

PENNSYLVANIA COMPENSATION RATING BUREAU

Indicated Change in Loss Costs

Page 1 presents the overall indicated change in loss costs.

For this filing, loss costs resulting from PCRB Filing No. C-374 were used to calculate expected losses on Page 1 and actual loss ratios on Page 2.

Derivation of the indemnity and medical trend factors and trended loss ratios shown on Page 1 is presented on Page 2. Severity ratios, defined as loss ratios adjusted by dividing out the frequency component, for both indemnity and medical, have been fitted using a seven-point exponential curve. Severity trend factors are calculated by fitting severity ratios to curves using a least squares regression analysis and comparing the fitted values at 4/1/21 to the fitted values at the midpoints of the latest three available policy years. Frequency trend factors are derived on Page 3. The resulting severity and frequency trend factors are then applied to the latest three available policy year loss ratios to generate projected ultimate trended loss ratios.

As described in Exhibit 8, staff has selected an annual frequency trend of -6.4%. Page 3 shows the derivation of overall frequency trend factors for each of the latest three available policy years.

In addition, staff is also taking into account the impact of the Pennsylvania Supreme Court ruling in *Protz v. WCAB (Derry Area School District)*, as well as the savings impact of House Bill 1840 of 2017.

INDICATED CHANGE IN LOSS COSTS

	<u>Indemnity</u>	<u>Medical</u>	<u>Total</u>
(1) Policy Year 2015 Ratio of Loss to Expected Loss	0.5458	0.5933	1.1391
(2) Policy Year 2016 Ratio of Loss to Expected Loss	0.5096	0.5676	1.0772
(3) Policy Year 2017 Ratio of Loss to Expected Loss	0.5001	0.5743	1.0744
(4) Average (Midpoint = 1/1/2017)	0.5185	0.5784	1.0969
(5) Policy Year 2015 Ratio Trended to 4/1/2021 +	0.4135	0.4696	0.8831
(6) Policy Year 2016 Ratio Trended to 4/1/2021 +	0.4070	0.4697	0.8767
(7) Policy Year 2017 Ratio Trended to 4/1/2021 +	0.4211	0.4969	0.9180
(8) Average at 4/1/2021	0.4139	0.4787	0.8926
(9a) Protz Adjustment	1.1337	1.0000	
(9b) House Bill 1840 Adjustment	0.8961	1.0000	
(10) Indicated Change in Loss Costs	0.4205	0.4787	0.8992
			-10.08%

CHANGES IN MANUAL LOSS COST LEVEL BY INDUSTRY GROUP

	<u>Mfg.</u>	<u>Cont.</u>	<u>Other</u>	<u>Total</u>
(11) Current Collectible Premium Ratio	1.0411	1.1268	0.9929	
(12) Anticipated Collectible Premium Ratio	1.0427	1.1287	0.9928	
(13) Final Indicated Change in Manual Loss Cost Level (10T) * (12) / (11)	0.9006	0.9007	0.8991	0.8999

+ Refer to pages 1.2 and 1.3

DETERMINATION OF TREND

INDEMNITY

Policy Year	2011	2012	2013	2014	2015	2016	2017
Actual Loss Ratio	0.6730	0.6347	0.6350	0.6018	0.5458	0.5096	0.5001
Normalized Frequency	0.7827	0.7315	0.7139	0.6531	0.6029	0.5639	0.5320
Severity Loss Ratio	0.8599	0.8677	0.8894	0.9215	0.9052	0.9037	0.9400
x	1	2	3	4	5	6	7
y	0.8599	0.8677	0.8894	0.9215	0.9052	0.9037	0.9400

7 Point Exponential Regression: $y = 0.852065 * 1.013161 ^ x$

Selected Annual Severity Trend Factor = 1.32%

Policy Year	Annual Severity Trend Factor (1)	Trend Period # of Years to 4/1/21 (2)	Severity Trend Factor (3) = (1) ^ (2)	Frequency Trend Factor (4) #
2015	1.0132	5.2500	1.0711	0.7073
2016	1.0132	4.2500	1.0571	0.7555
2017	1.0132	3.2500	1.0434	0.8070

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2015	0.5458	0.7576	0.4135
2016	0.5096	0.7986	0.4070
2017	0.5001	0.8420	0.4211

MEDICAL

Policy Year	2011	2012	2013	2014	2015	2016	2017
Actual Loss Ratio	0.7226	0.6909	0.7001	0.6850	0.5933	0.5676	0.5743
Normalized Frequency	0.7827	0.7315	0.7139	0.6531	0.6029	0.5639	0.5320
Severity Loss Ratio	0.9232	0.9445	0.9806	1.0489	0.9840	1.0065	1.0794
x	1	2	3	4	5	6	7
y	0.9232	0.9445	0.9806	1.0489	0.9840	1.0065	1.0794

7 Point Exponential Regression: $y = 0.912409 * 1.021644 ^ x$

Selected Annual Severity Trend Factor = 2.16%

Policy Year	Annual Severity Trend Factor (1)	Trend Period # of Years to 4/1/21 (2)	Severity Trend Factor (3) = (1) ^ (2)	Frequency Trend Factor (4) #
2015	1.0216	5.2500	1.1190	0.7073
2016	1.0216	4.2500	1.0953	0.7555
2017	1.0216	3.2500	1.0721	0.8070

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2015	0.5933	0.7915	0.4696
2016	0.5676	0.8275	0.4697
2017	0.5743	0.8652	0.4969

DETERMINATION OF TREND

CLAIM FREQUENCY

Policy Year Frequency per \$1 million of Expected Losses
{1 = PY 2006, 12 = PY 2017}

Policy Year	Claim Frequency	Normalized Frequency
2006	27.93	1.0000
2007	26.34	0.9431
2008	24.35	0.8718
2009	23.59	0.8446
2010	23.23	0.8317
2011	21.86	0.7827
2012	20.43	0.7315
2013	19.94	0.7139
2014	18.24	0.6531
2015	16.84	0.6029
2016	15.75	0.5639
2017	14.86	0.5320

Policy Year	2011	2012	2013	2014	2015	2016	2017
x	1	2	3	4	5	6	7
y	0.7827	0.7315	0.7139	0.6531	0.6029	0.5639	0.5320

7 Point Exponential Regression: $y = 0.844463 * 0.936156 ^ x$

Selected Annual Frequency Trend Factor =

-6.4%

Policy Year	Annual Frequency Trend Factor (1)	Trend Period # of Years to 4/1/21 (2)	Frequency Trend Factor (3) = (1) ^ (2)
2015	0.9362	5.2500	0.7073
2016	0.9362	4.2500	0.7555
2017	0.9362	3.2500	0.8070