	1,000,000	7.38%	5.42%	6.24%	0.73	0.85
12	1,000,000	7.37%	4.75%	6.34%	0.64	0.86
14	1,000,000	7.35%	4.17%	6.40%	0.57	0.87
16	1,000,000	7.36%	3.70%	6.47%	0.50	0.88
18	1,000,000	7.34%	3.30%	6.51%	0.45	0.89
20	1,000,000	7.34%	2.98%	6.56%	0.41	0.89
25	1,000,000	7.36%	2.38%	6.65%	0.32	0.90
30	1,000,000	7.36%	1.99%	6.72%	0.27	0.91
40	1,000,000	7.35%	1.49%	6.80%	0.20	0.93
50	1,000,000	7.35%	1.19%	6.87%	0.16	0.93
75	1,000,000	7.35%	0.79%	6.96%	0.11	0.95
100	1,000,000	7.36%	0.60%	7.02%	0.08	0.95
150	1,000,000	7.35%	0.40%	7.08%	0.05	0.96
200	1,000,000	7.35%	0.30%	7.12%	0.04	0.97
300	1,000,000	7.35%	0.20%	7.17%	0.03	0.98
400	1,000,000	7.35%	0.15%	7.20%	0.02	0.98
500	1,000,000	7.35%	0.12%	7.22%	0.02	0.98

**Notes:**

(5): The Aggregate Limit is based on the average claim severity of the simulated losses, \$16,777 and the permissible loss ratio of 0.638. One claim is assumed to be expected for each \$24,980 of standard premium.

# XI 000009 STIP

Section XI - Miscellaneous Rating Values  
 Subsection C - Massachusetts Benefits Claim and Aggregate Deductible Program Credits  
 7/1/2020

Section XI-C  
 Exhibit 3

## Law Amendments, Loss Development Factors, and Severity Trend

(1) Law Amendment Factors to Prospective Effective Period

Policy Year	Indemnity Losses				Medical Losses
	Death	Permanent Total	Permanent Partial	Temporary Total	All Injury Types
PY 2009	1.063	1.068	1.111	1.041	1.002
PY 2010	1.063	1.069	1.112	1.042	1.000
PY 2011	1.060	1.064	1.102	1.040	1.000
PY 2012	1.055	1.057	1.090	1.036	1.000
PY 2013	1.053	1.054	1.085	1.034	1.000

(2) Loss Development Factors - Fifth Report to Ultimate

Loss Development Category	Indemnity	Medical
Likely to Develop	1.087	1.034
Not Likely to Develop	1.017	1.005

(3) Severity Trend Factors

We apply three distinct trend factors.

Trend to PY 2013 is based on empirical USR data at 5th report.

Trend from PY 2013 to PY 2017 is based on severities from Section V-A, Exhibit 2.

Trend from PY 2017 to the Prospective Effective Period is based on the projected severity trends from Section V-A, Exhibit 1.

Trend Period		Indemnity	Lost Time Medical	Medical Only
From	To			
PY 2009	PY 2013	1.026	0.969	1.101
PY 2010	PY 2013	1.077	1.024	1.095
PY 2011	PY 2013	1.014	0.947	1.074
PY 2012	PY 2013	1.000	0.915	1.027
PY 2013	PY 2017	1.123	1.129	1.095
PY 2017	Prosp. Eff. Period	1.093	1.081	1.082

Notes:

(1): Section IV-A, Exhibit 1.

(2): Section IV-E, Exhibit 1, Pages 1 and 2.

(3): Section V-A, Exhibits 1 and 2.



# XI 000010 STIP

<b>MASSACHUSETTS WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE MANUAL</b>	<b>RATES</b>
<i>Proposed Effective July 1, 2020</i>	Page RA-5

### MISCELLANEOUS VALUES

<b>Basis of Premium</b> applicable in accordance with the footnote instructions for Code 7370 - "Taxicab Co.":	
Employee operated vehicles.....	\$111,700.00
Leased or rented vehicles.....	\$74,400.00
<b>Basis of Premium</b> for Sole Proprietors, Partners of Legal Partnerships, Members of Limited Liability Companies or Partners of Limited Liability Partnerships in accordance with Rule IX-B-3-a.....	
	\$52,100.00
<b>Payroll Limitations:</b>	
For Executive Officers - in accordance with Rule IX-A-3-a and b	
Minimum individual payroll for an executive officer per week.....	\$230.00
Maximum individual payroll for an executive officer per week.....	\$1,140.00
For Spouses of Individuals, Co-Partners or Corporate Officers - in accordance with Rule IX-A-4	
Minimum individual payroll for a spouse per week.....	\$230.00
For Elected or Appointed Officers of a City or Town - in accordance with Rule IX-A-5	
Minimum individual payroll for an elected or appointed officer per week.....	\$230.00
Maximum individual payroll for an elected or appointed officer per week.....	\$1,140.00
Applicable with footnote instructions detailing the maximum average weekly wage per employee for the following three classification codes:	
Code 9186 - Amusement Device Operator, Carnival or Circus Traveling - All Employees & Drivers.....	\$340.00
Code 9179 - Athletic Sports Or Park: Contact Sports.....	\$340.00
Code 9178 - Athletic Sports Or Park: Non-Contact Sports.....	\$340.00
<b>Terrorism Insurance Program</b> - Certified Loss.....	0.03

#### BENEFITS DEDUCTIBLE COVERAGE PROGRAM

Medical and Indemnity Deductible Amount	Premium Reduction Percentage
\$500	1.8%
\$1,000	3.0%
\$2,000	4.6%
\$2,500	5.2%
\$5,000	7.8%

#### BENEFITS CLAIM AND AGGREGATE DEDUCTIBLE PROGRAM

Basis for the Aggregate Limit	Claim Deductible Amount	Aggregate Deductible Amount	Premium Reduction Percentage
\$ 0 to \$75,000	\$2,500	\$10,000	5.1%
\$75,001 to \$100,000	\$2,500	\$10,000	5.0%
\$100,001 to \$125,000	\$2,500	\$10,000	4.9%
\$125,001 to \$150,000	\$2,500	\$10,000	4.8%
\$150,001 to \$200,000	\$2,500	\$10,000	4.6%
over \$200,000	\$2,500	5% of Basis for the Aggregate Limit	4.3%

<b>Expense Constant</b> applicable in accordance with Basic Manual Rule VI-E-2:	
Policies which develop earned Standard Premium of less than \$200.....	\$159.00
Policies which develop earned Standard Premium of at least \$200 and less than \$1,000.....	\$250.00
Policies which develop earned Standard Premium of \$1,000 or more.....	\$338.00

The expense constant for private residence per capita classifications is \$64, up to a maximum of 4.

**Notes:**

- Benefit Deductible Coverage Program - Section XI-B, Exhibit 1.
- Benefit Claim and Aggregate Deductible Program - Section XI-C, Exhibit 1.
- Expense Constant - Section VI-D, Exhibit 1.
- Expense Constant for private residences - Section I-A, Exhibit 1.

