Actuarial Analysis Summary

AA Statement 1 of 1

BR or Bill Ref.	SB 196/BR 1054	**Actuarial Analysis Conducted For:**	
Date:	3/5/2024	☐ KERS NH ☐ KERS Haz ☐ SPRS ☐ TRS	
Actuary:	GRS	☐ CERS NH ☒ CERS Haz ☐ LRP ☐ JRP	

Section I: Executive Summary

In the opinion of the actuary, this bill would make the affected state-administered retirement system(s) actuarially:

☐ MORE SOUND ☐ LESS SOUND ☒ NO IMPACT

If actuarially MORE SOUND OR LESS SOUND, please summarize the factors leading to the actuary's opinion:

The proposed legislation would have negligible impact on the unfunded actuarial accrued liability and the employer contribution requirement for the CERS Hazardous funds because the proposed legislation specifies that the assets, liability, and contribution rate be maintained separately for the Alternative Benefit Program.

Employers that make a one-time election will pay an additional contribution equal to 1.65% of pay on the payroll of their members who have elected to participate in the Alternative Benefit Program. That contribution requirement would be greater if the CERS Board required the unfunded liability be amortized over 10-years and/or if the Board included a margin in the contribution requirement in order to decrease the number of years to achieve full funding.

Does this bill increase or decrease employer costs?	☒ **INCREASE** ☐ **DECREASE** ☐ **NO IMPACT**
Does this bill increase or decrease benefits?	☒ **INCREASE** ☐ **DECREASE** ☐ **NO IMPACT**
Does this bill increase or decrease benefit participation?	☐ **INCREASE** ☐ **DECREASE** ☒ **NO IMPACT**

If the bill impacts employer costs, benefits, or benefit participation, please explain and estimate the impact in Sections II and VI.

Section II: Financial Projections

	Combined Pension and Retiree Health Plan					
	CERS Hazardous*		N/A		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected Employer Cost* ($ in Millions)						
30-Yr Nominal $	$8,745	$8,745	N/A	N/A	N/A	N/A
30-Yr Net Present Value $	$3,896	$3,896	N/A	N/A	N/A	N/A
Proj. Normal Cost for New Hire	8.25% of pay	8.25% of pay	N/A	N/A	N/A	N/A

**Projected costs are for all employers and all fund sources for entire 30-year period.*

Proj. normal cost is the normal cost for new hires after subtracting employee contributions. The cost shown does not include the Alternative Benefit Program.

	Pension Plan					
	CERS Hazardous		N/A		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected UAL ($ in Millions)						
Baseline (Year 1)	$2,842	$2,842	N/A	N/A	N/A	N/A
5 Years	$2,735	$2,735	N/A	N/A	N/A	N/A
10 Years	$2,560	$2,560	N/A	N/A	N/A	N/A
20 Years	$1,614	$1,614	N/A	N/A	N/A	N/A
30 Years	$0	$0	N/A	N/A	N/A	N/A
Projected Funding Ratio (%)						
Baseline (Year 1)	51%	51%	N/A	N/A	N/A	N/A
5 Years	58%	58%	N/A	N/A	N/A	N/A
10 Years	65%	65%	N/A	N/A	N/A	N/A
20 Years	82%	82%	N/A	N/A	N/A	N/A
30 Years	100%	100%	N/A	N/A	N/A	N/A

	Retiree Health Plan					
	CERS Hazardous		N/A		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected UAL ($ in Millions)						
Baseline (Year 1)	($11)	($11)	N/A	N/A	N/A	N/A
5 Years	($10)	($10)	N/A	N/A	N/A	N/A
10 Years	$42	$42	N/A	N/A	N/A	N/A
20 Years	$229	$229	N/A	N/A	N/A	N/A
30 Years	$0	$0	N/A	N/A	N/A	N/A
Projected Funding Ratio (%)						
Baseline (Year 1)	101%	101%	N/A	N/A	N/A	N/A
5 Years	101%	101%	N/A	N/A	N/A	N/A
10 Years	97%	97%	N/A	N/A	N/A	N/A
20 Years	85%	85%	N/A	N/A	N/A	N/A
30 Years	100%	100%	N/A	N/A	N/A	N/A

