September 14, 2023

Mr. Mitchell Bronson
Mr. David Martinez
Colorado Division of Insurance
1560 Broadway, Suite 850
Denver, Colorado 80202

Re: National Council on Compensation Insurance ("NCCI")
Colorado Workers Compensation Advisory Loss Costs and Rating Values Filing
Proposed Effective January 1, 2024

Dear Mr. Bronson and Mr. Martinez:

Merlinos & Associates, Inc. (M&A) has completed our review of the above-referenced Workers Compensation Advisory Loss Costs and Rating Values filing. This letter documents our review.

BACKGROUND

The NCCI submitted an advisory loss cost and rating values filing with a proposed effected date of January 1, 2024. The current loss costs and rating values have been in effect since January 1, 2023. The overall proposed average change in advisory loss costs for the voluntary market is -3.4%.

Table 1 below shows historical changes to voluntary loss costs from 2020 to 2023 and the proposed change effected January 1, 2024.

Table 1

Effective Date	Change
1/1/2020	-8.5%
1/1/2021	-8.4%
1/1/2022	-8.3%
1/1/2023	-6.1%
1/1/2024	-3.4%

The annualized average change for the 5-year period, including the proposed change, is -7.0%.

The proposed change in average voluntary loss costs consists of a 4.3% decrease due to experience and development, no change due to trend, a 0.4% increase due to benefits, and a 0.5% increase due to change in loss-based expenses. Individual class changes are capped at ±15% and are applied by industry group to which the classification belongs. The primary driver of the indicated reduction to the advisory voluntary loss costs is the continued improvement in the loss experience reflected in the experience period.

The NCCI has chosen to exclude all COVID-19 related claims for the purposes of calculating prospective voluntary loss costs. Any future pandemic-related claims will continue to be covered in the Catastrophe (Other Than Certified Acts of Terrorism) provision, as discussed below.

Per the Actuarial Certification included in the filing, the filing was prepared under the direction of Ms. Kelly Briggs, FCAS, MAAA, Executive Director and Actuary. Ms. Briggs certifies that the filing was prepared in accordance with applicable Actuarial Standards of Practice as promulgated by the Actuarial Standards Board.

RATE INDICATION: VOLUNTARY LOSS COST CHANGE

We have reviewed the methodology and assumptions used by the NCCI in calculating the proposed change in voluntary loss costs and have no actuarial objections to the proposed overall change. Below are our comments on the overall methodology, experience period used, premium adjustments, projected ultimate losses, loss-based expenses, trend, and filed indicated loss cost change.

Rating Methodology

NCCI's indications are calculated using a rating methodology similar to most states where the NCCI estimates loss costs. The overall proposed loss cost change is estimated using the state loss and payroll experience. Following that, the loss experience for each of the five industry groups is evaluated to adjust the overall statewide loss cost change to each industry group. Finally, the limited loss experience of each individual class code determines the proposed loss costs for each of the class codes, subject to swing limits around the overall industry group loss cost change. This overall methodology is consistent with the recent NCCI filings in Colorado. Additionally, NCCI's treatment of COVID-19 claims as catastrophic, and NCCI's adjustment to 2020 and 2021 wages when selecting trend factors, are consistent with NCCI's approaches in the prior two years. These more recent adjustments are discussed in more detail in the sections titled "Loss Trend" and "COVID-19" below. This methodology is reasonable.

Ultimate Losses

Unlimited indemnity and medical losses are developed to ultimate values using the reported development method. The selected unlimited loss development factors are set equal to the simple average of the five most recent development factors for all statewide losses. Loss development is performed separately for indemnity and medical.

The reported loss development method assumes that future loss emergence (i.e., payment, reporting and reserving patterns) will follow historical patterns. To test this assumption, we reviewed the following items provided by the NCCI upon request:

- Average case per open claim triangles for medical and indemnity separately,
- Paid to paid plus case loss ratio triangles for medical and indemnity separately,
- Indemnity claim closure rate triangle, and
- Paid and case losses to standard earned premium triangles for medical and indemnity separately.