# XI 000011 STIP

<b>RATES</b>		<b>MASSACHUSETTS WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE MANUAL</b>																
Page RA-6		<i>Proposed Effective July 1, 2020</i>																
<p><b>Premium Discount Percentages</b>—(See Basic Manual Rule VII). The following premium discounts are applicable to Standard Premiums. Note: Premium Discount is not applicable to Assigned Risk policies.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 35%; text-align: center;"><b>Type A Discount</b></th> <th style="width: 35%; text-align: center;"><b>Type B Discount</b></th> </tr> </thead> <tbody> <tr> <td>First \$ 10,000.....</td> <td style="text-align: center;">0.0%</td> <td style="text-align: center;">0.0%</td> </tr> <tr> <td>Next 190,000.....</td> <td style="text-align: center;">9.1%</td> <td style="text-align: center;">5.1%</td> </tr> <tr> <td>Next 1,550,000.....</td> <td style="text-align: center;">11.3%</td> <td style="text-align: center;">6.5%</td> </tr> <tr> <td>Over 1,750,000.....</td> <td style="text-align: center;">12.3%</td> <td style="text-align: center;">7.5%</td> </tr> </tbody> </table>					<b>Type A Discount</b>	<b>Type B Discount</b>	First \$ 10,000.....	0.0%	0.0%	Next 190,000.....	9.1%	5.1%	Next 1,550,000.....	11.3%	6.5%	Over 1,750,000.....	12.3%	7.5%
	<b>Type A Discount</b>	<b>Type B Discount</b>																
First \$ 10,000.....	0.0%	0.0%																
Next 190,000.....	9.1%	5.1%																
Next 1,550,000.....	11.3%	6.5%																
Over 1,750,000.....	12.3%	7.5%																
<p><b>United States Longshore and Harbor Workers' Compensation Coverage</b> Percentage applicable only in connection with Rule XII-D-3-b "U.S. Longshore and Harbor Workers' Compensation Act" of the MA Manual.....</p>			21.0%															
<p>(Multiply an eligible Non-F classification rate by a factor of 1.21)</p>																		
<b>EXPERIENCE RATING ELIGIBILITY</b>																		
<p>A risk is eligible for intrastate experience rating when the payrolls or other exposures developed in the last year or last two years of the experience period produced a subject premium of at least \$11,000. If more than two years, an average annual premium of at least \$5,500 is required. The Experience Rating Plan Manual should be referenced for the latest eligibility amounts by state.</p>																		

**Notes:**

USL&H factor - Section VIII-J, Exhibit 1.

# XII 00003 STIP

**RETROSPECTIVE RATING PLAN MANUAL  
 STATE SPECIAL RATING VALUES**

**MASSACHUSETTS  
 RR1**

*Proposed Effective July 1, 2020*

**1. Hazard Group Differentials**

A	B	C	D	E	F	G
1.96	1.59	1.37	1.16	0.97	0.75	0.60

**2. Tax Multipliers**

a. State (non-F Classes)	1.024*
b. Federal Classes, or non-F classes where rate is increased by the USL&HW Act Percentage	1.068*

\* Includes 0.24% residual market subsidy provision and -0.54% insolvency fund assessment provision

**3. Expected Loss Ratio**

0.639

**Expected Loss and Allocated Loss Adjustment Expense Ratio (ALAE Option)**

0.694

**4. Loss Conversion Factor**

1.187

**Loss Conversion Factor for Allocated Loss Adjustment Expense Option (ALAE Option)**

1.094

**5. Table of Expense Ratios Excluding Taxes and Including Profit**

**Type A Company**

Massachusetts  
 Effective July 1, 2020

**Type B Company**

Massachusetts  
 Effective July 1, 2020

**Table of Expense Ratios Excluding Allocated Loss Adjustment Expense and Taxes and Including Profit (ALAE Option)**

**Type A Company**

Massachusetts  
 Effective July 1, 2020

**Type B Company**

Massachusetts  
 Effective July 1, 2020

**6. 2013—Table of Expected Loss Ranges**

April 1, 2014

**7a.**

**Excess Loss Factors**

(Applicable to New and Renewal Policies)

<b>Per Accident Limitation</b>	<b>Hazard Groups</b>						
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
\$25,000	0.407	0.432	0.457	0.478	0.498	0.527	0.559
30,000	0.389	0.415	0.440	0.463	0.484	0.515	0.550
35,000	0.373	0.400	0.426	0.450	0.471	0.503	0.541
40,000	0.358	0.386	0.412	0.438	0.460	0.492	0.533
50,000	0.332	0.361	0.389	0.417	0.439	0.473	0.518
75,000	0.282	0.311	0.341	0.374	0.397	0.431	0.486
100,000	0.245	0.273	0.304	0.339	0.363	0.397	0.458
125,000	0.215	0.242	0.273	0.310	0.333	0.366	0.433
150,000	0.192	0.216	0.246	0.284	0.307	0.339	0.410
175,000	0.172	0.194	0.224	0.262	0.283	0.315	0.390
200,000	0.155	0.175	0.204	0.242	0.263	0.293	0.370
250,000	0.129	0.146	0.172	0.209	0.228	0.256	0.336
300,000	0.109	0.124	0.148	0.183	0.200	0.226	0.307
500,000	0.065	0.074	0.091	0.118	0.129	0.148	0.222
1,000,000	0.030	0.034	0.043	0.058	0.065	0.075	0.124
2,000,000	0.013	0.015	0.020	0.027	0.030	0.035	0.062
3,000,000	0.008	0.009	0.012	0.017	0.019	0.022	0.040
4,000,000	0.006	0.006	0.008	0.012	0.013	0.016	0.029
5,000,000	0.004	0.005	0.006	0.009	0.010	0.012	0.022

# XII 00004 STIP

**MASSACHUSETTS  
 RR2**

**RETROSPECTIVE RATING PLAN MANUAL  
 STATE SPECIAL RATING VALUES**

*Proposed Effective July 1, 2020*

**7b. ALAE Option Excess Loss and Allocated Loss Adjustment Expense Factors  
 (Applicable to New and Renewal Policies)**

Per Accident Limitation	Hazard Groups						
	A	B	C	D	E	F	G
\$25,000	0.450	0.478	0.503	0.525	0.547	0.578	0.611
30,000	0.431	0.459	0.486	0.510	0.532	0.565	0.601
35,000	0.414	0.443	0.471	0.496	0.519	0.553	0.592
40,000	0.399	0.428	0.457	0.484	0.507	0.541	0.584
50,000	0.371	0.402	0.432	0.461	0.485	0.521	0.569
75,000	0.318	0.349	0.381	0.416	0.441	0.478	0.536
100,000	0.277	0.309	0.342	0.379	0.405	0.442	0.507
125,000	0.246	0.275	0.309	0.348	0.374	0.410	0.481
150,000	0.220	0.247	0.280	0.321	0.346	0.382	0.457
175,000	0.198	0.223	0.256	0.297	0.321	0.356	0.435
200,000	0.180	0.203	0.235	0.276	0.299	0.332	0.415
250,000	0.150	0.170	0.200	0.240	0.261	0.292	0.379
300,000	0.128	0.145	0.172	0.211	0.231	0.259	0.347
500,000	0.077	0.087	0.107	0.138	0.152	0.173	0.256
1,000,000	0.036	0.041	0.051	0.069	0.077	0.089	0.146
2,000,000	0.016	0.018	0.023	0.032	0.036	0.042	0.074
3,000,000	0.010	0.011	0.014	0.020	0.022	0.026	0.048
4,000,000	0.007	0.008	0.010	0.014	0.016	0.019	0.035
5,000,000	0.005	0.006	0.008	0.011	0.012	0.014	0.027

**8. Retrospective Development Factors**

<u>With Loss Limit</u>				<u>Without Loss Limit</u>			
1st	2nd	3rd	4th & Subsequent	1st	2nd	3rd	4th & Subsequent
<u>Adj.</u>	<u>Adj.</u>	<u>Adj.</u>	<u>Adj.</u>	<u>Adj.</u>	<u>Adj.</u>	<u>Adj.</u>	<u>Adj.</u>
0.11	0.07	0.05	0.00	0.14	0.09	0.06	0.00

**9. State Special Classifications by Hazard Group**

All Massachusetts Hazard Group assignments can be found in Appendix G of the 2008 Edition of the Massachusetts Workers' Compensation & Employers Liability Insurance Manual.

