



Pennsylvania Compensation Rating Bureau

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To: The Honorable Jessica K. Altman, Insurance Commissioner
From: Brent Otto, FCAS, MAAA, Vice President of Actuarial Services and Chief Actuary
Date: December 8, 2020
Subject: PCRB Filing C-378 – Workers Compensation Loss Cost Filing
Proposed Effective Date: April 1, 2021

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, 2021 through March 31, 2022.

Indicated and Proposed Overall Change -3.02%
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The premium and loss experience underlying this filing has been updated with a new year of data compared to Filing C-377 (the April 1, 2020 Loss Cost filing). In this filing, a portion of a member's financial data containing issues noted in previous filings has again been excluded for valuation dates December 31, 2017, December 31, 2018, and December 31, 2019. However, the member's unit statistical data was included in this filing, as it was in 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)*.

The indemnity losses in this filing are adjusted to a post-HB1840 basis. That is, the underlying indemnity losses are adjusted to reflect Pennsylvania law after Act 57, *Protz* and HB1840. The medical losses continued to be reflected on a post-HB1846 basis. This methodology change carried no impact on the overall indication.

This filing also includes several methodology changes that impact the indication, compared to last year's filing. These are listed and supported in detail below.

- 1.) The claims counts used in the frequency analysis have been developed to an ultimate level rather than using claim counts at the 1st report level used previously. This change carried a -0.2% impact on the overall indication (further details found on page 9).
- 2.) The paid and incurred tail attachment points were moved from the 30th report to the 20th report for both indemnity and medical loss development. This change carried a -1.4% impact on the overall indication (further details found on pages 7).

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.

- 3.) A second incurred tail method was added, an exponential fit, that was then averaged with the current incurred tail method. This change carried a 0.7% impact on the overall indication (further details found on pages 7 and 8).
- 4.) The current paid tail bridge factor (paid to incurred ratios) used to determine the paid tail in conjunction with the incurred tail was replaced by a new method. The new method uses a curve fit applied to the paid-to-incurred ratio triangle. This change carried a -1.3% impact on the overall indication (further details found on page 8).

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

Aside from the methodology changes noted above, 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.

Components of the Indicated Change in Loss Costs		
	Component	Impact on Indication
1	Indemnity Loss	-2.51%
2	Medical Loss	-3.19%
3	Indemnity Trend	+1.25%
4	Medical Trend	+1.49%
	Overall Indicated Rate Change	-3.02%
Note that the total results from converting the percentages to factors (e.g., -3.02% is 0.9698, in factor form) and calculating the product of the four factors.		

Each of the components identified in this chart are briefly discussed below with more thorough discussion 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-377. 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 post-HB1840 basis before proceeding with the 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 -2.51%.

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 -3.19%.

Changes in Trend

Similar to last year's 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 last year's loss cost filing.

PCRB		
Trend Comparison Current v. Prior		
	Indemnity	Medical
Current Analysis (C-378)		
Frequency Trend	-6.25%	-6.25%
Severity Trend	+1.77%	+2.67%
Combined (Loss Ratio) Trend	-4.59%	-3.75%
Prior Analysis (C-377)		
Frequency Trend	-6.38%	-6.38%
Severity Trend	+1.32%	+2.16%
Combined (Loss Ratio) Trend	-5.14%	-4.36%
Impact to Current Indicated Change		
	+1.25%	+1.49%

Indemnity loss ratio trend, the combination of frequency and indemnity severity trend, has increased from -5.14% to -4.59%. This change implies an incremental change in indicated loss costs of +1.25%.

Medical loss ratio trend, the combination of frequency and medical severity trend, has increased from -4.36% to -3.75%. This change implies an incremental change in indicated loss costs of +1.49%.

RECOGNITION OF THE EFFECTS OF CHANGES IN LAW

As in past filings, the PCRB has made adjustments to reported experience reflecting changes in law to the historical data. As mentioned previously, this includes Act 44, Act 57, HB1846 and HB1840. This also included adjustments due to Protz.

In last year's filing, underlying indemnity losses were adjusted to a pre-Protz basis. In this year's filing, indemnity losses are now adjusted to a post-HB1840 basis. Table I, prepared from reported financial data in support of this filing, adjusted to a post-HB1840 and HB1846 basis, is shown in Exhibit 4. Details of the adjustments are provided in Exhibit 4.

