Bolton

Employee Benefits, Actuarial & Investment Consulting

June 9, 2023

Board of Trustees
Carpenters Local No. 491 Pension Plan
c/o Mr. Dave Jensen
Associated Administrators, LLC
911 Ridgebrook Road
Sparks, MD 21152-9451

Re: Actuarial Studies to Reflect Trade Show Increases

Dear Trustees:

At the March 2023 Board of Trustees meeting, Bolton was asked to study the cost of providing an increase in the Trade Show benefit multiplier from the current $54 to either $60 or $65 for all service credits (past and future). The purpose of this letter is to provide the results of the requested study.

We have determined the cost of the benefit increase using the valuation data, plan provisions, assumptions, and methods (except those being studied) described in our 2022 valuation report, dated March 15, 2023. Additionally, this study reflects the following updates since the July 1, 2022 valuation date:

- Market value of assets as of July 1, 2023 is assumed to be the same as the market value of assets as of April 1, 2023 ($55,392,855) as provided by Associated Administrators and Bolton Investment Consulting Group.
- Contributions and hours for the plan year 2022 – 2023 are estimated based on contributions and hours received through May 22, 2023 which were provided by Associated Administrators.
- Contribution rate increase of $0.15 effective May 1, 2023 for Trade Show participants.

Description of Studies Performed

We were asked to estimate the cost of providing an increase in the Trade Show benefit multiplier under the following scenarios:

- Increase the Trade Show benefit multiplier from $54 to $60 for each service credit
- Increase the Trade Show benefit multiplier from $54 to $65 for each service credit

The possible plan changes in each scenario were assumed to take place retroactively effective July 1, 2022, which was done for simplicity and to be somewhat conservative. Additionally, the increase in benefit multiplier (as a percent) was applied on all prior service periods (including those periods separated by a Break in Service), which was done for simplicity and to be somewhat conservative. Neither of these approaches would have a material impact on the results if a more complex method was followed.

Study Results

Increase in Trade Show Benefit Multiplier

The table below provides the cost as an increase in the Trade Show contribution rate. As can be seen in the table, the cost for every $1 increase in the current Trade Show benefit multiplier is approximately a $0.07 to $0.08 increase in the contribution rate.

As of July 1, 2022	Baseline – Current Plan Provisions	Trade Show Monthly Unit Benefit Rate – For All Service: Increase to $60	Trade Show Monthly Unit Benefit Rate – For All Service: Increase to $65
Accrued Liability	44,107,579	45,343,265	46,373,004
Accrued Liability Increase		1,235,686	2,265,425
15-year Amortization of Increase[1]		120,028	220,051
Normal Cost (excl expenses)	1,109,398	1,227,939	1,326,724
Normal Cost Increase		118,541	217,326
Dollar Per Hour ($/Hr)[2]	**N/A**	**$0.47**	**$0.86**
Funded Ratio (AVA/Liability)	**129.0%**	**125.5%**	**122.7%**

As footnoted below, the above costs are based on active Trade Show participants working 510,000 hours annually. If hours for the current active Trade Show participants increase, then this would have little impact on benefit accruals, but would increase contributions into the Plan, thus reducing the cost on a per-hour basis. For example, if Trade Show hours increase by 100,000, the cost drops to $0.43 and $0.79 for the $60 and $65 scenarios, respectively. As a note, pre-COVID hours for Trade Show participants were averaging slightly over 611,000 hours.

[1] This is determined at 6.00%. There is no amortization base created for this increase in accrued liability if the Plan is 100% funded.
[2] Based on 510,000 estimated hours worked by Trade Show participants in the plan year July 1, 2022 to June 30, 2023 (hours provided through May 22, 2023 from Associated Administrators; annualized) .