# XII 000005 STIP

Section XII - Retrospective Rating  
Subsection A - Expenses  
7/1/2020

Section XII - A  
Exhibit 3

## Expense Provisions Underlying the Proposed Retrospective Rating Plans

### Total Expenses:

(1) Commission and Other Acquisition Expenses	12.2%
(2) Fixed Expenses	5.1%
(3) Premium Discount	5.3%
(4) Underwriting Profit Provision	<u>-0.8%</u>
(5) Total Expenses Excluding Taxes and Assessments ( = (1) + (2) + (3) + (4) )	21.8%
(6) Current Premium Tax Rate	2.28%
(7) Miscellaneous Taxes	0.33%
(8) Retro Provision for the Residual Market Subsidy	0.24%
(9) Insolvency Fund Assessment	<u>-0.54%</u>
(10) Tax Multiplier ( = $1.0 / \{ 1.0 - [(6) + (7) + (8) + (9)] \}$ )	1.024
(11) Expected Loss and LAE Ratio (adjusted for Residual Market Subsidy) ( = $[ 1.0 / (10) ] - (5)$ )	75.9%
(12) Loss Adjustment Expense (as percentage of losses)	18.7%
(13) Loss Conversion Factor ( = $1.0 + (12)$ )	1.187
(14) Expected Loss without LAE ( = $(11) / (13)$ )	63.9%
(15) Expenses excluding Premium Taxes but including LAE ( = $(5) + [(12) \times (14)]$ )	33.8%

### Notes:

- (1): Section VI-J, Exhibit 1, line (1).
- (2): Section VI-J, Exhibit 1, line (7), less the provision for miscellaneous taxes, see line (7) below.
- (3): Section VI-A, Exhibit 1, line (2).
- (4): Section VII-A, Exhibit 1, line (14).
- (6): Section VI-J, Exhibit 1, Note (3).
- (7): Section VI-B, Exhibit 1, the average of the results of columns (13) x (15) / (17).
- (8): Section XII-B, Exhibit 1, line (3).
- (9): Section IX-K, Exhibit 5, page 1, line (9).
- (12): Section VI-J, Exhibit 1, line (9).

# XII 000006 STIP

Section XII - Retrospective Rating  
Subsection A - Expenses  
7/1/2020

Section XII - A  
Exhibit 4

## Expense Provisions Underlying the ALAE Option of the Recommended Retrospective Rating Plans

(1) Expected Loss without Defense and Cost Containment Expense (as percentage of Standard Premium plus ARAP)	63.9%
(2) Provision for ALAE Expenses (as percentage of losses)	8.5%
(3) Expected Loss plus ALAE Ratio ( = (1) x [ 1.0 + (2) ] )	69.4%
(4) Loss Adjustment Expense (as percentage of losses)	18.7%
(5) Loss Conversion Factor ( = [ 1.0 + (4) ] / [ 1.0 + (2) ] )	1.094
(6) Tax Multiplier	1.024
(7) Expenses excluding Premium Taxes but including LAE (as percentage of Standard Premium plus ARAP)	33.8%
(8) Expenses including all AO Expenses but excluding ALAE Expenses and Premium Taxes ( = (7) - [ (1) x (2) ] )	28.3%

### Notes:

(1): Exhibit 3, line (14)

(2): Section VI-H, Exhibit 1, Page 1, line (5), DCC assumed a proxy for ALAE.

(4), (6), (7): Exhibit 3, lines (12), (10) and (15) respectively.

# XII 000007 STIP

Section XII - Retrospective Rating  
Subsection B - Residual Market Subsidy  
7/1/2020

Section XII - B  
Exhibit 1

## Calculation of the Provision for the Residual Market Subsidy

(1) Voluntary Market Implied Rate Factor Equivalent	0.997
(2) Factor to Take into Account Basic Premium	0.800
(3) Retro Provision for the Residual Market Subsidy	0.24%

### Notes:

(1): Section I-E, Exhibit 1, page 1.

(2): From the filing for the provision for the Residual Market Subsidy effective 1/1/89.

