



Pennsylvania Compensation Rating Bureau

30 South 17th Street • Suite 1500
Philadelphia, PA 19103-4007
(215)568-2371 • FAX (215)564-4328 • www.pcrb.com

To: The Honorable Jessica K. Altman, Insurance Commissioner
From: Brent Otto, FCAS, MAAA, Vice President of Actuarial Services and Chief Actuary
Date: December 10, 2019
Subject: PCRB Filing C-377 – Workers Compensation Loss Cost Filing
Proposed Effective Date: April 1, 2020

This actuarial memorandum provides a discussion of the analysis performed by the PCRB reflected in the proposed changes to loss costs and other rating values in Pennsylvania contained in this filing. The loss costs in this filing are meant to apply to policies written from April 1, 2020 through March 31, 2021.

Indicated and Proposed Change -10.08%

The premium and loss experience underlying this filing has been updated with a new year of data compared to Filing C-374 (the April 1, 2019 Loss Cost filing). In this filing, a member's financial data containing issues noted in previous filings has again been excluded for valuation dates December 31, 2016, December 31, 2017, and December 31, 2018. However, the member's unit statistical data was included in this filing and in the previous filings.

Throughout this memorandum, several pieces of legislation are referenced. They are as follows: Act 44 of 1993 (Act 44), Act 57 of 1996 (Act 57), House Bill 1846 of 2014 (HB1846) and House Bill 1840 of 2017 (HB1840)¹. Also referenced is the Pennsylvania Supreme Court decision in *Protz v. WCAB (Derry Area School District)* (Protz).

This filing includes one minor change in methodology, and two other minor changes compared to past annual filings as follows:

- 1.) The methodology change is related to the calculation of partial credibility used in determining construction classification surcharges, which is described later in this memorandum.
- 2.) The indemnity loss development factors continue to be presented on a post-Act 57, pre-Protz and HB1840 basis. Similarly, the medical loss development factors are presented on a post-HB1846 basis. However, those indemnity and medical loss development factors are now calculated as a function of the reported loss development factors and "LDF adjustment factors". Using this approach compared to the approach used last year would not impact the overall result. Further information on this change can be found in Exhibit 5 – Paid and Incurred Loss Development and Trend.
- 3.) A new exhibit, Exhibit 6 – Loss Development Triangles, is now included. This exhibit displays loss development factors in loss development triangle format, which are in addition to the presentations of loss development factors found elsewhere in the filing.

¹ For consistency with prior filings, the term HB1846 is generally used in this memorandum, rather than Act 184 of 2014. Likewise, HB1840 is referenced, rather than Act 111 of 2018.

The discussion in this memorandum is organized by the following topics:

- Summary of Key Elements
- Recognition of Effects of Changes in Law
- Adherence to Actuarial Principles and Standards of Practice
- Methods
 - Loss Development
 - Trend
- Indicated Change in Loss Costs
- Employer Assessment Factor and Loss Cost Loadings
- Experience Rating Plan Parameters
- Retrospective Loss Development Factors
- Classification Loss Cost Relativities
- Excess Loss (Pure Premium) Factors, Loss Elimination Ratios and State and Hazard Group Relativities
- Closing Comments and Qualifications
- Index of Exhibits

SUMMARY OF KEY ELEMENTS

In this filing, the PCRB has employed procedures and analyses consistent with those supporting previous annual rating value filings. The following table summarizes the major components of the proposed change.

PCRB Loss Cost Filing Effective April 1, 2020		
(1)	Change in indemnity loss experience from provisions in the C-374 April 1, 2019 filing	-4.02%
(2)	Change in medical loss experience from provisions in the C-374 April 1, 2019 filing	-3.88%
(3)	Change in the indemnity trend rate from provisions in the C-374 April 1, 2019 filing	-1.00%
(4)	Change in the medical trend rate from provisions in the C-374 April 1, 2019 filing	-1.55%
(5)	Change in the Protz Adjustment from provisions in the C-374 April 1, 2019 filing	-0.01%
(6)	Change in the HB1840 Adjustment from provisions in the C-374 April 1, 2019 filing	+0.01%
(7)	Overall Change: $[(1+(1)) \times [1+(2)] \times [(1+(3)) \times [1+(4)] \times [(1+(5)) \times [1+(6)]]$	-10.08%

Each of the components identified in this chart are briefly discussed below. More thorough discussion can be found in subsequent sections of this memorandum.

