

August 30, 2024

Mr. Steve Wendling
Audit Manager
Washington State Auditor's Office
3200 Capitol Way
P.O. Box 40031
Olympia, WA 98504

RE: Department of Labor & Industries' 2025 Classification Relativity Rate Change Process Analysis

Dear Mr. Wendling,

Deloitte Consulting LLP ("Deloitte Consulting") has completed its review of the State of Washington Department of Labor & Industries' ("the Department") actuarial methodologies, processes, and assumptions used in determining the classification relativity rate changes for the Accident Fund ("AF") and the Medical Aid Fund ("MAF"). This letter summarizes the findings/conclusions of our initial review.

As of the date of this letter, the Department's overall rate levels have not yet been decided and, as such, a zero overall rate increase per fund is assumed in our review of the Department's analysis. After the final overall rate levels have been selected, we will perform a high-level review of the new classification rates and include any relevant comments on the final classification rate levels in our final deliverable on the overall rate levels. Therefore, for this analysis we are only reviewing the class relativities versus the actual class rates.

The Deloitte Consulting team appreciates the time and effort dedicated by the Department's actuarial team to help us understand their classification relativity rate review process, as well as the resources devoted to providing us with the appropriate data needed to perform our review.

Executive Summary

Based on our review of the Department's methodologies and processes for determining the 2025 classification relativity rate change indications, and subject to the limitations and reliances discussed below in *Distribution and Limitations*, we believe that the Department's actuarial classification relativity ratemaking process is consistent with actuarial standards of practice as issued by the Actuarial Standards Board.

Based on our review we had the following recommendations:

- We note that there are alternatives to the Department's use of the prior year's pure premium as the expected pure premiums which the Department may wish to explore. One example is using the class or industry group relativities from other states, which would recognize a broader, industry view of class rates for low credibility classes. A second option is to continue using the prior year's pure premium but increasing the number of years in the experience period for low credibility groups. We note approximately thirteen classes are currently being separately

aggregated with a similar class to form higher-credibility groupings, though a third option is to further aggregate similar low-credibility classes where it is deemed appropriate to do so from an underwriting standpoint. We suggest that the Department consider these and other reasonable alternatives to determine whether a change will improve the equity and effectiveness of its classification base rating system.

- While we believe the classification relativity ratemaking process is reasonable, we suggest that the Department consider another option for recognizing the costs associated with the Supplemental Pension Fund (“SPF”) in its classification relativity ratemaking process. Currently, the SPF is treated as a fixed cost (per exposure unit) for each classification. In our opinion, this methodology may create equity issues among the various manual classifications, with lower loss cost classes bearing a disproportionate share of the SPF costs. Instead, the Department may wish to consider spreading the costs associated with the SPF based on a fixed percentage of the classification base rates, rather than as a fixed cost for each classification. We believe that using a fixed percentage may mitigate the potential inequities for lower loss cost classes.

Process Overview – Classification (“Class”) Relativity Rate Changes

Our process entailed reviewing the internal actuarial rate analyses / calculations for the indicated classification relativity rate changes effective January 1, 2025, performed by the Department’s actuarial group. The internal rate analysis was comprised of a series of Excel worksheets as well as a brief description of the Department’s analyses and assumptions used. Both the internal ratemaking review work papers and write-up were provided to us directly by the Department.

In addition, we had discussions regarding the process used for estimating the classification relativity rate level changes with Bill Vasek, the Department’s chief actuary, and other members of the Department’s actuarial team.

Lastly, we performed reasonability checks on the calculations / formulas shown in the Department’s classification relativity rate analysis.

