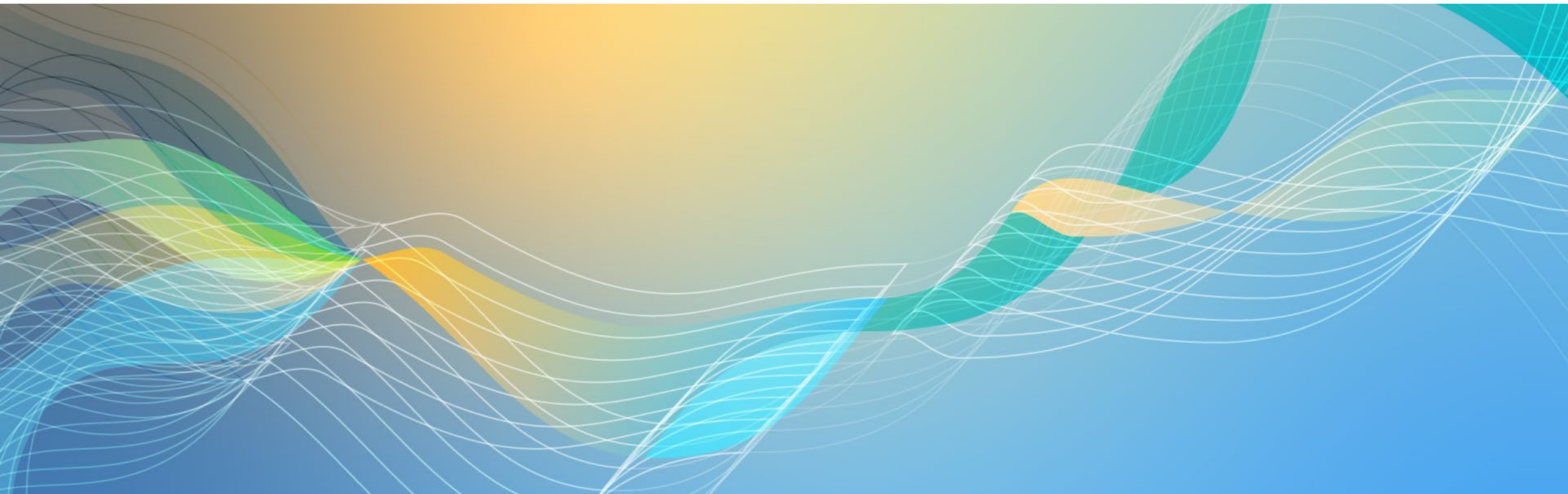


Experience Study and Actuarial Assumptions Review

Milliman Presentation for CPS Energy

AUGUST 22, 2023



Contents

Your Milliman Team

Background

- Experience Study
 - Actuarial Assumption Selection
 - Actuarial Certification
-

Experience Study Executive Summary

Demographic Assumptions

- Retirement Experience
 - Termination Experience
 - Disability Experience
 - Mortality Experience
 - Optional Payment Form Election Rates
 - Marriage Assumption
 - Retiree Medical Coverage / Spouse Coverage Assumptions
-

Contents

Economic Assumptions

- Expected Return on Assets Assumption
- Inflation Assumption
- Salary Increases and Overtime Assumptions
- Cost of Living Adjustment (COLA) Assumption
- Sensitivities of Accrued Vacation Impact on Pension Benefits

Detailed Results

- Funding Impacts
- GASB 68 / 75 Impacts
- Recommended Assumption Changes - Tables

Appendices

Your Milliman Team

Your Milliman Team

ACTUARIAL SERVICES



JAKE PRINGLE
Principal & Consulting
Actuary
713.658.3013
jake.pringle@milliman.com



JOEL WEHNER
Principal
214.863.5525
joel.wehner@milliman.com



JIM TURLINSON
Principal & Consulting
Actuary
713.658.3009
jim.tumlinson@milliman.com



ABBY HIRSHKOWITZ
Actuarial Associate
713.658.3033
abby.hirshkowitz@milliman.com

HEALTH PLAN SERVICES



STEPHANIE PETERSON
Principal & Consulting
Actuary
214.863.5159
stephanie.peterson@milliman.com

Our retirement plan services to your plans include . . .

Funding

- Annual valuation
- Actuarially determined contributions



Accounting

- GASB 67/68 (Pension)
- GASB 74/75 (Health, Disability & Life)



Other Services

- RDS Attestation
- Projections for budgeting purposes
- Plan studies



Background

Background

Experience Study

- Last experience study completed by Milliman, June 2020 (using experience from calendar years 2017 through 2020).
- Actual experience was compared to current assumptions along with future considerations for the plan(s) and economic environment.
- As requested, we have performed an actuarial experience study of the Pension Plan and Group Retiree Health Plan (for Health-specific assumptions) including experience from calendar years 2020 through 2023. This experience was included in the actuarial valuations performed from January 1, 2020 through January 1, 2022 as well as the initial results for the January 1, 2023 actuarial valuation.
- Note that the results of the experience study will also apply to the Long-Term Disability Income Plan and the Group Life Insurance Plan (where assumptions are applicable).
- Our findings are shown in this presentation and indicate that some intermediate adjustments are recommended. Furthermore, as expected with intermediate adjustments, the impact of the proposed assumption changes is within a moderate range.
- Special events may impact these assumptions and should be considered as part of the analysis.

Background

Actuarial Assumption Selection

Actuarial assumptions are intended to quantify a best-estimate value of contingent obligations coming due in the future for a given purpose. Those contingent obligations will have a cost determined over time as actual experience emerges. Not all actuarial assumptions will be found to precisely match experience once it emerges and thus are expected to change as that emerging experience and circumstances change.

The Actuarial Standards Board (“ASB”), an authoritative professional actuarial practice body in the United States, publishes Actuarial Standards of Practice (“ASOP”) of which all statements of actuarial opinion must comply. In particular, for retirement actuaries, the following statements especially pertain;

- ASOP 4 Measuring Pension Obligations and Determining Pension Plan Costs or Contributions;
- ASOP 27 Selecting Economic Assumptions for Measuring Pension Obligations;
- ASOP 35 Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations; and
- ASOP 41 Actuarial Communication.

These statements are subject to revision from time to time by the ASB and require practicing actuaries to comply. This report details the compliance with these actuarial standards of practice by Milliman.

Actuarial assumptions may be broadly categorized into three areas:

- Those selected by the actuary,
- Those prescribed or set by another party (example: investment return assumption, interest rate assumption), and
- Those prescribed by law or regulations (example: 401(a) and 415 limits).

Background

Actuarial Assumption Selection

The main focus of this report is those assumptions selected or recommended by the actuary but includes those selected by another party. Those assumptions prescribed by law or set by another party are identified as such in this report. Assumptions immaterial to the results of the valuation may or may not be addressed.

According to the Standards mentioned above, assumptions selected or recommended by an actuary must be reasonable and consistent. Reasonable assumptions will:

- Be appropriate for the purpose of the measurement;
- Reflect the actuary's professional judgment;
- Consider current and historical economic data, the actuary's observation of the estimates inherent in market data, or a combination of these elements; and,
- Have no significant bias, except in certain cases involving plan provisions that are difficult to measure or to assess risks.

An actuary could consider several different assumptions reasonable for a given measurement as a result of the inherent uncertainty in one or more of the underlying components of that assumption including, but not limited to, inflation, real returns, productivity growth or medical trends. Additionally, different actuaries may select different reasonable assumptions.

Background

Actuarial Certification

This presentation is intended as a high-level discussion of current experience for the plan. It should be considered a supplement to our latest actuarial valuation, the January 1, 2022 actuarial funding valuations and the FYE 2024 GASB 68 and GASB 75 valuations and all caveats from those reports apply. Unless otherwise stated, any calculations herein are based on the same plan provisions and assumptions as disclosed in this presentation. Please refer to the most recent valuation report for additional details on plan provisions, assumptions, limitations, and information about the Plan's risks. Please also refer to the Statements of Reliance and Limitations at the end of this presentation for additional disclaimers.

We hereby certify that to the best of our knowledge and belief, this presentation is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the Code of Professional Conduct and Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States of the American Academy of Actuaries. The assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Jake Pringle

Principal and Consulting Actuary



James Tumlinson, Jr.

Principal and Consulting Actuary

Experience Study Executive Summary


Experience Study Executive Summary

Demographic Assumptions

Assumption	January 1, 2022 Current Assumptions	January 1, 2023 Proposed Assumptions	Observations	Liabilities / Cost Impact
Healthy Mortality	Pri-2012 Private Retirement Plans Mortality Tables projected with Mortality Improvement Scale MP-2021 on a generational basis, with sex-distinct employee rates before commencement and healthy annuitant rates after commencement (separate table for contingent survivors; headcount weighted for OPEB)	No Recommended Change	<ul style="list-style-type: none"> • More deaths than expected • Experience more consistent with private sector table than public sector tables • Headcount-weighted tables more appropriate for OPEB plans • Older active deaths cause higher mortality at later ages (since CPS Energy has older active workforce) 	
Disabled Mortality	Pri-2012 Private Retirement Plans Disabled Mortality Table projected with Mortality Improvement Scale MP-2021	No Recommended Change	<ul style="list-style-type: none"> • Less deaths than expected using current table • More deaths than expected; headcount-weighted tables closest to actual experience 	

Experience Study Executive Summary

Demographic Assumptions

Assumption	January 1, 2022 Current Assumptions			January 1, 2023 Proposed Assumptions			Observations	Liabilities / Cost Impact
	Age	<25YOS	>25YOS	Age	<25YOS	>25YOS		
Retirement Rates (Actives)	50-53	N/A	2.0%	50-53	N/A	2.5%	<ul style="list-style-type: none"> Higher number of retirements in years 2021 – 2022; considered these years may be inflated due to COVID Higher retirement rates at normal retirement age Retirement pattern overall higher; overall increase recommended 	
	54	N/A	10.0%	54	N/A	15.0%		
	55-60	2.5%	20.0%	55-57	2.5%	22.5%		
	61	10.0%	25.0%	58-60	7.5%	22.5%		
	62-63	10.0%	30.0%	61	12.5%	25.0%		
	64-65	22.5%	30.0%	62-63	12.5%	30.0%		
	66-67	22.5%	35.0%	64	22.5%	30.0%		
	68-69	35.0%	35.0%	65	22.5%	50.0%		
	70	100.0%	100.0%	66	22.5%	35.0%		
				67	35.0%	35.0%		
			68-69	35.0%	35.0%			
			70	100.0%	100.0%			

Experience Study Executive Summary

Demographic Assumptions

Assumption	January 1, 2022 Current Assumptions	January 1, 2023 Proposed Assumptions	Observations	Liabilities / Cost Impact																												
Termination Rates	<p>10.0% for actives with 1-2 YOS and 5.0% for actives with 3-4 YOS.</p> <p>Sample rates for termination after the first 4 years of service are shown in the following table based on age after first 4 YOS.</p> <table border="1"> <thead> <tr> <th>Age</th> <th>5+ YOS</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>4.61%</td> </tr> <tr> <td>30</td> <td>3.34%</td> </tr> <tr> <td>35</td> <td>2.42%</td> </tr> <tr> <td>40</td> <td>1.88%</td> </tr> <tr> <td>45</td> <td>1.71%</td> </tr> <tr> <td>50</td> <td>1.71%</td> </tr> </tbody> </table>	Age	5+ YOS	25	4.61%	30	3.34%	35	2.42%	40	1.88%	45	1.71%	50	1.71%	<p>10.0% for actives with 1-2 YOS, 5.0% for actives with 3 YOS, and 7.0% for actives with 4 YOS.</p> <p>Sample rates for termination after the first 4 years of service are shown in the following table based on age after first 4 YOS.</p> <table border="1"> <thead> <tr> <th>Age</th> <th>5+ YOS</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>5.53%</td> </tr> <tr> <td>30</td> <td>4.01%</td> </tr> <tr> <td>35</td> <td>2.90%</td> </tr> <tr> <td>40</td> <td>2.26%</td> </tr> <tr> <td>45</td> <td>2.05%</td> </tr> <tr> <td>50</td> <td>2.05%</td> </tr> </tbody> </table>	Age	5+ YOS	25	5.53%	30	4.01%	35	2.90%	40	2.26%	45	2.05%	50	2.05%	<ul style="list-style-type: none"> • More terminations than expected for actives with 4 YOS • Overall more terminations than expected for actives with 5+ YOS • Higher number of terminations in years 2021 – 2022; considered these years may be inflated due to COVID 	
Age	5+ YOS																															
25	4.61%																															
30	3.34%																															
35	2.42%																															
40	1.88%																															
45	1.71%																															
50	1.71%																															
Age	5+ YOS																															
25	5.53%																															
30	4.01%																															
35	2.90%																															
40	2.26%																															
45	2.05%																															
50	2.05%																															


Experience Study Executive Summary

Demographic Assumptions

Assumption	January 1, 2022 Current Assumptions		January 1, 2023 Proposed Assumptions	Observations	Liabilities / Cost Impact
	Age	Male	Female		
Disability Rates	25	0.03%	0.03%	No Recommended Change	<ul style="list-style-type: none"> Significantly less disabilities than expected Greater impact would be recognized in LTD plan if disability rates were decreased
	30	0.03%	0.05%		
	35	0.04%	0.07%		
	40	0.07%	0.10%		
	45	0.13%	0.16%		
	50	0.25%	0.27%		
	55	0.48%	0.42%		
	60	0.74%	0.55%		

Experience Study Executive Summary

Demographic Assumptions

Assumption	January 1, 2022 Current Assumptions	January 1, 2023 Proposed Assumptions	Observations	Liabilities / Cost Impact																				
<p>Form of Payment</p>	<p>For active retirements and future terminated vested retirements: shown in the following table.</p> <table border="1"> <tr><td>Single Life</td><td>18%</td></tr> <tr><td>10 Year C&L</td><td>10%</td></tr> <tr><td>100% J&S</td><td>37%</td></tr> <tr><td>75% J&S</td><td>18%</td></tr> <tr><td>50% J&S</td><td>17%</td></tr> </table> <p>For current terminated vested retirements: lump sum is assumed.</p> <p>For future disability retirements and pre-retirement deaths: 10 year certain and life annuity is assumed (future deaths also include a \$5,000 immediate death benefit).</p>	Single Life	18%	10 Year C&L	10%	100% J&S	37%	75% J&S	18%	50% J&S	17%	<p>For active retirements and future terminated vested retirements: shown in the following table.</p> <table border="1"> <tr><td>Single Life</td><td>15%</td></tr> <tr><td>10 Year C&L</td><td>15%</td></tr> <tr><td>100% J&S</td><td>35%</td></tr> <tr><td>75% J&S</td><td>13%</td></tr> <tr><td>50% J&S</td><td>22%</td></tr> </table> <p>For current terminated vested retirements: lump sum is assumed.</p> <p>For future disability retirements and pre-retirement deaths: 10 year certain and life annuity is assumed (future deaths also include a \$5,000 immediate death benefit).</p>	Single Life	15%	10 Year C&L	15%	100% J&S	35%	75% J&S	13%	50% J&S	22%	<ul style="list-style-type: none"> • More certain and life annuities and 50% joint and survivor annuities elected (some joint and survivors with certain periods). • Limited deferred vested population showed split experience between lump sums and annuities; annuity experience consistent with active retirements. 	
Single Life	18%																							
10 Year C&L	10%																							
100% J&S	37%																							
75% J&S	18%																							
50% J&S	17%																							
Single Life	15%																							
10 Year C&L	15%																							
100% J&S	35%																							
75% J&S	13%																							
50% J&S	22%																							







Experience Study Executive Summary

Demographic Assumptions

Assumption	January 1, 2022 Current Assumptions	January 1, 2023 Proposed Assumptions	Observations	Liabilities / Cost Impact
Marriage Assumption	For participants not in pay status: 80% of male participants and 55% of female participants are assumed to be married to a spouse of the opposite sex. Males are assumed to be two years older than females.	No Recommended Change	<ul style="list-style-type: none"> Percentage of retirees with spouse date of birth on file consistent with current assumptions. 	
Election of Retiree Welfare Benefits	Males - 85% ; females - 85%	No Recommended Change	<ul style="list-style-type: none"> Fewer females retiring and electing retiree medical during last four years to a minor degree Conservative assumption to keep current rates and to see impact from COVID 	
Future Retirees Covering Dependents	Males - 75% ; females - 40% ; males are assumed to be two years older than their spouse	No Recommended Change	<ul style="list-style-type: none"> Fewer males and more females retiring and electing dependent retiree medical coverage during last four years to a minor degree Conservative assumption to keep current rates and to see impact from COVID 	


