

PENNSYLVANIA COMPENSATION RATING BUREAU

Indicated Change in Loss Cost

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. Severity ratios, defined herein 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 4/1/08 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 -6.1%. Page 3 shows the derivation of overall frequency trend factors for each of the latest three available policy years.

**INDICATED CHANGE IN LOSS COSTS**

	<u>Indemnity</u>	<u>Medical</u>	<u>Total</u>
(1) Policy Year 2002 Ratio of Loss to Expected Loss	0.5276	0.4977	1.0253
(2) Policy Year 2003 Ratio of Loss to Expected Loss	0.4892	0.4970	0.9862
(3) Policy Year 2004 Ratio of Loss to Expected Loss	0.5160	0.5484	1.0644
(4) Average (Midpoint = 1/1/2004)	0.5109	0.5144	1.0253
(5) Policy Year 2002 Ratio Trended to 4/1/2008 +	0.5117	0.5179	1.0296
(6) Policy Year 2003 Ratio Trended to 4/1/2008 +	0.4772	0.5133	0.9905
(7) Policy Year 2004 Ratio Trended to 4/1/2008 +	0.5063	0.5621	1.0684
(8) Average at 4/1/2008	0.4984	0.5311	1.0295
(9) Indicated Change in Loss Costs	0.4984	0.5311	1.0295

**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	1.1192	1.1190	1.0821	
(11) Anticipated Collectible Premium Ratio	1.0767	1.1133	1.0648	
(12) Final Indicated Change in Manual Loss Cost Level (9T) * (11) / (10)	0.9904	1.0243	1.0130	1.0099

+ Refer to pages 12.2 and 12.3.

**DETERMINATION OF TREND**

**INDEMNITY**

Policy Year	1998	1999	2000	2001	2002	2003	2004
Actual Loss Ratio	0.4986	0.5423	0.5676	0.5349	0.5276	0.4892	0.5160
Normalized Frequency	0.6390	0.6048	0.5671	0.5241	0.5006	0.4621	0.4410
Severity Loss Ratio	0.7803	0.8967	1.0009	1.0206	1.0539	1.0586	1.1701
<b>x</b>	1	2	3	4	5	6	7
<b>y</b>	0.7803	0.8967	1.0009	1.0206	1.0539	1.0586	1.1701

7 Point Exponential Regression:  $y = 0.78794 * 1.05877 ^ x$

Policy Year	Fitted Value @ Midpoint of PY (1)	Fitted Value @ 4/1/07 (2)	Severity Trend Factor (3) = (2) / (1)	Frequency Trend Factor (4) #
2002	0.9902	1.3363	1.3495	0.7186
2003	1.0483	1.3363	1.2747	0.7653
2004	1.1100	1.3363	1.2039	0.8150

**Trended Loss Ratio**

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3)*(4)	Trended Loss Ratio (7) = (5) * (6)
2002	0.5276	0.9698	0.5117
2003	0.4892	0.9755	0.4772
2004	0.5160	0.9812	0.5063

**MEDICAL**

Policy Year	1998	1999	2000	2001	2002	2003	2004
Actual Loss Ratio	0.4924	0.5121	0.5308	0.4905	0.4977	0.4970	0.5484
Normalized Frequency	0.6390	0.6048	0.5671	0.5241	0.5006	0.4621	0.4410
Severity Loss Ratio	0.7706	0.8467	0.9360	0.9359	0.9942	1.0755	1.2435
<b>x</b>	1	2	3	4	5	6	7
<b>y</b>	0.7706	0.8467	0.9360	0.9359	0.9942	1.0755	1.2435

7 Point Exponential Regression:  $y = 0.72524 * 1.07305 ^ x$

Policy Year	Fitted Value @ Midpoint of PY (1)	Fitted Value @ 4/1/07 (2)	Severity Trend Factor (3) = (2) / (1)	Frequency Trend Factor (4) #
2002	0.9615	1.3923	1.4480	0.7186
2003	1.0318	1.3923	1.3494	0.7653
2004	1.1072	1.3923	1.2575	0.8150

**Trended Loss Ratio**

Policy Year	Actual Loss Ratio (5)	Combined Trend Factor (6) = (3)*(4)	Trended Loss Ratio (7) = (5) * (6)
2002	0.4977	1.0405	0.5179
2003	0.4970	1.0327	0.5133
2004	0.5484	1.0249	0.5621

# See page 12.3 for column (4).

## DETERMINATION OF TREND

### Claim Frequency

Policy Year Frequency per \$1 million of Expected Losses  
{1 = PY 1993, 12 = PY 2004}

Policy Year	Claim Frequency	Normalized Frequency
1993	37.43	1.0000
1994	33.46	0.8939
1995	29.80	0.7961
1996	27.12	0.7245
1997	25.67	0.6858
1998	23.92	0.6390
1999	22.64	0.6048
2000	21.23	0.5671
2001	19.62	0.5241
2002	18.74	0.5006
2003	17.30	0.4621
2004	16.51	0.4410

Policy Year	1998	1999	2000	2001	2002	2003	2004
<b>x</b>	1	2	3	4	5	6	7
<b>y</b>	0.6390	0.6048	0.5671	0.5241	0.5006	0.4621	0.4410

7 Point Exponential Regression:  $y = 0.68278 * 0.93856 ^ x$

### SELECTED FREQUENCY TREND FACTOR

-6.1%

Policy Year	Frequency Trend Factor (1)	# of years to 4/1/07 (2)	Frequency Trend to 4/1/07 (3) = (1)^(2)
2002	0.9390	5.2500	0.7186
2003	0.9390	4.2500	0.7653
2004	0.9390	3.2500	0.8150