(3) =  $[ 1.0 - (1) ] \times (2)$

# XII 000008 STIP

**RETROSPECTIVE RATING PLAN MANUAL**  
**STATE SPECIAL RATING VALUES**

**MASSACHUSETTS**  
**RR5**

*Proposed Effective July 1, 2020*

**TABLE OF EXPENSE RATIOS—EXCLUDING TAXES AND INCLUDING PROFIT**

**TYPE A COMPANY—MASSACHUSETTS**

Standard Premium		Expense Ratio	Standard Premium		Expense Ratio	Standard Premium		Expense Ratio
From	To		From	To		From	To	
0	- 10,057	0.338	18,002	- 18,373	0.298	94,872	- 106,209	0.258
10,058	- 10,172	0.337	18,374	- 18,761	0.297	106,210	- 120,626	0.257
10,173	- 10,289	0.336	18,762	- 19,166	0.296	120,627	- 139,571	0.256
10,290	- 10,410	0.335	19,167	- 19,588	0.295	139,572	- 165,575	0.255
10,411	- 10,533	0.334	19,589	- 20,030	0.294	165,576	- 200,589	0.254
10,534	- 10,660	0.333	20,031	- 20,492	0.293	200,590	- 208,661	0.253
10,661	- 10,789	0.332	20,493	- 20,975	0.292	208,662	- 217,409	0.252
10,790	- 10,922	0.331	20,976	- 21,483	0.291	217,410	- 226,923	0.251
10,923	- 11,058	0.330	21,484	- 22,015	0.290	226,924	- 237,308	0.250
11,059	- 11,197	0.329	22,016	- 22,574	0.289	237,309	- 248,689	0.249
11,198	- 11,340	0.328	22,575	- 23,162	0.288	248,690	- 261,216	0.248
11,341	- 11,486	0.327	23,163	- 23,782	0.287	261,217	- 275,073	0.247
11,487	- 11,637	0.326	23,783	- 24,436	0.286	275,074	- 290,481	0.246
11,638	- 11,791	0.325	24,437	- 25,127	0.285	290,482	- 307,719	0.245
11,792	- 11,950	0.324	25,128	- 25,858	0.284	307,720	- 327,132	0.244
11,951	- 12,113	0.323	25,859	- 26,633	0.283	327,133	- 349,158	0.243
12,114	- 12,280	0.322	26,634	- 27,456	0.282	349,159	- 374,365	0.242
12,281	- 12,452	0.321	27,457	- 28,331	0.281	374,366	- 403,495	0.241
12,453	- 12,629	0.320	28,332	- 29,264	0.280	403,496	- 437,541	0.240
12,630	- 12,811	0.319	29,265	- 30,261	0.279	437,542	- 477,862	0.239
12,812	- 12,999	0.318	30,262	- 31,327	0.278	477,863	- 526,368	0.238
13,000	- 13,191	0.317	31,328	- 32,472	0.277	526,369	- 585,834	0.237
13,192	- 13,390	0.316	32,473	- 33,704	0.276	585,835	- 660,448	0.236
13,391	- 13,595	0.315	33,705	- 35,032	0.275	660,449	- 756,842	0.235
13,596	- 13,806	0.314	35,033	- 36,470	0.274	756,843	- 886,182	0.234
13,807	- 14,024	0.313	36,471	- 38,031	0.273	886,183	- 1,068,841	0.233
14,025	- 14,249	0.312	38,032	- 39,731	0.272	1,068,842	- 1,346,349	0.232
14,250	- 14,481	0.311	39,732	- 41,590	0.271	1,346,350	- 1,765,480	0.231
14,482	- 14,721	0.310	41,591	- 43,633	0.270	1,765,481	- 1,917,451	0.230
14,722	- 14,969	0.309	43,634	- 45,885	0.269	1,917,452	- 2,098,050	0.229
14,970	- 15,226	0.308	45,886	- 48,384	0.268	2,098,051	- 2,316,206	0.228
15,227	- 15,491	0.307	48,385	- 51,170	0.267	2,316,207	- 2,584,995	0.227
15,492	- 15,766	0.306	51,171	- 54,296	0.266	2,584,996	- 2,924,359	0.226
15,767	- 16,051	0.305	54,297	- 57,829	0.265	2,924,360	- 3,366,293	0.225
16,052	- 16,346	0.304	57,830	- 61,854	0.264	3,366,294	- 3,965,577	0.224
16,347	- 16,652	0.303	61,855	- 66,482	0.263	3,965,578	- 4,824,450	0.223
16,653	- 16,970	0.302	66,483	- 71,857	0.262	4,824,451	- 6,158,207	0.222
16,971	- 17,300	0.301	71,858	- 78,179	0.261	6,158,208	- 8,511,194	0.221
17,301	- 17,644	0.300	78,180	- 85,720	0.260	8,511,195	- 13,774,155	0.220
17,645	- 18,001	0.299	85,721	- 94,871	0.259	13,774,156	- OVER	0.219

Table based on the following discounts:

Standard Premium	Discount	
First	10,000	0.0%
Next	190,000	9.1%
Next	1,550,000	11.3%
Over	1,750,000	12.3%

Expected Loss Ratio

0.639

Tax Multiplier

1.024



**MASSACHUSETTS  
 RR6**

**RETROSPECTIVE RATING PLAN MANUAL  
 STATE SPECIAL RATING VALUES**

*Proposed Effective July 1, 2020*

**TABLE OF EXPENSE RATIOS—EXCLUDING TAXES AND INCLUDING PROFIT**

**TYPE B COMPANY—MASSACHUSETTS**

Standard Premium		Expense Ratio	Standard Premium		Expense Ratio	Standard Premium		Expense Ratio
From	To		From	To		From	To	
0	- 10,101	0.338	19,683	- 20,492	0.313	231,275	- 249,097	0.288
10,102	- 10,311	0.337	20,493	- 21,371	0.312	249,098	- 269,896	0.287
10,312	- 10,528	0.336	21,372	- 22,329	0.311	269,897	- 294,484	0.286
10,529	- 10,756	0.335	22,330	- 23,377	0.310	294,485	- 324,002	0.285
10,757	- 10,993	0.334	23,378	- 24,529	0.309	324,003	- 360,096	0.284
10,994	- 11,241	0.333	24,530	- 25,799	0.308	360,097	- 405,240	0.283
11,242	- 11,501	0.332	25,800	- 27,209	0.307	405,241	- 463,326	0.282
11,502	- 11,773	0.331	27,210	- 28,781	0.306	463,327	- 540,850	0.281
11,774	- 12,058	0.330	28,782	- 30,546	0.305	540,851	- 649,529	0.280
12,059	- 12,357	0.329	30,547	- 32,542	0.304	649,530	- 812,868	0.279
12,358	- 12,671	0.328	32,543	- 34,817	0.303	812,869	- 1,085,958	0.278
12,672	- 13,002	0.327	34,818	- 37,434	0.302	1,085,959	- 1,635,375	0.277
13,003	- 13,351	0.326	37,435	- 40,476	0.301	1,635,376	- 1,891,818	0.276
13,352	- 13,719	0.325	40,477	- 44,057	0.300	1,891,819	- 2,086,006	0.275
13,720	- 14,107	0.324	44,058	- 48,332	0.299	2,086,007	- 2,324,620	0.274
14,108	- 14,518	0.323	48,333	- 53,526	0.298	2,324,621	- 2,624,874	0.273
14,519	- 14,954	0.322	53,527	- 59,972	0.297	2,624,875	- 3,014,195	0.272
14,955	- 15,417	0.321	59,973	- 68,182	0.296	3,014,196	- 3,539,116	0.271
15,418	- 15,910	0.320	68,183	- 78,996	0.295	3,539,117	- 4,285,420	0.270
15,911	- 16,435	0.319	78,997	- 93,888	0.294	4,285,421	- 5,430,585	0.269
16,436	- 16,995	0.318	93,889	- 115,699	0.293	5,430,586	- 7,410,969	0.268
16,996	- 17,596	0.317	115,700	- 150,709	0.292	7,410,970	- 11,664,798	0.267
17,597	- 18,240	0.316	150,710	- 202,323	0.291	11,664,799	- OVER	0.266
18,241	- 18,934	0.315	202,324	- 215,832	0.290			
18,935	- 19,682	0.314	215,833	- 231,274	0.289			

Table based on the following discounts:

Standard Premium	Discount
First	10,000 0.0%
Next	190,000 5.1%
Next	1,550,000 6.5%
Over	1,750,000 7.5%