Experience Study Executive Summary

Economic Assumptions

Assumption	January 1, 2022 Current Assumptions	January 1, 2023 Proposed Assumptions	Observations	Liabilities / Cost Impact
Investment Return & Interest Rate	7.00%	ASOP 27 30-year average analysis produces 7.04% median Sensitivities provided for 6.75% and 7.25%		
Inflation	2.30%	2.33%	<ul style="list-style-type: none"> Actual inflation over past five years averaged ~3.8% Updated annually 	
Max Benefit & Annual Comp Limit Increases	2.30%	2.33%	<ul style="list-style-type: none"> Tied to inflation 	
Social Security Taxable Wage Base	2.80%	2.83%	<ul style="list-style-type: none"> Inflation + GDP assumption of 0.5% 	
Cost of Living Adjustment	1.25%	1.50% (sensitivities shown)	<ul style="list-style-type: none"> Actual is half of inflation Actual COLAs paid over past five years averaged ~1.9% 	
Administrative Expenses	\$500,000	\$500,000 (no change)	<ul style="list-style-type: none"> Average administrative expenses ~\$473,000 over past five years 	


Experience Study Executive Summary

Economic Assumptions

Assumption	January 1, 2022 Current Assumptions	January 1, 2023 Proposed Assumptions	Observations	Liabilities / Cost Impact																						
Base Salary Table	<table border="1"> <thead> <tr> <th>Age</th> <th>Annual Base Salary Increase*</th> </tr> </thead> <tbody> <tr><td>25</td><td>11.58%</td></tr> <tr><td>30</td><td>8.37%</td></tr> <tr><td>35</td><td>6.56%</td></tr> <tr><td>40</td><td>5.56%</td></tr> <tr><td>45</td><td>4.86%</td></tr> <tr><td>50</td><td>4.56%</td></tr> <tr><td>55</td><td>4.31%</td></tr> <tr><td>60</td><td>3.80%</td></tr> <tr><td>65</td><td>3.55%</td></tr> <tr><td>70</td><td>3.30%</td></tr> </tbody> </table>	Age	Annual Base Salary Increase*	25	11.58%	30	8.37%	35	6.56%	40	5.56%	45	4.86%	50	4.56%	55	4.31%	60	3.80%	65	3.55%	70	3.30%	No Recommended Change outside of 2.33% inflation update:	<ul style="list-style-type: none"> Overall compensation increases met expectations looking at all ages Looking for feedback for future expectations 	
	Age	Annual Base Salary Increase*																								
25	11.58%																									
30	8.37%																									
35	6.56%																									
40	5.56%																									
45	4.86%																									
50	4.56%																									
55	4.31%																									
60	3.80%																									
65	3.55%																									
70	3.30%																									
2.30% inflation built into base salary table; 2022 market match valued by increasing salary increases by 12.5% for salaried employees (including executives) and 1.2% for wage scale and utility worker employees for 2022.	<table border="1"> <thead> <tr> <th>Age</th> <th>Annual Base Salary Increase</th> </tr> </thead> <tbody> <tr><td>25</td><td>11.61%</td></tr> <tr><td>30</td><td>8.40%</td></tr> <tr><td>35</td><td>6.59%</td></tr> <tr><td>40</td><td>5.59%</td></tr> <tr><td>45</td><td>4.89%</td></tr> <tr><td>50</td><td>4.59%</td></tr> <tr><td>55</td><td>4.34%</td></tr> <tr><td>60</td><td>3.84%</td></tr> <tr><td>65</td><td>3.58%</td></tr> <tr><td>70</td><td>3.33%</td></tr> </tbody> </table>	Age	Annual Base Salary Increase*	25	11.61%	30	8.40%	35	6.59%	40	5.59%	45	4.89%	50	4.59%	55	4.34%	60	3.84%	65	3.58%	70	3.33%	*2.33% inflation built into base salary table; partial 2022 market match valued by increasing salary increases by 6.25% for salaried employees (including executives) and 0.6% for wage scale and utility worker employees for 2023. PTO 2-week buy out valued by loading salary increases by approximately 3.85% for 2025.		
Age	Annual Base Salary Increase*																									
25	11.61%																									
30	8.40%																									
35	6.59%																									
40	5.59%																									
45	4.89%																									
50	4.59%																									
55	4.34%																									
60	3.84%																									
65	3.58%																									
70	3.33%																									

Experience Study Executive Summary

Economic Assumptions

Assumption	January 1, 2022 Current Assumptions		January 1, 2023 Proposed Assumptions		Observations	Liabilities / Cost Impact
Additional Pay for Nonexempt Employees	Age	% of Base Pay	Age	% of Base Pay	<ul style="list-style-type: none"> Higher overtime / shift differential / relief paid over past four years 	
	45	14.60%	45	18.60%		
	50	13.60%	50	17.60%		
	55	12.60%	55	16.60%		
	60	10.90%	60	14.90%		
	65	6.50%	65	13.90%		
	70	6.00%	70	4.80%		
	Annual overtime/shift differential/relief, etc. assumed to equal a percentage of base pay (percentage varies by age; see sample rates above).					

Experience Study Executive Summary

Economic Assumptions

Assumption	January 1, 2022 Current Assumptions	January 1, 2023 Proposed Assumptions	Observations	Liabilities / Cost Impact																
Incentive Pay	Incentive Pay: Annual incentive pay targets assumed as follows:	No adjustments made since close of the incentive pay program; 2020 incentive pay assumption used to estimate future expected incentive payments from future program	<ul style="list-style-type: none"> Previously provided by CPS Energy every year. Incentive pay program ended 2020 Prior year incentive payment paid March 2023 To be discussed 																	
	<table border="1"> <thead> <tr> <th>Employee Group</th> <th>Incentive Target % of Base Pay</th> </tr> </thead> <tbody> <tr> <td>Senior Executive</td> <td>35.00%</td> </tr> <tr> <td>Sr. Director, Director</td> <td>25.00%</td> </tr> <tr> <td>Sr. Manager</td> <td>18.00%</td> </tr> <tr> <td>Level 2</td> <td>12.00%</td> </tr> <tr> <td>Level 1 (exempt)</td> <td>9.00%</td> </tr> <tr> <td>Level 1 (non-exempt)</td> <td>7.00%</td> </tr> <tr> <td>Wage Scale</td> <td>0.00%</td> </tr> </tbody> </table>				Employee Group	Incentive Target % of Base Pay	Senior Executive	35.00%	Sr. Director, Director	25.00%	Sr. Manager	18.00%	Level 2	12.00%	Level 1 (exempt)	9.00%	Level 1 (non-exempt)	7.00%	Wage Scale	0.00%
	Employee Group				Incentive Target % of Base Pay															
Senior Executive	35.00%																			
Sr. Director, Director	25.00%																			
Sr. Manager	18.00%																			
Level 2	12.00%																			
Level 1 (exempt)	9.00%																			
Level 1 (non-exempt)	7.00%																			
Wage Scale	0.00%																			
Percentage of target incentive paid assumed as follows:																				

Category	% of Employees	% of Target
Exceptional	14.9%	100%
Exceeds	36.2%	66%
Meets Expectations	47.7%	33%
Needs Improvement	1.2%	0%
Unsatisfactory	0.1%	0%

Experience Study Executive Summary

Pension Plan Impact (\$ in millions)

	2022	2023 Preliminary (Individual Impacts)						
	Final	No ES Changes	Retirement	Termination	Form of Payment	Overtime and Salary	COLA (1.50%)	All Proposed (7.00% IR)
<u>Funding Estimates</u>								
Employer Normal Cost	\$31.3	\$32.7	\$33.1	\$31.2	\$32.6	\$33.9	\$34.0	\$33.9
Unfunded Actuarial Accrued Liability	\$281.3	\$325.4	\$335.3	\$327.4	\$324.5	\$369.8	\$381.1	\$437.6
Actuarial Determined Contribution	\$56.7	\$62.2	\$63.4	\$60.8	\$62.0	\$67.1	\$68.1	\$72.8
<u>GASB 67 Estimates</u>								
Total Pension Liability	\$2,351.3	\$2,461.9	\$2,472.1	\$2,462.6	\$2,460.8	\$2,511.2	\$2,522.6	\$2,582.9
Fiduciary Net Position	<u>1,919.2</u>	<u>1,991.5</u>	<u>1,990.7</u>	<u>1,991.5</u>	<u>1,991.5</u>	<u>1,992.2</u>	<u>1,991.5</u>	<u>1,991.3</u>
Net Pension Liability	\$432.1	\$470.4	\$481.4	\$471.1	\$469.3	\$519.0	\$531.1	\$591.6
<u>GASB 68 Estimates</u>								
	2024	2025 Estimate (Individual Impacts)						
Total Pension Liability	\$2,357.8	\$2,468.9	\$2,479.2	\$2,469.4	\$2,467.8	\$2,518.8	\$2,530.0	\$2,590.9
Pension Expense	\$81.0	\$79.5	\$81.9	\$79.9	\$79.3	\$88.2	\$90.8	\$104.0

Experience Study Executive Summary

Pension Plan Impact (\$ in millions)

Interest Rate Sensitivities

Funding	2023 Preliminary		
	All Proposed (7.00% IR)	0.25% Decrease (6.75% IR)	0.25% Increase (7.25% IR)
Actuarial Accrued Liability	\$2,497.6	\$2,569.7	\$2,428.5
Actuarial Value of Assets	<u>2,060.0</u>	<u>2,060.0</u>	<u>2,060.0</u>
Unfunded Actuarial Accrued Liability	\$437.6	\$509.7	\$368.5
2023 Amortization Base	13.5	19.0	7.9
Actuarial Determined Contribution	\$72.8	\$81.4	\$64.3
	2025 Estimate		
GASB 68	All Proposed (7.00% IR)	0.25% Decrease (6.75% IR)	0.25% Increase (7.25% IR)
Total Pension Liability	\$2,590.9	\$2,666.8	\$2,522.0
Fiduciary Net Position	<u>2,086.1</u>	<u>2,086.1</u>	<u>2,086.1</u>
Net Pension Liability	\$504.8	\$580.7	\$435.9
Recognition of Assumption Changes or Inputs	42.7	57.8	28.9
Pension Expense	\$104.0	\$119.1	\$90.2

Experience Study Executive Summary

Group Retiree Health Plan Impact (\$ in millions)

	2022	2023 Preliminary (Individual Impacts)			
	Final	No ES Changes	Retirement	Termination	All Proposed (7.00% IR)
<u>Funding Contribution Estimates</u>					
Normal Cost	\$4.0	\$5.5	\$5.6	\$5.2	\$5.4
Unfunded Actuarial Accrued Liability	(\$93.6)	(\$29.0)	(\$25.6)	(\$28.8)	(\$25.5)
Actuarial Determined Contribution	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<u>GASB 74 Estimates</u>					
Total OPEB Liability	\$251.0	\$321.9	\$325.9	\$321.8	\$325.7
Fiduciary Net Position	<u>285.0</u>	<u>286.5</u>	<u>286.5</u>	<u>286.5</u>	<u>286.5</u>
Net OPEB Liability	(\$34.0)	\$35.4	\$39.4	\$35.3	\$39.2
<u>GASB 75 Estimates</u>					
	2024	2025 Estimate (Individual Impacts)			
Total OPEB Liability	\$251.1	\$321.9	\$325.9	\$321.8	\$325.7
OPEB Expense	(\$0.9)	\$10.2	\$11.3	\$10.5	\$11.6

Experience Study Executive Summary

Group Retiree Health Plan Impact (\$ in millions)

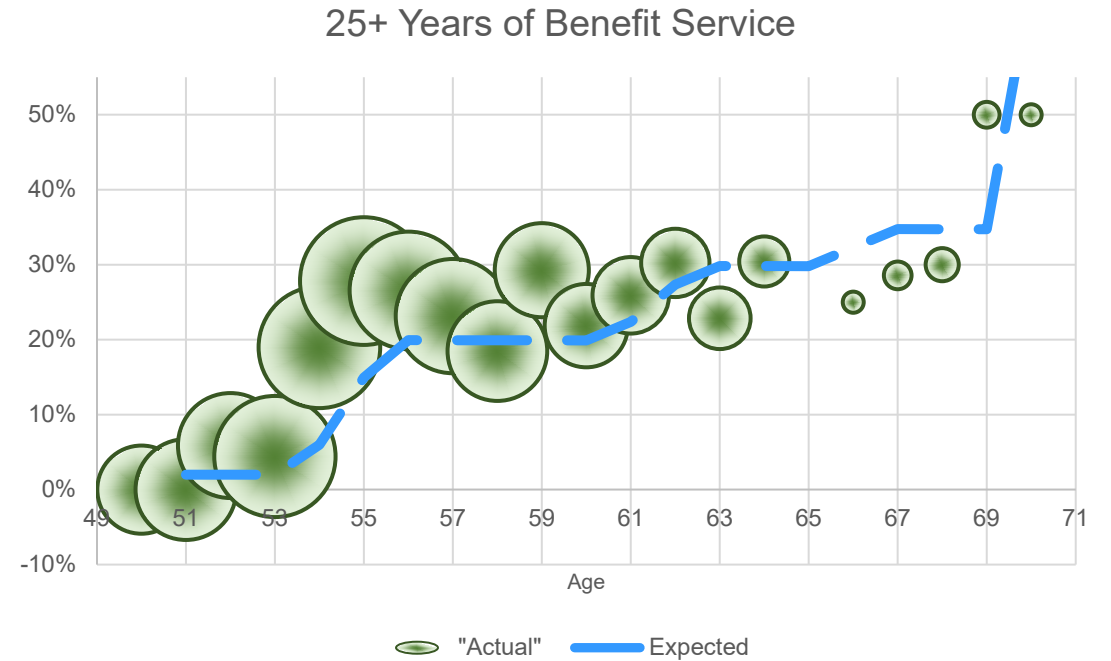
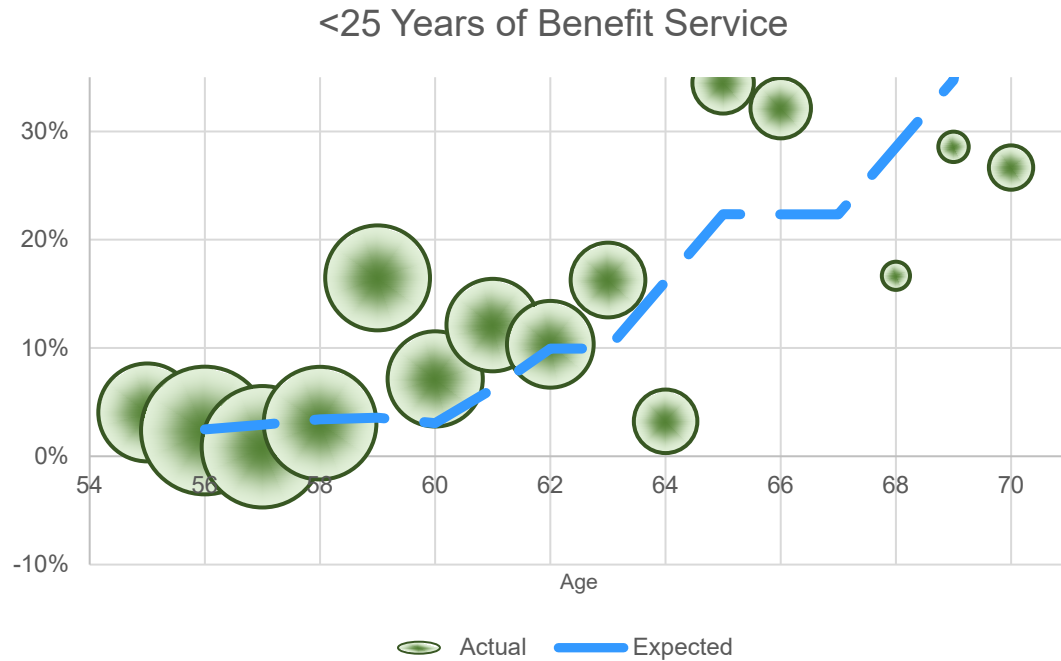
Interest Rate Sensitivities