Section III: Brief Summary of Bill

The proposed legislation establishes an alternative benefit program for CERS hazardous members who are earning Tier 3 Cash Balance benefits. Members are eligible to elect to enter the Alternative Benefit Program once they have attained ten (10) years of hazardous service and are employed by an employer that has entered into the program. If the member retires with at least 20 years but less than 25 years of alternative benefit program service (30 total years of hazardous service), the member will receive a retirement benefit equal to an annuity based on their cash balance benefit earned as of their alternative benefit program election date (with interest), plus 2.25% of final compensation for each year of alternative benefit program service the member has earned. If the member has earned 25 or more years of alternative benefit calculation service (35 total years of hazardous service), the benefit will be equal to an annuity based on their cash balance benefit earned as of their alternative benefit program election date (with interest), plus 2.50% of final compensation for each year of alternative benefit program service.

If the member elects the Alternative Benefit Program but does not retire with at least 30 years of hazardous service, the member's benefit will be calculated as if they did not elect to enter the program.

Section IV: Statement of Assumptions and Methods

Did the analysis rely solely upon the same assumptions & methods previously established and utilized by the actuary in the retirement system's most recent actuarial valuation? ☐ **YES** ☒ **NO**

If NO, please describe each new assumption or method utilized, the basis for selecting the revised assumption or method, and whether each new assumption or method increased or decreased projected employer costs:

The additional contribution rate associated with the Alternative Benefit Program will depend on the employers and members that elect to participate. The estimate provided of 1.65% of pay assumes that all employers elect to participate in the Alternative Benefit Program and that members elect the benefit that is most valuable to them. The actual required contribution rate could vary significantly based on actual experience of the membership.

Section V: Comment from Actuary

The proposed legislation requires Board action to adjust benefits if the funding level of the Alternative Benefit Program decreases below 90% or the employer contribution rate for the Alternative Benefit Program exceeds 16% of pay. It is unlikely the maximum 16% of pay employer contribution rate will ever become restrictive.

On the other hand, because the Alternative Benefit Program will begin with no assets and no liability, we expect the plan's funded ratio to be less than 90% for several years and volatile until the plan's demographics mature. As such, we recommend the proposed legislation be amended such that the 90% funded ratio threshold have a delayed effective date of June 30, 2040 (i.e. 15 years after the effective date of the Alternative Benefit Program).

We believe the proposed legislation's absence of parameters in how the actuarially determined contribution of the Alternative Benefit Program is determined is advantageous as is it provides the CERS Board the ability to be more responsive with the contribution rate to maintain the Alternative Benefit Program's funding level.

In order to accelerate funding of the plan and reduce the likelihood of future benefit changes, we recommend using a lower amortization period (between 8-12 years, rather than the current 20 years) to calculate the actuarially determined contribution rate for the Alternative Benefit Program. Additionally, we would recommend that employers pay an additional margin over the actuarially determined contribution rate (around an additional 1%-2% of pay) to provide a margin for future adverse experience, at least for the first 15 years until the 90% funded ratio becomes effective.

Section VI: Detailed Actuarial Analysis and Projections *(May be attached as Appendix)*

Please see attached.

P: 469.524.0000 | www.grsconsulting.com

March 5, 2024

Mr. David Eager
Executive Director
Kentucky Public Pensions Authority
1260 Louisville Road
Frankfort, KY 40601

Re: Actuarial Analysis of Proposed Legislation SB 196 (24 RS BR 1054) and its Financial Impact on the CERS Hazardous System Administered by KPPA