Projections

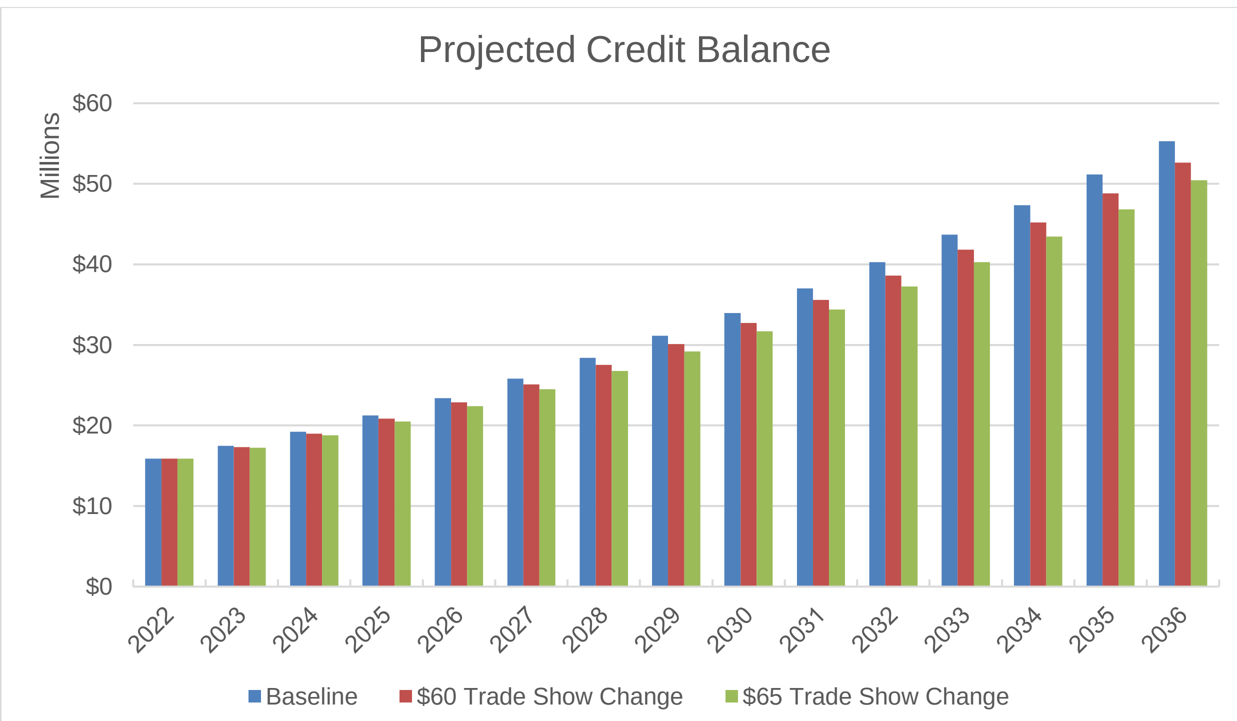
The tables below show projected values of the Credit Balance and Funded Ratio (Actuarial Value of Assets / Unit Credit Liability) under three scenarios: Baseline, Increase to $60, and Increase to $65.

The Baseline projection is based on the 2022 valuation, except for the following: (1) assets as of July 1, 2023 are assumed to be the same as assets as of April 1, 2023, (2) projected contributions reflect a $0.15/hour increase to the contribution rate for Trade Show participants, effective May 1, 2023, and (3) projected contributions and normal cost reflect an increase in hours of 50% for Trade Show participants based on data provided by Associated Administrators received through May 22, 2023 (extrapolated through June 30, 2023). Although normal cost is generally not impacted as much as contributions by increases in hours, we have assumed that they are consistent for simplicity and would not have a material impact on the projections.

The other projections reflect the changes noted in the Baseline projection and the relative increases in accrued liability and normal cost discussed above and assumed to be effective on July 1, 2022.