Expected Loss Ratio

0.639

Tax Multiplier

1.024

**RETROSPECTIVE RATING PLAN MANUAL  
 STATE SPECIAL RATING VALUES**

**MASSACHUSETTS  
 RR7**

*Proposed Effective July 1, 2020*

**TABLE OF EXPENSE RATIOS—EXCLUDING ALLOCATED LOSS ADJUSTMENT EXPENSE  
 AND TAXES AND INCLUDING PROFIT**

**TYPE A COMPANY—MASSACHUSETTS**

Standard Premium		Expense Ratio	Standard Premium		Expense Ratio	Standard Premium		Expense Ratio
From	To		From	To		From	To	
0	- 10,057	0.283	18,002	- 18,373	0.243	94,872	- 106,209	0.203
10,058	- 10,172	0.282	18,374	- 18,761	0.242	106,210	- 120,626	0.202
10,173	- 10,289	0.281	18,762	- 19,166	0.241	120,627	- 139,571	0.201
10,290	- 10,410	0.280	19,167	- 19,588	0.240	139,572	- 165,575	0.200
10,411	- 10,533	0.279	19,589	- 20,030	0.239	165,576	- 200,589	0.199
10,534	- 10,660	0.278	20,031	- 20,492	0.238	200,590	- 208,661	0.198
10,661	- 10,789	0.277	20,493	- 20,975	0.237	208,662	- 217,409	0.197
10,790	- 10,922	0.276	20,976	- 21,483	0.236	217,410	- 226,923	0.196
10,923	- 11,058	0.275	21,484	- 22,015	0.235	226,924	- 237,308	0.195
11,059	- 11,197	0.274	22,016	- 22,574	0.234	237,309	- 248,689	0.194
11,198	- 11,340	0.273	22,575	- 23,162	0.233	248,690	- 261,216	0.193
11,341	- 11,486	0.272	23,163	- 23,782	0.232	261,217	- 275,073	0.192
11,487	- 11,637	0.271	23,783	- 24,436	0.231	275,074	- 290,481	0.191
11,638	- 11,791	0.270	24,437	- 25,127	0.230	290,482	- 307,719	0.190
11,792	- 11,950	0.269	25,128	- 25,858	0.229	307,720	- 327,132	0.189
11,951	- 12,113	0.268	25,859	- 26,633	0.228	327,133	- 349,158	0.188
12,114	- 12,280	0.267	26,634	- 27,456	0.227	349,159	- 374,365	0.187
12,281	- 12,452	0.266	27,457	- 28,331	0.226	374,366	- 403,495	0.186
12,453	- 12,629	0.265	28,332	- 29,264	0.225	403,496	- 437,541	0.185
12,630	- 12,811	0.264	29,265	- 30,261	0.224	437,542	- 477,862	0.184
12,812	- 12,999	0.263	30,262	- 31,327	0.223	477,863	- 526,368	0.183
13,000	- 13,191	0.262	31,328	- 32,472	0.222	526,369	- 585,834	0.182
13,192	- 13,390	0.261	32,473	- 33,704	0.221	585,835	- 660,448	0.181
13,391	- 13,595	0.260	33,705	- 35,032	0.220	660,449	- 756,842	0.180
13,596	- 13,806	0.259	35,033	- 36,470	0.219	756,843	- 886,182	0.179
13,807	- 14,024	0.258	36,471	- 38,031	0.218	886,183	- 1,068,841	0.178
14,025	- 14,249	0.257	38,032	- 39,731	0.217	1,068,842	- 1,346,349	0.177
14,250	- 14,481	0.256	39,732	- 41,590	0.216	1,346,350	- 1,765,480	0.176
14,482	- 14,721	0.255	41,591	- 43,633	0.215	1,765,481	- 1,917,451	0.175
14,722	- 14,969	0.254	43,634	- 45,885	0.214	1,917,452	- 2,098,050	0.174
14,970	- 15,226	0.253	45,886	- 48,384	0.213	2,098,051	- 2,316,206	0.173
15,227	- 15,491	0.252	48,385	- 51,170	0.212	2,316,207	- 2,584,995	0.172
15,492	- 15,766	0.251	51,171	- 54,296	0.211	2,584,996	- 2,924,359	0.171
15,767	- 16,051	0.250	54,297	- 57,829	0.210	2,924,360	- 3,366,293	0.170
16,052	- 16,346	0.249	57,830	- 61,854	0.209	3,366,294	- 3,965,577	0.169
16,347	- 16,652	0.248	61,855	- 66,482	0.208	3,965,578	- 4,824,450	0.168
16,653	- 16,970	0.247	66,483	- 71,857	0.207	4,824,451	- 6,158,207	0.167
16,971	- 17,300	0.246	71,858	- 78,179	0.206	6,158,208	- 8,511,194	0.166
17,301	- 17,644	0.245	78,180	- 85,720	0.205	8,511,195	- 13,774,155	0.165
17,645	- 18,001	0.244	85,721	- 94,871	0.204	13,774,156	- OVER	0.164

Table based on the following discounts:

Standard Premium	Discount
First	10,000 0.0%
Next	190,000 9.1%
Next	1,550,000 11.3%
Over	1,750,000 12.3%

Expected Loss and Allocated Loss Adjustment  
 Expense Ratio (ALAE Option)

0.694

Tax Multiplier

1.024

# XII 000011 STIP

Section XII - Retrospective Rating  
 Subsection C - Expense Ratios  
 7/1/2020

Section XII - C  
 Exhibit 2  
 Page 2

<b>MASSACHUSETTS</b>	<b>RETROSPECTIVE RATING PLAN MANUAL</b>
<b>RR8</b>	<b>STATE SPECIAL RATING VALUES</b>
<i>Proposed Effective July 1, 2020</i>	

**TABLE OF EXPENSE RATIOS—EXCLUDING ALLOCATED LOSS ADJUSTMENT EXPENSE  
 AND TAXES AND INCLUDING PROFIT**

**TYPE B COMPANY—MASSACHUSETTS**

Standard Premium		Expense Ratio	Standard Premium		Expense Ratio	Standard Premium		Expense Ratio
From	To		From	To		From	To	
0	10,101	0.283	19,683	20,492	0.258	231,275	249,097	0.233
10,102	10,311	0.282	20,493	21,371	0.257	249,098	269,896	0.232
10,312	10,528	0.281	21,372	22,329	0.256	269,897	294,484	0.231
10,529	10,756	0.280	22,330	23,377	0.255	294,485	324,002	0.230
10,757	10,993	0.279	23,378	24,529	0.254	324,003	360,096	0.229
10,994	11,241	0.278	24,530	25,799	0.253	360,097	405,240	0.228
11,242	11,501	0.277	25,800	27,209	0.252	405,241	463,326	0.227
11,502	11,773	0.276	27,210	28,781	0.251	463,327	540,850	0.226
11,774	12,058	0.275	28,782	30,546	0.250	540,851	649,529	0.225
12,059	12,357	0.274	30,547	32,542	0.249	649,530	812,868	0.224
12,358	12,671	0.273	32,543	34,817	0.248	812,869	1,085,958	0.223
12,672	13,002	0.272	34,818	37,434	0.247	1,085,959	1,635,375	0.222
13,003	13,351	0.271	37,435	40,476	0.246	1,635,376	1,891,818	0.221
13,352	13,719	0.270	40,477	44,057	0.245	1,891,819	2,086,006	0.220
13,720	14,107	0.269	44,058	48,332	0.244	2,086,007	2,324,620	0.219
14,108	14,518	0.268	48,333	53,526	0.243	2,324,621	2,624,874	0.218
14,519	14,954	0.267	53,527	59,972	0.242	2,624,875	3,014,195	0.217
14,955	15,417	0.266	59,973	68,182	0.241	3,014,196	3,539,116	0.216
15,418	15,910	0.265	68,183	78,996	0.240	3,539,117	4,285,420	0.215
15,911	16,435	0.264	78,997	93,888	0.239	4,285,421	5,430,585	0.214
16,436	16,995	0.263	93,889	115,699	0.238	5,430,586	7,410,969	0.213
16,996	17,596	0.262	115,700	150,709	0.237	7,410,970	11,664,798	0.212
17,597	18,240	0.261	150,710	202,323	0.236	11,664,799	OVER	0.211
18,241	18,934	0.260	202,324	215,832	0.235			
18,935	19,682	0.259	215,833	231,274	0.234			

Table based on the following discounts:

Standard Premium	Discount
First 10,000	0.0%
Next 190,000	5.1%
Next 1,550,000	6.5%
Over 1,750,000	7.5%

Expected Loss and Allocated Loss Adjustment  
Expense Ratio (ALAE Option)

0.694

Tax Multiplier

1.024

# XII 000012 STIP

Section XII - Retrospective Rating  
 Subsection D - NCCI's Item R-1413  
 7/1/2020

Section XII - D  
 Exhibit 1

NATIONAL COUNCIL ON COMPENSATION INSURANCE, INC.