Funding	2023 Preliminary		
	All Proposed (7.00% IR)	0.25% Decrease (6.75% IR)	0.25% Increase (7.25% IR)
Actuarial Accrued Liability	\$282.4	\$289.2	\$275.9
Actuarial Value of Assets	<u>307.8</u>	<u>307.8</u>	<u>307.8</u>
Unfunded Actuarial Accrued Liability	(\$25.4)	(\$18.6)	(\$31.9)
2023 Amortization Base	N/A	N/A	N/A
Actuarial Determined Contribution	\$0.0	\$0.0	\$0.0
GASB 75	2025 Estimate		
	All Proposed (7.00% IR)	0.25% Decrease (6.75% IR)	0.25% Increase (7.25% IR)
Total OPEB Liability	\$325.7	\$333.8	\$317.9
Fiduciary Net Position	<u>299.7</u>	<u>299.7</u>	<u>299.7</u>
Net OPEB Liability	\$26.0	\$34.1	\$18.2
Recognition of Assumption Changes or Inputs	0.2	1.6	(1.1)
OPEB Expense	\$11.6	\$13.0	\$10.3

Demographic Assumptions

Demographic Assumptions

Retirement Experience

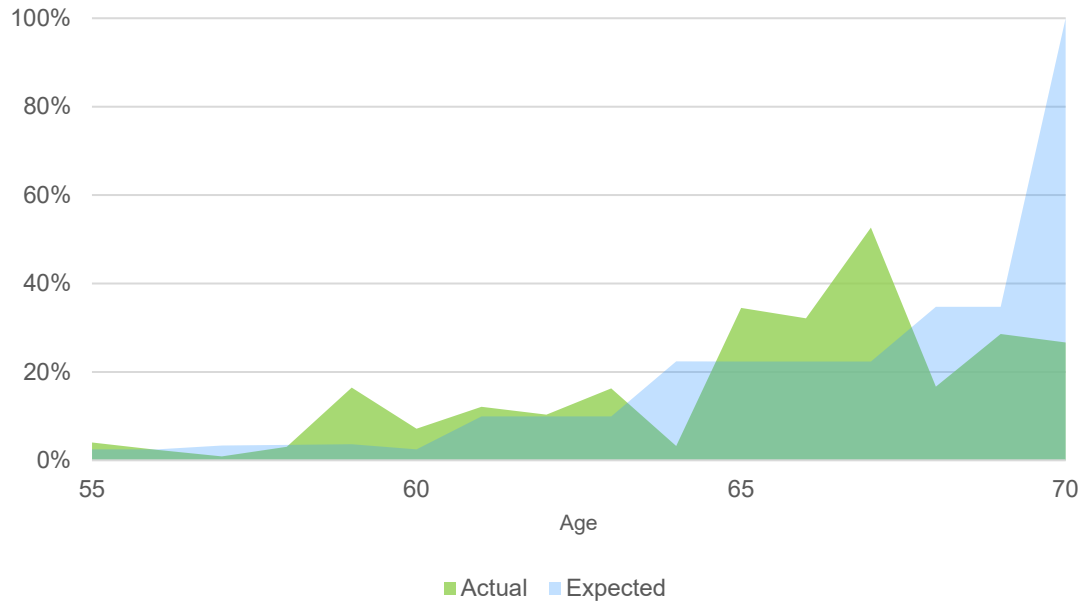


- Largest retirement exposure between ages 55 – 60 for actives with less than 25 years of benefit service
- Largest retirement exposure for ages under 50 and for ages 52 – 55 for actives with 25+ years of benefit service

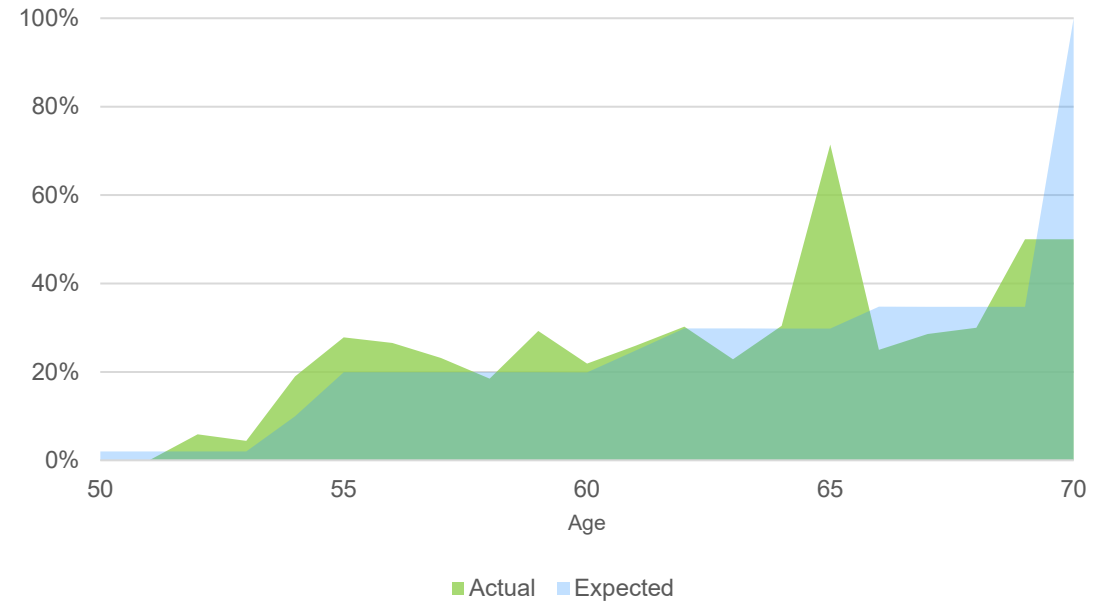
Demographic Assumptions

Retirement Experience

<25 Years of Benefit Service



25+ Years of Benefit Service

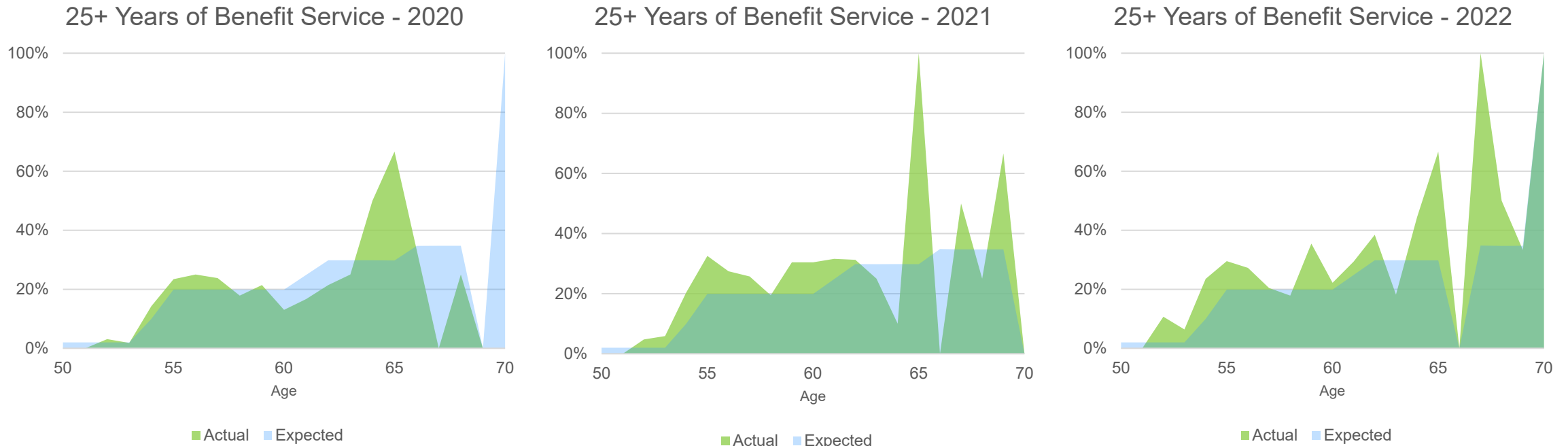


- Actual retirements with less than 25 years of benefit service overall more than expected
- Propose increased rates at younger ages (58 – 63) and at age 67 based on actual experience

- Actual retirements with 25+ years of benefit service overall more than expected
- Propose increased rates at younger ages (50 – 60) and at age 65 based on actual experience
- COVID likely factor (since 2021 and 2022 exposure high)

Demographic Assumptions

Retirement Experience

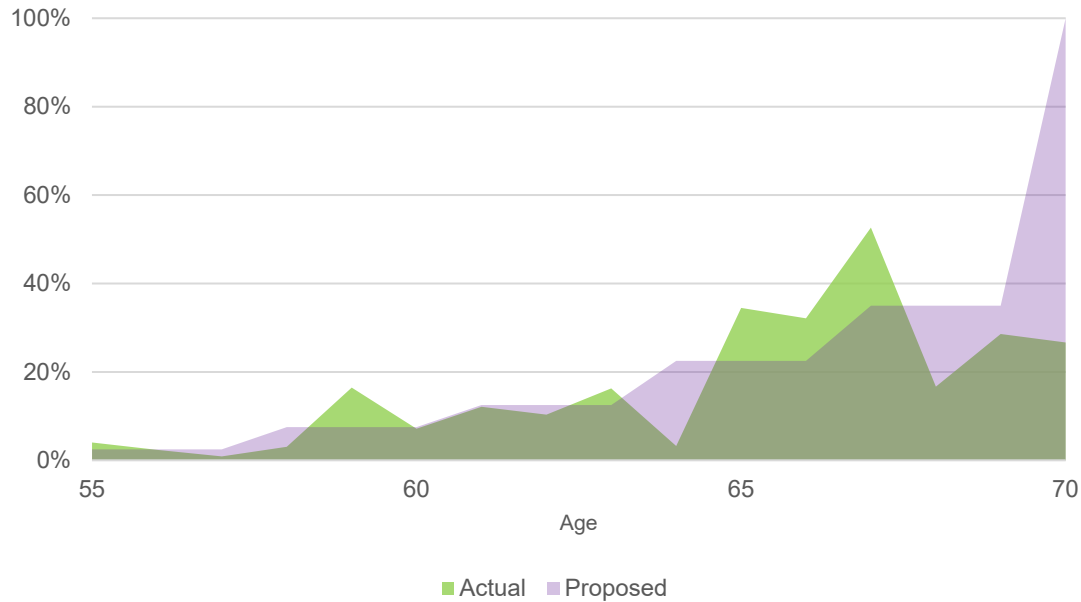


- 2021 and 2022 have higher actual experience rates than 2020 and prior years
- Propose increased rates at younger ages (58 – 63) and at age 67 based on actual experience, with 2021 and 2022 taken into consideration as inflated years

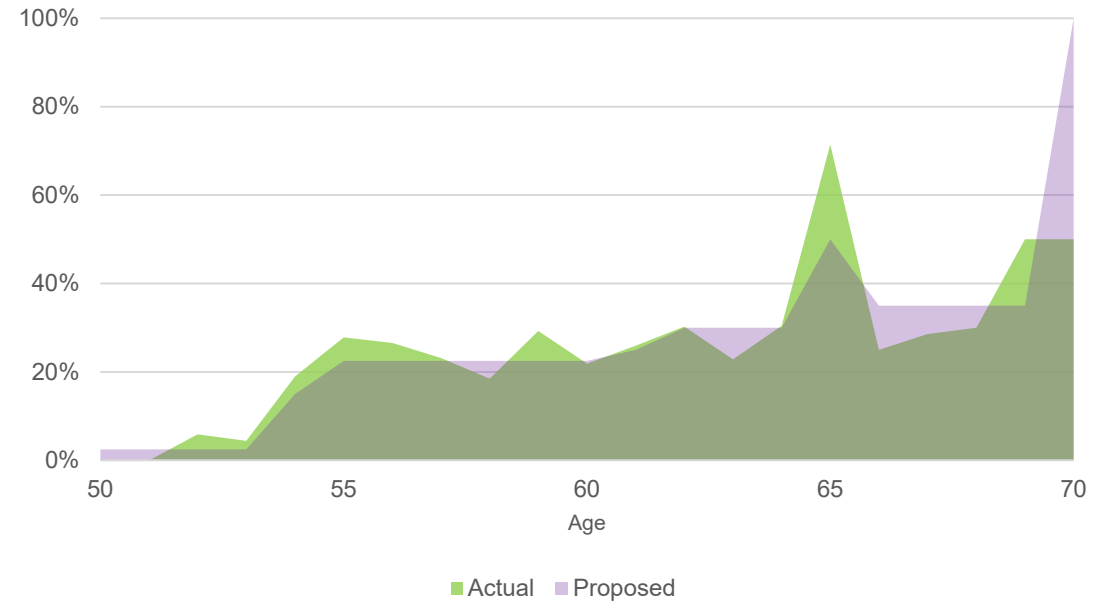
Demographic Assumptions

Retirement Experience

<25 Years of Benefit Service



25+ Years of Benefit Service

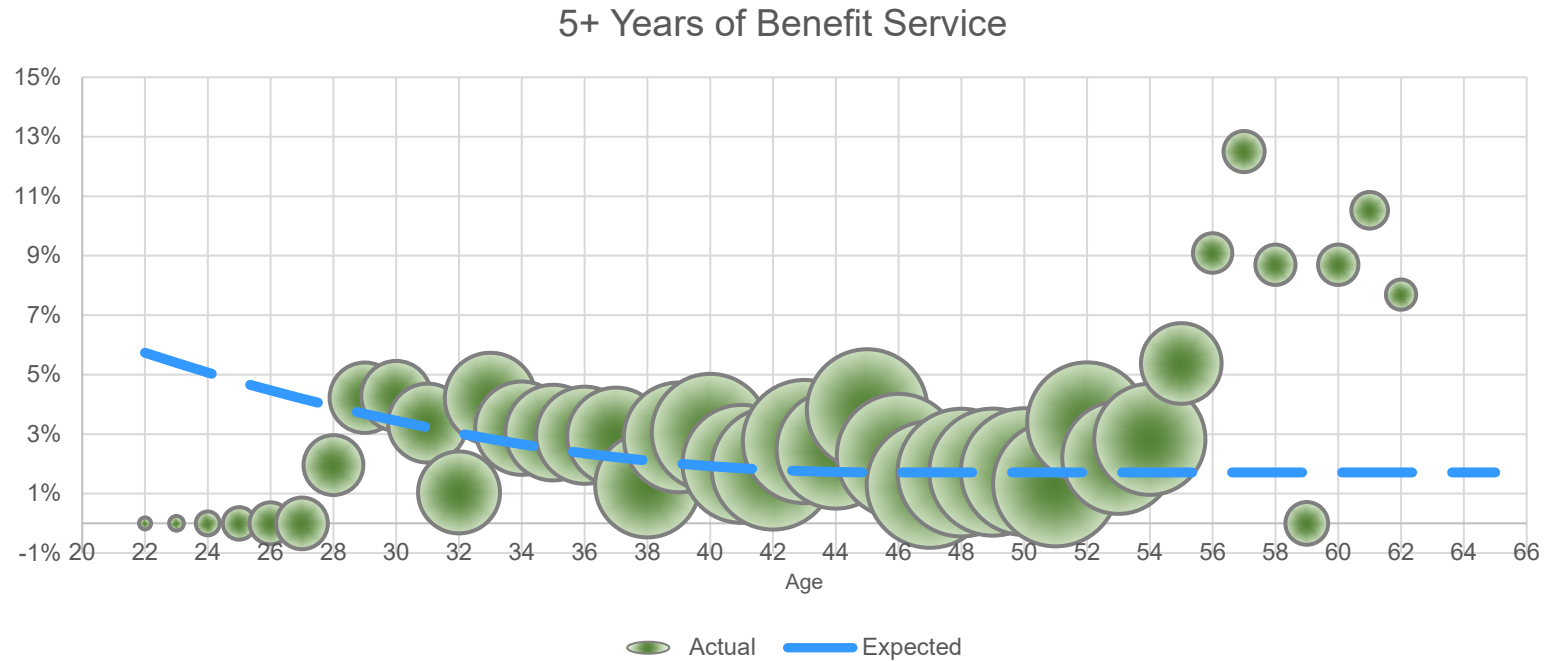
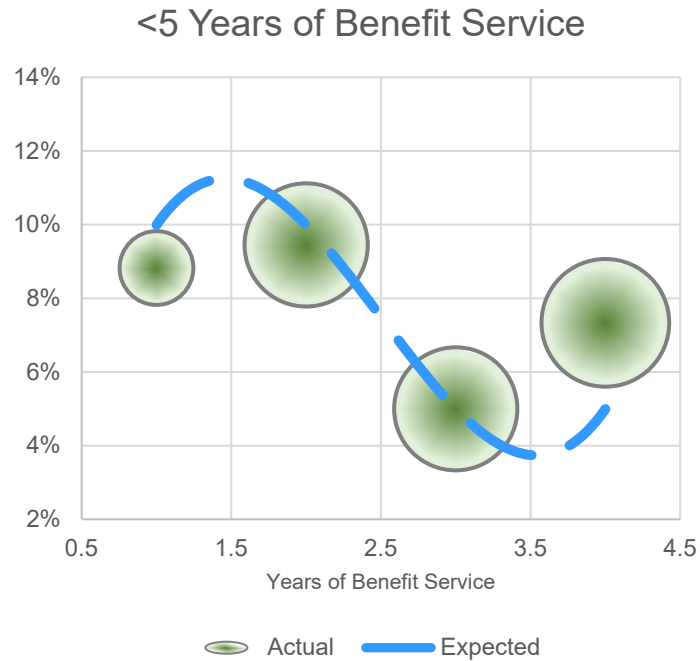


