

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-373 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 4/1/20 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 -6.3%. 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 2014 Ratio of Loss to Expected Loss	0.5317	0.6142	1.1459
(2) Policy Year 2015 Ratio of Loss to Expected Loss	0.4956	0.5386	1.0342
(3) Policy Year 2016 Ratio of Loss to Expected Loss	0.4765	0.5215	0.9980
(4) Average (Midpoint = 1/1/2016)	0.5013	0.5581	1.0594
(5) Policy Year 2014 Ratio Trended to 4/1/2020 +	0.4245	0.5083	0.9328
(6) Policy Year 2015 Ratio Trended to 4/1/2020 +	0.4130	0.4621	0.8751
(7) Policy Year 2016 Ratio Trended to 4/1/2020 +	0.4145	0.4638	0.8783
(8) Average at 4/1/2020	0.4173	0.4781	0.8954
(9a) Protz Adjustment	1.1337	1.0000	
(9b) House Bill 1840 Adjustment	0.8961	1.0000	
(10) Indicated Change in Loss Costs (from January 21, 2019 amendment)	0.4239	0.4781	0.9020
(11) Factor to Adjust Indicated Change in Loss Costs (from Exhibit 1a, Line 12)			0.9651
(12) Indicated Change in Loss Costs to Reflect Adjustment Factor (10) * (11)			0.8705
			-12.95%

CHANGES IN MANUAL LOSS COST LEVEL BY INDUSTRY GROUP

	<u>Mfg.</u>	<u>Cont.</u>	<u>Other</u>	<u>Total</u>
(13) Current Collectible Premium Ratio	1.0389	1.1238	0.9931	
(14) Anticipated Collectible Premium Ratio	1.0411	1.1268	0.9929	
(15) Final Indicated Change in Manual Loss Cost Level (12T) * (14) / (13)	0.8723	0.8728	0.8703	0.8713

+ Refer to pages 1.2 and 1.3

DETERMINATION OF TREND

INDEMNITY

Policy Year	2010	2011	2012	2013	2014	2015	2016
Actual Loss Ratio	0.6245	0.5897	0.5543	0.5593	0.5317	0.4956	0.4765
Normalized Frequency	0.8008	0.7519	0.7030	0.6868	0.6292	0.5803	0.5373
Severity Loss Ratio	0.7799	0.7843	0.7885	0.8144	0.8451	0.8541	0.8869
x	1	2	3	4	5	6	7
y	0.7799	0.7843	0.7885	0.8144	0.8451	0.8541	0.8869

7 Point Exponential Regression: $y = 0.750829 * 1.022592 ^ x$

Selected Annual Severity Trend Factor = **2.26%**

Policy Year	Annual Severity Trend Factor (1)	Trend Period # of Years to 4/1/20 (2)	Severity Trend Factor (3) = (1) ^ (2)	Frequency Trend Factor (4) #
2014	1.0226	5.2500	1.1244	0.7101
2015	1.0226	4.2500	1.0996	0.7579
2016	1.0226	3.2500	1.0753	0.8090

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2014	0.5317	0.7984	0.4245
2015	0.4956	0.8334	0.4130
2016	0.4765	0.8699	0.4145

MEDICAL

Policy Year	2010	2011	2012	2013	2014	2015	2016
Actual Loss Ratio	0.6521	0.6396	0.6114	0.6293	0.6142	0.5386	0.5215
Normalized Frequency	0.8008	0.7519	0.7030	0.6868	0.6292	0.5803	0.5373
Severity Loss Ratio	0.8143	0.8507	0.8698	0.9163	0.9762	0.9282	0.9706
x	1	2	3	4	5	6	7
y	0.8143	0.8507	0.8698	0.9163	0.9762	0.9282	0.9706

7 Point Exponential Regression: $y = 0.802634 * 1.029591 ^ x$

Selected Annual Severity Trend Factor = **2.96%**

Policy Year	Annual Severity Trend Factor (1)	Trend Period # of Years to 4/1/20 (2)	Severity Trend Factor (3) = (1) ^ (2)	Frequency Trend Factor (4) #
2014	1.0296	5.2500	1.1654	0.7101
2015	1.0296	4.2500	1.1319	0.7579
2016	1.0296	3.2500	1.0994	0.8090

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2014	0.6142	0.8276	0.5083
2015	0.5386	0.8579	0.4621
2016	0.5215	0.8894	0.4638

DETERMINATION OF TREND

CLAIM FREQUENCY

Policy Year Frequency per \$1 million of Expected Losses
{1 = PY 2005, 12 = PY 2016}

Policy Year	Claim Frequency	Normalized Frequency
2005	25.35	1.0000
2006	24.42	0.9633
2007	23.02	0.9081
2008	21.28	0.8394
2009	20.60	0.8126
2010	20.30	0.8008
2011	19.06	0.7519
2012	17.82	0.7030
2013	17.41	0.6868
2014	15.95	0.6292
2015	14.71	0.5803
2016	13.62	0.5373

Policy Year	2010	2011	2012	2013	2014	2015	2016
x	1	2	3	4	5	6	7
y	0.8008	0.7519	0.7030	0.6868	0.6292	0.5803	0.5373

7 Point Exponential Regression: $y = 0.862171 * 0.936859 ^ x$

Selected Annual Frequency Trend Factor =

-6.3%

Policy Year	Annual Frequency Trend Factor (1)	Trend Period # of Years to 4/1/20 (2)	Frequency Trend Factor (3) = (1) ^ (2)
2014	0.9369	5.2500	0.7101
2015	0.9369	4.2500	0.7579
2016	0.9369	3.2500	0.8090