It is likely that the 2019 and 2020 policy year data contains distortions, relative to all other policy years, based on the impact of COVID-19 on the claims that occurred in 2020 and 2021. It is also possible that all policy years' calendar year 2020 and 2021 data could have been impacted for similar reasons. It appears as though there has not been a significant change in the paid loss to paid plus case ratios, for either indemnity and medical losses. The average case reserve diagnostics show an increase in the average case reserves for the 2012-2014 policy years followed by generally lower average case reserves beginning in policy year 2015 and no significant change in more recent years (although policy year 2021 is slightly higher than the two prior policy years at 12 months of maturity). Additionally, our review of diagnostic triangles related to claim closure rates did not reveal any material changes that would distort estimated ultimate losses based on the reported loss development. Based on our review of the projections and the diagnostic data, we have concluded that the reported loss development method is a reasonable approach for estimating ultimate losses.

Experience Period

NCCI's indications are based on three policy years of statewide experience: policy years 2019-2021. This is a change from the use of two policy years in prior analyses due to the impact of the pandemic on policy year 2020 in the experience period. Reported losses (paid losses plus case reserves) are used as the basis for the loss development projections. This is consistent with the recent NCCI filings in Colorado. Table 2 shows the statewide indications on a policy year basis for the current filing, including the impact of the change in the loss adjustment expense provision.

Table 2

Policy Year	Indicated Change (Reported)
2019	-0.9%
2020	-9.2%
2021	0.0%

While the three most recent policy years have considerable volume, they are still immature for a long-tailed line of insurance like workers compensation. At our request, NCCI provided two additional years of analysis, policy years 2017-2018. The average indicated change from the reported losses including these additional years is -2.4% compared to the -3.4% proposed change, although the 4-year average of -3.4% is equal to the proposed change.

Table 3 below shows the indicated loss cost change by year for the most recent five policy years, including the indications using both reported and paid losses, provided as additional support (these indicated changes also include the impact of the change in the loss adjustment expense provision).

Table 3

Policy Year	Indicated Change (Reported)	Indicated Change (Paid)
2017	2.0%	3.9%
2018	-3.6%	0.0%
2019	-0.9%	0.4%
2020	-9.2%	-5.7%
2021	0.0%	-0.8%

Due to the higher estimation error associated with the latest two policy years, given the impact of the pandemic on those years, the use of the longer experience period is reasonable. Policy year 2019 is indicating a similar loss cost change as policy year 2021. This policy year includes all policies written during 2019, and as a result is the first policy year that includes loss experience during the COVID-19 pandemic, particularly for policies written later in 2019. Policy year 2020 is heavily impacted by the pandemic, and we inquired to the NCCI about whether this favorable loss experience is biasing the proposed loss costs down. The NCCI responded that they are attempting to propose a reasonable overall loss cost change, and they implicitly adjusted for this favorable 2020 policy year by both selecting the 3-year experience period and trend factors slightly higher than the long-term averages. The NCCI sensitivity-tested the selections by applying long-term trends to the 2019 and 2021 policy years, which produced an indicated loss cost change consistent with the proposed loss cost change. So, the NCCI concluded that the average loss cost change is reasonable, even if individual policy years' indications appear too high or too low. Overall, the paid loss indications would have indicated a slightly lower loss cost decrease than the reported (paid plus case) losses. The indications for these five policy years (2017-2021), along with the paid vs. reported indications, were considered in our review of the reasonability of the proposed changes. It appears as though the use of the three-year reported experience is reasonable, and reliance on the paid indications would have had a minor impact on the selections.

Unlimited vs. Limited Losses

The NCCI does not limit any claims in the preparation of the statewide loss cost indication. In a number of other states, the NCCI limits large claims based on the impact to the overall indication and replaces the actual excess portion of the losses with a provision for large losses. For small states, this limiting procedure would have the impact of reducing volatility in the statewide indications. However, given the size of Colorado, it is unlikely that large claims significantly distort the statewide indications. The use of unlimited losses in the overall state indication is reasonable and consistent with prior filings.