- Proposed retirement rates for actives with less than 25 years of benefit service more in line with actual experience where exposure largest

- Proposed retirement rates for actives 25+ years of benefit service more in line with actual experience where exposure largest

Demographic Assumptions

Termination Experience

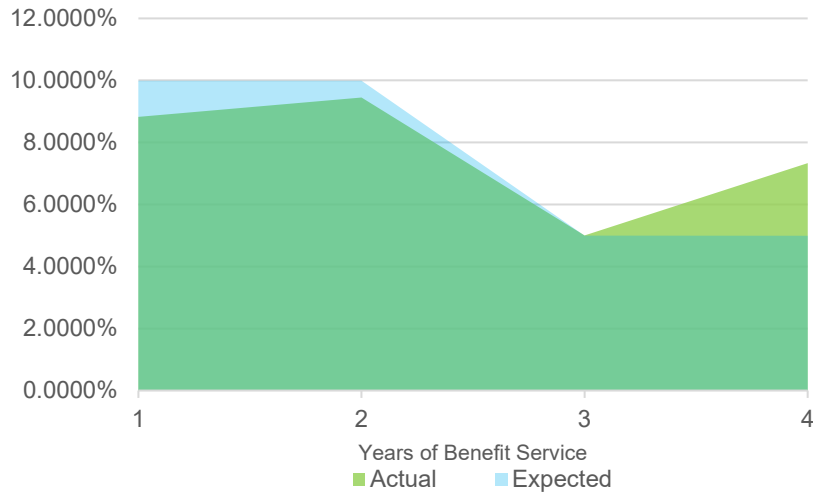


- Largest termination exposure between 2-5 years of benefit service for actives with less than 5 years of benefit service
- Largest termination exposure between ages 45 – 52 for actives with 25+ years of benefit service
- Peaks at older ages (63+) associated with very small exposures (exaggerated)

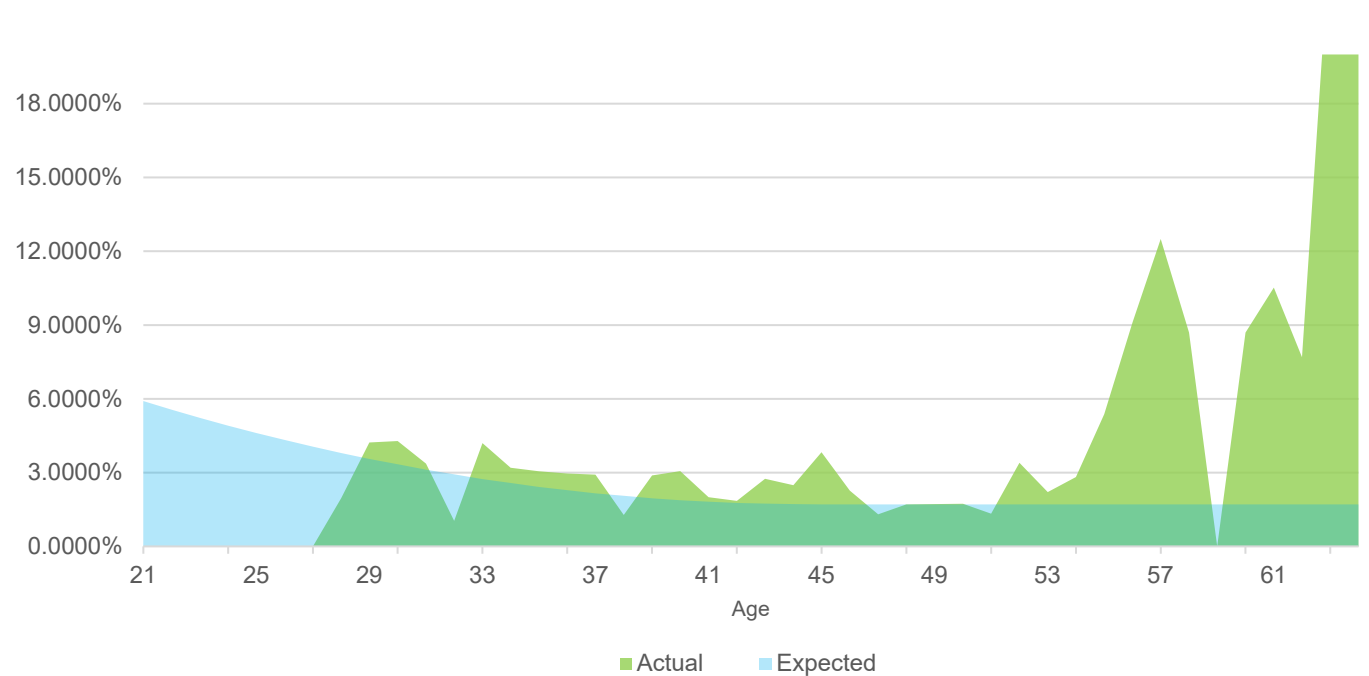
Demographic Assumptions

Termination Experience

<5 Years of Benefit Service



5+ Years of Benefit Service



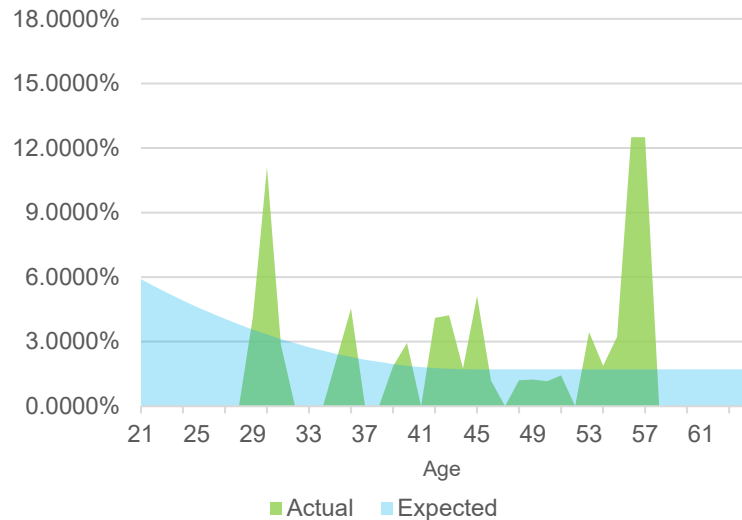
- Actual terminations with less than 5 years of benefit service greater than expected for actives with 4 – 5 years of service
- Propose appropriate adjustments in rates to better match experience

- Actual terminations with 5+ years of benefit service overall more than expected
- Propose adjustment for increasing table based on total experience
- COVID likely factor (since 2021 and 2022 exposure high)

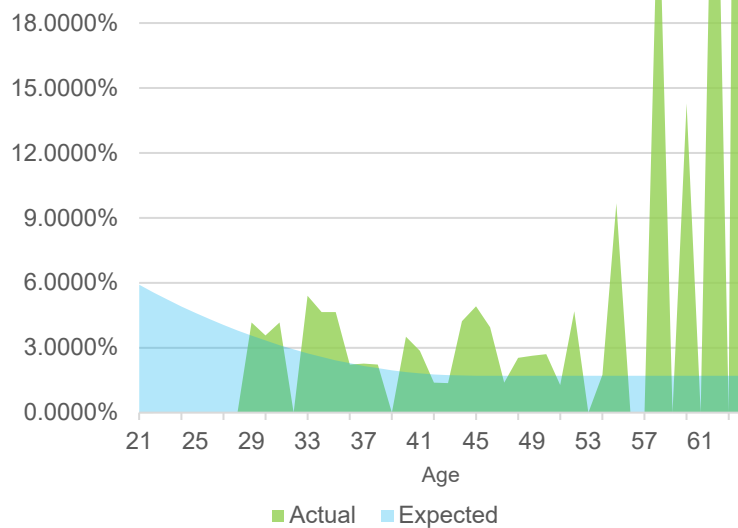
Demographic Assumptions

Termination Experience

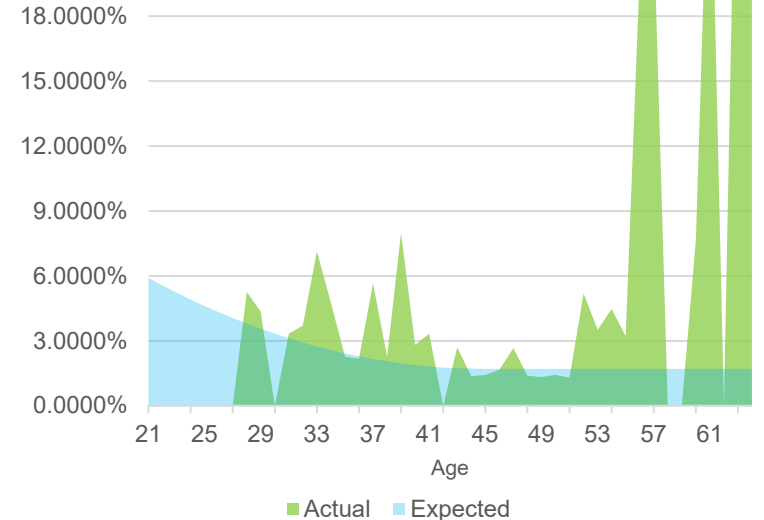
5+ Years of Benefit Service - 2020



5+ Years of Benefit Service - 2021



5+ Years of Benefit Service - 2022

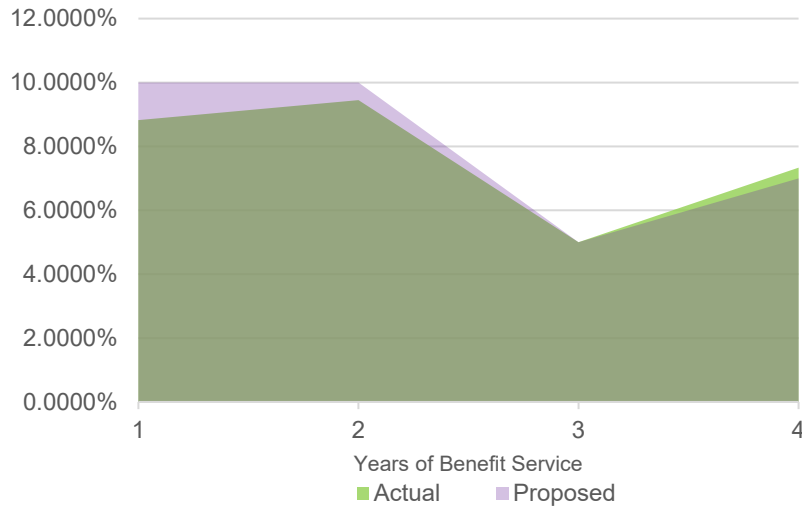


- 2021 and 2022 have higher actual experience rates than 2020 and prior years
- Propose increased rates at lower degree than what 2021 and 2022 experience shows, with 2021 and 2022 considered to be as inflated years due to COVID

Demographic Assumptions

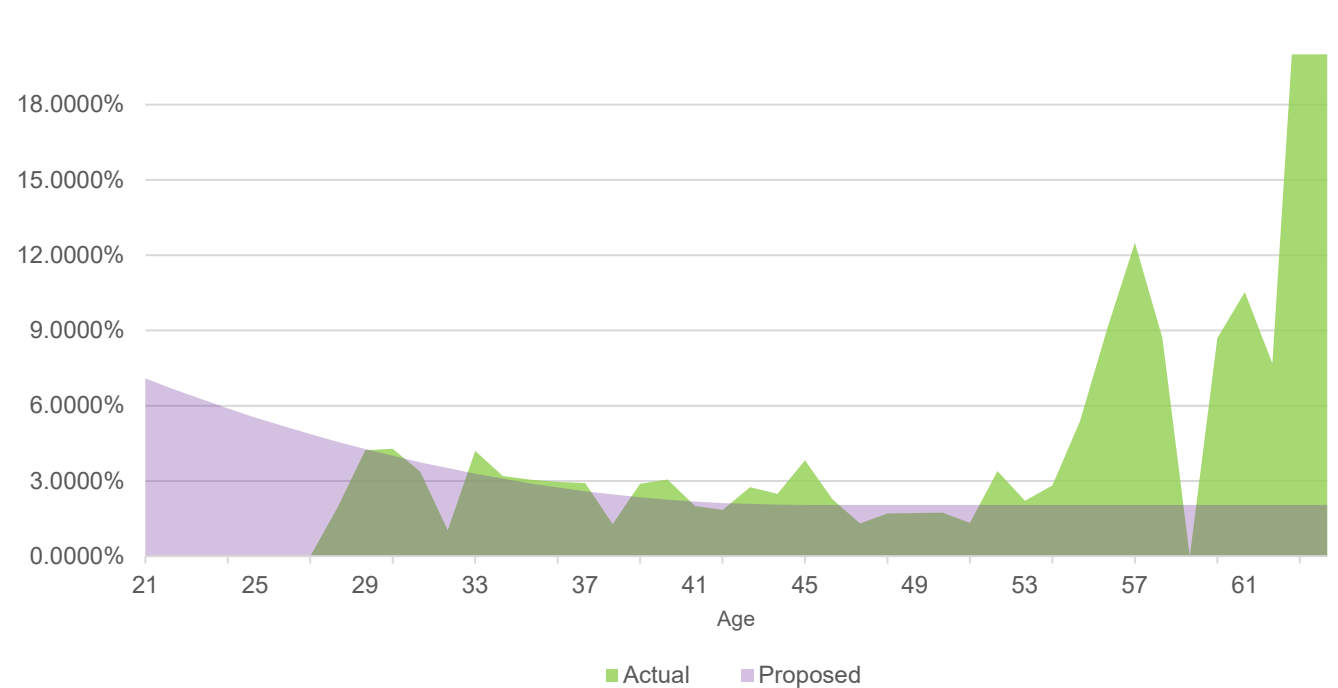
Termination Experience

<5 Years of Benefit Service



- Proposed termination rates for actives with less than 5 years of benefit service more in line with actual experience

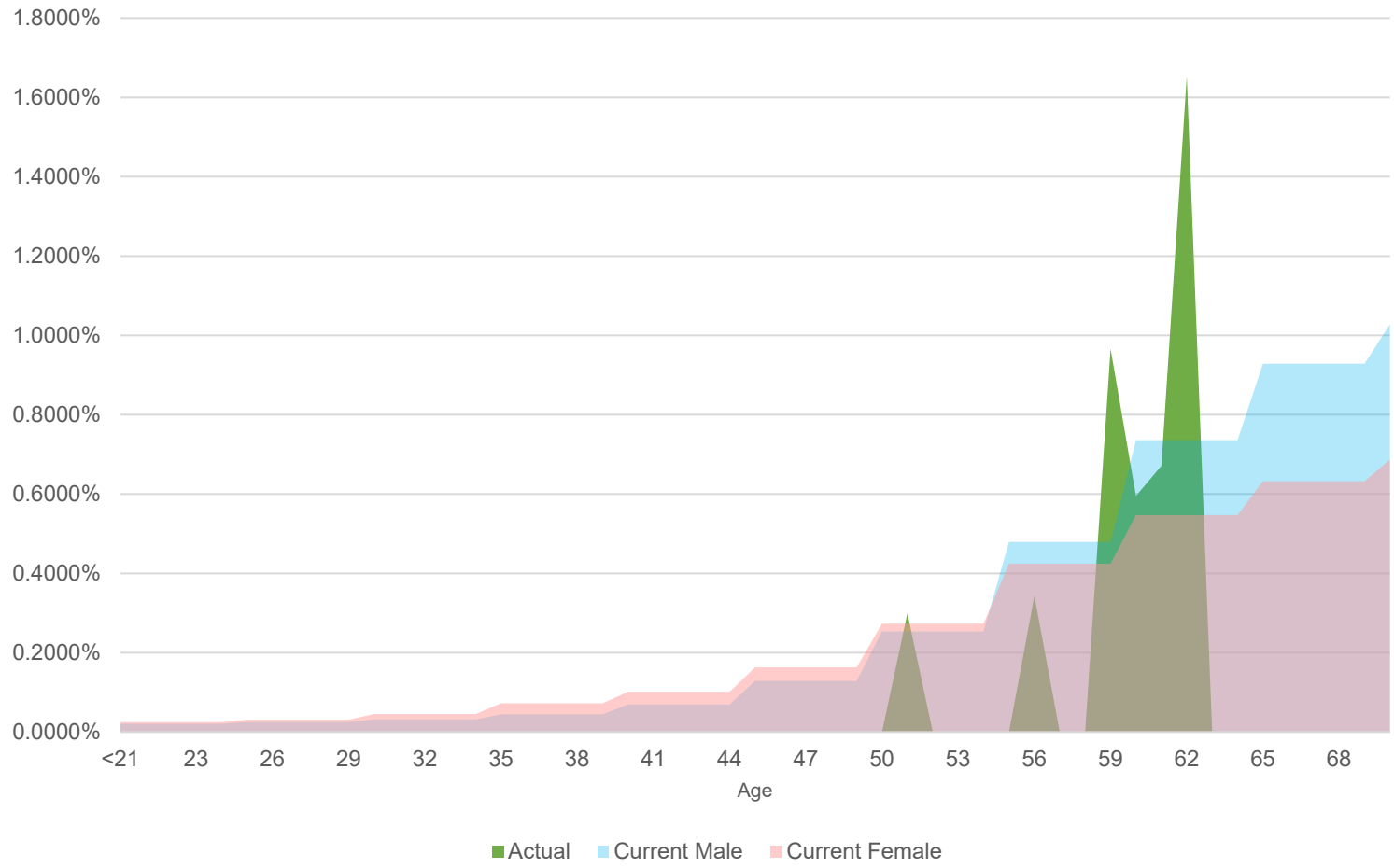
5+ Years of Benefit Service



- Proposed termination rates for actives 5+ years of benefit service more in line with actual experience where exposure largest as well as overall termination more in line with actual experience