Changes in Indemnity Loss Experience

The PCRB's analysis of the experience data for indemnity benefits produces estimates of loss costs that would be lower than the costs underlying the schedule of PCRB loss costs in Filing C-374. The PCRB has adjusted available historical indemnity data to be consistent with

provisions of Act 57 and applied benefit on-level factors to adjust historical indemnity data to a post-Act 44 basis. Further, factors were applied to adjust indemnity experience to a pre-Protz and HB1840 basis before proceeding with our loss development and trend analyses. The indemnity loss experience in the current filing, after adjustment to ultimate value, but before adjustment for trend, implies a change in indicated loss costs of -4.02%.

Changes in Medical Loss Experience

The PCRB has adjusted medical loss experience to a post-HB1846 basis, before proceeding with the loss development and trend analyses. The evaluation of medical loss experience in this filing, after adjustment to ultimate value, but before adjustment for trend, shows a change in indicated loss costs of -3.88%.

Changes in Trend

Similar to the C-374 April 1, 2019 loss cost filing, the PCRB’s trend provisions are based upon separate analyses of claim frequency and claim severity experience for the Pennsylvania workers compensation system. The PCRB has applied an exponential trend model fitted through the most recent available seven policy years as the basis for estimating claim frequency trend.

Claim severity is analyzed in a similar manner to prior filings. For both indemnity and medical, ultimate loss ratios at current loss cost levels are adjusted to remove frequency. The remaining severity ratios have been reviewed using commonly accepted trend methods.

The following table provides a summary of trend results and a comparison to the results in the approved C-374 loss cost filing.

PCRB Trend Comparison C-377 v. C-374		
	Indemnity	Medical
Current Analysis (C-377)		
Frequency Trend	-6.38%	-6.38%
Severity Trend	+1.32%	+2.16%
Combined (Loss Ratio) Trend	-5.14%	-4.36%
Prior Analysis (C-374)		
Frequency Trend	-6.31%	-6.31%
Severity Trend	+1.77%	+2.85%
Combined (Loss Ratio) Trend	-4.65%	-3.64%
Impact to Current Indicated Change		
	-1.00%	-1.55%

Indemnity loss ratio trend, the combination of frequency and indemnity severity trend, has decreased from -4.65% to -5.14%. This change implies an incremental change in indicated loss costs of -1.00%.

Medical loss ratio trend, the combination of frequency and medical severity trend, has decreased from -3.64% to -4.36%. This change implies an incremental change in indicated loss costs of -1.55%.

Protz v. WCAB (Derry Area School District) and House Bill 1840 of 2017 Legislation

Exhibits 35 and 36 in this filing provide the PCRB's analyses of the impacts to indemnity benefits due to the Protz decision and HB1840 seen in previous filings. The impacts due to Protz and HB1840 result in factors to change indemnity losses of 1.1337 and 0.8961, respectively. Changes in the distribution of trended ultimate loss ratios between indemnity and medical benefits in this filing, compared to the distribution seen in Filing C-374, result in a de minimis net change.

RECOGNITION OF THE EFFECTS OF CHANGES IN LAW

The PCRB has made two types of adjustments to reflect changes in law. In the first case, law change is reflected through adjustment to the historical data. In the second case, law change is reflected through factors explicitly applied in the final calculations of the overall indicated change.

Adjustment to Historical Data for Act 44, Act 57, HB1846 and HB1840

The law changes which required adjustment to historical data in preparing this filing are Act 44, Act 57, HB1846 and HB1840.