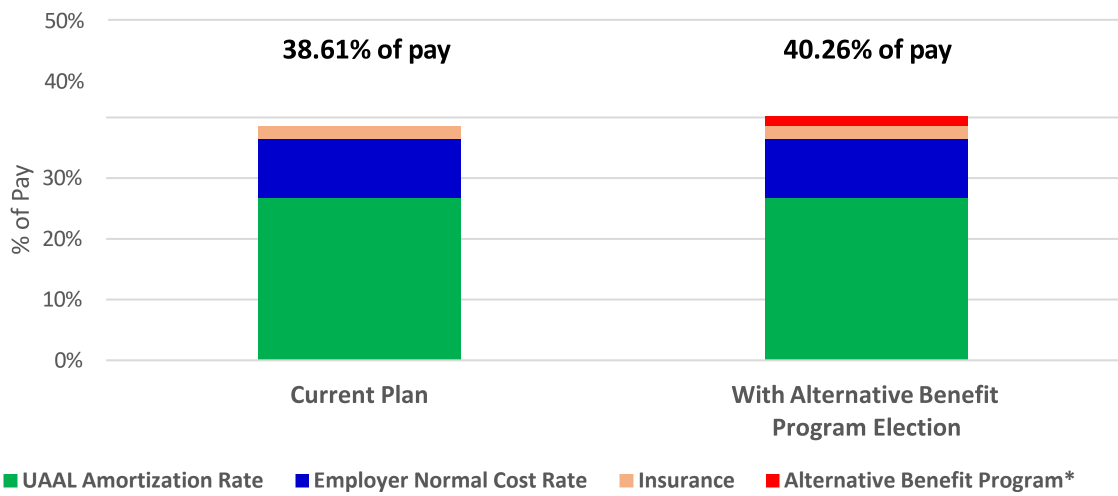
Dear Mr. Eager:

We have reviewed the proposed legislation SB 196 (24 RS BR 1054), and the purpose of this letter is to communicate the actuarial analysis of this legislation in regards to the Hazardous County Employees Retirement System administered by the Kentucky Public Pensions Authority (KPPA).

Summary of Provisions of Proposed Legislation and Fiscal Impact

The proposed legislation establishes an Alternative Benefit Program for CERS hazardous members who are earning Tier 3 Cash Balance benefits. Based on the current policy to amortize the unfunded liability over a closed 20-year period, we have estimated that employers electing to provide the alternative benefit to eligible members will contribute an additional 1.65% of pay on the payroll of their members who have elected to participate in the Alternative Benefit Program. However, due to the nature of this new program, it is our recommendation that this contribution rate be set higher than this actuarially determined rate. Additional discussion is provided further in this letter.

Increase in the CERS Hazardous FY 2025 Actuarially Determined Employer Contribution Rate for Employers Electing the Alternative Benefit Program



* Payable only on payroll of members who have elected to participate in the Alternative Benefit Program.

Because the proposed legislation specifies that the assets, liability, and contribution rate be maintained separately for the Alternative Benefit Program, the proposed legislation will not have a fiscal impact on the contribution requirement for the employers that do not elect to provide the Alternative Benefit Program to their eligible employees.

Members are eligible to elect to enter the Alternative Benefit Program once they have attained ten (10) years of hazardous service and work for an employer that has entered into the program. If the member retires with at least 20 years but less than 25 years of alternative benefit program service (30 total years of hazardous service), the member will receive a retirement benefit equal to an annuity based on their cash balance benefit earned as of their alternative benefit program election date (with interest), plus 2.25% of final compensation for each year of alternative benefit program service the member has earned. If the member has earned 25 or more years of alternative benefit calculation service (35 total years of hazardous service), the benefit will be equal to an annuity based on their cash balance benefit earned as of their alternative benefit program election date (with interest), plus 2.50% of final compensation for each year of alternative benefit program service.

If the member elects the Alternative Benefit Program but does not retire with at least 20 years of alternative benefit program service, the member's benefit will be calculated as if they did not elect to enter the program.

The additional contribution rate associated with the Alternative Benefit Program will depend on the employers and members that elect to participate. The estimate provided in this letter of 1.65% of pay assumes that all employers elect to participate in the Alternative Benefit Program and that members elect the benefit that is most valuable to them. The actual required contribution rate could vary significantly based on actual experience of the membership.