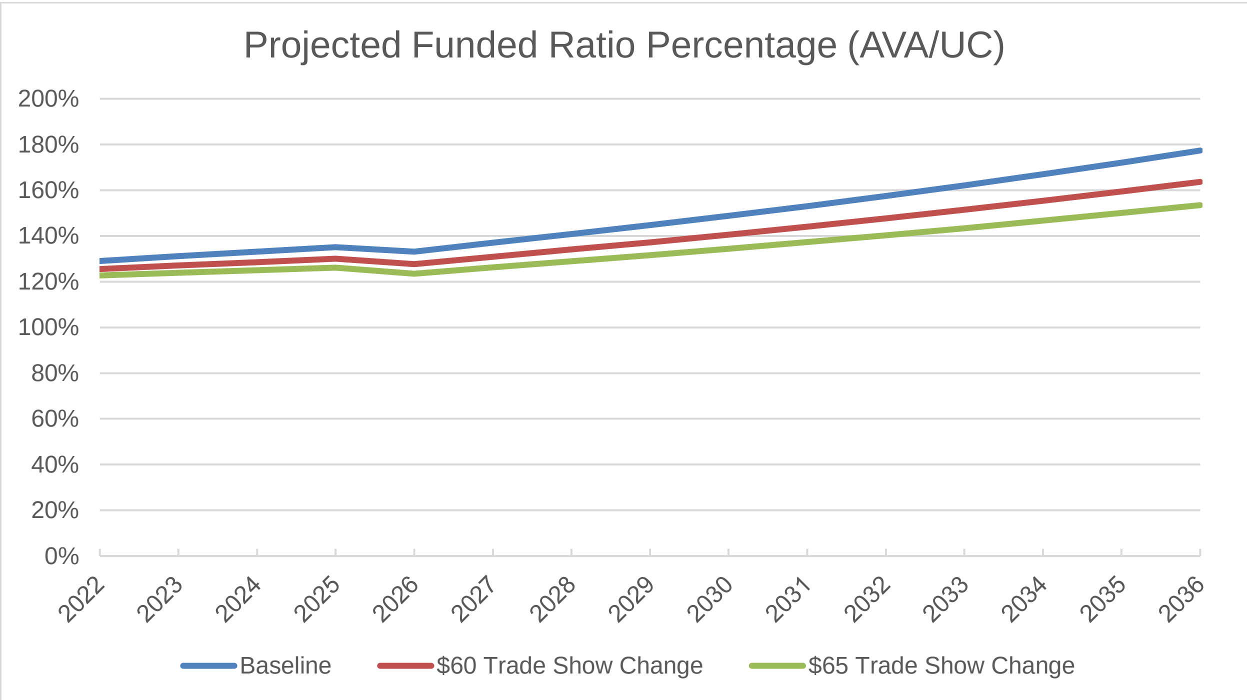
Credit Balance Projection

The credit balance is projected to remain well above $0 in each projection year. Thus, the Plan is projected to not have an accumulated funding deficiency under any of the study scenarios.



Funded Ratio Projection

The Plan is projected to remain well above 100% funded in each projection year. Thus, the Plan is projected to remain within the Green Zone under each of the study scenarios. There is a decrease in the funded ratio in 2026 because recent losses have caused the actuarial value of assets to be higher than the market value of assets as of July 1, 2022. These losses are fully reflected in the actuarial value of assets by 2026.



As with all projections, future results may differ substantially from those projected herein. See appendix for tables of the projections shown in the charts above.

Actuarial Certification

This is a deterministic valuation in that it is based on a single set of assumptions. This set of assumptions is one possible basis for our calculations. Other assumptions may be equally valid. We may consider that some factors are not material to the valuation of the plan and may not provide a specific assumption for those factors. We may have used other assumptions in the past. We will likely consider changes in assumptions at a future date.

The cost of this plan is determined by the benefits promised by the plan, the plan's participant population, the investment experience of the plan and many other factors. An actuarial valuation is a budgeting tool for the trustees. It does not affect the cost of the plan. Different funding methods provide for different timing of contributions to the plan. As the experience of the plan evolves, it is normal for the level of contributions to the plan to change. If a contribution is not made for a particular year, either by deliberate choice or because of an error in a calculation, that contribution can be made in later years. We will not be responsible for contributions that are made at a future time rather than an earlier time. The contributing employers are responsible for funding the cost of the plan.

The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information. The Plan Sponsor is solely responsible for the validity and completeness of this information.

This report is conditioned on the assumption of an ongoing plan and is not meant to present the actuarial position of the Plan in the case of Plan termination. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status), and changes in plan provisions or applicable law.

This report was completed using both proprietary and third-party models (including software and tools). We have tested these models to ensure they are used for their intended purposes, within their known limitations, and without any known material inconsistencies unless otherwise stated.

Bolton Partners, Inc. ("Bolton") does not practice law and, therefore, cannot and does not provide legal advice. Any statutory interpretation on which this report is based on reflects Bolton's understanding as an actuarial firm. Bolton recommends that recipients of this report consult with legal counsel when making any decisions.

The information in this report was prepared for the internal use of the Board of Trustees and its auditors in connection with our actuarial valuations of the pension plan. It is neither intended nor necessarily suitable for other purposes. We are not responsible for the consequences of any other use.

If you have any questions regarding these studies, please do not hesitate to contact me via email at tboles@boltonusa.com or via phone at 443-573-3938.