The following chart displays a summary of the calculations performed to estimate the classification relativity rate change for risk class 0101:

SUMMARY OF MAJOR STEPS - L&I BASE RATE REVIEW (RISK CLASS 0101)					
		Accident Fund	Stay-At- Work	Medical Aid Fund	Composite Fund
(1)	Selected Pure Premium (Unadjusted)	\$0.929	\$0.013	\$0.526	
(2)	Underlying Loss Ratio	84.8%	84.8%	99.7%	
(3)	Targeted Rate Level Increase	0.0%	0.0%	0.0%	0.0%
(4)	Selected Pure Premium (Adjusted)	\$1.096	\$0.016	\$0.528	
(5)	Adjustment to pre-fund retro refunds	9.6%			
(6)	First Approximation Base Rate	\$1.252	\$0.016	\$0.528	
(7)	Off-Balance Factor	1.027	1.239	1.006	
(8)	Balanced Base Rate	\$1.285	\$0.020	\$0.531	
(9)	Adjustment for Capping Base Rates	1.000	1.000	1.000	
(10)	Final Balanced and Capped Base Rate	\$1.285	\$0.020	\$0.531	
(11)	Supplemental Pension Fund Rate				\$0.171
(12)	Final Composite Base Rate				\$2.007

Footnotes:

$$(4) = [(1) / (2)] \times [1 + (3)]$$

$$\text{for AF only, } (6) = (4)_{AF+MAF} \times [1 + (5)] - (4)_{MAF}$$

$$(8) = (6) \times (7)$$

$$(10) = (8) \times (9)$$

$$(12) = (10)_{AF} + (10)_{SAW} + (10)_{MAF} + (11)$$

A brief description of the major steps in this process is given below:

Major Steps in Calculating Classification Base Rates

1. Select pure premiums for each classification

For the AF and MAF, the Department selects unadjusted pure premiums (losses per hour worked in most cases) for each classification, separately for Serious, Non-Serious, and Medical-Only losses. We note that the pure premium used for the Stay-at-Work ("SAW") program is based on the ratio of the indicated 2025 break-even rate for the AF to the indicated 2025 break-even rate for the SAW program. Further details on the calculation of the selected unadjusted pure premium is given below for risk class 0101:

CALCULATION OF UNADJUSTED SELECTED PURE PREMIUM (RISK CLASS 0101)			
	Accident Fund	Medical Aid Fund	
I. (a) Indicated Serious Pure Premium	\$0.6011	\$0.2433	
(b) Indicated Non-Serious Pure Premium	\$0.2684	\$0.1793	
(c) Indicated Med-Only Pure Premium	n/a	\$0.0904	
(d) Indicated Pure Premium	\$0.8694	\$0.5130	$(Id) = (Ia) + (Ib) + (Ic)$
II. (a) Prior Serious Pure Premium (adjusted)	\$0.7911	\$0.2918	
(b) Prior Non-Serious Pure Premium (adjusted)	\$0.2929	\$0.1728	
(c) Prior Med-Only Pure Premium (adjusted)	n/a	\$0.0880	
(d) Prior Pure Premium (adjusted)	\$1.0840	\$0.5526	$(IId) = (IIa) + (IIb) + (IIc)$
III. (a) Credibility used for Serious Pure Premium	70.3%	70.3%	
(b) Credibility used for Non-Serious Pure Premium	85.5%	85.5%	
(c) Credibility used for Med-Only Pure Premium	n/a	94.6%	
(d) Credibility used for Pure Premium	n/a	n/a	
IV. (a) Selected Serious Pure Premium (Unadjusted)	\$0.6575	\$0.2577	$(IVa) = (Ia) \times (IIIa) + (IIa) \times [1 - (IIIa)]$
(b) Selected Non-Serious Pure Premium (Unadjusted)	\$0.2719	\$0.1784	$(IVb) = (Ib) \times (IIIb) + (IIb) \times [1 - (IIIb)]$
(c) Selected Med-Only Pure Premium (Unadjusted)	n/a	\$0.0902	$(IVc) = (Ic) \times (IIIc) + (IIc) \times [1 - (IIIc)]$
(d) Selected Pure Premium (Unadjusted)	\$0.9294	\$0.5263	$(IVd) = (IVa) + (IVb) + (IVc)$

Selected Pure Premium

As seen in the table above, to determine the selected unadjusted pure premiums in IV(d), the Department credibility weights its indicated pure premiums in I(d) with an a priori or “expected” pure premium in II(d). The Department uses the adjusted pure premiums from the prior year’s filed rates as the expected pure premiums. The higher the credibility assigned to an individual class, the more weight that is placed on the indicated pure premium. The lower the credibility assigned to an individual class, the more weight that is placed on the expected pure premium (see *Credibility* subsection below for further details).