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, 2021 to March 31, 2022. 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.

This filing relies on data provided by our member companies; however in accordance with ASOP No. 23 Data Quality, the data has been reviewed for reasonableness and consistency. Some examples of review include, but are not limited to: Identifying and investigating questionable data from the 19 largest carrier groups in Pennsylvania as well as in total for all carriers; comparing the current premium and loss data to the data used in the prior analysis; comparing loss development patterns and several reserving diagnostic triangles.

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. Below is a discussion of limitations that may have a substantive impact on the unpaid claims estimates included in the filing.

The PCRB notes that the estimates for unpaid claims included in the referenced filing are inherently uncertain. This uncertainty stems from a dependence of the amount of future claims payments on facts and circumstances that are unknown at this time. The PCRB believes that the following additional limitations may also apply.

Aggregate Data

The PCRB's filing contains data and information for the combined experience of carriers in the PCRB's database. The policy year data valued as of December 31, 2019 used to calculate the overall loss cost indication in the April 1, 2021 filing was based on a majority of companies in the

PCRB's database. The total Pennsylvania workers compensation market share of those companies was approximately 99%. This compared to market shares of 97%, 94% and 94% in the April 1, 2020, April 1, 2019 and January 1, 2019 Interim loss cost filings, respectively. Not all companies' financial call data is used in the filing due to data quality issues or because certain companies/groups did not submit financial calls to the PCRB.

As noted elsewhere in this filing, a portion of a member's financial data containing issues noted in previous filings has again been excluded for valuation dates December 31, 2017, December 31, 2018, and December 31, 2019. However, the member's unit statistical data was included in this filing as with previous filings.

Data by carrier or insured is not disclosed in the filing to protect the proprietary and trade secret information of these entities. However, the PCRB acknowledges that the experience of the PCRB's individual member companies or insureds may be different (or may be perceived to be different) from the aggregate experience of the PCRB's total membership.

Legislative Changes

The impact of legislative adjustments over time is another area that can impact unpaid claim estimates. The uncertainty inherent in the estimation of legislative reform implies that a range of reserves can be actuarially sound. The true value of the impact of these reforms may not be known until all claims have been settled.

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, 2021. 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.

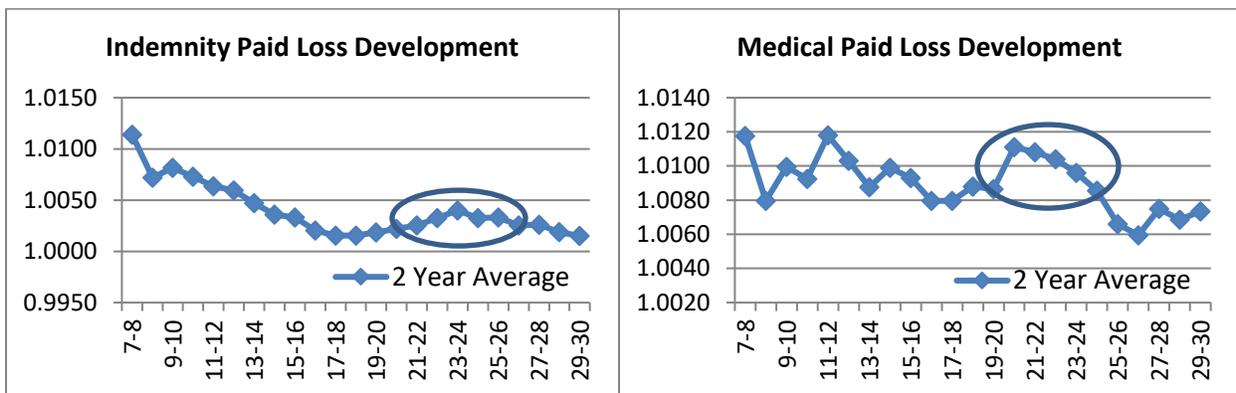
Data in Exhibit 4 is organized so that policy year losses for a given stage of development, used to calculate development factors, are from a common population of companies. In order to make the best use of available data, the population of companies used for one stage of development is allowed to differ from the population for other stages of development. Exhibit 4 provides the data for two stages of development: policy years valued as of 12/31/17 developing to values as of 12/31/18; policy years valued as of 12/31/18 developing to values as of 12/31/19. 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).