Sincerely,

Timothy D. Boles

Timothy D. Boles, ASA, EA

Appendix

Baseline

15-Year Projection of the Credit Balance and Funded Percentage

Plan Year	PPA Funded %	Beginning Credit Balance	Total Normal Cost	Net Amort. Charge	Anticipated Contribution	Interest	Ending Credit Balance
2022	129.0%	$ 15,904,326	$ 1,410,568	$ 518,197	$ 2,568,948	$ 915,602	$ 17,460,112
2023	131.2%	17,460,112	1,416,591	456,605	2,639,715	1,014,406	19,241,037
2024	133.1%	19,241,037	1,422,735	351,323	2,639,715	1,127,210	21,233,904
2025	135.2%	21,233,904	1,429,002	286,378	2,639,715	1,250,303	23,408,542
2026	133.2%	23,408,542	1,435,394	191,628	2,639,715	1,386,082	25,807,317
2027	137.0%	25,807,317	1,441,914	143,517	2,639,715	1,532,504	28,394,105
2028	140.8%	28,394,105	1,448,564	131,293	2,639,715	1,688,046	31,142,009
2029	144.7%	31,142,009	1,455,347	213,263	2,639,715	1,847,595	33,960,709
2030	148.8%	33,960,709	1,462,266	130,372	2,639,715	2,021,276	37,029,062
2031	153.0%	37,029,062	1,469,323	130,372	2,639,715	2,204,953	40,274,035
2032	157.5%	40,274,035	1,476,522	130,372	2,639,715	2,399,220	43,706,076
2033	162.2%	43,706,076	1,483,864	130,372	2,639,715	2,604,702	47,336,257
2034	167.0%	47,336,257	1,491,353	130,375	2,639,715	2,822,063	51,176,308
2035	172.1%	51,176,308	1,498,992	90,732	2,639,715	3,054,387	55,280,686
2036	177.4%	55,280,686	1,506,784	7,696	2,639,715	3,305,164	59,711,085

Increase to $60 for Trade Show

15-Year Projection of the Credit Balance and Funded Percentage

Plan Year	PPA Funded %	Beginning Credit Balance	Total Normal Cost	Net Amort. Charge	Anticipated Contribution	Interest	Ending Credit Balance
2022	125.5%	$ 15,904,326	$ 1,529,109	$ 518,197	$ 2,568,948	$ 908,490	$ 17,334,458
2023	127.1%	17,334,458	1,535,132	456,605	2,639,715	999,755	18,982,191
2024	128.5%	18,982,191	1,541,276	351,323	2,639,715	1,104,567	20,833,873
2025	130.1%	20,833,873	1,547,543	286,378	2,639,715	1,219,188	22,858,855
2026	127.7%	22,858,855	1,553,935	191,628	2,639,715	1,345,989	25,098,995
2027	130.9%	25,098,995	1,560,455	143,517	2,639,715	1,482,893	27,517,631
2028	134.0%	27,517,631	1,567,105	131,293	2,639,715	1,628,346	30,087,294
2029	137.3%	30,087,294	1,573,888	213,263	2,639,715	1,777,200	32,717,057
2030	140.6%	32,717,057	1,580,807	130,372	2,639,715	1,939,544	35,585,137
2031	144.1%	35,585,137	1,587,864	130,372	2,639,715	2,111,206	38,617,821
2032	147.7%	38,617,821	1,595,063	130,372	2,639,715	2,292,735	41,824,836
2033	151.5%	41,824,836	1,602,405	130,372	2,639,715	2,484,715	45,216,488
2034	155.4%	45,216,488	1,609,894	130,375	2,639,715	2,687,765	48,803,699
2035	159.4%	48,803,699	1,617,533	90,732	2,639,715	2,904,917	52,640,066
2036	163.7%	52,640,066	1,625,325	7,696	2,639,715	3,139,614	56,786,373

Increase to $65 for Trade Show

15-Year Projection of the Credit Balance and Funded Percentage

Plan Year	PPA Funded %	Beginning Credit Balance	Total Normal Cost	Net Amort. Charge	Anticipated Contribution	Interest	Ending Credit Balance
2022	122.7%	$ 15,904,326	$ 1,627,894	$ 518,197	$ 2,568,948	$ 902,563	$ 17,229,746
2023	124.0%	17,229,746	1,633,917	456,605	2,639,715	987,544	18,766,483
2024	125.0%	18,766,483	1,640,061	351,323	2,639,715	1,085,698	20,500,511
2025	126.1%	20,500,511	1,646,328	286,378	2,639,715	1,193,259	22,400,779
2026	123.5%	22,400,779	1,652,720	191,628	2,639,715	1,312,578	24,508,723
2027	126.2%	24,508,723	1,659,240	143,517	2,639,715	1,441,550	26,787,231
2028	128.9%	26,787,231	1,665,890	131,293	2,639,715	1,578,594	29,208,357
2029	131.6%	29,208,357	1,672,673	213,263	2,639,715	1,718,537	31,680,672
2030	134.4%	31,680,672	1,679,592	130,372	2,639,715	1,871,434	34,381,857
2031	137.3%	34,381,857	1,686,649	130,372	2,639,715	2,033,082	37,237,632
2032	140.3%	37,237,632	1,693,848	130,372	2,639,715	2,203,996	40,257,123
2033	143.4%	40,257,123	1,701,190	130,372	2,639,715	2,384,725	43,450,000
2034	146.7%	43,450,000	1,708,679	130,375	2,639,715	2,575,848	46,826,509
2035	150.0%	46,826,509	1,716,318	90,732	2,639,715	2,780,359	50,439,533
2036	153.5%	50,439,533	1,724,110	7,696	2,639,715	3,001,655	54,349,096