This process is performed separately for each fund, and for each type of loss: Serious, Non-Serious, and Medical-Only. Serious losses include Fatal claims, Total Permanent Disability (“TPD”) claims, Permanent Partial Disability (“PPD”) and Time Loss claims greater than individual thresholds for each fiscal-accident year. The remaining non-Medical-Only losses are considered Non-Serious. The Medical-Only losses are only seen in the MAF and are therefore not applicable to the AF.

The Serious threshold is calculated separately for each individual fiscal-accident year so that the percentage of Serious on-leveled losses is approximately half of the total for each fiscal-accident year. The ratio of Serious claims to Compensable counts is calculated for each of the five fiscal-accident years (2019-2023), and a five-year average of 7.383% is used as the target for all five fiscal-accident years to back into the Serious thresholds.

This methodology produces ratios that are 55.7%, 54.6%, 53.3%, 47.4%, and 38.9% from oldest to most recent year, and an average ratio of 50.0% for all years combined.

Indicated Pure Premium

The indicated pure premium in I(a)-I(d) uses exposure and historical claims data evaluated as of June 1, 2024 from fiscal-accident years 2019-2023. The case incurred loss data is developed by type of claim (e.g. Fatal, TPD, Serious PPD, Non-Serious Time Loss, etc.), by fund, and by fiscal-accident year, using development factors which are calculated by comparing the total loss amounts to the ultimate loss incurred amounts based on the Department’s March 31, 2024 reserve analysis. The Department calculates the 84-to-Ultimate portion of the development factor for an individual type of claim by using a weighted average of all types of claims and a selected transition percentage for each type of claim, which is consistent with the methodology used last year. This transition percentage estimates the likelihood of each type of claim to transition to the selected type of claim at a particular age. After the losses are developed, they are further adjusted to the projected 2025 benefit levels. The indicated pure premium is calculated by dividing the five-year sum of developed on-leveled losses by the five-year sum of exposure.

Prior Pure Premium

The total prior pure premiums in II(d) are derived by multiplying the total 2024 base rate by the indicated 2025 permissible loss ratio (separately for each fund) from the Department’s March 31, 2024 rate indication. This converts the rate used last year to a pure premium at the 2025 benefit levels. The AF base rate is further adjusted to remove the impact of the retro program (discussed

in more detail in Step 5 below). These two pure premiums are then distributed into each type of loss in II(a)-II(c) by using the actual pure premiums underlying the 2024 classification rates to calculate the proportion of serious, non-serious, and medical-only pure premiums.

The final step for the prior pure premiums occurs after the distribution to loss type. The preliminary aggregated pure premium distribution may not match the targeted overall pure premium split. This is a common occurrence in classification ratemaking procedures. In order to adjust the pure premiums such that the aggregated pure premium distribution is comparable to the targeted overall split, a factor is computed and applied to each class.

We note that there are alternatives to the Department's use of the prior year's pure premium as the expected pure premiums which the Department may wish to explore. One example is using the class or industry group relativities from other states, which would recognize a broader, industry view of class rates for low credibility classes. A second option is to continue using the prior year's pure premium but increasing the number of years in the experience period for low credibility groups. We note approximately ten classes are currently being separately aggregated with a similar class to form higher-credibility groupings, though a third option is to further aggregate similar low-credibility classes where it is deemed appropriate to do so from an underwriting standpoint. We suggest that the Department consider these and other reasonable alternatives to determine whether a change will improve the equity and effectiveness of its classification base rating system.