R-1413  
 PAGE 26

**ITEM R-1413—2017 UPDATE TO THE RETROSPECTIVE RATING PLAN PARAMETERS—HAZARD GROUP DIFFERENTIALS, EXCESS LOSS PURE PREMIUM FACTORS AND EXCESS LOSS AND ALLOCATED EXPENSE PURE PREMIUM FACTORS**

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**EXHIBIT 2-HG  
 DEVELOPMENT OF MICHIGAN HAZARD GROUP DIFFERENTIALS  
 FOR HAZARD GROUPS A TO G**

- Step 1.** Five years of historical experience is trended, on-leveled, and developed to estimate the severities for each hazard group. For a given hazard group, state severities are calculated by weighting the severities by claim group together using claim counts. The severities and claim counts have been adjusted using countrywide relativities from NCCI's excess loss factor methodology.
- Step 2.** The severities are weighted with the countrywide severities by hazard group using a credibility that is based on the number of claims in the state's experience period. For this purpose, 155,000 claims are regarded as fully credible and the square root rule is used to compute partial credibilities.
- Step 3.** Credibility weighted severities for each hazard group are produced. A countrywide average severity is calculated by taking the weighted average of the state severities using claim counts as weights.
- Step 4.** The differentials are calculated by dividing the countrywide severity by the individual state hazard group severities.

<u>Step 1</u>	<u>Hazard Group</u>	<u>Michigan</u>	<u>Countrywide</u>
Severities	A	27,361	37,292
	B	33,796	45,689
	C	36,053	51,116
	D	42,308	60,165
	E	49,253	71,093
	F	58,989	87,212
	G	65,830	100,004
 <u>Step 2</u>	Claim Count	=	78,533
	Credibility	=	$(78,533 / 155,000)^{0.5} = 0.712$
 <u>Step 3</u>	<u>Hazard Group</u>	<u>Michigan</u>	
Credibility Weighted Severities	A	30,223	= (0.712)(27,361) + (0.288)(37,292)
	B	37,223	
	C	40,394	
	D	47,453	
	E	55,547	
	F	67,122	
	G	75,679	
	Countrywide Overall:	59,736	
 <u>Step 4</u>	<u>Hazard Group</u>	<u>Differentials</u>	
Differentials	A	1.98	= 59,736 / 30,223
	B	1.60	
	C	1.48	
	D	1.26	
	E	1.08	
	F	0.89	
	G	0.79	

**Note:** The underlying data source for the above calculations is NCCI's Unit Statistical data, excluding medical-only claims. The Unit Statistical data for each state is adjusted accordingly, as reflected in the data underlying the Excess Loss Factor (ELF) calculation.

# XII 00013 STIP

Section XII - Retrospective Rating  
 Subsection E - State Hazard Group Relativities  
 7/1/2020

Section XII - E  
 Exhibit 1

## Development of State Hazard Group Differentials

Step 1, Severities:

Hazard Group (1)	Massachusetts Severities (2)	Countrywide Severities (3)	Massachusetts Overall Severity Split Using CW Severity Relativities = Overall (2) x (3) / Overall (3) (4)
A	24,316	37,292	30,800
B	30,718	45,689	37,736
C	39,603	51,116	42,218
D	46,899	60,165	49,692
E	60,525	71,093	58,718
F	92,554	87,212	72,031
G	149,863	100,004	82,596
Overall	49,338	59,736	49,338

Step 2, Credibility:

(5) Massachusetts Claim Count =	45,279
(6) Requirement for Full Credibility =	155,000
(7) Massachusetts Credibility = = [ (5) / (6) ] <sup>0.5</sup>	0.54

Step 3, Credibility Weighted Severities:

Hazard Group (8)	Massachusetts Credibility Weighted Severities (9)
A	30,279
B	37,597
C	44,893
D	52,995
E	65,381
F	90,099
G	126,952

Step 4, Relativities:

Hazard Group (10)	Indicated Relativities = Overall (3) / (9) (11)	Indicated Relativities Based on MA Severity Split Using CW Relativities = Overall (3) / (4) (12)	Average of the Two Indicated Relativities = [ (11) + (12) ] / 2.0 (13)	Selected Hazard Group Differential (14)
A	1.97	1.94	1.96	1.96
B	1.59	1.58	1.59	1.59
C	1.33	1.41	1.37	1.37
D	1.13	1.20	1.16	1.16
E	0.91	1.02	0.97	0.97
F	0.66	0.83	0.75	0.75
G	0.47	0.72	0.60	0.60

Notes:

(2), (5): Lost Time Claim Data for Policy Years 2017 at 1st report, 2016  
 at 2nd report, 2015 at 3rd report, adjusted for trend, law amendments and development factors.

(3), (6): Section XII - D, Exhibit 1 (NCCI's Item R-1413, Page 26.)

(9) = [ (2) x (7) ] + { (3) x [ 1.0 - (7) ] }

# XII 000022 STIP

Section XII - Retrospective Rating  
 Subsection F - Excess Loss Factors  
 7/1/2020

Section XII - F  
 Exhibit 1  
 Page 1

Excess Loss Factors Proposed to be Effective 07/01/2020

Accident Limit	Hazard Group						
	A	B	C	D	E	F	G
\$25,000	0.407	0.432	0.457	0.478	0.498	0.527	0.559
\$30,000	0.389	0.415	0.440	0.463	0.484	0.515	0.550
\$35,000	0.373	0.400	0.426	0.450	0.471	0.503	0.541
\$40,000	0.358	0.386	0.412	0.438	0.460	0.492	0.533
\$50,000	0.332	0.361	0.389	0.417	0.439	0.473	0.518
\$75,000	0.282	0.311	0.341	0.374	0.397	0.431	0.486
\$100,000	0.245	0.273	0.304	0.339	0.363	0.397	0.458
\$125,000	0.215	0.242	0.273	0.310	0.333	0.366	0.433
\$150,000	0.192	0.216	0.246	0.284	0.307	0.339	0.410
\$175,000	0.172	0.194	0.224	0.262	0.283	0.315	0.390
\$200,000	0.155	0.175	0.204	0.242	0.263	0.293	0.370
\$250,000	0.129	0.146	0.172	0.209	0.228	0.256	0.336
\$300,000	0.109	0.124	0.148	0.183	0.200	0.226	0.307
\$500,000	0.065	0.074	0.091	0.118	0.129	0.148	0.222
\$1,000,000	0.030	0.034	0.043	0.058	0.065	0.075	0.124
\$2,000,000	0.013	0.015	0.020	0.027	0.030	0.035	0.062
\$3,000,000	0.008	0.009	0.012	0.017	0.019	0.022	0.040
\$4,000,000	0.006	0.006	0.008	0.012	0.013	0.016	0.029
\$5,000,000	0.004	0.005	0.006	0.009	0.010	0.012	0.022

**Notes:**

Exhibit 3, page 1 times the Expected Loss Ratio without LAE of 63.9% from Section XII-A, Exhibit 3.