Comments on the Proposed Legislation

There are approximately 240 employers of various sizes participating in the CERS Hazardous System. Providing employers an election to offer this benefit to their employees helps the employer control their pension cost and workforce dynamics. Of the total 9,205 active members in the System as of June 30, 2023, there are 4,636 members earning benefits in the Tier 3 Cash Balance Plan who will potentially be able to make an election to participate in the Alternative Benefit Program upon their attainment of 10 years of hazardous service. However, the number of members in the Tier 3 Cash Balance Plan is expected to increase as Tier 1 and Tier 2 members retire and are replaced with new employees earning Tier 3 benefits. As of the June 30, 2023 actuarial valuation, there are approximately 500 Tier 3 members who would be expected to have enough service on July 1, 2025 in order elect the Alternative Benefit Program.

The proposed legislation requires Board action to adjust benefits if the funding level of the Alternative Benefit Program decreases below 90% or the employer contribution rate for the Alternative Benefit Program exceeds 16% of pay. It is unlikely the maximum 16% of pay employer contribution rate will ever become restrictive.

On the other hand, because the Alternative Benefit Program will begin with no assets and no liability, we expect the plan's funded ratio to be less than 90% for several years and volatile until the plan's demographics mature. As such, we recommend the proposed legislation be amended such that the 90% funded ratio threshold have a delayed effective date of June 30, 2040 (i.e. 15 years after the effective date of the Alternative Benefit Program).

We believe the proposed legislation's absence of parameters in how the actuarially determined contribution of the Alternative Benefit Program is determined is advantageous as is it provides the CERS Board the ability to be more responsive with the contribution rate to maintain the Alternative Benefit Program's funding level.

In order to accelerate funding of the plan and reduce the likelihood of future benefit changes, we recommend using a lower amortization period (between 8-12 years, rather than the current 20 years) to calculate the actuarially determined contribution rate for the Alternative Benefit Program. Additionally, we would recommend that employers pay an additional margin over the actuarially determined contribution rate (around an additional 1%-2% of pay) to provide a margin for future adverse experience, at least for the first 15 years until the 90% funded ratio becomes effective.

The attached exhibits provide a projection of the funded status and employer contribution requirement of the Alternative Benefit Program under three different scenarios:

1. Amortization period is maintained at 20 years and no margin above the actuarially determined contribution rate is paid
2. Amortization period is lowered to 10 years and no margin above the actuarially determined contribution is paid
3. Amortization period is lowered to 10 years and an additional 1% of pay is contributed above the actuarially determined rate

The comparison of the first and second exhibit illustrates the value of using a 10-year amortization period versus a 20-year amortization period that is in Statute for the existing and new unfunded liability. Also, comparing the second and third exhibit shows the benefit of contributing 1% more than the actuarial determined rate. It is GRS's recommendation to use funding parameters based on Exhibit 3 or something of similar result.

Basis of Calculations

Except where noted, the calculations are based on the methods, assumptions, and plan provisions documented in the actuarial valuation as of June 30, 2023. Our calculations are based upon assumptions regarding future events, which may or may not materialize. Depending on actual plan experience, actual results could deviate significantly.

We are not attorneys, and we cannot provide a legal opinion regarding the changes in this proposed legislation. Nothing in this letter should be construed as providing legal, investment or tax advice. Finally, no statement in this letter is intended to be interpreted as a recommendation in favor of or in opposition to the proposed legislation studied herein.

All three of the undersigned are members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. In addition, all three are independent of KPPA and are experienced in performing valuations for large public retirement systems.