Demographic Assumptions

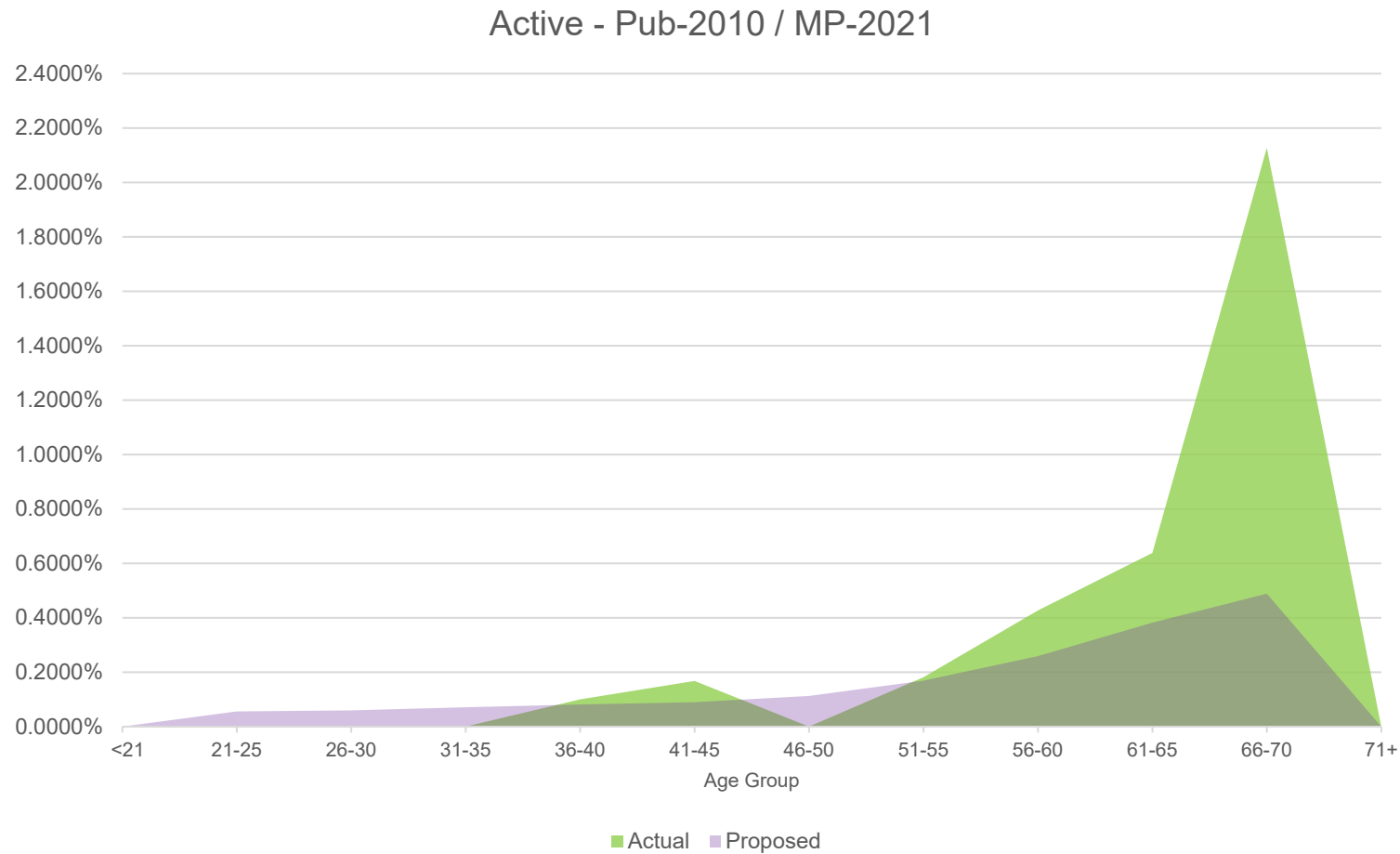
Disability Experience



- Limited disability experience viewed in Pension Plan
- Current rates overestimate number of disabilities
- Propose to leave rates as they are and overstate disability benefit in Pension Plan
- A change would have larger impact in LTD plan

Demographic Assumptions

Mortality Experience



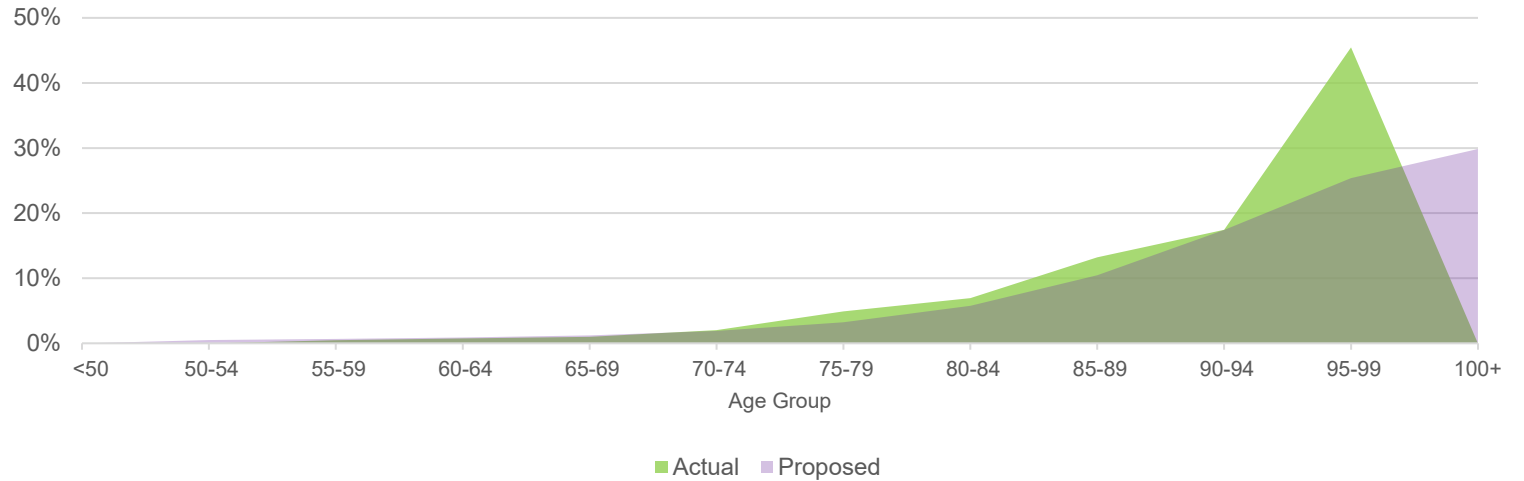
- Current private sector mortality table more in line for active population
- Lines up with CPS Energy mortality experience overall better than current public sector mortality table
- Actual experience at older ages higher due to older active population

Demographic Assumptions

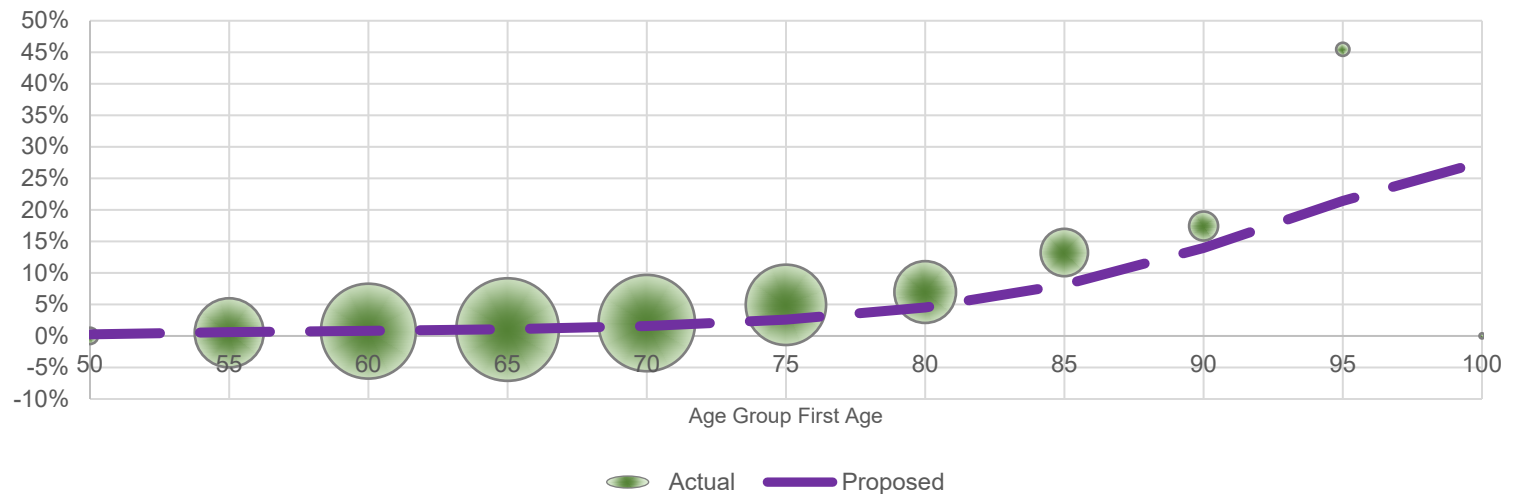
Mortality Experience

- Current private sector mortality table more in line for retiree population where retiree population is most dense
- Propose no adjustment to base table
- Propose continued regular updates to projection scales (as released)

Retiree - Pri-2012 / MP-2021



Retiree - Pri-2012 / MP-2021

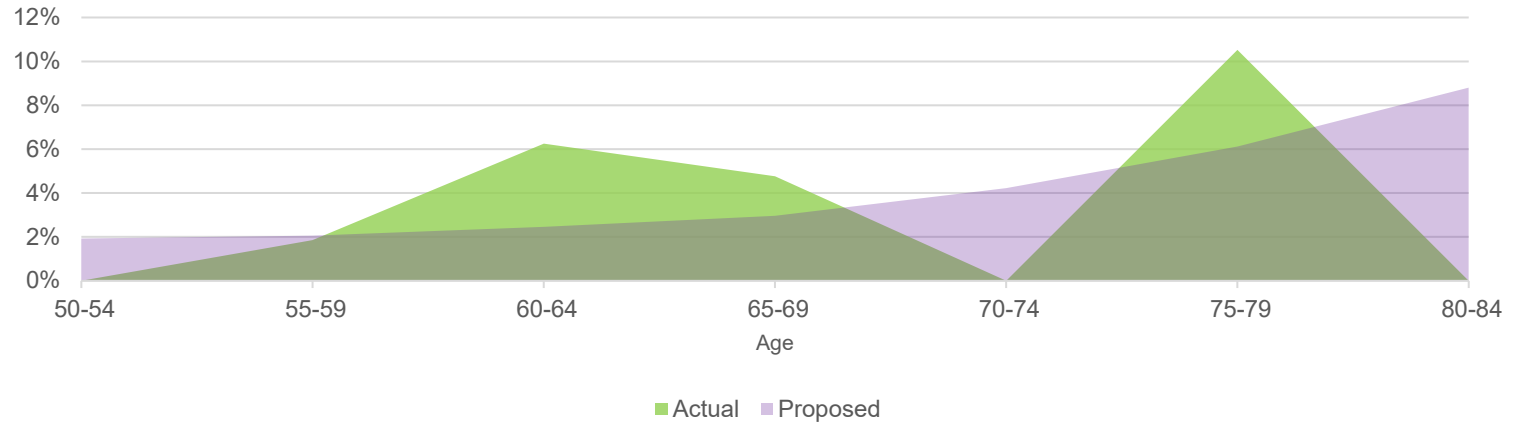


Demographic Assumptions

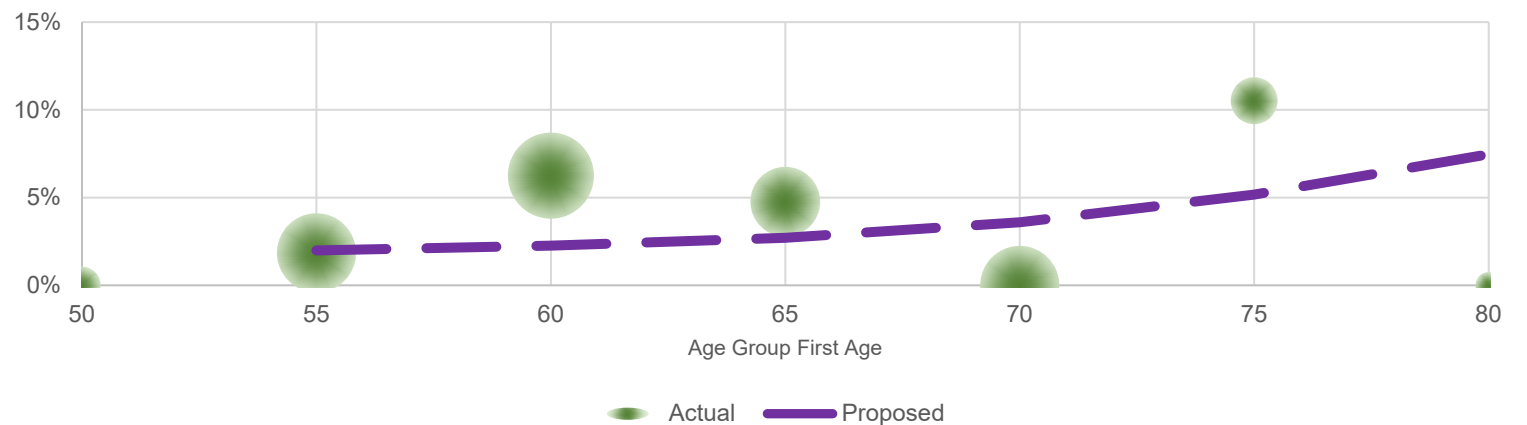
Mortality Experience

- Disability retiree mortality applies to current disabled retired participants and future disabled retirees running through disability decrements
- Current private sector mortality table lower than actual disability mortality but closer than current table
- Would be more conservative and would be in line with health mortality proposal

