

PENNSYLVANIA COMPENSATION RATING BUREAU

Indicated Change in Loss Costs

Page 1 presents the overall indicated change in loss costs.

Derivation of the indemnity and medical trend factors and trended loss ratios shown on Page 1 is presented on Page 2.

Page 3 provides the calculation of Statewide Average Weekly Wage (SAWW) trends. The selection of the 6-point exponential trend fit for Policy Years 2016-2021 was used in the calculation of the indemnity and medical severity trends on Page 2.

Page 4 shows the derivation of overall frequency trend factors for each of the latest three policy years.

INDICATED CHANGE IN LOSS COSTS

	<u>Indemnity</u>	<u>Medical</u>	<u>Total</u>
(1) Policy Year 2018 Ratio of Loss to Expected Loss	0.5835	0.6433	1.2268
(2) Policy Year 2019 Ratio of Loss to Expected Loss	0.5292	0.5554	1.0846
(3) Policy Year 2020 Ratio of Loss to Expected Loss	0.4752	0.5044	0.9796
(4) Weighted Average (2018 - 40%; 2019 - 40%; 2020 - 20%)	0.5401	0.5804	1.1205
(5) Policy Year 2018 Ratio Trended to 4/1/2024 +	0.4843	0.5486	1.0329
(6) Policy Year 2019 Ratio Trended to 4/1/2024 +	0.4552	0.4883	0.9435
(7) Policy Year 2020 Ratio Trended to 4/1/2024 +	0.4234	0.4570	0.8804
(8) Weighted Average (2018 - 40%; 2019 - 40%; 2020 - 20%)	0.4605	0.5062	0.9667
(9) Indicated Change in Loss Costs	0.4605	0.5062	0.9667 -3.33%

CHANGES IN MANUAL LOSS COST LEVEL BY INDUSTRY GROUP

	<u>Mfg.</u>	<u>Cont.</u>	<u>Other</u>	<u>Total</u>
(10) Current Collectible Premium Ratio	1.0336	1.1350	0.9984	
(11) Anticipated Collectible Premium Ratio	1.0318	1.1426	1.0027	
(12) Final Indicated Change in Manual Loss Cost Level (9T) * (11) / (10)	0.9650	0.9732	0.9709	0.9703

+ Refer to pages 1.2 and 1.4

DETERMINATION OF TREND

INDEMNITY

Policy Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual Loss Ratio	0.8180	0.7696	0.7592	0.7275	0.6565	0.6031	0.5901	0.5835	0.5292	0.4752
Normalized Frequency	0.9383	0.8798	0.8619	0.7882	0.7265	0.6796	0.6431	0.6200	0.5501	0.5188
Severity Loss Ratio	0.8718	0.8748	0.8809	0.9230	0.9037	0.8874	0.9175	0.9411	0.9620	0.9160
x	1	2	3	4	5	6	7	8	9	10
y	0.8718	0.8748	0.8809	0.9230	0.9037	0.8874	0.9175	0.9411	0.9620	0.9160

Trend Selection	Severity Loss Ratio Trend (excluding 2020)	Severity Loss Ratio Trend (including 2020)	SAWW Trend
3 pt	2.4%	-1.3%	6.4%
6 pt	1.0%	1.0%	4.6%
7 pt	1.1%	0.6%	4.2%
All Available	1.1%	0.9%	3.2%

7 Point Exponential Regression = 1.1% (y = 0.855741 * 1.011429 ^ x)
 SAWW 6 Point Exponential Regression = 4.6% *
Selected Annual Trend Factor = 2.9%

Policy Year	Annual Severity Trend Factor (1)	Trend Period # of Years to 4/1/2024 (2)	Severity Trend Factor (3) = (1) ^ (2)	Frequency Trend Factor (4) **
2018	1.0286	5.2500	1.1596	0.7158
2019	1.0286	4.2500	1.1274	0.7629
2020	1.0286	3.2500	1.0960	0.8130

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2018	0.5835	0.8300	0.4843
2019	0.5292	0.8601	0.4552
2020	0.4752	0.8910	0.4234

MEDICAL

Policy Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual Loss Ratio	0.8158	0.7699	0.7657	0.7537	0.6559	0.6291	0.6190	0.6433	0.5554	0.5044
Normalized Frequency	0.9383	0.8798	0.8619	0.7882	0.7265	0.6796	0.6431	0.6200	0.5501	0.5188
Severity Loss Ratio	0.8694	0.8751	0.8884	0.9563	0.9028	0.9256	0.9625	1.0375	1.0096	0.9723
x	1	2	3	4	5	6	7	8	9	10
y	0.8694	0.8751	0.8884	0.9563	0.9028	0.9256	0.9625	1.0375	1.0096	0.9723