Beginning with its April 1, 1999 Loss Cost Filing, the PCRB adopted an approach of stating medical experience incurred prior to the implementation of Act 44 on an effective "post-Act 44" basis. Prior to adopting this approach, the PCRB had performed extensive testing of this approach and compared its results to alternative methods incorporated in previous loss cost filings. In its April 1, 2006 Loss Cost Filing, the PCRB made a similar adjustment to historical data for the effects of Act 44 on indemnity experience. This filing continues the procedures first implemented with the April 1, 1999 filing.

In its February 1, 1997 Loss Cost Filing, the PCRB estimated the effects of Act 57 on prospective loss costs. In subsequent loss cost filings, various technical updates and/or revisions to the original estimates of effects of this legislation have been incorporated as appropriate.

Similar to the adjustment of prior medical experience to a post-Act 44 basis in preparing the April 1, 1999 Loss Cost Filing, the PCRB adopted a comparable approach for indemnity experience in the April 1, 2000 Loss Cost Filing with respect to Act 57. These approaches have been consistently used since the filings in which they were first implemented, including this filing.

In last year's filing, C-374, similar to the approaches taken with regard to Acts 44 and 57, underlying medical losses were adjusted to a post-HB1846 basis.

In this year's filing, underlying medical losses were adjusted to a pre-HB1840 basis.

Table I, prepared from reported financial data in support of this filing, adjusted to a post-Act 57 and HB1846, pre-Protz and HB1840 basis, is shown in Exhibit 4. Details of the adjustments are provided in Exhibit 4.

Impact of the Protz Decision

The impact of the Protz decision was analyzed in Filing C-369, and is discussed in Exhibit 35. The PCRB continues to use this analysis and the resulting change to indemnity costs. The analysis results in a factor of 1.1337 to adjust to indemnity costs to a post-Protz level. Due to the change in the distribution of indemnity and medical ultimate loss ratios, the overall impact to loss costs in this filing is lower than in approved Filing C-374 (1.0620 v. 1.0623).

Impact of the HB1840 legislation

The impact of the HB1840 legislation was analyzed in Filing C-373, and is discussed in Exhibit 36. The PCRB continues to use this analysis and its resulting change to indemnity costs. The analysis results in a factor of 0.8961 to adjust to indemnity costs to a post-HB1840 level. Due to the change in the distribution of indemnity and medical ultimate loss ratios, the overall impact to loss costs in this filing is higher than in approved Filing C-374 (0.9518 v. 0.9515).

ADHERENCE TO ACTUARIAL PRINCIPLES AND STANDARDS OF PRACTICE

This filing has been developed using actuarial methods that are consistent with all applicable actuarial principles and standards of practice. Loss costs, as developed, filed and distributed by the PCRB represent estimates of future costs. These estimates rely on projections of loss experience (claim costs) to the prospective time period during which they will be in effect. That is, they are estimates of the costs of claims that are made under workers compensation insurance policies to be in effect from April 1, 2020 to March 31, 2021. The ultimate, true value of these claims will not be known until they have all closed, several decades from now. As a result, estimates of the future costs must be used. Adherence to actuarial principles and standards of practice ensures the reasonableness of the estimates, along with their compliance with regulatory requirements.

Four principles are provided in the Casualty Actuarial Society's Statement of Principles Regarding Property and Casualty Insurance Ratemaking. The fourth principle states:

"A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer."

There are many Actuarial Standards of Practice (ASOPs) applicable to this filing. These documents set forth the standards, including appropriate considerations, that guide an actuary in developing and presenting the methods and calculations contained in this filing. These include ASOPs regarding data quality, credibility, trend, risk classification, and communications.

In addition, core principles for estimating future payments on claims are found in the Casualty Actuarial Society's Statement of Principles Regarding Property and Casualty Unpaid Claims Estimates. The first principle states:

"An unpaid claims estimate for a defined group of claims is reasonable if it is derived from reasonable assumptions and appropriate methods or models and the

reasonableness of the estimate has been validated by appropriate indicators or tests, all evaluated consistent with the review date and valuation date in the context of the intended measure.”