Disability - Pri-2010 / MP-2021

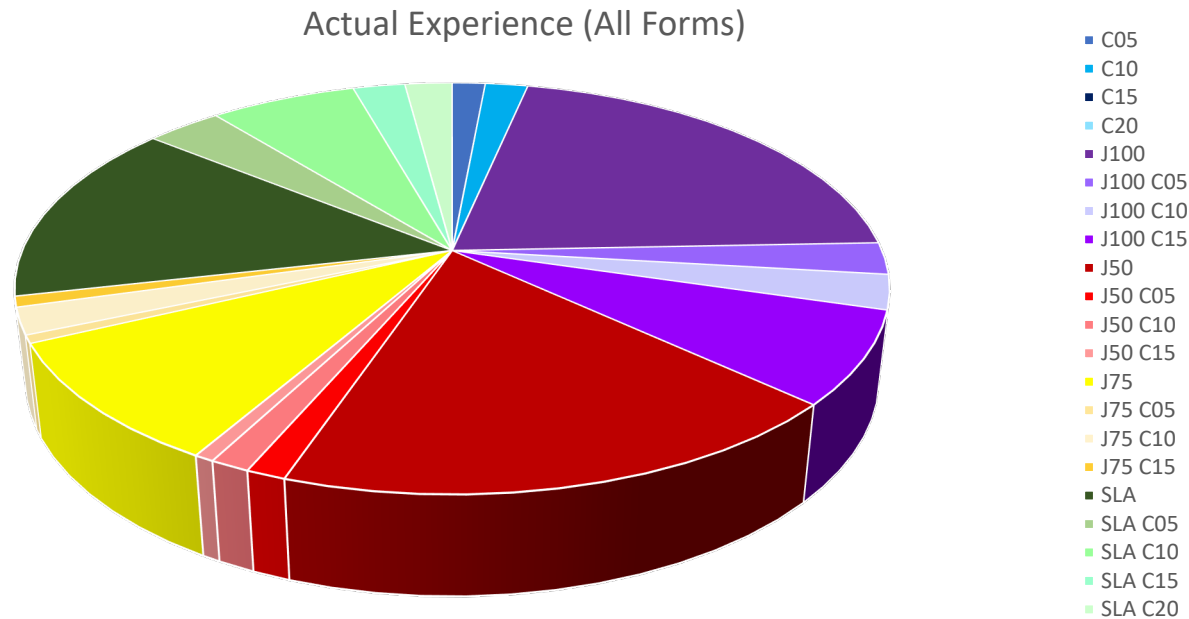


Retiree - Pri-2012 / MP-2021

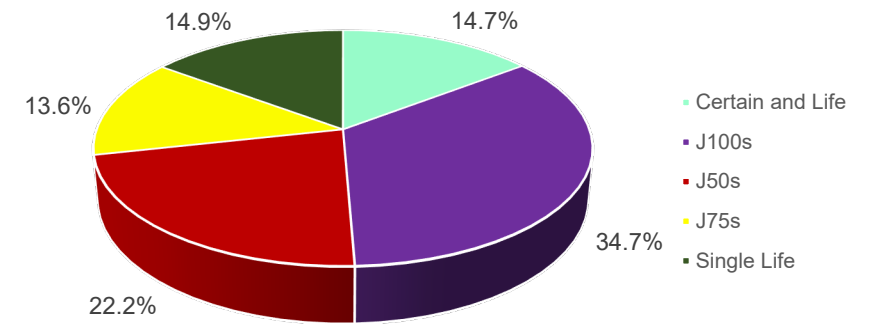


Demographic Assumptions

Optional Payment Form Election Rates

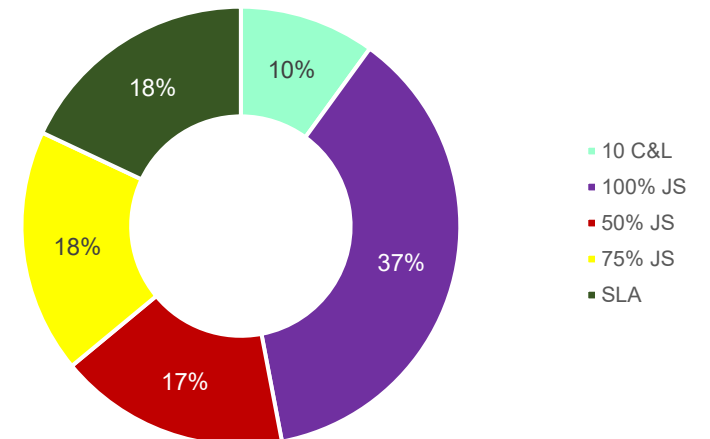


Actual Experience
(Certain Forms Combined with Joint Options)



- Actual optional forms elected include some certain periods for joint and survivor options
- For a valuation assumption, consolidated these with respective joint and survivor form for experience study consideration
- Certain and life annuities and 50% joint and survivor options elected more often than current assumption

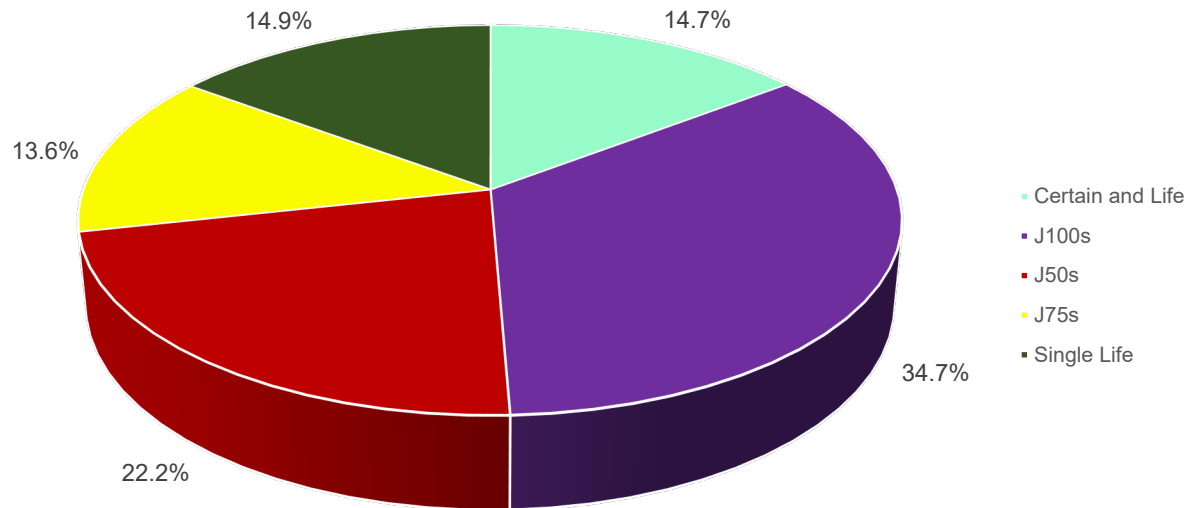
Current Assumption



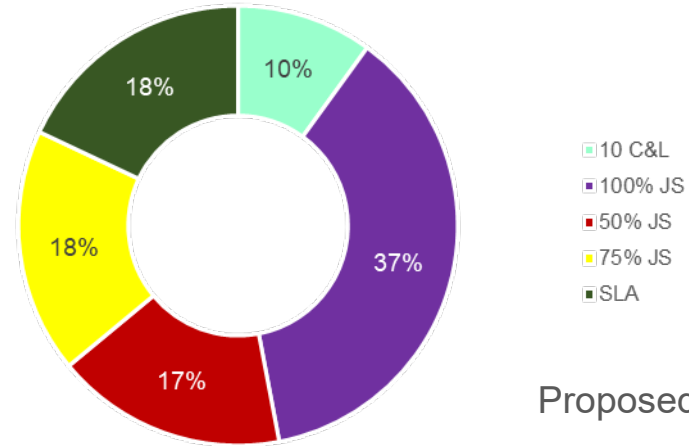
Demographic Assumptions

Optional Payment Form Election Rates

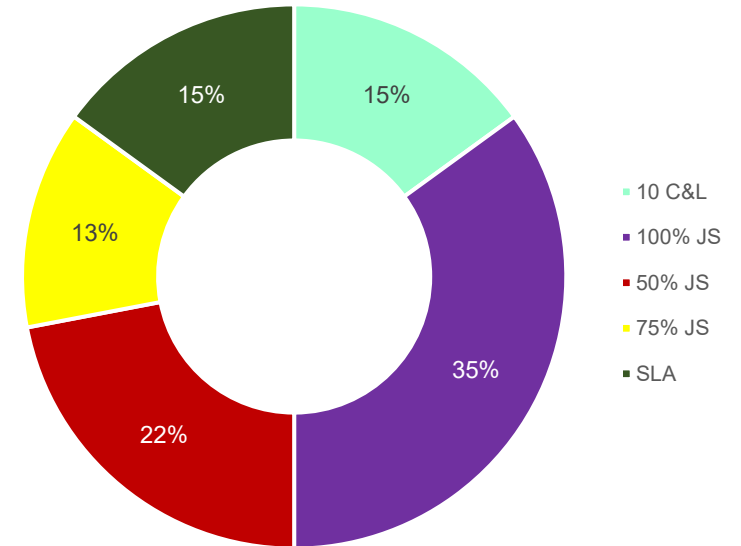
Actual Experience
(Certain Forms Combined with Joint Options)



Current Assumption



Proposed Assumption

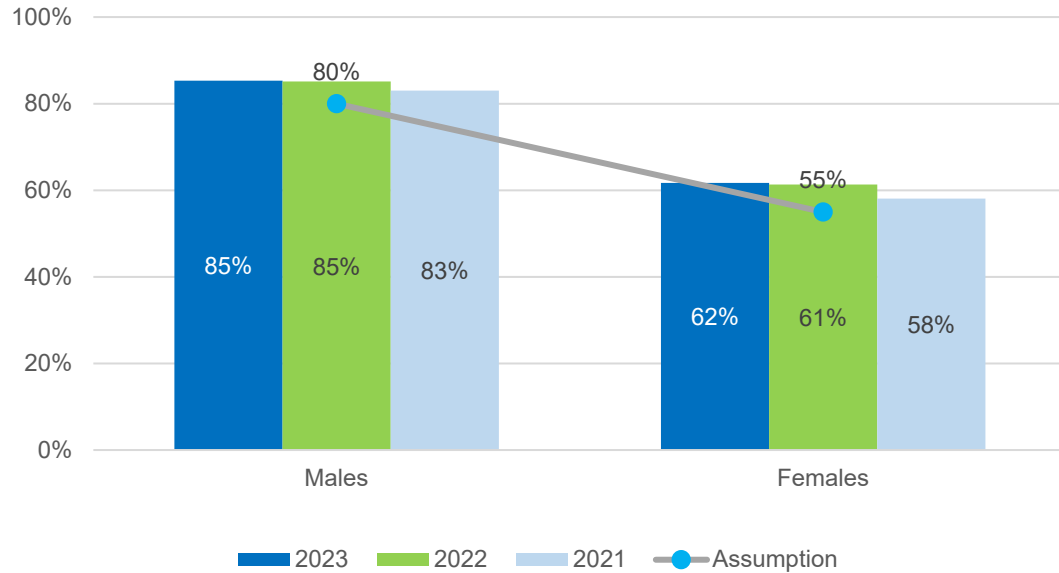


- Optional payment forms for actives updated to be more in line with actual active elections
- Terminations and disabilities limited in number and liability; do not suggest updated assumptions for those decrements

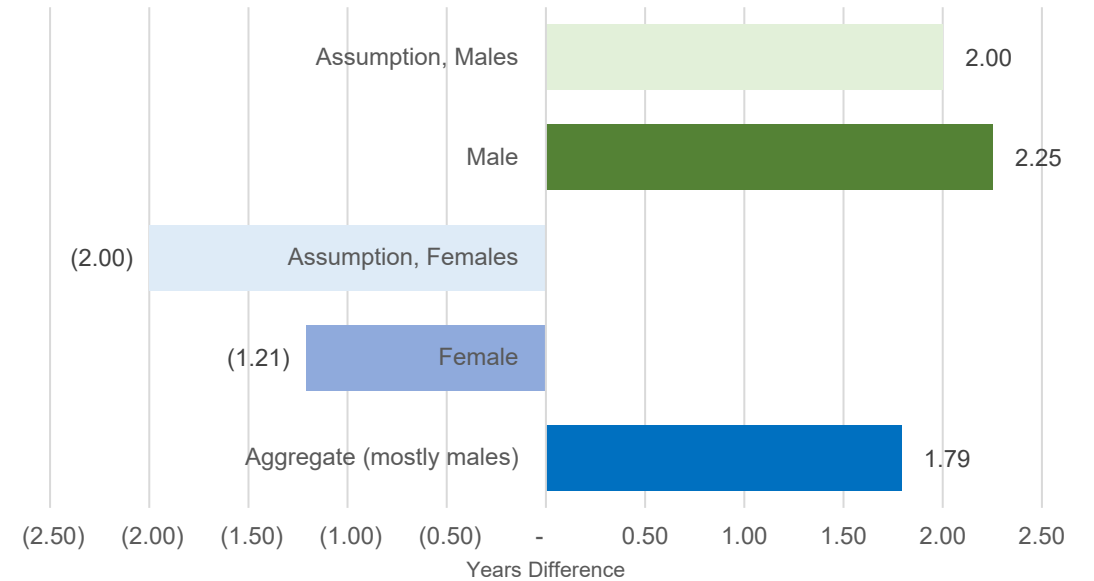
Demographic Assumptions

Marriage Assumption

Marriage Percentage - Retirees



Spouse Age Difference - Retirees

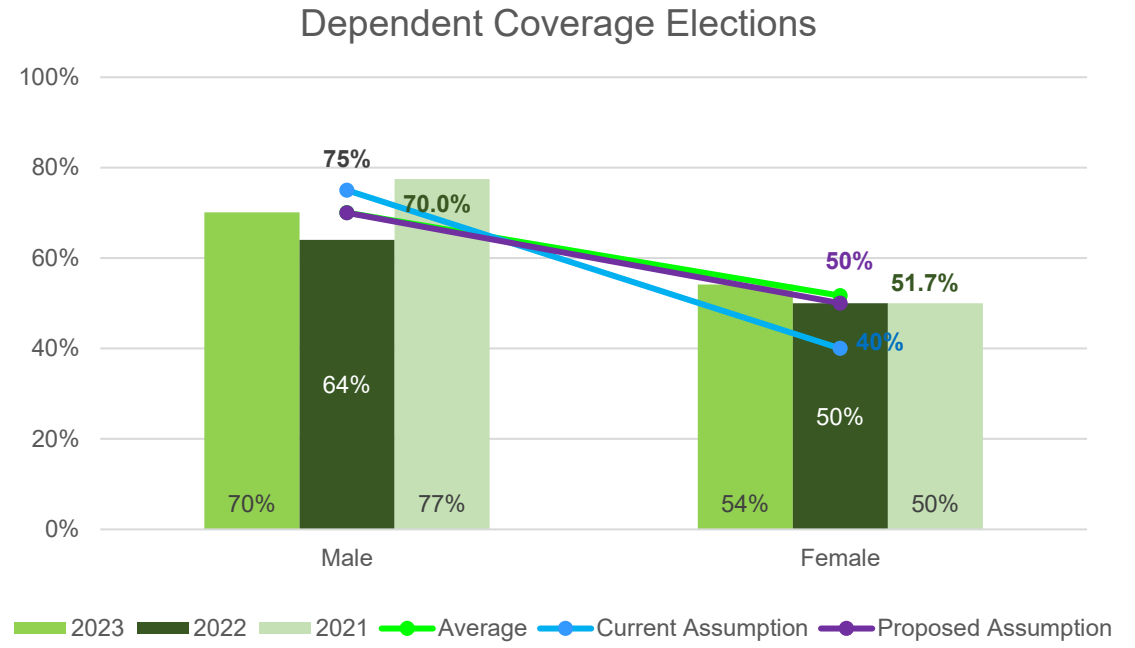
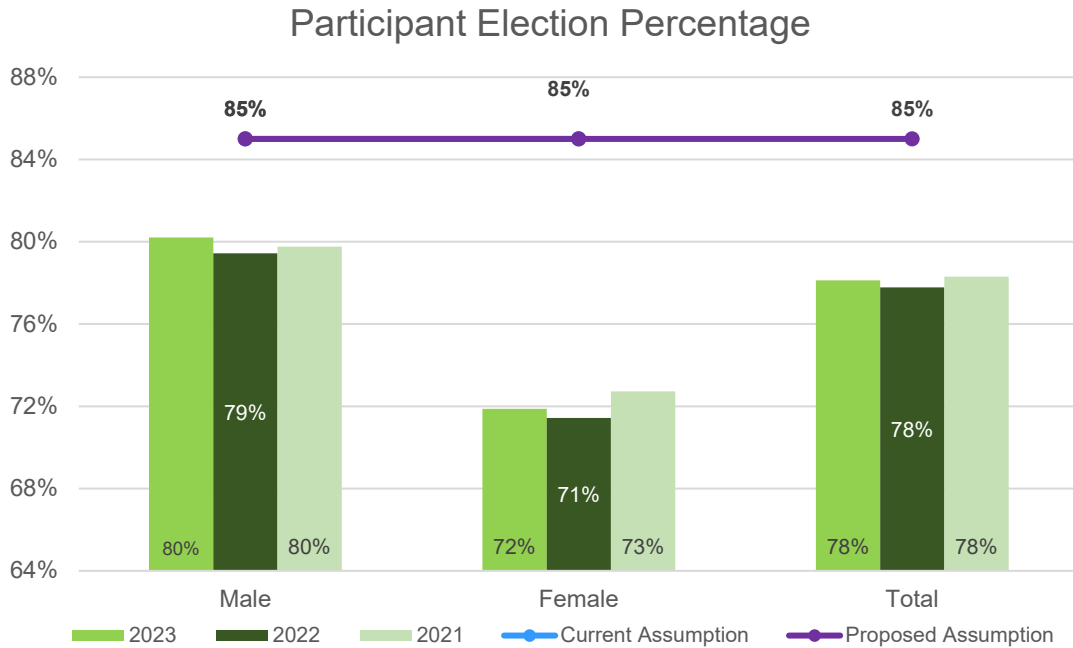