The NCCI does limit individual claims in the calculation of the individual class code loss costs. The current claim limit is $500,000, which is consistent with prior filings.

Analysis of Frequency and Severity

At our request, the NCCI has provided information showing the annual change in the lost-time claim frequency and severity. The following table shows this data, including both indemnity and medical severity changes.

Table 4

Policy Year	Frequency Change	Indemnity Severity Change*	Medical Severity Change*
2017	-6.3%	2.9%	-1.9%
2018	-2.7%	-3.7%	-10.6%
2019	-3.5%	2.3%	0.7%
2020	0.5%	-13.2%	-13.1%
2021	3.4%	4.7%	-1.0%

*Adjusted to common wage level

The data in table 4 suggests positive frequency trends over the past two years, which is inconsistent with our expectations given that frequency is measured relative to payroll. It is likely that these latest two years were impacted by the pandemic, and that the long-term trends are still expected to be negative. The implied policy year severity has alternated between increases and decreases over the past five policy years, although the long-term trends are still negative, when measured on a common wage level basis. The medical severity trend has been more consistently negative over the past five policy years. The diagnostics do indicate that the case reserves per open claim, for both indemnity and medical losses, are generally lower over the past handful of policy years. This does provide some support for the lower severity in recent policy years.

Statewide vs. Pinnacol Data

The NCCI has estimated the proposed loss costs using all the statewide data, including Pinnacol Assurance ("Pinnacol"). For filings with effective dates between 1/1/2010 and 1/1/2017, loss development was analyzed and applied separately to private carrier and Pinnacol data. The reason for separate analysis related to a change in Pinnacol's reporting of structured settlements, which has now been reflected in the recent development history. Because Pinnacol's market share has not changed dramatically (although it has declined from 56.9% in calendar year 2018 to 49.8% in calendar year 2022 on a written premium basis), which could otherwise bias the loss development factors, we do not have any objection to the overall loss costs rate indication being estimated on a statewide basis.

We reviewed supplemental information to determine if there is a significant difference in loss experience between Pinnacol and the rest of the industry. The data provided suggests that Pinnacol has had on-level loss ratios approximately 12% higher than the private carriers for policy years 2013 through 2021, relative to statewide loss costs. (The actual historical loss ratios are not necessarily different between private carriers and Pinnacol, based on this information.) This experience indicates that the proposed loss costs are higher than if they were determined using only the non-Pinnacol experience and lower than if they were based on the Pinnacol's experience alone. However, because the current methodology is consistent with past years and represents the total statewide experience, the proposed loss cost change is reasonable. This issue is also discussed below in the "Residual Market" section of this review.

Loss Trend

The NCCI proposes no change to the indemnity loss trend factor or the medical loss trend factor. The proposed annual loss trends are shown in Table 5 below:

Table 5

	Current	Proposed
Indemnity	-4.5%	-4.5%
Medical	-5.0%	-5.0%

Given the impact that COVID-19 had on 2020 and 2021 wages and employment, the NCCI noted unusually large shifts in the average weekly wage ("AWW") in the state and countrywide. While some of the additional increase reflected changes in the mix of payroll within an industry, a portion of the change is attributed to changes in the mix across sectors. The primary cause identified by the NCCI in a previous filing was the significant decline in employment in the hospitality and leisure segment of the economy, which has average wages that are lower than average. Because loss costs and loss trends are relative to payroll, failure to adjust for this abrupt shift would bias the trend and loss cost indications. For the purposes of calculating the trend in Appendix A-III, the NCCI adjusted the 2020 and 2021 AWW to reflect the impact of COVID-19 on the payroll across sectors by removing the change in payroll that is attributed to the change in the mix across sectors. The loss trend indications relied upon in the selection of the trends used these adjusted 2020 and 2021 AWW amounts. No AWW adjustment was deemed necessary for 2022. The NCCI has stated the adjustment is expected to be immaterial due to the long period that the NCCI considers in their trend selections, and we have concluded this adjustment is reasonable.