Unpaid claim estimates are discussed in this filing in the Loss Development section. In November 2014, the Casualty Actuarial Society revised the Statement of Principles Regarding Unpaid Claims Estimates, removing reference to several considerations that now appear in ASOP 43. While this ASOP specifies that it does not apply to “estimates developed solely for ratemaking purposes,” the PCRB has nevertheless adhered to the spirit of this standard. As such, an additional document is attached that addresses a request from the Pennsylvania Insurance Department to provide a discussion of any limitations that may have had a substantive impact on the unpaid claims estimates included in the filing.

METHODS

The ratemaking approach in this filing has three overarching steps:

- Gather premium and claim data from prior periods and project it to its ultimate value. This is commonly known as premium and loss development.
- Project the resulting estimated ultimate loss ratios for both frequency and severity trend to the midpoint of the future policy period.
- Make any other adjustments necessary to reflect known trends or changes impacting premium or claims.

LOSS DEVELOPMENT

This filing uses premium and loss experience from recent policy years to estimate the costs of the upcoming policy period, which starts April 1, 2020. Using experience from prior years is perhaps the most common approach to developing estimates of future costs in property and casualty insurance ratemaking, and relies on the basic assumption that past experience is a key source of information and insight regarding future costs.

In this filing, the PCRB has applied both the case incurred loss development and the paid loss development methods in its analysis of loss experience from prior policy periods. The PCRB has selected the average of these two methods in its estimate of future costs. The average provides a balance between the different results of the case incurred and the paid loss development methods. Results of these loss development methods are set forth in detail in Exhibits 5, 7 and 10. The data used to calculate the two most recent sets of development factors (link ratios) is shown in Exhibit 4.

Data in Exhibit 4 is organized so that policy year losses for a given stage of development, used to calculate development factors, are from a common population of companies. In order to make the best use of available data, the population of companies used for one stage of development is allowed to differ from the population for other stages of development. Exhibit 4 provides the data for two stages of development: policy years valued as of 12/31/16 developing to values as of 12/31/17; policy years valued as of 12/31/17 developing to values as of 12/31/18. These are the two stages of development used to select loss development factors in this filing. The development factors calculated in this fashion are shown in columns labeled, “Ratio to Prior Year.”

Exhibit 5 shows the development factors calculated in Exhibit 4, along with several sets of factors from prior years for comparison. The selected factors for indemnity and medical, both paid and incurred, are the average of the factors for the latest two stages of development (from Exhibit 4).

Tail factors for beyond the 30th report are determined for incurred loss development in Exhibit 7, using a decrement method. The tail factors for paid loss development are based on two calculations in Exhibit 5. First, the ratio of incurred loss at the later valuation at 30th report is divided by the paid loss at the earlier valuation at 29th report. This ratio can be seen in the column labeled, "Pd-Inc. LDF." Second, the tail factor for incurred loss beyond the 30th report is also used for paid development beyond the 30th report. That is, paid loss development factors are used through the 29th report, developed to the incurred level at the 30th report, and then developed to ultimate using the incurred tail factor for beyond the 30th report. The individual development factors for each report are accumulated into report-to-ultimate factors, shown in Exhibit 5 as "Cum LDF". The product of the report-to-ultimate factors and the most recent valuation of paid loss or case incurred loss, as appropriate, produces estimates of ultimate loss for all policy years displayed.

This process produces estimates of ultimate loss for both indemnity and medical on both an incurred basis and a paid basis. The resulting projected ultimate losses can be seen on Exhibit 5, Page 7 for indemnity and Page 21 for medical. The resulting projected ultimate loss ratios appear on Exhibit 5, Page 8 for indemnity and Page 22 for medical.