- Current marriage percentages in line with past two years for retirees with spouse dates of births on file
- No recommended changes to current assumption

- Spouse age difference in line with past three years for retirees with spouse dates of birth on file
- No recommended changes to current assumption

Demographic Assumptions

Retiree Medical Coverage / Spouse Coverage Assumptions



- Retiree medical coverage elections lower on average over past four years for both males and females
- May be impacted by COVID; conservative to keep current higher elections and re-evaluate next experience study

- Dependent coverage election percentages include children coverage elections for additional costs
- Dependent coverage election percentages higher on average over past four years for females
- Recommend keeping current assumption to see COVID impact at next experience study



Economic Assumptions

Economic Assumptions

Expected Return on Assets Assumption

Milliman's Expected Return Model

Target Allocations from Wilshire's 1/1/2023 Report; Milliman's 12/31/2022 Model

Asset	Target Allocation	Annual Return: Arithmetic Mean	Annualized Return: Geometric Mean	Standard Deviation or Annual Return
US Core Fixed Income	10.00%	4.60%	4.51%	4.22%
High Yield Fixed Income	7.50%	6.73%	6.26%	10.03%
Bank Loans	4.00%	6.13%	5.84%	7.74%
Emerging Markets Debt	2.00%	7.32%	6.41%	13.95%
US Equity	37.00%	7.98%	6.52%	17.66%
Global Low Volatility Equity	7.50%	8.77%	7.27%	17.99%
Non-US Equity	10.00%	9.99%	8.27%	19.32%
Real Estate	10.00%	9.04%	6.94%	21.33%
MLPs	7.00%	9.52%	6.13%	27.04%
Hedge Funds/ARS	5.00%	6.86%	6.32%	9.04%
Total Portfolio	100.00%	7.88%	7.07%	13.48%

Percentile	Next 5 years	Next 10 years	Next 15 years	Next 20 years	Next 25 years	Next 30 years
5%	-2.80%	-0.17%	1.26%	2.11%	2.69%	3.12%
25%	2.62%	3.74%	4.48%	4.91%	5.20%	5.42%
50%	6.56%	6.54%	6.77%	6.90%	6.98%	7.04%
75%	10.66%	9.42%	9.12%	8.93%	8.80%	8.70%
95%	16.83%	13.70%	12.59%	11.92%	11.46%	11.12%

Inflation	2.50%	2.40%	2.37%	2.35%	2.34%	2.33%
-----------	-------	-------	-------	-------	-------	-------

Modeled for Pension Plan, 2.33% inflation for 30 year model:

These returns were developed based on the use of passive index funds and exclude the following:

- expected alpha developed by the investment advisor, and
- expected plan expenses paid from the trust.

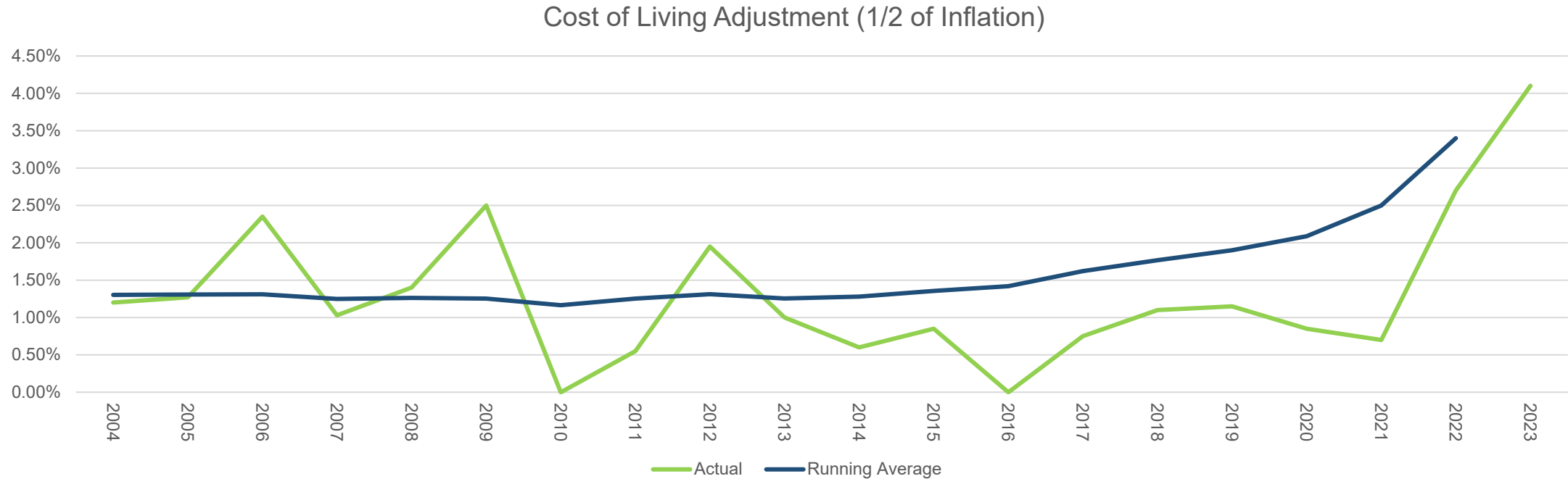
The current expense assumption for funding purposes is \$500,000.

Calculated investment return of 7.04% over 30-year assuming 50th percentile. Range through 25th percentile yielding 5.42% and 75th percentile yielding 8.70% investment return assumption. Current assumption inside of this range.

Show sensitivities of decreasing expected return and interest rate assumptions to either 6.75% or 7.00% to be closer to 50th percentile and Wilshire's

Economic Assumptions

Inflation Assumption

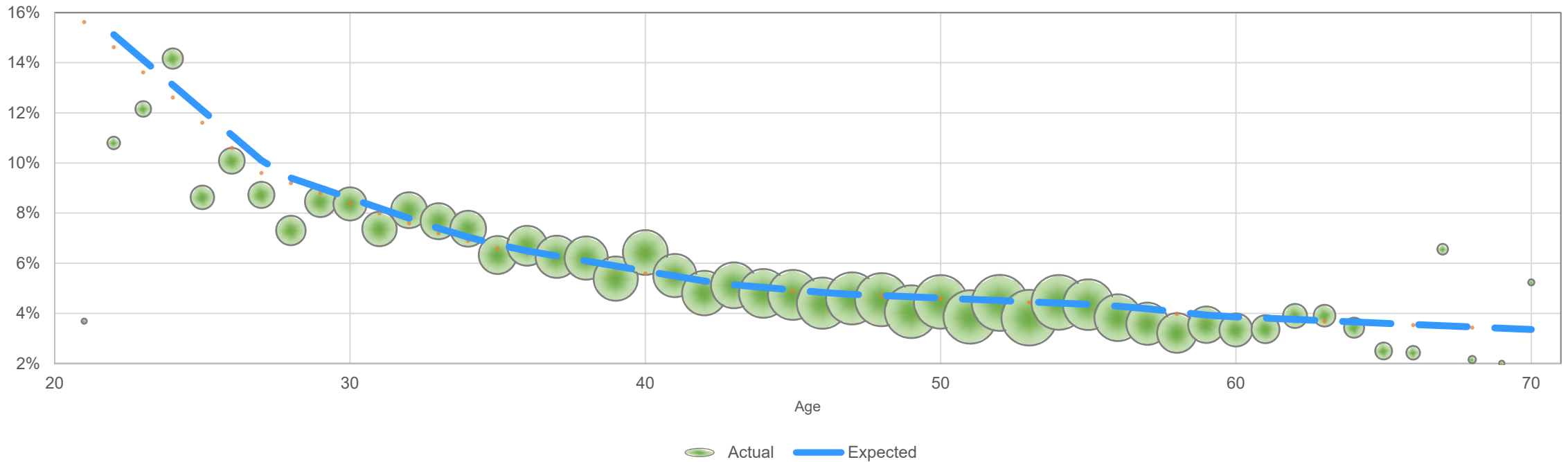


- Average Inflation over past 20 years averages approximately 6.8%
- Average COLA over past 5 years averages approximately 1.9%
- Recommend Milliman’s long-term inflation assumption of 2.33%, a small increase from previous assumption of 2.30% (updated annually)

Economic Assumptions

Salary Increases and Overtime Assumption

Base Salary Increases

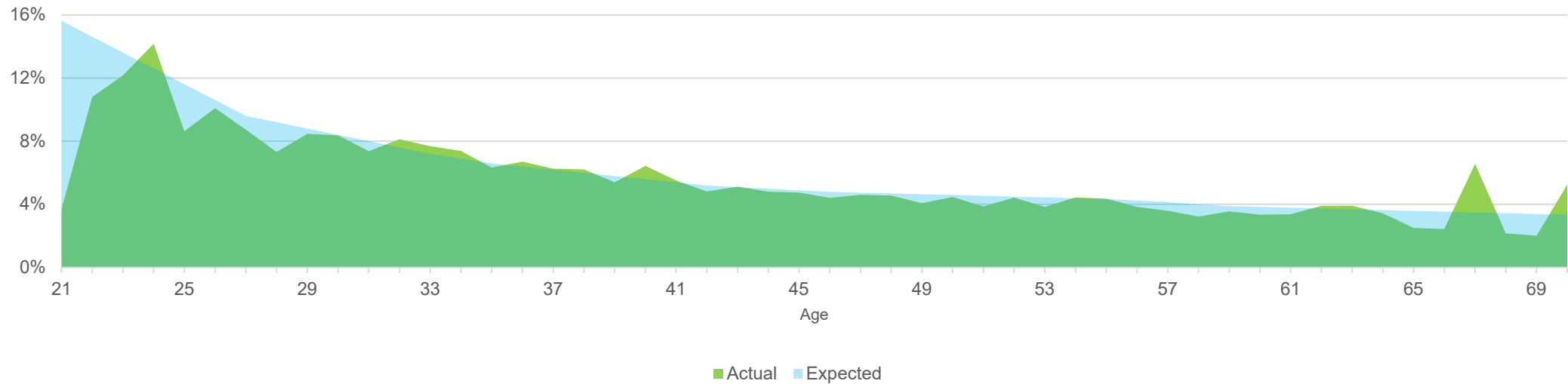


- Actual base salary increases higher than expected
- Largest exposure for ages 46 – 57; chart scales exposure size by 50

Economic Assumptions

Salary Increases and Overtime Assumption

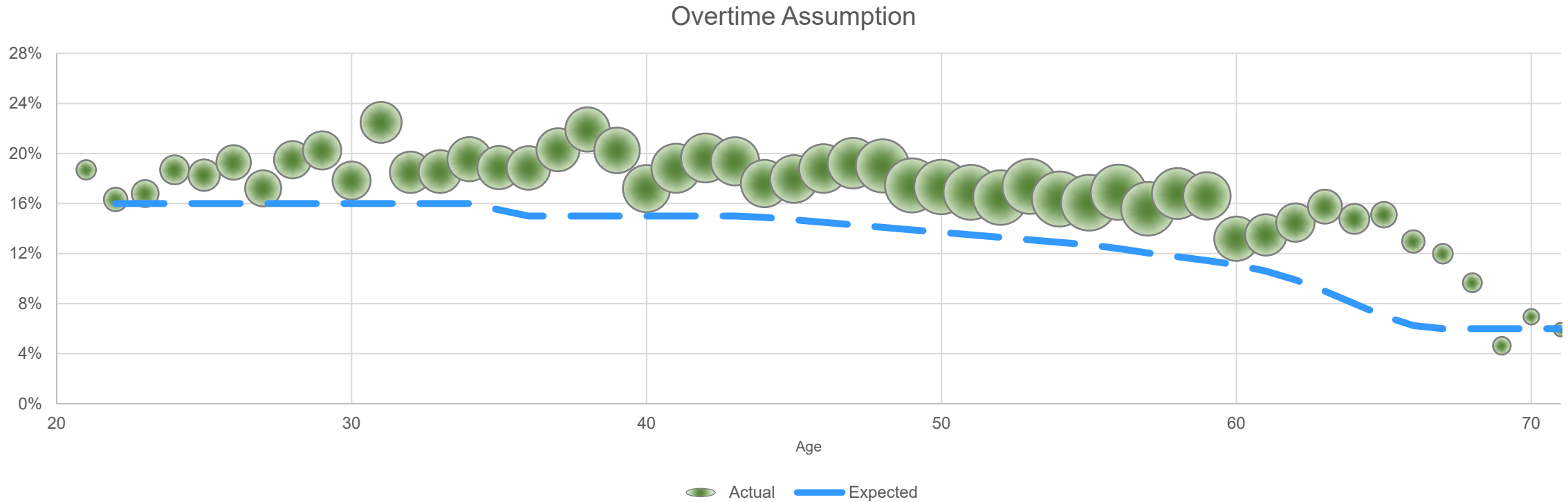
Base Salary Increases



- No base salary increases proposed since overall current assumption in line with current assumption
- Looking for CPS Energy input regarding future expected salary increases
- Included loads for partial market match not yet reflected in salary assumption (for 2023) and future PTO 2-week buy-out option beginning in 2025.

Economic Assumptions

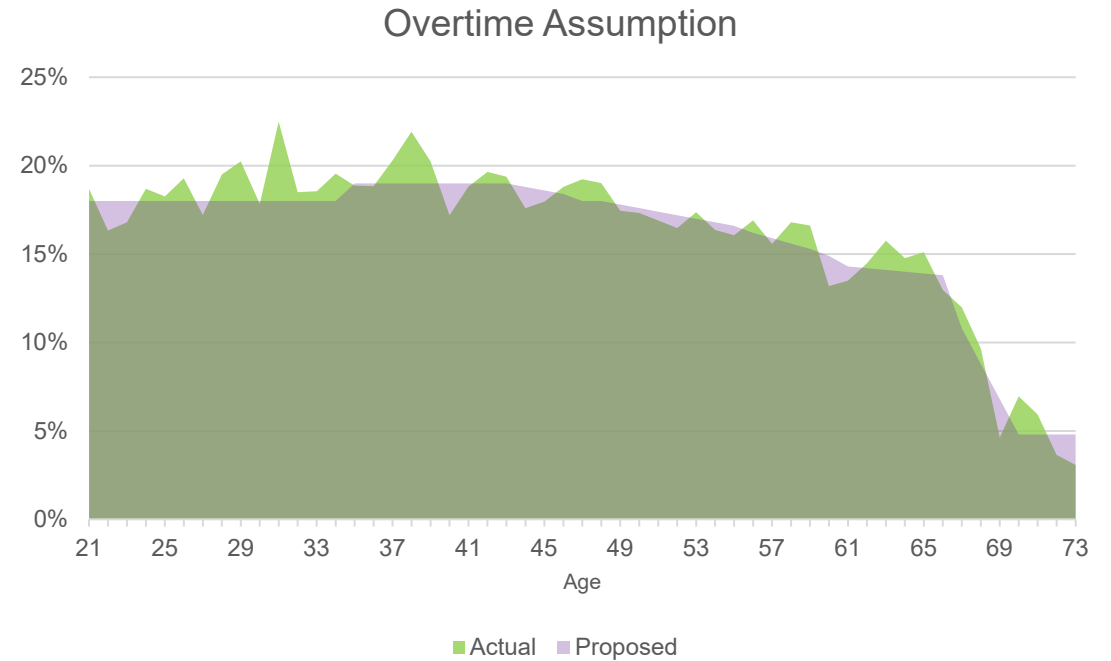
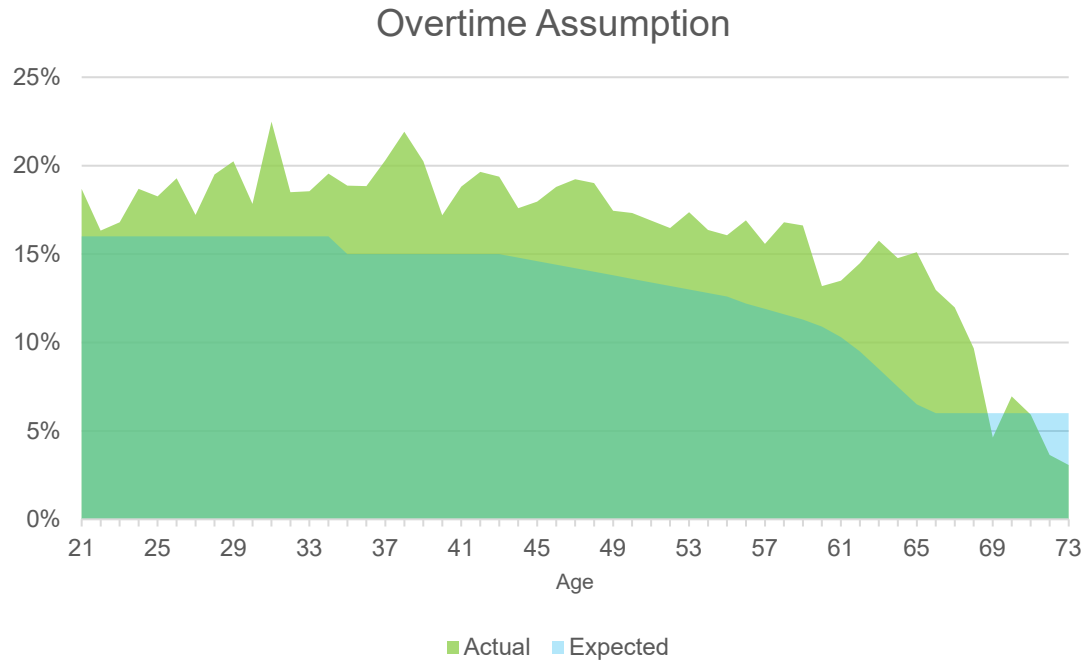
Salary Increases and Overtime Assumption