Sincerely,
Gabriel, Roeder, Smith & Company

Daniel J. White, FSA, EA, MAAA
Senior Consultant and Actuary

Janie Shaw, ASA, EA, MAAA
Consultant and Actuary

Krysti Kiesel, ASA, MAAA
Consultant and Actuary

CERS Hazardous Retirement Fund
SB196 - Alternative Benefit Program
EXHIBIT 1: 20-Year Amortization Period - No Additional Margin is Paid over the Actuarially Determined Rate
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 3	$ -	$ 3	0%	$ -	$ -	$ -	0.00%	0.00%
2024	6	-	6	0%	-	-	-	0.00%	0.00%
2025	10	1	9	8%	-	-	27,702	0.00%	0.00%
2026	14	2	12	15%	786	-	47,638	1.65%	1.65%
2027	19	4	15	22%	1,257	-	72,237	1.74%	1.74%
2028	24	7	18	27%	1,732	-	99,530	1.74%	1.74%
2029	30	10	20	33%	2,168	-	125,315	1.73%	1.73%
2030	36	14	23	37%	2,636	-	151,482	1.74%	1.74%
2031	43	18	25	42%	3,094	-	175,806	1.76%	1.76%
2032	51	23	27	46%	3,590	-	202,802	1.77%	1.77%
2033	59	30	29	50%	3,985	-	225,135	1.77%	1.77%
2034	68	37	32	54%	4,520	-	252,501	1.79%	1.79%
2035	79	45	34	57%	5,028	-	280,872	1.79%	1.79%
2036	90	54	36	60%	5,554	-	310,276	1.79%	1.79%
2037	103	65	38	63%	6,099	-	340,745	1.79%	1.79%
2038	116	76	40	66%	6,702	-	372,308	1.80%	1.80%
2039	131	89	42	68%	7,290	-	404,997	1.80%	1.80%
2040	147	104	43	71%	7,899	-	438,844	1.80%	1.80%
2041	165	120	45	73%	8,530	-	473,884	1.80%	1.80%
2042	184	138	46	75%	9,234	-	510,150	1.81%	1.81%
2043	205	158	47	77%	9,913	-	547,677	1.81%	1.81%
2044	228	180	48	79%	10,674	-	586,500	1.82%	1.82%
2045	253	203	49	80%	10,967	-	626,658	1.75%	1.75%
2046	279	229	51	82%	11,426	-	668,187	1.71%	1.71%
2047	308	256	52	83%	11,876	-	711,127	1.67%	1.67%
2048	340	286	53	84%	12,315	-	755,518	1.63%	1.63%
2049	374	319	55	85%	12,822	-	801,399	1.60%	1.60%
2050	410	354	57	86%	13,326	-	848,813	1.57%	1.57%
2051	450	392	58	87%	13,916	-	897,804	1.55%	1.55%
2052	488	428	60	88%	14,416	-	948,414	1.52%	1.52%

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.

All employers are assumed to elect to enter the Alternative Benefit Program at July 1, 2025.

All members are assumed to elect to enter the Alternative Benefit Program when they attain 10 years of service, if the program is most valuable to them.

CERS Hazardous Retirement Fund
SB196 - Alternative Benefit Program
EXHIBIT 2: 10-Year Amortization Period - No Additional Margin is Paid over the Actuarially Determined Rate
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 3	$ -	$ 3	0%	$ -	$ -	$ -	0.00%	0.00%
2024	6	-	6	0%	-	-	-	0.00%	0.00%
2025	10	1	9	12%	-	-	27,702	0.00%	0.00%
2026	14	3	11	22%	1,115	-	47,638	2.34%	2.34%
2027	19	6	13	31%	1,784	-	72,237	2.47%	2.47%
2028	24	9	15	38%	2,429	-	99,530	2.44%	2.44%
2029	30	14	16	46%	3,020	-	125,315	2.41%	2.41%
2030	36	19	17	52%	3,636	-	151,482	2.40%	2.40%
2031	43	25	18	58%	4,237	-	175,806	2.41%	2.41%
2032	51	32	18	64%	4,908	-	202,802	2.42%	2.42%
2033	59	41	18	69%	5,448	-	225,135	2.42%	2.42%
2034	68	50	18	73%	6,161	-	252,501	2.44%	2.44%
2035	79	60	19	76%	6,263	-	280,872	2.23%	2.23%
2036	90	71	19	79%	6,485	-	310,276	2.09%	2.09%
2037	103	83	20	81%	6,747	-	340,745	1.98%	1.98%
2038	116	96	21	82%	6,999	-	372,308	1.88%	1.88%
2039	131	110	21	84%	7,330	-	404,997	1.81%	1.81%
2040	147	125	22	85%	7,680	-	438,844	1.75%	1.75%
2041	165	142	23	86%	8,103	-	473,884	1.71%	1.71%
2042	184	161	24	87%	8,468	-	510,150	1.66%	1.66%
2043	205	181	25	88%	8,982	-	547,677	1.64%	1.64%
2044	228	203	25	89%	9,443	-	586,500	1.61%	1.61%
2045	253	227	26	90%	9,901	-	626,658	1.58%	1.58%
2046	279	253	27	90%	10,424	-	668,187	1.56%	1.56%
2047	308	281	28	91%	10,880	-	711,127	1.53%	1.53%
2048	340	311	28	92%	11,408	-	755,518	1.51%	1.51%
2049	374	345	29	92%	11,941	-	801,399	1.49%	1.49%
2050	410	380	30	93%	12,478	-	848,813	1.47%	1.47%
2051	450	419	31	93%	13,018	-	897,804	1.45%	1.45%
2052	488	456	32	94%	13,562	-	948,414	1.43%	1.43%