As part of their selection process, the NCCI reviewed the exponential trend fits for periods ranging from 5 to 15 years for the loss ratio, along with the frequency and severity components. Despite the increase in the frequency and indemnity severity for policy year 2021, the NCCI selected trends equal to the previous selections. However, due to the impact of the pandemic on the policy year 2019 and 2020 data, this is not unreasonable. The NCCI has selected both indemnity and medical trends that are consistent with the adjusted longer-term exponential fits and within the range of trend factors we have observed in other states. We have no objection to the selected annual trend rates.

Benefit Level Changes

The NCCI has included the impact of the latest medical fee schedule benefits in the proposed loss costs. The estimated 0.4% increase to the total loss costs, based on a 0.8% increase to medical costs, appears reasonable based on the analysis included in the filing.

Loss Adjustment Expenses

In Colorado, the NCCI loss costs include a provision for all loss adjustment expenses ("LAE"), including legal defense ("DCCE") and Adjusting and Other Expense ("AOE") costs. The DCCE provision is estimated by developing the ultimate ratio of paid DCCE to paid loss and appears reasonable.

Countrywide data is used for the private carrier AOE provision because the claims adjusting costs are often difficult to allocate out to individual states for national workers compensation insurers. The countrywide private carrier AOE provision is 9.4%. The NCCI then develops Pinnacol claims adjusting data separately to estimate an AOE provision for Pinnacol. Based on our request, the NCCI provided support for the Pinnacol AOE provision of 20.5%. Finally, the private carrier and Pinnacol AOE provisions are weighted together, using the 3-year experience period premium, to determine a statewide AOE provision. (The use of the 2021 premium as a weighting would have produced an AOE provision 0.2% lower than the NCCI's calculation. While this alternative calculation would have been more reasonable to us, the difference is minor.) The NCCI previously noted that the relatively significant difference in the AOE provision for the private carriers compared to Pinnacol is largely due to the difference in claims handling and accounting practices, with Pinnacol having offsetting, lower DCCE costs than the industry. The NCCI believes the total needed AOE provision is similar for Pinnacol and private carriers. That statewide AOE provision is combined with the DCCE provision to estimate the LAE provision, which is then applied to the losses to calculate the filed loss and LAE costs.

The selected LAE provision of 23.9% is an increase from the 23.3% provision underlying the loss costs effective 1/1/23. This selected LAE provision is consistent with the combined industry and Pinnacol data and appears reasonable. Because much of the LAE provision relates to salaries and overhead, the LAE provision, relative to losses, is likely to increase when loss costs decrease significantly. The increase in the LAE provision is included in the overall loss cost change.

Voluntary Loss Cost Change Summary

Based on the support provided, we have no objections to the proposed -3.4% voluntary loss cost change.

In our evaluation of the reasonability of the proposed changes in loss costs we have considered market conditions. Among other things, we monitor market conditions by reviewing the impact on premium of loss cost deviations, schedule rating, and dividends which, when combined, are referred to as "premium departures" in the table below. Upon request, the NCCI provided this information for Colorado through 2022.

Table 6

Year	Premium Departures
2016	-6.8%
2017	-8.1%
2018	-3.5%
2019	+5.6%
2020	+5.4%

2021	+5.3%
2022	+5.5%

The overall downward rate deviations in industry pricing for 2016 through 2018 are consistent with the actual reductions in loss costs effective 1/1/18, 1/1/19, and 1/1/20 respectively. The industry's average positive premium departure for 2019 through 2022 may indicate that the industry feels the loss costs are relatively less redundant than in previous years.

OTHER CONSIDERATIONS

Class Pure Premiums

After determining the -3.4% statewide loss cost indication, indicated changes by individual occupational class are determined. All class codes are assigned to one of five industry groups. The loss experience of each industry group determines the overall loss cost change for each industry group. The indicated class code loss cost, the current class code loss cost, and the countrywide loss cost (adjusted to state conditions) are credibility-weighted together to calculate the class code loss cost, prior to any limiting. Due to the lower credibility of each class code, individual losses are also limited for the sake of these calculations. The swings in the individual class code loss costs are capped at the industry group loss cost change ±15%, rounded to the nearest 1%, which is consistent with prior filings. We have no objections to these swing limits or methodology.