We note that the Department responded to these recommendations as follows: *"The Department has reviewed the recommendations previously for the three options that [Deloitte Consulting] mentions:*

1). For several low credibility classes the department started using rate relativities for similar classes in California and Massachusetts to develop relativities between low credibility and higher credibility classes in Washington. However this method is limited due to the differences between the NCCI and Washington classification definitions.;

2) The Department only sets case reserves out to the fifth year of experience, therefore we do not have the case incurred data for more years to use in the classification rating. The Department may consider a one-time ten-year study in the future; additionally

3) Our current process is to review low credibility classes and combine them with other similar classes or use a relativity to a similar class with a higher credibility. The Department repeats this type of analysis periodically to ensure that the combinations and relativities are appropriate."

Credibility

The Department's process for determining the credibility for each class is consistent with commonly used ratemaking procedures. It currently uses a classic Bayesian credibility approach which is a function of the expected losses and which assigns a low credibility for classes with low loss volume and a high credibility for classes with high loss volume. However, as mentioned above, the expected pure premium used in the Department's process is the prior year's pure

premium for the class. Therefore, for low loss volume classes, the credibility is likely to be low and a significant weight will be placed on last year's pure premium in setting this year's class rate. As a result, low loss volume classes will tend to have very similar pure premiums from year to year. While this promotes rate stability, it may detract from reacting appropriately to changes in loss experience for such classes.

As mentioned above, one recommendation to account for this issue would be to perform a full class review to analyze the current class structure, including the description of each class, and review the possibility of grouping smaller, more homogeneous classes together to make new, larger classes.

We note that in response to this prior recommendation, the Department performed some analysis on low credibility classes and is still using the same credibility methodology that has been in place for the past five years. This methodology includes multiplying the indicated credibility by 99% and then adding back in a flat 1%, which has the impact of increasing the credibility for all classes between 0% and 1%. The methodology also includes a second adjustment which manually adjusts small classes by either using a relativity to an associated class or combining a small class with a comparable class.

The selected overall average credibility of 50%, 78%, and 90% for Serious, Non-Serious, and Medical-Only claims respectively, are comparable to or lower than last year's average credibility of 50%, 88%, and 90%, respectively. The decreased average credibility for Non-Serious resulted from the increase in the credibility constant for Non-Serious losses which is used in the denominator of the calculation.

We note that the Department's process for estimating classification pure premiums is consistent with actuarial standards of practice as issued by the Actuarial Standards Board.

2. Indicated loss ratios underlying 2024 rates

Step 2 shows the indicated loss ratios (at 2024 classification rate levels) for the AF and the MAF based on the Department's March 31, 2024 reserve analysis.

3. Targeted overall rate change

Step 3 represents an adjustment to include in the pure premiums to reflect the overall rate change selected by the Department. As discussed above, the Department's overall rate levels have not yet been decided as of the date of this letter, and as such, a zero overall rate increase is assumed in the Department's classification rate review.

4. Calculate the adjusted pure premiums for indicated loss ratios underlying 2024 rates and the targeted overall rate change

In this step, adjusted pure premiums are calculated by dividing the pure premium rates calculated in step 1 by the indicated loss ratios from step 2, and then multiplying that quotient by $[1 + \text{targeted overall rate change}]$ from step 3.

5. Add a provision for the retro program

The State of Washington offers a retrospectively (“retro”) rated program to qualifying employers. We understand that approximately 31% of employers participate in this program and that the retro program is priced in a manner that anticipates refunds over all participating employers. These refunds are estimated by the Department and then are “funded” through a loading in the classification rates (the “retro adjustment”). The retro adjustment is applied to the combined AF and MAF pure premiums though the adjustment to the rates is reflected in the AF only. Based on the June 30, 2024 reserve analysis, the retro adjustment is 9.6% (compared to 9.1%, 9.1%, and 7.9%, in the prior three analyses).

6. Estimate the first approximation base rate

For the MAF, the base rate equals the rate calculated in step 4.

For the AF, the base rate is calculated as the sum of the AF and MAF rates calculated in step 4 multiplied by [1 + retro program provision] less the MAF rate from step 4.

7. Apply off-balance factors to the preliminary base rates

The aggregate change for preliminary class base rates calculated in step 6 may not match the targeted overall rate change. This is a common occurrence in classification ratemaking procedures. In order to adjust the classification rates such that the aggregate rate change is equal to the targeted overall rate change, an off-balance factor is computed.