As noted above, this year's filing contains three methodology changes related to paid and incurred tail factors. The first change related to moving the tail attachment point from the 30th to the 20th. This change results in several benefits.

- 1.) Legislative Act 44 (1993) and Act 57 (1996) disrupted the development patterns and volatility seen in the paid and incurred loss development triangles. Moving the attachment point to the 20th report allows more methods to be considered to better address these two distinct periods.
- 2.) Setting the attachment point at the 20th versus the 30th, provides more data and the opportunity to deploy different methods that are more appropriate for handling the observed higher levels of volatility and shifting patterns in portions of the triangle with fewer (less than 2%) of the claims remaining open.
- 3.) Aligns with all other states attach tail factors at either the 19th or 20th report.

Appendix A shows several graphs using Cook's distance to measure volatility by report level, year, and loss types. In general, one would expect the volatility to drop as most of the claims are closed, however the graphs show often similar or even higher levels of volatility (Cook's Distance) in the pre-reform years. The two paid loss development graphs below also show the unusual jump in the paid patterns between the 20th and 30th report periods that further supports this point.



Once the new tail attachment point was determined, a second method was added to help project the incurred loss tail factors. After researching several commonly used distributions and methods for determine workers compensation tail factors including exponential decay, inverse power curve, growth methods, and others, the exponential decay model was selected. This is a

commonly used model for projecting tail factors, along with having the appeal of being in the same family of distributions as our current method that has worked reasonably well historically. This method allows for varying levels of development pattern stability (number of data points used in the model) or year-over-year observed volatility in the data (number of years averaged) between indemnity and medical. Exhibit 7, Pages 11-12 show the two exponential curve fits for indemnity and medical. Our prior incurred tail method was adjusted to be applied to an attachment point at the 20th report, and then the final incurred tail factor selections is the result of averaging the two methods as shown on Exhibit 7, Page 1.

The tail factors for paid loss development are based on the incurred loss tail factors and a paid-to-incurred ratio or paid "bridge factor". Our previously used bridge factor placed significant weight on a few points at the 29th report. As discussed earlier, this makes the calculations subject to a higher degree of volatility. The approach taken in this filing is an improvement over the prior method. A curve fit is performed on a broader set of data based on the paid-to-incurred ratio triangle to better determine the bridge factors for indemnity (Exhibit 5, Page 9) and medical (Exhibit 5, Page 24) losses. The curve fit projected paid-to-incurred ratios to the 50th report level, when virtually all of the claims have been settled. Appendix B also shows graphically the two selected curve fits, and the resulting bridge factors based on the average of the points between the 20th and 50th reports. The bridge factors are then combined with the paid development point at the 19th report as well as the incurred tail shown at the 20th report.

That is, paid loss development factors are used through the 19th report, developed to the incurred level at the 20th report, and then developed to ultimate using the incurred tail factor for beyond the 20th 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 22 for medical. The resulting projected ultimate loss ratios appear on Exhibit 5, Page 8 for indemnity and Page 23 for medical.

In summary, the paid loss development method and the incurred loss development method provide important insight into the projected 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. The tail factor methodology changes introduced with this filing were done, in part, to address prior concerns mentioned in the actuarial review provided by the Office of Small Business Advocate. They observed a divergence between the paid and incurred loss ratio projections, and these changes have addressed the divergence between the methods by addressing the significant shift and volatility in the development patterns observed both pre and post the significant reforms that took place in 1993 (Act 44) and 1996 (Act 57).

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.

As mentioned earlier, the analysis contained a change that develops the claim counts used in the frequency analysis to an ultimate level. It is considered actuarial best practice to develop claim counts to an ultimate level where reasonable and consistent factors can be determined. Exhibit 8, Page 2 shows the Reported Claim Count development triangle and development factors. The statewide volume of data produces very stable and consistent factors allowing a four-year average to be selected. There was limited development beyond the 4th report, so the factors result in unity beyond that point. While this new approach did not result in a material change to the overall indication, it is considered a more actuarially sound method compared to our previous method which used reported counts at the 1st report.