Experience Modification Factors and Off-Balance

The NCCI has provided subsequent information showing the average experience modification of the past five years. The following table shows this data.

Table 7

Rating Year	Average Experience Mod
2018	0.948
2019	0.946
2020	0.962
2021	0.962
2022	0.962

Because the overall premium collected is a function of both the manual proposed loss costs and the average experience modification factor, the NCCI adjusts the loss costs for the change in the experience modification factors. This procedure is consistent with previous filings and appears reasonable.

Experience Rating Parameters

Earlier this year the NCCI submitted changes to the experience rating formula on a countrywide basis. We have reviewed the statistical performance measures provided by the NCCI, which shows that the new parameters result in loss experience that is more consistent with the calculated experience modification factors. As a result, the new experience rating parameters represent an improvement from the prior factors, provide more predictive accuracy, and appear reasonable.

One experience rating parameter is the split point, which is used to allocate both actual and expected losses into primary and excess losses. Because all primary losses factor into an insured's experience modification factor, this split point has an impact on the premium of all insureds. The NCCI has proposed a decrease from $18,500 to $14,500 for Colorado as part of the revised experience rating filing. Previously the split point was a countrywide number, but beginning this year the split point will vary by state based on the average severity in each state. The new state-specific split point is calculated such that all states will have a D-Ratio (the percentage of ratable losses in the primary layer) of approximately 40%. In subsequently provided information, the NCCI has provided support for this new split point, which appears reasonable.

It is worth noting that in nearly every state, the experience rating formula uses both exposure and losses that are ground-up (gross of any deductible an insured has selected). However, in Colorado, the experience modification factor is calculated using losses that are net of deductibles. As a result, two insureds with identical exposure and ground-up losses will have different experience mods if, for example, one has a deductible and the other does not. For two otherwise identical insureds, this is not an optimal or logical result. It certainly incentivizes insureds to select a deductible. Considering that all statewide loss costs and experience modification factors are balanced to produce the proposed loss costs, this calculation results in loss costs that are likely too high for insureds without a deductible.

Coal Mining Occupational Disease Provision

Beginning with this filing, with the exception of the two coal mining class codes, the NCCI is proposing to eliminate occupational disease ("OD") provisions. Last year the reviewing actuary and Colorado objected to the coal mining OD provisions and the NCCI filed revised loss costs for those provisions effective 1/1/23. The OD provisions are generally dependent on the selection of the frequency and severity of the entitlements for claims filed by living miners and living widows. Last year the difference in the originally proposed OD provisions and the revised provisions was driven by a difference in the estimated frequency of the claims. This year the selected frequencies are consistent with the reduced frequencies of last year and the historical data. The estimated entitlements for federal claims filed by living miners is 10, which compares to NCCI's initial estimate last year of 25 and the reviewing actuary's estimate of 13. The frequency for widows on federal claims this year is 1.0, which is also lower than last year's original NCCI estimate of 3.0 and the reviewing actuary's selection of 1.3. We also reviewed supplemental support from the NCCI on the selected claim severities for each type of claim, and the selections appear reasonable.

The proposed OD provisions for the coal mining class codes appear both reasonable and consistent with last year's revised provisions.

Terrorism Provision

As part of Colorado's approval of the 1/1/23 loss costs last year, the state required that the NCCI provide an updated analysis of the Terrorism loss cost. The NCCI has provided an analysis of this provision, which is primarily relying on a report from a third-party vendor of this risk exposure. We have reviewed the AIR terrorism modelling report, which supports the proposed terrorism charge. Based on AIR's modelling, Colorado would be expected to have a terrorism event in 3% of years, resulting in 10 deaths. We did not identify anything unreasonable in the NCCI's support of the provision.

It is estimated that the insurance industry has been collecting $2-3 million related to this terrorism charge each year in Colorado at the current loss cost. This compares to annual written premium of $1.0 billion in the state, so this terrorism provision does not represent a significant issue when reviewed alongside the loss costs. Relatively large changes in the terrorism loss cost would still result in a statewide impact of a small fraction of a percentage of total premium.

