Exhibit 1a
Second Amendment

PENNSYLVANIA COMPENSATION RATING BUREAU

Calculation of Adjustment Factor

This exhibit presents the calculation of the adjustment factor shown in Exhibit 1, Line 11.

Lines 1 through 10 show the calculation of the overall indicated change in collectible loss costs using two-year averages for loss development with a "tail" factor based on a four-year average. Line 11 shows the overall indicated change in collectible loss costs filed in the January 21, 2019 amendment to PCRB Filing No. C-374. Line 12 shows the calculation of the adjustment factor.

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.

Calculation of Adjustment Factor

INDICATED CHANGE IN LOSS COSTS

		Indemnity	Medical	Total
(1)	Policy Year 2014 Ratio of Loss to Expected Loss	0.5273	0.5994	1.1267
(2)	Policy Year 2015 Ratio of Loss to Expected Loss	0.4886	0.5241	1.0127
(3)	Policy Year 2016 Ratio of Loss to Expected Loss	0.4605	0.5048	0.9653
(4)	Average (Midpoint = 1/1/2016)	0.4921	0.5428	1.0349
(5)	Policy Year 2014 Ratio Trended to 4/1/2020 +	0.4106	0.4933	0.9039
(6)	Policy Year 2015 Ratio Trended to 4/1/2020 +	0.3990	0.4476	0.8466
(7)	Policy Year 2016 Ratio Trended to 4/1/2020 +	0.3944	0.4474	0.8418
(8)	Average at 4/1/2020	0.4013	0.4628	0.8641
(9a)	Protz Adjustment	1.1337	1.0000	
(9b)	House Bill 1840 Adjustment	0.8961	1.0000	
(10)	Indicated Change in Loss Costs *	0.4077	0.4628	0.8705
(11)	Indicated Change in Loss Costs (from January 21, 2019 amendment)	0.4239	0.4781	0.9020
(12)	Factor to Adjust Indicated Change in Loss Costs (10) / (11)			0.9651

+ Refer to pages 2 and 3

* Calculated using a two-year average for Selected Paid and Incurred loss development factors with a “tail” factor based on a four-year average

DETERMINATION OF TREND

INDEMNITY

Policy Year	2010	2011	2012	2013	2014	2015	2016
Actual Loss Ratio	0.6237	0.5899	0.5533	0.5570	0.5273	0.4886	0.4605
Normalized Frequency	0.8008	0.7519	0.7030	0.6868	0.6292	0.5803	0.5373
Severity Loss Ratio	0.7789	0.7846	0.7871	0.8110	0.8381	0.8420	0.8571

x	1	2	3	4	5	6	7
y	0.7789	0.7846	0.7871	0.8110	0.8381	0.8420	0.8571

7 Point Exponential Regression: y = 0.758472 * 1.017691 ^ x

Selected Annual Severity Trend Factor = **1.77%**

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	1.0177	5.2500	1.0964	0.7101
2015	1.0177	4.2500	1.0774	0.7579
2016	1.0177	3.2500	1.0586	0.8090

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2014	0.5273	0.7786	0.4106
2015	0.4886	0.8166	0.3990
2016	0.4605	0.8564	0.3944

MEDICAL

Policy Year	2010	2011	2012	2013	2014	2015	2016
Actual Loss Ratio	0.6359	0.6248	0.5967	0.6151	0.5994	0.5241	0.5048
Normalized Frequency	0.8008	0.7519	0.7030	0.6868	0.6292	0.5803	0.5373
Severity Loss Ratio	0.7941	0.8310	0.8488	0.8956	0.9527	0.9032	0.9396

x	1	2	3	4	5	6	7
y	0.7941	0.8310	0.8488	0.8956	0.9527	0.9032	0.9396

7 Point Exponential Regression: y = 0.785587 * 1.028500 ^ x

Selected Annual Severity Trend Factor = **2.85%**

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	1.0285	5.2500	1.1590	0.7101
2015	1.0285	4.2500	1.1269	0.7579
2016	1.0285	3.2500	1.0956	0.8090

Trended Loss Ratio

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3) * (4)	Trended Loss Ratio (7) = (5) * (6)
2014	0.5994	0.8230	0.4933
2015	0.5241	0.8541	0.4476
2016	0.5048	0.8863	0.4474

See page 3

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