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.

All employers are assumed to elect to enter the Alternative Benefit Program at July 1, 2025.

All members are assumed to elect to enter the Alternative Benefit Program when they attain 10 years of service, if the program is most valuable to them.

CERS Hazardous Retirement Fund
SB196 - Alternative Benefit Program
EXHIBIT 3: 10-Year Amortization Period - Additional 1% of Pay Contributed over the Actuarially Determined Rate
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 3	$ -	$ 3	0%	$ -	$ -	$ -	0.00%	0.00%
2024	6	-	6	0%	-	-	-	0.00%	0.00%
2025	10	2	8	17%	-	-	27,702	0.00%	0.00%
2026	14	4	10	31%	1,591	-	47,638	3.34%	2.34%
2027	19	8	11	43%	2,507	-	72,237	3.47%	2.47%
2028	24	13	12	53%	3,334	-	99,530	3.35%	2.35%
2029	30	18	11	62%	4,048	-	125,315	3.23%	2.23%
2030	36	25	11	70%	4,757	-	151,482	3.14%	2.14%
2031	43	33	10	77%	5,415	-	175,806	3.08%	2.08%
2032	51	42	8	83%	6,084	-	202,802	3.00%	2.00%
2033	59	52	7	89%	6,596	-	225,135	2.93%	1.93%
2034	68	63	5	92%	7,247	-	252,501	2.87%	1.87%
2035	79	75	4	95%	7,246	-	280,872	2.58%	1.58%
2036	90	88	2	97%	7,385	-	310,276	2.38%	1.38%
2037	103	101	1	99%	7,565	-	340,745	2.22%	1.22%
2038	116	116	(0)	100%	7,781	-	372,308	2.09%	1.09%
2039	131	133	(1)	101%	8,059	-	404,997	1.99%	0.99%
2040	147	150	(3)	102%	8,338	-	438,844	1.90%	0.90%
2041	165	169	(4)	103%	8,719	-	473,884	1.84%	0.84%
2042	184	190	(6)	103%	9,081	-	510,150	1.78%	0.78%
2043	205	213	(7)	104%	9,530	-	547,677	1.74%	0.74%
2044	228	237	(9)	104%	9,912	-	586,500	1.69%	0.69%
2045	253	264	(11)	104%	10,340	-	626,658	1.65%	0.65%
2046	279	292	(13)	105%	10,758	-	668,187	1.61%	0.61%
2047	308	323	(15)	105%	11,165	-	711,127	1.57%	0.57%
2048	340	357	(17)	105%	11,635	-	755,518	1.54%	0.54%
2049	374	393	(19)	105%	12,021	-	801,399	1.50%	0.50%
2050	410	432	(21)	105%	12,478	-	848,813	1.47%	0.47%
2051	450	474	(24)	105%	12,928	-	897,804	1.44%	0.44%
2052	488	514	(26)	105%	13,467	-	948,414	1.42%	0.42%

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.

All employers are assumed to elect to enter the Alternative Benefit Program at July 1, 2025.

All members are assumed to elect to enter the Alternative Benefit Program when they attain 10 years of service, if the program is most valuable to them.