Consistent with prior filings, the PCRB selected the seven-year exponential trend, as shown on Exhibit 8, Page 1 (see "PY12-PY18".) The resulting frequency trend, -6.3%, approximates the result in last year's filing, which was -6.4%. 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 2008. 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 +1.77% per year. This is higher than the selected indemnity severity trend in last year's filing, which was +1.32%. Exhibit 5, Pages 8 through 13, 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 +2.67% per year. This is higher than the selected medical severity trend in last year's filing, which was +2.16%. Exhibit 5, Pages 23 through 28, 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 Protz and HB1840 on indemnity benefits. The estimated policy year loss ratios are trended forward to the midpoint of the prospective policy period (April 1, 2022), resulting in a loss ratio of 0.9698, which represents a change in collectible loss costs of -3.02%.

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 -2.90%. By industry group, the proposed average changes in manual loss costs effective April 1, 2021 are:

Manufacturing	-3.03%
Contracting	-3.15%
All Other	-2.76%

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 2.48%, an increase from the currently approved provision of 2.02%. The increase in the provision was primarily due to an increase in the Supersedeas 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 0.0033, which is slightly lower than the currently approved factor of 0.0034. The Certified Safety Committee Program increment factor is proposed to change from 0.0102 to 0.0107. 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, the number of PCCPAP-eligible classes in Exhibit 14, pages 14.1 and 14.2, increased due to the approval of PCRB Filing No. 311, effective April 1, 2021, which expanded the PCCPAP-eligible classes to all 6xx and 26xx codes.

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 2.25% of loss costs, a decrease from the current average of 2.43%.

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 0.08% in Code 652, Carpentry – Residential, to 5.67% 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, temporary staffing and attendant care classifications), 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 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, for direct employment classifications, 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, if any. Exhibit 31 is a new exhibit which calculates temporary staffing loss costs based on the new methodology presented in PCRB Filing No. 311.

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. In this year's filing, the methodology used to calculate the state and hazard group relativities for Pennsylvania was revised. There are several reasons for this change. First, an enhancement was made to the current methodology by selecting a different complement of credibility that better balances stability and responsiveness of the indicated differentials. Second, the countrywide average severity amount used in the calculations in the past was provided by the National Council on Compensation, Inc. (NCCI). That average severity is no longer updated, so the current approach needed to be revised. Third, the changes would make the methodology more consistent with other states.

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, 2021.

CLOSING COMMENTS AND QUALIFICATIONS

PCRB Filing C-378 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, 2021**. 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.

The Honorable Jessica K. Altman
Commonwealth of Pennsylvania
December 8, 2020
PCRB Filing C-378
Page 15

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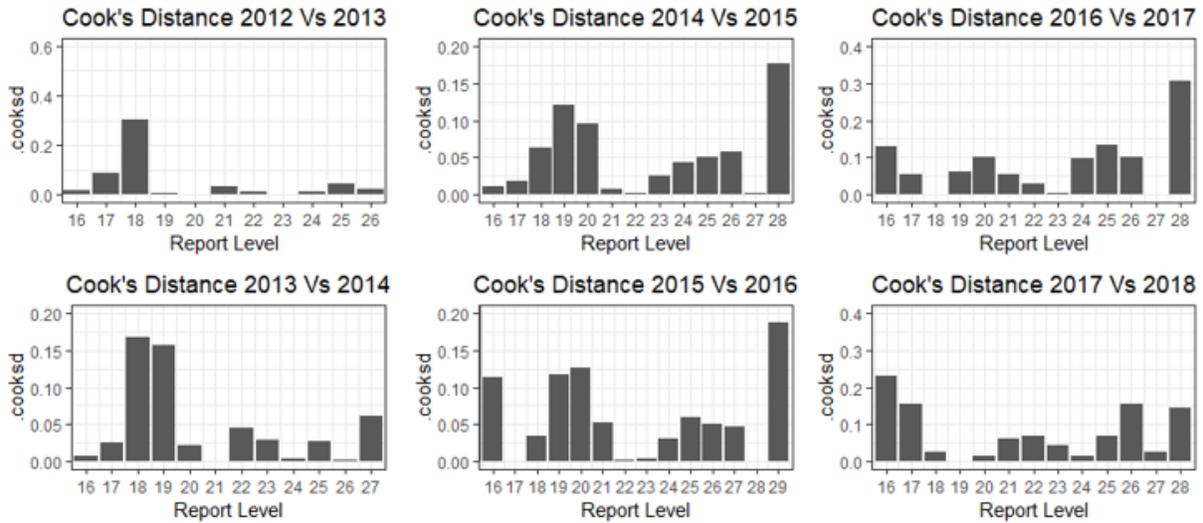
INDEX OF EXHIBITS