# XII 000023 STIP

Section XII - Retrospective Rating  
 Subsection F - Excess Loss Factors  
 7/1/2020

Section XII - F  
 Exhibit 1  
 Page 2

Excess Loss and ALAE Factors Proposed to be Effective 07/01/2020

Accident Limit	Hazard Group						
	A	B	C	D	E	F	G
\$25,000	0.450	0.478	0.503	0.525	0.547	0.578	0.611
\$30,000	0.431	0.459	0.486	0.510	0.532	0.565	0.601
\$35,000	0.414	0.443	0.471	0.496	0.519	0.553	0.592
\$40,000	0.399	0.428	0.457	0.484	0.507	0.541	0.584
\$50,000	0.371	0.402	0.432	0.461	0.485	0.521	0.569
\$75,000	0.318	0.349	0.381	0.416	0.441	0.478	0.536
\$100,000	0.277	0.309	0.342	0.379	0.405	0.442	0.507
\$125,000	0.246	0.275	0.309	0.348	0.374	0.410	0.481
\$150,000	0.220	0.247	0.280	0.321	0.346	0.382	0.457
\$175,000	0.198	0.223	0.256	0.297	0.321	0.356	0.435
\$200,000	0.180	0.203	0.235	0.276	0.299	0.332	0.415
\$250,000	0.150	0.170	0.200	0.240	0.261	0.292	0.379
\$300,000	0.128	0.145	0.172	0.211	0.231	0.259	0.347
\$500,000	0.077	0.087	0.107	0.138	0.152	0.173	0.256
\$1,000,000	0.036	0.041	0.051	0.069	0.077	0.089	0.146
\$2,000,000	0.016	0.018	0.023	0.032	0.036	0.042	0.074
\$3,000,000	0.010	0.011	0.014	0.020	0.022	0.026	0.048
\$4,000,000	0.007	0.008	0.010	0.014	0.016	0.019	0.035
\$5,000,000	0.005	0.006	0.008	0.011	0.012	0.014	0.027

Excess Loss Factors Effective 9/1/2008

Accident Limit	Hazard Group						
	A	B	C	D	E	F	G
\$25,000	0.382	0.409	0.436	0.460	0.482	0.514	0.552
\$30,000	0.362	0.390	0.417	0.444	0.466	0.499	0.541
\$35,000	0.344	0.373	0.401	0.429	0.451	0.485	0.531
\$40,000	0.328	0.357	0.386	0.415	0.438	0.472	0.521
\$50,000	0.299	0.329	0.359	0.391	0.414	0.449	0.503
\$75,000	0.246	0.275	0.306	0.342	0.366	0.401	0.464
\$100,000	0.208	0.233	0.265	0.303	0.326	0.360	0.430
\$125,000	0.179	0.201	0.232	0.271	0.292	0.325	0.400
\$150,000	0.156	0.176	0.205	0.244	0.264	0.294	0.374
\$175,000	0.137	0.155	0.183	0.221	0.239	0.266	0.350
\$200,000	0.122	0.138	0.164	0.201	0.217	0.243	0.329
\$250,000	0.098	0.112	0.135	0.169	0.183	0.205	0.291
\$300,000	0.081	0.092	0.113	0.144	0.156	0.176	0.260
\$500,000	0.046	0.053	0.066	0.088	0.095	0.108	0.177
\$1,000,000	0.020	0.024	0.030	0.042	0.045	0.051	0.093
\$2,000,000	0.009	0.010	0.013	0.019	0.020	0.023	0.045
\$3,000,000	0.005	0.006	0.008	0.011	0.012	0.014	0.028
\$4,000,000	0.004	0.004	0.006	0.008	0.009	0.010	0.020
\$5,000,000	0.003	0.003	0.004	0.006	0.006	0.007	0.015

Note:  
 9/1/2008 Stipulation. Section XII-F, Exhibit 1, Page 1.

XII 000024 STIP



# XII 000025 STIP

Section XII - Retrospective Rating  
 Subsection F - Excess Loss Factors  
 7/1/2020

Section XII - F  
 Exhibit 3  
 Page 1

Estimated Excess Ratios Based on Adjusted Data and Curves Fit to Data Truncated and Shifted at \$150,000

Accident Limit	Hazard Group						
	A	B	C	D	E	F	G
\$25,000	0.637	0.676	0.714	0.747	0.779	0.825	0.874
\$30,000	0.608	0.649	0.689	0.724	0.757	0.805	0.860
\$35,000	0.583	0.625	0.666	0.704	0.737	0.787	0.846
\$40,000	0.560	0.603	0.645	0.685	0.719	0.770	0.834
\$50,000	0.520	0.564	0.608	0.652	0.687	0.739	0.811
\$75,000	0.441	0.487	0.534	0.585	0.620	0.675	0.761
\$100,000	0.383	0.427	0.475	0.530	0.567	0.620	0.717
\$125,000	0.337	0.378	0.426	0.484	0.521	0.573	0.678
\$150,000	0.300	0.337	0.385	0.444	0.480	0.531	0.642
\$175,000	0.269	0.303	0.350	0.410	0.443	0.492	0.609
\$200,000	0.243	0.274	0.319	0.379	0.411	0.458	0.579
\$250,000	0.202	0.228	0.270	0.328	0.356	0.400	0.526
\$300,000	0.170	0.193	0.231	0.286	0.312	0.353	0.479
\$500,000	0.101	0.115	0.142	0.184	0.202	0.232	0.347
\$1,000,000	0.047	0.054	0.068	0.091	0.101	0.118	0.194
\$2,000,000	0.021	0.024	0.031	0.042	0.047	0.055	0.098
\$3,000,000	0.013	0.014	0.019	0.026	0.029	0.035	0.063
\$4,000,000	0.009	0.010	0.013	0.019	0.021	0.024	0.045
\$5,000,000	0.007	0.008	0.010	0.014	0.016	0.019	0.035

Note:

For Accident Limit  $L \leq \$150,000$  excess ratios are from Page 3. For Accident Limit  $L > \$150,000$  excess ratios are from Page 2 times the estimated excess ratio at  $L = \$150,000$  (See Appendix).