In summary, the paid loss development method and the incurred loss development method provide important insight into the costs of the upcoming policy period. The practice of using the average of the two methods, as is done in this and in prior filings, strikes a balance between the two and utilizes the strengths of both methods: the paid loss development method relies on actual payments and payment patterns, while the incurred loss development method uses actual payments plus the amounts that insurers have identified as the additional amounts to be paid on a case-by-case basis.

TREND

This filing incorporates adjustments for four types of trend, or the inflationary (deflationary) forces that affect costs and the methods of measuring and projecting costs: exposure trend, frequency trend, indemnity severity trend, and medical severity trend.

Exposure Trend

In this filing, as has been done in prior filings, standard earned premium is calculated at current loss cost levels. This removes the impact of loss cost level changes. The remaining trends in exposure are matched to trends in costs through loss ratios. By dividing losses for a policy year, either on a paid or case incurred basis, by premium at current levels, the loss-based costs of providing workers compensation coverage are directly paired with the premium for the coverage. When loss ratios rise, then costs are rising relative to premium, and when they decline, the costs are declining relative to premium, exclusive of filed loss cost changes. Thus, the loss ratio methods used in this filing implicitly reflect premium trends due to exposure changes. The loss ratios are shown in Exhibit 5, Page 8 for indemnity and Page 22 for medical.

Frequency Trend

Exhibit 8 provides the analysis of frequency trend. Indemnity claim counts are used as a consistent measure for frequency since these claims include those with indemnity and medical benefits. Medical only claims are not used here to reduce the volatility they bring. (The cost of medical only claims is incorporated later in the medical loss ratios.) Separate analyses are shown; the first excludes large deductible business while the second includes it. This exhibit also includes graphs of frequency using both approaches, along with non-deductible business broken down by industry group.

Consistent with prior filings, the PCRB has selected the seven-year exponential trend, as shown on Exhibit 8, Page 1 (see "PY11-PY17".) The resulting frequency trend, -6.4%, is lower than the result in Filing C-374, which was -6.3%. As can be seen in the graphs in Exhibit 8, the frequency points show a shallower drop in the more recent years. This can also be deduced from the several different exponential fits over shorter and longer periods of time. The shorter, more recent periods show higher frequency trend estimates as a result of the shallower points in the more recent observations.

Claim frequency ("#Claims per \$1 million") in Exhibit 8 is reproduced in Exhibit 5, Page 8. These are actual frequency measures, not fitted. The figures are normalized to show them relative to Policy Year 2006. The frequency component of indemnity and medical trend is removed by dividing the indemnity loss ratio and the medical loss ratio by normalized frequency. The resulting indemnity severity and medical severity ratios show the resulting severity over time. In other words, by holding exposure trend and frequency trend constant, the remaining severity trends may be observed and analyzed.

Indemnity Severity Trend

Using the severity ratios discussed above, the PCRB has applied an exponential trend model to the most recent seven available policy years to estimate indemnity claim severity trend. The indicated indemnity severity trend is +1.32% per year. This is lower than the selected indemnity severity trend in approved Filing C-374, which was +1.77%. Exhibit 5, Pages 8 through 15, provides details of the severity ratios and the variety of analyses applied. The use of the seven-point exponential trend in this filing is consistent with the method and selection in prior filings.

Medical Severity Trend

Using the severity ratios discussed above in the Frequency Trend section, the PCRB has applied an exponential trend model to the most recent seven available policy years to estimate medical claim severity trend. The indicated medical severity trend is +2.16% per year. This is lower than the selected medical severity trend in approved Filing C-374, which was +2.85%.

Exhibit 5, Pages 22 through 29, provides details of the medical severity ratios and the variety of analyses applied. The use of the seven-point exponential trend in this filing is consistent with the method and selection in prior filings.