Trend Selection	Severity Loss Ratio Trend (excluding 2020)	Severity Loss Ratio Trend (including 2020)	SAWW Trend
3 pt	2.4%	-3.2%	6.4%
6 pt	2.1%	2.0%	4.6%
7 pt	2.2%	1.4%	4.2%
All Available	2.1%	1.7%	3.2%

7 Point Exponential Regression = 2.2% (y = 0.836408 * 1.022050 ^ x)
 SAWW 6 Point Exponential Regression = 4.6% *
Selected Annual Trend Factor = 3.4%

Policy Year	Annual Severity Trend Factor (1)	Trend Period # of Years to 4/1/2024 (2)	Severity Trend Factor (3) = (1) ^ (2)	Frequency Trend Factor (4) **
2018	1.0339	5.2500	1.1914	0.7158
2019	1.0339	4.2500	1.1523	0.7629
2020	1.0339	3.2500	1.1145	0.8130

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2018	0.6433	0.8528	0.5486
2019	0.5554	0.8791	0.4883
2020	0.5044	0.9061	0.4570

* See page 1.3
 ** See page 1.4

SAWW Trend Calculation

<u>Policy Year</u>	<u>Official SAWW</u>	<u>Annual Percent Change</u>	<u>Period</u>	<u>SAWW Exp Fit Trend</u>
2000	662.00		2011-2021	3.2% 11 pt
2001	675.00	2.0%	2012-2021	3.4% 10 pt
2002	690.00	2.2%	2013-2021	3.6% 9 pt
2003	716.00	3.8%	2014-2021	3.8% 8 pt
2004	745.00	4.1%	2015-2021	4.2% 7 pt
2005	779.00	4.6%	2016-2021	4.6% 6 pt
2006	807.00	3.6%	2017-2021	5.2% 5 pt
2007	836.00	3.6%	2018-2021	5.9% 4 pt
2008	845.00	1.1%	2019-2021	6.4% 3 pt
2009	858.00	1.5%		
2010	888.00	3.5%		
2011	917.00	3.3%	2009-2019	2.6% 11 pt
2012	932.00	1.6%	2010-2019	2.5% 10 pt
2013	951.00	2.0%	2011-2019	2.6% 9 pt
2014	978.00	2.8%	2012-2019	2.7% 8 pt
2015	995.00	1.7%	2013-2019	2.8% 7 pt
2016	1025.00	3.0%	2014-2019	2.9% 6 pt
2017	1049.00	2.3%	2015-2019	3.1% 5 pt
2018	1081.00	3.1%	2016-2019	3.3% 4 pt
2019	1130.00	4.5%	2017-2019	3.8% 3 pt
2020	1205.00	6.6%		
2021*	1279.00	6.1%		

* Estimated

DETERMINATION OF TREND

CLAIM FREQUENCY

Policy Year Frequency per \$1 million of Expected Losses

Policy Year	Claim Frequency	Normalized Frequency
2010	29.03	1.0000
2011	27.24	0.9383
2012	25.54	0.8798
2013	25.02	0.8619
2014	22.88	0.7882
2015	21.09	0.7265
2016	19.73	0.6796
2017	18.67	0.6431
2018	18.00	0.6200
2019*	15.97	0.5501
2020*	15.06	0.5188

Policy Year	2012	2013	2014	2015	2016	2017	2018
x	1	2	3	4	5	6	7
y	0.8798	0.8619	0.7882	0.7265	0.6796	0.6431	0.6200

Trend Selection	Frequency Trend (excluding 2019 and 2020)	Frequency Trend (including 2019 and 2020)
3 pt	-4.5%	-8.5%
6 pt	-6.4%	-6.5%
7 pt	-6.2%	-6.6%
9 pt	-6.0%	-6.5%

Selected Annual Frequency Trend Factor:

7 Point Exponential Regression = -6.2% (y = 0.950328 * 0.938298 ^ x)

Policy Year	Annual Frequency Trend Factor (1)	Trend Period # of Years to 4/1/2024 (2)	Frequency Trend Factor (3) = (1) ^ (2)
2018	0.9383	5.2500	0.7158
2019	0.9383	4.2500	0.7629
2020	0.9383	3.2500	0.8130

* Policy Years 2019 and 2020 were excluded from trend due to being significantly impacted by COVID-19 disruptions.