Fitted Excess Ratios Based on Losses Truncated and Shifted to \$150,000

Accident Limit	Hazard Group													
	A		B		C		D		E		F		G	
	Entry Ratio	Excess Ratio	Entry Ratio	Excess Ratio	Entry Ratio	Excess Ratio	Entry Ratio	Excess Ratio	Entry Ratio	Excess Ratio	Entry Ratio	Excess Ratio	Entry Ratio	Excess Ratio
\$175,000	0.111	0.897	0.109	0.899	0.098	0.908	0.083	0.922	0.081	0.924	0.076	0.928	0.053	0.949
\$200,000	0.222	0.810	0.218	0.813	0.197	0.829	0.166	0.853	0.161	0.856	0.152	0.863	0.105	0.902
\$250,000	0.444	0.672	0.436	0.676	0.394	0.700	0.331	0.737	0.322	0.742	0.305	0.754	0.210	0.819
\$300,000	0.666	0.568	0.654	0.573	0.591	0.600	0.497	0.645	0.484	0.651	0.457	0.665	0.315	0.747
\$500,000	1.554	0.337	1.526	0.342	1.378	0.368	1.158	0.415	1.129	0.422	1.066	0.438	0.736	0.541
\$1,000,000	3.774	0.157	3.706	0.159	3.346	0.176	2.813	0.206	2.741	0.211	2.589	0.222	1.786	0.303
\$2,000,000	8.215	0.069	8.066	0.071	7.283	0.079	6.123	0.096	5.965	0.098	5.634	0.105	3.888	0.152
\$3,000,000	12.655	0.042	12.426	0.043	11.219	0.048	9.433	0.059	9.190	0.061	8.680	0.065	5.990	0.098
\$4,000,000	17.096	0.029	16.786	0.030	15.156	0.034	12.743	0.042	12.414	0.043	11.725	0.046	8.091	0.071
\$5,000,000	21.536	0.022	21.146	0.023	19.093	0.026	16.052	0.032	15.639	0.033	14.771	0.035	10.193	0.054

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Notes:

Entry Ratio = ( [ Limit ] - [ \$150,000 Truncation Point ] ) / [ Average Size of Data Truncated and Shifted to \$150,000 ]

For the seven Hazard Groups, the detrended average sizes are \$165,517 for HGA, \$168,570 for HGB, \$186,703 for HGC, \$222,061 for HGD, \$227,939 for HGE, \$241,326 for HGF and \$349,728 for HGG.

Excess Ratio is computed for a Mixed Pareto - Exponential distribution with parameters: 0.7344, 2.3285, 1.4950, 0.6270 (weight to Pareto, Pareto Shape, Pareto Scale, Exponential Scale).

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 Exhibit 3  
 Page 3

Excess Ratios Based on Adjusted Data

Accident Limit	Hazard Group						
	A	B	C	D	E	F	G
\$25,000	0.637	0.676	0.714	0.747	0.779	0.825	0.874
\$30,000	0.608	0.649	0.689	0.724	0.757	0.805	0.860
\$35,000	0.583	0.625	0.666	0.704	0.737	0.787	0.846
\$40,000	0.560	0.603	0.645	0.685	0.719	0.770	0.834
\$50,000	0.520	0.564	0.608	0.652	0.687	0.739	0.811
\$75,000	0.441	0.487	0.534	0.585	0.620	0.675	0.761
\$100,000	0.383	0.427	0.475	0.530	0.567	0.620	0.717
\$125,000	0.337	0.378	0.426	0.484	0.521	0.573	0.678
\$150,000	0.300	0.337	0.385	0.444	0.480	0.531	0.642
\$175,000	0.270	0.304	0.350	0.410	0.443	0.492	0.610
\$200,000	0.244	0.275	0.320	0.380	0.410	0.457	0.580
\$250,000	0.202	0.230	0.272	0.330	0.355	0.397	0.528
\$300,000	0.171	0.197	0.235	0.292	0.309	0.347	0.485
\$500,000	0.103	0.119	0.148	0.197	0.194	0.217	0.362
\$1,000,000	0.048	0.050	0.079	0.124	0.094	0.105	0.232
\$2,000,000	0.017	0.021	0.044	0.088	0.043	0.049	0.130
\$3,000,000	0.006	0.015	0.033	0.077	0.028	0.029	0.081
\$4,000,000	0.002	0.013	0.028	0.073	0.023	0.020	0.055
\$5,000,000	0.000	0.012	0.024	0.069	0.020	0.014	0.037

**Notes:**

Unit Statistical Plan Data for Composite Policy Years 00/01, 99/00, 98/99, 97/98, 96/97, 95/96 at fifth report, adjusted for trend, law amendments and development factors using factors from Section XI-C, Exhibit 1.

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Section XII - Retrospective Rating  
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Section XII - F  
 Exhibit 4

## Mixed Pareto-Exponential Distribution

Parameters:

Pareto shape = s	2.3285
Pareto scale = b	1.4950
Exponential scale = $\theta$	0.6270
Weight to Pareto = p	0.7344
Mean =	1.0000
Variance =	5.5243
Coefficient of Variation =	2.3504
Skewness =	18.0452
Pareto Mean = $b / (s - 1.0)$	1.1253
Exponential Mean = $\theta$	0.6270

Entry Ratio	Excess Ratio	Entry Ratio	Excess Ratio
0.1	0.9067	11	0.0496
0.2	0.8263	12	0.0448
0.3	0.7567	13	0.0407
0.4	0.6960	14	0.0372
0.5	0.6428	15	0.0343
0.6	0.5960	20	0.0241
0.7	0.5546	25	0.0183
0.8	0.5178	30	0.0145
0.9	0.4849	35	0.0119
1.0	0.4555	40	0.0101
1.25	0.3941	45	0.0087
1.5	0.3460	50	0.0076
1.75	0.3075	55	0.0067
2.0	0.2763	60	0.0060
2.50	0.2286	65	0.0054
3.0	0.1942	70	0.0049
3.5	0.1682	75	0.0045
4.0	0.1479	80	0.0041
4.5	0.1316	85	0.0038
5.0	0.1183	90	0.0035
6.0	0.0978	95	0.0033
7.0	0.0828	100	0.0031
8.0	0.0714		
9.0	0.0625		
10.0	0.0554		

Notes:  
 See the Appendix for a sample calculation of an excess ratio.

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 Exhibit 5

## Total Severity Trend & Benefit Change Adjustment

	Indemnity	Lost Time Medical	Medical Only	Total
(1) PY 9/1/2008 Average Severity	25,927	10,208	801	
(2) PY 2017 Average Severity	30,789	11,890	949	
(3) Annual Severity Trend - From PY 2017 to Prospective Effective Period	2.6%	2.3%	2.3%	
(4) Trend Factor from PY 9/1/2008 to Prospective Effective Period = $[(2) / (1)] \times [1.000 + (3)]^{3.5}$	1.298	1.259	1.282	
(5) Injury Type Weight at Ultimate	65.87%	29.99%	4.14%	
(6) Total Severity Trend Factor from PY 9/1/2008 to Prospective Effective Period = (4) Weighted by (5)				1.286
(7) Total Benefit Level Change Factor from PY 9/1/2008 to Prospective Effective Period				1.058
(8) Combined Trend and Benefit Factor from PY 9/1/2008 to Prospective Effective Period = (6) x (7)				1.361

**Notes:**

- (1),(2) : From Section V-A, Exhibit 2, Pages 1, 3, and 5. PY9/1/2008 is a weighted average of PY2008 and PY2009. =  $(1/3) \times \text{PY2008} + (2/3) \times \text{PY2009}$
- (3): From Section V-A, Exhibit 1.
- (5): From Section IV-E, Exhibit 2, Pages 1 and 2.
- (7): From Section IV-A, Exhibit 1.