Brown Book	Summary of Materials for Modification of Experience
Other Supporting Classification Exhibits	
Class Book	
Exhibit 1	Indicated Change in Loss Costs
Exhibit 4	Table I - Summary of Financial Call Data
Exhibit 5	Paid and Incurred Loss Development and Trend
Exhibit 6	Loss Development Triangles
Exhibit 7	Tail Factors for Loss Development
Exhibit 8	Claim Frequencies
Exhibit 10	Graphs of Indemnity and Medical Loss Ratios
Exhibit 13	Loss Based Assessments and Employer Assessment Factor
Exhibit 14	Pennsylvania Construction Classification Premium Adjustment Program ("PCCPAP")
Exhibit 15	Merit Rating Plan Off-Balance Indications
Exhibit 16	Pennsylvania Certified Safety Committee Program Offset
Exhibit 17	Loss Cost Formulae
Exhibit 18	Review of Experience Rating Plan Results
Exhibit 19	Review of Experience Rating Plan Parameters
Exhibit 20a	Table II - Unit Statistical Data
Exhibit 20b	Table III - Unit Statistical Data
Exhibit 20c	Table IV - Unit Statistical Data
Exhibit 22	Empirical Pennsylvania Loss Distribution
Exhibit 23	Excess Loss (Pure Premium) Factors
Exhibit 24	State and Hazard Group Relativities
Exhibit 25	Loss Elimination Ratios
Exhibit 26	Retrospective Development Factors
Exhibit 27	Table B
Exhibit 28	Loss Costs and Expected Loss Factors
Exhibit 29	Tests of Indicated and Selected Loss Costs
Exhibit 30	Distribution of Loss Cost Percentage Changes
Exhibit 31	Temporary Staffing Loss Costs