INDICATED CHANGE IN LOSS COSTS

Exhibit 1 presents the derivation of indicated changes in collectible loss costs effective April 1, 2020. The indicated change in collectible loss costs is derived based on estimates of prior policy year loss ratios, including the effects of Act 44 on both indemnity and medical benefits, of

Act 57 on indemnity benefits, of HB1846 on medical benefits and of HB1840 on indemnity benefits. The estimated policy year loss ratios are trended forward to the midpoint of the prospective policy period (April 1, 2021), resulting in a loss ratio of 0.8926. The impact of the Protz decision and the HB1840 legislation to indemnity benefits, reflected through factors of 1.1337 and 0.8961, respectively, result in a loss ratio of 0.8992, which represents a change in collectible loss costs of -10.08%.

Recognizing expected changes in experience modifications during the period for which the proposed loss costs will apply, the average change proposed in manual loss costs is -10.02%. By industry group, the proposed average changes in manual loss costs effective April 1, 2020 are:

Manufacturing	-9.94%
Contracting	-9.93%
All Other	-10.09%

These indicated changes to manual loss costs were derived by industry group on Page 1 of Exhibit 1, using information regarding the historical operation of the Experience Rating Plan (see Exhibits 18 and 19 of the enclosures to this filing). Anticipated collectible premium ratios are compared to provisions in current loss costs, with the ratios used to adjust the proposed change in collectible loss costs to appropriate manual levels on the bottom of Page 1 of Exhibit 1.

EMPLOYER ASSESSMENT FACTOR AND LOSS COST LOADINGS

The PCRB has reviewed experience pertinent to the Employer Assessment Factor to be applied to Pennsylvania workers compensation business in accordance with Act 57 of 1997. Exhibit 13 presents a summary of the PCRB's determination of the appropriate Employer Assessment Factor. The proposed employer assessment provision is 2.02%, an increase from the currently-approved provision of 1.83%. The increase in the provision was due to an increase in the Administration Fund assessment.

The provision for assessments supporting the Office of the Small Business Advocate, which continues to be part of proposed PCRB loss costs, is proposed to remain at 0.01%.

PCRB loss costs continue to include adjustments for the effects of the Merit Rating Plan and the Certified Safety Committee Program. The Merit Rating Plan increment factor is proposed to be 0.0034, which is slightly higher than the currently-approved factor of 0.0033. The Certified Safety Committee Program increment factor is proposed to change from 0.0100 to 0.0102. These proposed values are shown in Exhibit 13 and are separately derived in Exhibits 15 and 16.

This filing also proposes to update classification loss costs to reflect indicated loadings for the Pennsylvania Construction Classification Premium Adjustment Program (PCCPAP). The PCCPAP program is intended to be revenue neutral and reallocates premium obligations between low- and high-wage employers without either increasing or reducing the overall amount of premium collected in the affected classifications.

In this filing, there was a change made to the PCCPAP regarding the calculation of credibility for each construction class. In the calculation of proposed surcharges, the partial credibility formula has been revised to be the square root of (Number of policies divided by the Full Credibility

standard) compared to the previous formula, which was (Number of policies divided by the Full Credibility standard). This was done to satisfy a basic criterion for credibility found in actuarial literature which says that, as the size of the risk increases (all else being equal), the credibility should increase at a decreasing rate.

For this filing, the PCRB analyzed participation in this program and the level of credits generally obtained by participating employers in each classification using the most recent available experience. Results of that analysis and proposed PCCPAP loads on loss costs by classification are included in Exhibit 14.

Available experience, as summarized on Exhibit 14, produces a revised average indicated PCCPAP offset of 2.43% of loss costs, a decrease from the current average of 2.78%.

Exhibit 14 reveals that there continue to be material differences between construction classifications in terms of the portion of employers receiving PCCPAP credits and/or the level of credits provided to such employers. Proposed offsets range from 0.11% in Code 662, Appliance Electrical – Service or Repair, to 6.97% in Code 649, Ceiling Installation – Suspended Acoustical Grid Type.

EXPERIENCE RATING PLAN PARAMETERS

The Experience Rating Plan provides a prospective means of recognizing differences in loss potential between employers. This recognition is accomplished by means of a comparison of each qualifying employer's loss and exposure experience over a specified period of time (experience period) to the average experience of all employers engaged in similar businesses.