8. Calculate off-balanced class base rates

Step 8 incorporates the off-balance factor into the class rates. In this step, the first approximation base rates from step 6 are multiplied by the off-balance factors from step 7 to compute the off-balanced class base rates.

9. Adjust base rates to reflect the impact of capping

Individual class base rate changes are limited to +25% of the overall rate change, with one exception: in the case of an administrative issue, such as the separation of a class code and creation of a new class code, the change may be limited to +15% of the overall rate change for a select number of years. We note if a class base rate change is negative, the Department does not automatically cap the class.

If any class base rates are capped, then there is the potential that the aggregate change for class base rates calculated in step 8 may not match the targeted overall rate change. In this case, the impact of capping is estimated by the Department and then spread to all other uncapped classes. The Department’s capping is based on the composite rate change, which include the AF and MAF rate changes as well as an assessment for losses associated with the Supplemental Pension Fund (“SPF”). The SPF assessment is discussed in step 11. Adjusting in this fashion for the impact of capped rate changes for individual classes is a common approach in classification ratemaking.

As discussed above, a zero overall rate increase is assumed in this report. As of this report, we note there are four classes being capped: classes 6904, 6905, 6991, and 6992 capped due to an

administrative 15% for firefighters and law enforcement officers. We believe the impact of capping on the Department's preliminary base rates is minimal, though we note this may change when the actual approved rate change is included.

10. Calculate final base rate

The final base rate is calculated by multiplying the off-balanced base rates from step 8 by the capping factors from step 9.

11. Add an assessment for the Supplemental Pension Fund

The Department estimates the impact of the SPF in the coming year. The SPF is funded on a pay-as-you-go basis. The SPF is treated as a flat assessment for each risk class, and as a result, the SPF assessment can represent a significant portion of the total class base rate for some classes. We suggest that the Department consider another option for recognizing the costs associated with the SPF in its classification ratemaking process. Currently, the SPF is treated as a fixed cost (\$0.171 per exposure unit) for each classification. In our opinion, this methodology may create equity issues among the various manual classifications, with lower loss cost classes bearing a disproportionate share of the SPF costs. Instead, the Department may wish to consider spreading the costs associated with the SPF based on a fixed percentage of the classification base rates, rather than as a fixed cost for each classification.

For example, we note that approximately 77% of the classes calculate a lower rate using a fixed cost approach, while approximately 23% of the classes calculate a higher rate, including 34 classes that would increase more than 30% over a fixed percentage approach. We show the following examples of differences in three individual class codes when comparing the SPF based on a fixed percentage to the SPF based on a fixed cost:

Class	Description	AF+SAW+ MAF rate	Total rate (assuming fixed)	Total rate (assuming ratio)	Difference
7202	Real Estate Agencies/Brokers	0.039	0.210	0.051	0.159
3406	Gas Stations-Full Service	0.532	0.703	0.698	0.005
507	Roof Work - Construction and Repair	5.443	5.614	7.146	(1.532)

We believe that using a fixed percentage may mitigate the potential inequities for lower loss cost classes. We note that the Department previously responded to this recommendation as follows: *"The Department appreciates the recommendation and views this as a significant policy change for our rate payers. This is an approach that we believe should only be considered after thorough stakeholder involvement to understand the impacts to various employers, likely as part of a broader range of underwriting changes."*

12. Calculate final composite base rate

The SPF assessment is added to the balanced AF and MAF base rates to determine the final base rate.

2023 Legislative Activity – SB 5454

During 2023, the State of Washington passed a bill (SB 5454) that relates to nursing. SB 5454 allows industrial insurance coverage for posttraumatic stress disorders affecting registered nurses. SB 5454 adds medical conditions to the presumption of occupational diseases and extends the presumption only to a direct care registered nurse who has posttraumatic stress disorder that develops or manifests itself after the individual has been employed on a fully compensated basis as a direct care registered nurse in Washington state for at least 90 consecutive days.