The previous reviewing actuary for Colorado objected to the per capita rating basis for this charge, with one reason being that it makes a higher percentage difference to job classifications with low loss costs. However, because the terrorism risk appears to be uncorrelated to the injury risk of different occupations, this per capita application appears reasonable. A second objection relates to the geographical equity, with the assumption that a rural area is less likely to experience an event than Denver. There is merit to this theoretical objection, although it is difficult to objectively account for this different.

We also note that the terrorism loss cost has declined 75% over the past 15 years, from $0.02 per $100 of payroll before 9/1/08 to $0.005 per $100 of payroll effective 1/1/18. The nature of this exposure is that most years there will be no claims, while there is an extremely small chance of a significant loss event. While there is a fairly large judgmental component to the terrorism provision, it does not appear unreasonable.

Residual Market

Unlike many states, Colorado does not have a separate residual market or assigned risk plan that covers insureds that are generally not able to secure insurance through the voluntary market. These insureds tend to have higher expected losses, and are often covered by either a residual market pool or by direct assignment of the risks to voluntary insurers. In many states, the NCCI estimates assigned risk rates that reflect both expenses and the higher loss experience of these insureds.

In Colorado, Pinnacol is required to insure all risks. However, because Pinnacol does not know or note which policyholders would otherwise be "residual market" insureds, it is difficult to estimate the possible impact of these insureds being included in the voluntary loss cost data. We also note that there are insureds who move into and out of the "residual market." However, based on our understanding of Pinnacol's structure and the current countrywide residual markets, it is possible that the proposed loss costs could be 3 to 4% lower if the "residual market" insureds could be excluded from the statewide analysis. This result would also appear to be consistent with the historical loss ratios discussed above, showing Pinnacol having noticeably higher loss ratios than the rest of the industry. We also understand that the current methodology has always been used, and do not have any current objections to it.

COVID-19

Catastrophic Handling of the COVID-19 Pandemic

Consistent with last year's filing, the NCCI has removed all COVID-19 related claims from the data for the purposes of calculating prospective loss costs and rates. As of 12/31/22, $7.1 million, $16.6 million, and $2.2 million of reported losses were excluded from the policy years' 2019, 2020, and 2021 data, respectively. The NCCI has continued to treat any future pandemic related losses under the Catastrophe (other than Certified Acts of Terrorism) Provision. The current charge for this Catastrophe Provision is $0.01 per $100 of payroll. We note that the provision was not increased even as potential pandemic claims were included in the prospective Catastrophe provision.

The reviewing actuary last year objected to the size of this Catastrophe provision and noted that the workers compensation loss ratio was actually lower during the pandemic, with COVID-19 claims more than offset by a reduction in workplace accidents. As part of Colorado's approval of the 1/1/23 loss costs last year, the state required that the NCCI provide an updated analysis of the Catastrophe (other than Certified Acts of Terrorism) Provision. As a result, the NCCI has included a report from an outside consultant, AIR, which estimates the losses resulting from a large number of potential pandemics. This NCCI/AIR pandemic analysis produces an estimated loss cost of $0.02 per $100 of payroll. Again, we note that this projected impact was included with the non-pandemic catastrophe provision of $0.01 that existed before the COVID-19 pandemic. So, in effect, the NCCI has offset the projected pandemic claims with reductions in injuries (while it is possible that some pandemics would not result in the offsetting decline in injuries). We would have likely objected to an increase in the provision, but do not find maintaining the catastrophe provision at $0.01 to be unreasonable. Similar to the terrorism provision, the proposed Catastrophe Provision does not account for a significant of premium compared to the size of the market in Colorado.

CONCLUSION AND RECOMMENDATIONS

Based on our review of this filing, we have no objections to the proposed voluntary loss cost changes. In our opinion, the proposed changes are reasonable.

Please let me know if you have any questions.

Sincerely,

Thomas Vasey, FCAS, MAAA
tvasey@merlinosinc.com
678-684-4851