As part of each loss cost filing, the PCRB reviews the results of its Experience Rating Plan and proposes certain updates or revisions to the plan as are deemed necessary or appropriate to maintain the effective operation of the plan.

Exhibit 18 presents a detailed analysis of results of the Experience Rating Plan within each industry group over the most recent available five years. These analyses are set forth in tabular form by premium size group and experience modification range by year.

Exhibit 19 presents summaries of collectible premium ratios and details of the derivation of expected loss cost factors supporting the Experience Rating Plan parameters proposed in this filing.

Final Experience Rating Plan parameters proposed in this filing are shown in Exhibits 27 and 28.

RETROSPECTIVE LOSS DEVELOPMENT FACTORS

Because loss valuations tend to change (and generally to increase) over time, some retrospective rating plans provide for application of development factors to preliminary loss reports in computing retrospective premiums. The PCRB has historically presented appropriate voluntary loss development factors based on aggregate PCRB experience as part of its filings for use by carriers and insureds in negotiating and agreeing upon their retrospective rating plans.

Exhibit 26 presents the PCRB's proposed optional retrospective loss development factors on an unlimited basis. In addition, the PCRB includes, in its Manual, reference to the formula for

adjusting unlimited loss development factors to a limited basis. That formula is also shown in Exhibit 26 for reference.

CLASSIFICATION LOSS COST RELATIVITIES

Workers compensation insurance is written under a classification system that provides varying rating values for different types of businesses, based on the risk of loss inherent in those businesses subject to each distinct classification. As a result, any overall loss cost indication must ultimately be apportioned to each individual classification with due recognition given to the comparative experience of employers subject to each classification.

Exhibit 17 provides an overview of the classification loss cost formulae used in preparation of this filing. These procedures are consistent with previously-submitted and approved methods.

The PCRB applies “swing limits,” which limit fluctuations in classification loss costs to no more than 25 points above and below the average loss cost change within each industry group. In addition, the PCRB applies a testing procedure to identify significant changes in classification loss cost changes relative to overall average indications year-after-year and intervenes where such indicated changes exceed selected amounts. These swing limits apply to “pure” loss costs, which include an adjustment for the operation of the Experience Rating Plan. The values so determined are subsequently adjusted to include appropriate provisions for the following items:

- Offsets for net Merit Rating Plan credits
- Offsets for Pennsylvania Construction Classification Premium Adjustment Program credits
- Offsets for Certified Safety Committee credits
- Assessment for the Office of the Small Business Advocate

The Index to Classification Exhibits and the accompanying Class Book present detail of the experience and loss cost indications derived for each classification in this filing. Within the Index to Classification Exhibits, certain parameters of the classification loss cost review process are presented, and the bases for establishing credibility tables applicable to both payroll and expected losses are provided. Summary unit statistical data is also included in Exhibits 20a, 20b and 20c.

Item 8 within the Index to Classification Exhibits identifies several classifications for which some form of selection or other intervention in the standard procedures was deemed appropriate. The bases for loss cost selection include special pricing procedures (for example, the explosives, aircraft, attendant care and temporary staffing classifications²), allocation of loss costs between ratable and non-ratable components, recognition of statutory provisions for occupational disease benefits, combinations of separately-defined codes for purposes of determining loss costs and/or responses to data reassignments occurring during the latter stages of classification pricing analysis.

Item 13 of the Index to Classification Exhibits presents “Supplemental Class Book Pages” detailing the derivation of loss costs for classifications treated in combination or subject to reassignments of data from/to another classification or classifications. The Class Book presents

² The temporary staffing classification methodology incorporated in this filing was filed with the Pennsylvania Insurance Department on April 28, 2016, in Filing No. 274, and approved on June 24, 2016.

details of the experience and loss cost indications derived for each individual classification in this filing, performed without special consideration using the proposed procedures.