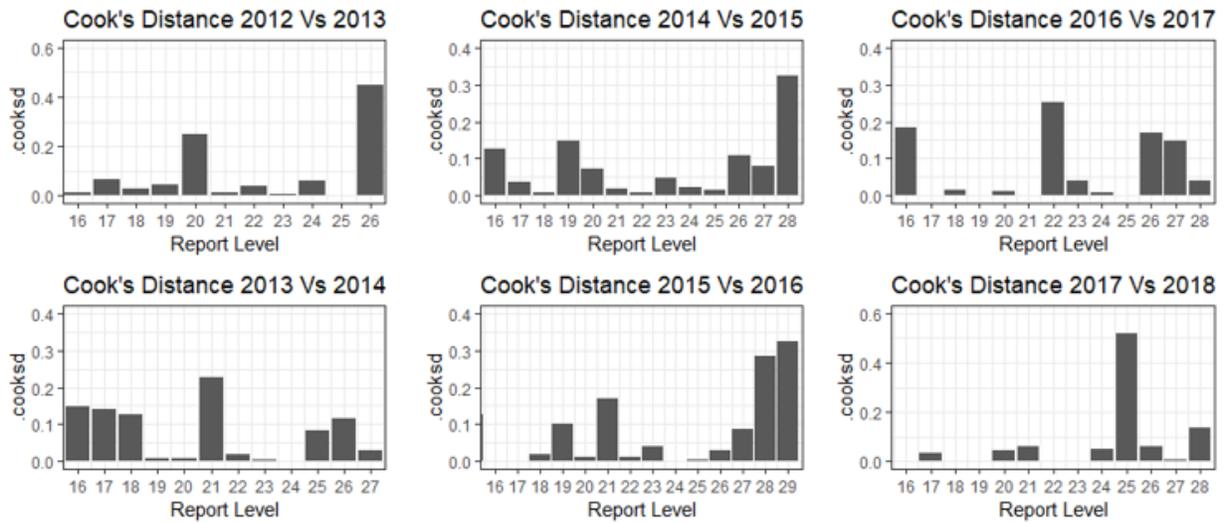
APPENDIX

APPENDIX A

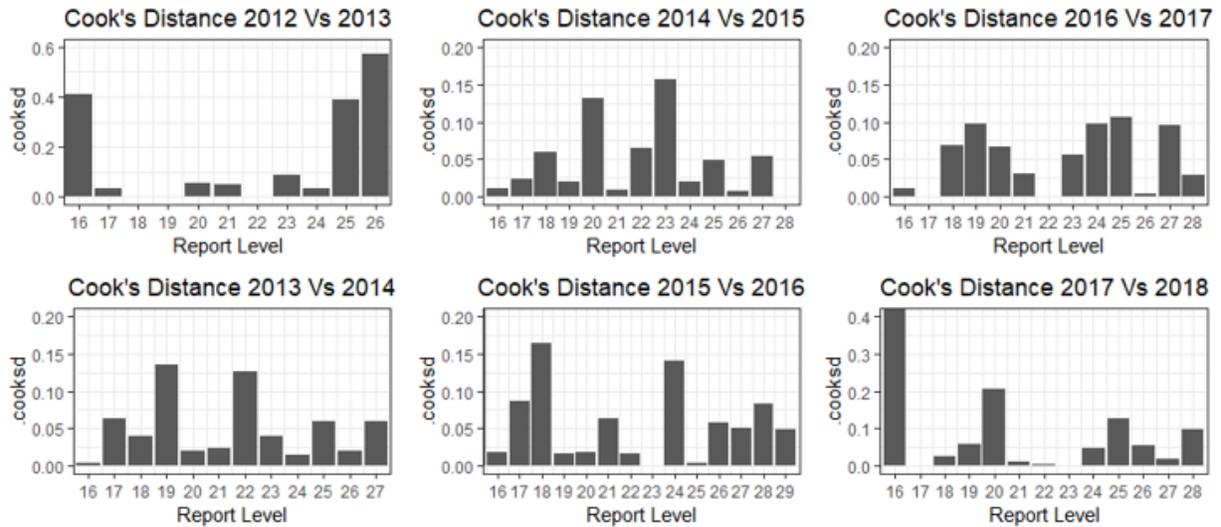
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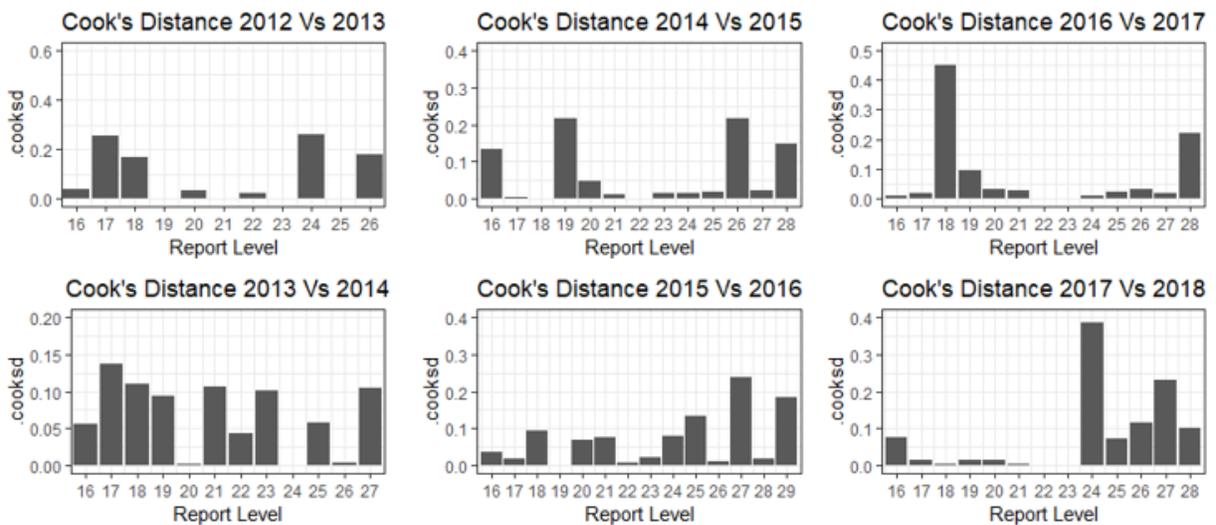
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Medical Paid



Medical Incurred



Paid Tail Bridge Factor