To account for the expected fiscal impact of this bill, the Department has added amounts to the underlying pure premiums for each class code impacted that is proportional to that codes nursing exposure. The 12 class codes impacted: 4906 (Colleges and Universities), 6105 (Hospitals, NOC), 6108 (Nursing and Convalescent Homes), 6109 (Physicians and Medical Clinics), 6110 (Home Health Services and Nursing Care, NOC), 6120 (Acute Care Hospitals with Safe Patient Handling), 6121 (Acute Care Hospitals without Safe Patient Handling), 6509 (Assisted Living, Adult Family Homes, Retirement Centers), 7111 (Temp. Help - Health Care Services), 7200 (State Acute Health Care Facilities w/Safe Patient Handling), 7201 (State Patient and Health Care Personnel, NOC), and 7400 (State Acute Health Care Facilities w/o Safe Patient Handling). We note these additions increase the calculated 2025 rates for the above classes by approximately 2% to 5%.

Conclusion

The classification rating process followed by the Department's actuarial team appears reasonable and consistent with actuarial standards of practice as issued by the Actuarial Standards Board.

One of the key inputs in estimating the base rates is the approved overall rate change for the upcoming fiscal year. As of the date of this letter, the overall rate change has not yet been approved. For purposes of this review, the Department has assumed an overall rate change of 0%. We will review the final classification base rates when the overall rate change has been approved and provide any relevant comments in our final deliverable for the overall base rate level. As part of our review this year, we will provide comments on the 3-year change by classification so that any individual outliers can be flagged and reviewed. Additionally, we will perform diagnostics comparing the rates of similar classifications (e.g. 521 Painting: Buildings-Interior Work and 504 Painting: Building & Structures-Exterior Work) to verify that the relative rates between classifications are consistent with the relative risk.

We understand that the Department will discuss the recommendations mentioned in this letter, as appropriate, with the Workers' Compensation Advisory Committee ("WCAC") by the end of the year. Due to practical considerations, the discussion of changes to the ratemaking processes would most likely occur during the 2026 rates or thereafter.

Distribution & Limitations

This letter has been prepared for the internal use of the State Auditor's Office and the Department solely for the purpose of evaluating the appropriateness of the 2025 classification relativity rate change estimated by the Department actuaries. It is neither intended nor necessarily suitable for any other purpose. We have prepared this report for use by individuals who have a degree of technical competence

in insurance matters. This report should be studied in its entirety before any judgments are made about the conclusions in the report. It is our intention that this report be used in its entirety, as a whole, and not segmented for other purposes. Deloitte Consulting personnel are available to discuss any questions or concerns regarding this letter.

To the extent that this report is requested and distributed beyond the State of Washington as required by law, we request a listing of those receiving the report. Deloitte Consulting shall have no liability, regardless of form, to any person or entity other than the State of Washington for any action taken or omitted to be taken by such parties in respect of this report. Third parties should recognize that the furnishing of this report is not a substitute for their own due diligence and may not place any reliance on this report or data contained herein that would result in the creation of any duty or liability by Deloitte Consulting to any third party.

Deloitte Consulting has relied upon data provided by the Department for this analysis. A specific audit to verify the accuracy or completeness of the data is beyond the scope of this letter. While we have reviewed the data with regard to its reasonableness and consistency, we have relied on such data without audit or verification and our conclusions are based on the assumption that it is accurate and complete. In addition, Deloitte Consulting reviewed the process and some of the actuarial calculations underlying the classification ratemaking analysis prepared by the actuarial team of the Department. If the underlying information provided is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

The services we performed throughout this engagement did not constitute an audit, review, examination, or other form of attestation as those terms are defined by the American Institute of Certified Public Accountants ("AICPA"). Any use of the word "review" within this report should be interpreted in the common use of that term, and not in the definition of "review" promulgated by the AICPA.

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Please contact us at the following numbers if you would like to discuss any aspect of this letter or have any questions or comments.

Rod Morris and Matthew Crotts are members of the Casualty Actuarial Society and are Members of the American Academy of Actuaries and meet the qualification standards for rendering the opinions in this letter.

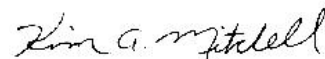
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