The loss costs developed in accordance with the procedures set forth in Exhibit 17 and presented in portions of the Index to Classification Exhibits and the Class Book exclude the following considerations previously discussed in this letter:

- PCCPAP offsets from Exhibit 14
- Merit Rating Plan credit offsets derived in Exhibit 15
- Offsets for Certified Safety Committee credits derived in Exhibit 16
- Assessment loading for the Office of the Small Business Advocate shown in Exhibit 13

The loss costs prior to application of these latter considerations may be thought of as “pure” loss costs and are the values to which the loss cost change limitations or “swing limits” have been applied.

Consistent with prior filings, consideration has been given to past filings’ changes by classification relative to average or overall indications in making final rating value selections. This “secondary capping” procedure is meant to mitigate substantial fluctuations above and below average levels between successive filings for a limited number of classifications. This procedure also includes an additional step to prevent an increase beyond an increase resulting from secondary capping, or a decrease beyond a decrease resulting from the secondary capping. For this filing, no classifications were revised due to the secondary capping procedure.

Exhibit 28 presents a complete table of proposed loss costs and expected loss factors pertinent to the Experience Rating Plan. Exhibit 29 presents both summary results and classification detail of the PCRB’s tests of proposed loss costs against intended levels. Exhibit 30 depicts in graphic form the distribution of percentage changes in classification loss costs on both an indicated and proposed basis. Classifications subject to capping are also identified.

EXCESS LOSS (PURE PREMIUM) FACTORS, LOSS ELIMINATION RATIOS AND STATE AND HAZARD GROUP RELATIVITIES

PCRB loss cost filings typically include rating values for various rating plans affected by the size of loss for individual claims or occurrences. Limitations applicable to the amount(s) of loss can be used in computing a retrospective premium. Other portions of this analysis facilitate the application of standard tables to Pennsylvania business.

This filing has updated parameters associated with the ongoing set of seven hazard groups based on the most recent available experience, as discussed below.

Exhibit 22 shows empirical size-of-loss distributions for Pennsylvania workers compensation business. Actual excess loss indications for loss levels below \$500,000 were combined with excess loss indications derived by fitting either Single Parameter Pareto distributions or Lognormal distributions to empirical data by type of loss (death, permanent total, permanent partial and temporary total).

Exhibit 23 shows the derivation of excess loss (pure premium) factors from the loss distributions produced in Exhibit 22. Average claim size by hazard group and type of injury were used,

together with incurred loss weights by type of injury within each hazard group, to derive excess loss factors at selected size-of-loss limits by hazard group for Hazard Groups A through G.

Exhibit 24 presents the derivation of state and hazard group relativities for Hazard Groups A through G in the proposed filing.

Offering small deductible coverages at certain specified amounts is mandatory in Pennsylvania. PCRB filings provide loss elimination ratios computed consistent with the mandatory deductible levels of \$1,000, \$5,000 and \$10,000. Exhibit 25 shows the results of the updated analysis with proposed loss elimination ratios effective April 1, 2020.

CLOSING COMMENTS AND QUALIFICATIONS

PCRB Filing C-377 fully and fairly reflects the most recent available experience indications in Pennsylvania, together with all initial and continuing effects of Act 44, Act 57, HB1846 and HB1840 as well as the impact of the Protz decision. The PCRB respectfully requests a timely review of this filing, allowing implementation on a new and renewal basis **effective April 1, 2020**. A timely review will allow adequate advance notice of final loss costs and related rating values to all participants in the Pennsylvania marketplace. Toward that objective, the PCRB will be pleased to answer any questions or provide any available supplementary information which you or your staff may require.

This filing has been developed by and under the direction of Brent Otto, FCAS, MAAA and Kenneth Creighton, ACAS, MAAA. They both meet the Qualification Standards of the American Academy of Actuaries to provide the actuarial opinion contained within this filing.

Please direct all questions to:

Brent Otto
Vice President of Actuarial Services
and Chief Actuary
botto@pcrb.com
215-320-4451

Kenneth Creighton
Director of Actuarial Services
kcreighton@pcrb.com
215-320-4924

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