- Actual overtime higher than expected
- Largest exposure for ages 45 – 56 (same as for base salary increases); only for non-exempt participants with pensionable earnings – base pay – incentive payment (if eligible / received)

Economic Assumptions

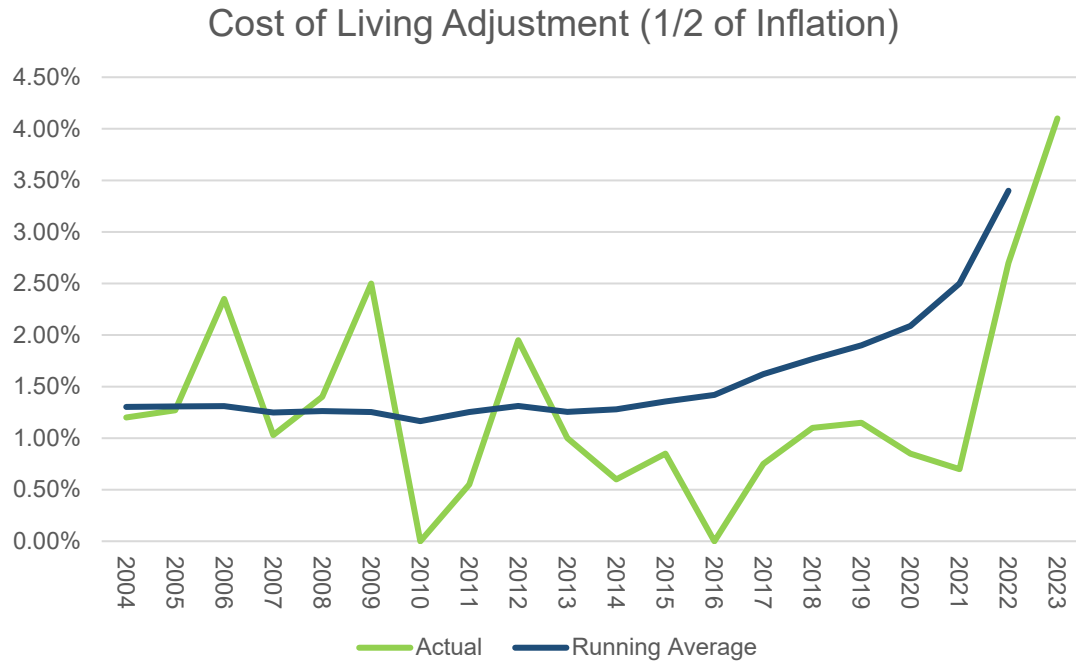
Salary Increases and Overtime Assumption



- Proposed increase to overtime assumption to be more in line with actual experience where exposure largest as well as increase overall overtime assumption to be more in line with actual experience

Economic Assumptions

Cost of Living Adjustment (COLA) Assumption



- Average COLA over past 20 years averages approximately 3.4%
- Average COLA over past 5 years averages approximately 1.9%
- Since large impact on valuation, recommended increase slightly to 1.50%

COLA Sensitivities

Funding

Actuarial Accrued Liability
 Actuarial Value of Assets
 Unfunded Actuarial
 Accrued Liability

	2023 Preliminary		
	All Proposed (1.50% COLA, 7.00% IR)	1.25% COLA	1.75% COLA
Actuarial Accrued Liability	\$2,497.6	\$2,440.3	\$2,557.1
Actuarial Value of Assets	<u>2,060.0</u>	<u>2,060.0</u>	<u>2,060.0</u>
Unfunded Actuarial Accrued Liability	\$437.6	\$380.3	\$497.1

GASB 68

Total Pension Liability
 Fiduciary Net Position
 Net Pension Liability

	2025 Estimate		
	All Proposed (1.50% COLA, 7.00% IR)	1.25% COLA	1.75% COLA
Total Pension Liability	\$2,590.9	\$2,529.9	\$2,658.2
Fiduciary Net Position	<u>2,086.1</u>	<u>2,086.1</u>	<u>2,086.1</u>
Net Pension Liability	\$504.8	\$443.8	\$572.1

Economic Assumptions

Sensitivities of Accrued Vacation Impact on Pension Benefits

<u>Accrued Vacation Sensitivities</u>	2023 Preliminary		
	All Proposed (7.00% IR) 3.00% Accrued Vacation	2.50% Accrued Vacation	3.50% Accrued Vacation
Funding			
Actuarial Accrued Liability	\$2,497.6	\$2,492.2	\$2,502.9
Actuarial Value of Assets	<u>2,060.0</u>	<u>2,060.0</u>	<u>2,060.0</u>
Unfunded Actuarial Accrued Liability	\$437.6	\$432.2	\$442.9
	2025 Estimate		
	All Proposed (7.00 IR) 3.00% Accrued Vacation	2.50% Accrued Vacation	3.50% Accrued Vacation
GASB 68			
Total Pension Liability	\$2,590.9	\$2,586.7	\$2,598.7
Fiduciary Net Position	<u>2,086.1</u>	<u>2,086.1</u>	<u>2,086.0</u>
Net Pension Liability	\$504.8	\$500.6	\$512.7

- Accrued vacation included as a 3% load of pension benefit
- 50 basis point sensitivities shown for update for assumption
- Salary assumption includes 2025 load for future PTO 2-week buy-out option beginning in 2025.

Detailed Results

Economic Assumptions

Funding Impacts (\$ in millions)

<i><u>Pension</u></i>	2022	2023 Preliminary (Individual Impacts)						
	Final	No ES Changes	Retirement	Termination	Form of Payment	Overtime Assumption	COLA (1.50%)	All Proposed (7.00% IR)
Total Normal Cost	\$45.9	\$46.7	\$47.1	\$45.2	\$46.6	\$48.7	\$48.0	\$48.7
Load for Administrative Expense	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Employee Contributions	<u>(15.2)</u>	<u>(14.6)</u>	<u>(14.6)</u>	<u>(14.6)</u>	<u>(14.6)</u>	<u>(15.4)</u>	<u>(14.6)</u>	<u>(15.4)</u>
Employer Normal Cost	\$31.3	\$32.7	\$33.1	\$31.2	\$32.6	\$33.9	\$34.0	\$33.9
UAAL	\$281.3	\$325.4	\$335.3	\$327.4	\$324.5	\$369.8	\$381.1	\$437.6
Prior Amortization Bases	\$27.7	\$25.4	\$25.4	\$25.4	\$25.4	\$25.4	\$25.4	\$25.4
New Amortization Base	<u>(2.3)</u>	<u>4.1</u>	<u>4.9</u>	<u>4.3</u>	<u>4.0</u>	<u>7.8</u>	<u>8.8</u>	<u>13.5</u>
Total Amortization Bases	\$25.4	\$29.5	\$30.3	\$29.6	\$29.4	\$33.2	\$34.1	\$38.9
Actuarial Determined Contribution (Employer Normal Cost + Total Amortization Bases, not less than \$0)	\$56.7	\$62.2	\$63.4	\$60.8	\$62.0	\$67.1	\$68.1	\$72.8

Economic Assumptions

Funding Impacts (\$ in millions)

<u>OPEB</u>	2022	2023 Preliminary (Individual Impacts)			
	Final	No ES Changes	Retirement	Termination	All Proposed (7.00% IR)
Normal Cost	\$4.0	\$5.5	\$5.6	\$5.2	\$5.4
Unfunded Actuarial Accrued Liability	(\$93.6)	(\$29.0)	(\$25.6)	(\$28.8)	(\$25.5)
Prior Amortization Bases	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
New Amortization Base	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Total Amortization Bases	N/A	N/A	N/A	N/A	N/A
Actuarial Determined Contribution (ADC) (Normal Cost + Total Amortization Bases, not less than \$0)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

Economic Assumptions

GASB 68 Impacts (\$ in millions)

	2024	2025 Estimate (Individual Impacts)						
	Final	No ES Changes	Retirement	Termination	Form of Payment	Overtime and Salary	COLA (1.50%)	All Proposed (7.00% IR)
<u>Pension</u>								
Service Cost	\$40.2	\$42.5	\$42.5	\$42.5	\$42.5	\$42.7	\$42.5	\$42.7
Interest on Total Pension Liability	155.0	167.0	167.0	167.0	167.0	167.0	167.0	167.0
Administrative Expenses	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Member Contributions	(15.0)	(14.6)	(14.6)	(14.6)	(14.6)	(15.4)	(14.6)	(15.4)
Expected Investment Return Net of Investment Expenses	(146.9)	(138.5)	(138.5)	(138.5)	(138.5)	(138.5)	(138.5)	(138.5)
Recognition of Deferred Inflows/Outflows of Resources								
Recognition of Investment Gains or Losses	31.2	(2.8)	(2.8)	(2.8)	(2.8)	(2.8)	(2.8)	(2.8)
Recognition of Assumption Changes or Inputs	21.2	18.3	20.3	18.3	18.1	27.6	29.6	42.7
Recognition of Economic/Demographic Gains or Losses	<u>(5.2)</u>	<u>7.1</u>	<u>7.5</u>	<u>7.5</u>	<u>7.1</u>	<u>7.1</u>	<u>7.1</u>	<u>7.8</u>
Pension Expense	\$81.0	\$79.5	\$81.9	\$79.9	\$79.3	\$88.2	\$90.8	\$104.0

Economic Assumptions

GASB 75 Impacts (\$ in millions)

<u>OPEB</u>	2024	2025 Estimate (Individual Impacts)			
	Final	No ES Changes	Retirement	Termination	All Proposed (7.00% IR)
Service Cost	\$4.3	\$5.8	\$5.8	\$5.8	\$5.8
Interest on Total OPEB Liability	17.1	21.5	21.5	21.5	21.5
Administrative Expenses	1.3	1.3	1.3	1.3	1.3
Medicare Part D Reimbursement	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)
Expected Investment Return Net of Investment Expenses	(22.2)	(20.2)	(20.2)	(20.2)	(20.2)
Recognition of Deferred Inflows/Outflows of Resources					
Recognition of Investment Gains or Losses	5.1	(1.1)	(1.1)	(1.1)	(1.1)
Recognition of Assumption Changes or Inputs	(4.8)	(0.4)	0.2	(0.4)	0.2
Recognition of Economic/Demographic Gains or Losses	<u>(0.7)</u>	<u>4.3</u>	<u>4.8</u>	<u>4.6</u>	<u>5.1</u>
OPEB Expense	(\$0.9)	\$10.2	\$11.3	\$10.5	\$11.6

Economic Assumptions

Recommended Assumption Changes - Tables

Age	Retirement Rates			
	Current Rates		Proposed Rates	
	Service	Service	Service	Service
	under 25	25+	under 25	25+
<50	N/A	N/A	N/A	N/A
50	N/A	2.00%	N/A	2.50%
51	N/A	2.00%	N/A	2.50%
52	N/A	2.00%	N/A	2.50%
53	N/A	2.00%	N/A	2.50%
54	N/A	10.00%	N/A	15.00%
55	2.50%	20.00%	2.50%	22.50%
56	2.50%	20.00%	2.50%	22.50%
57	2.50%	20.00%	2.50%	22.50%
58	2.50%	20.00%	7.50%	22.50%
59	2.50%	20.00%	7.50%	22.50%
60	2.50%	20.00%	7.50%	22.50%
61	10.00%	25.00%	12.50%	25.00%
62	10.00%	30.00%	12.50%	30.00%
63	10.00%	30.00%	12.50%	30.00%
64	22.50%	30.00%	22.50%	30.00%
65	22.50%	30.00%	22.50%	50.00%
66	22.50%	35.00%	22.50%	35.00%
67	22.50%	35.00%	35.00%	35.00%
68	35.00%	35.00%	35.00%	35.00%
69	35.00%	35.00%	35.00%	35.00%
70+	100.00%	100.00%	100.00%	100.00%

Economic Assumptions

Recommended Assumption Changes - Tables

Termination Rates, <5 Years of Service		
Benefit Service	Current Rates	Proposed Rates
1	10%	10%
2	10%	10%
3	5%	5%
4	5%	7%

Termination Rates, 5+ Years of Service		
Age	Current Rates	Proposed Rates
21	5.91%	7.09%
22	5.56%	6.67%
23	5.23%	6.28%
24	4.91%	5.89%
25	4.61%	5.53%
26	4.33%	5.20%
27	4.06%	4.87%
28	3.80%	4.56%
29	3.56%	4.27%
30	3.34%	4.01%
31	3.12%	3.74%
32	2.93%	3.52%
33	2.74%	3.29%
34	2.58%	3.10%
35	2.42%	2.90%
36	2.29%	2.75%
37	2.16%	2.59%
38	2.06%	2.47%
39	1.96%	2.35%
40	1.88%	2.26%
41	1.82%	2.18%
42	1.77%	2.12%
43	1.74%	2.09%
44	1.72%	2.06%
45	1.71%	2.05%
46	1.71%	2.05%
47	1.71%	2.05%
48	1.71%	2.05%
49	1.71%	2.05%
50+	1.71%	2.05%

Economic Assumptions

Recommended Assumption Changes - Tables

Future Retirement Optional Payment Form Elections		
Form of Payment	Current Elections	Proposed Elections
Single Life	18%	15%
10 Year Certain and Life	10%	15%
100% Joint and Survivor	37%	35%
75% Joint and Survivor	18%	13%
50% Joint and Survivor	17%	22%

Future Retirees Election of Retiree Welfare Benefits		
	Current Elections	Proposed Elections
Male	85%	85%
Female	85%	85%

Future Retirees Covering Dependents		
	Current Elections	Proposed Elections
Male	75%	75%
Female	40%	40%

Economic Assumptions (besides salary scale / overtime)		
	Current Assumption	Proposed Assumption
Investment Return & Interest Rate	7.00%	6.75% or 7.00%
Inflation	2.30%	2.33%
Max Benefit & Annual Comp Limit Increases	2.30%	2.33%
Social Security Taxable Wage Base	2.80%	2.83%
Cost of Living Adjustment	1.25%	1.50%

Economic Assumptions

Recommended Assumption Changes - Tables

Base Salary Increases		
Age	Current Rates	Proposed Rates
21	15.59%	15.62%
22	14.59%	14.62%
23	13.58%	13.62%
24	12.58%	12.61%
25	11.58%	11.61%
26	10.57%	10.61%
27	9.57%	9.60%
28	9.17%	9.20%
29	8.77%	8.80%
30	8.37%	8.40%
31	7.97%	8.00%
32	7.57%	7.60%
33	7.16%	7.20%
34	6.86%	6.90%
35	6.56%	6.59%
36	6.36%	6.39%
37	6.16%	6.19%
38	5.96%	5.99%
39	5.76%	5.79%
40	5.56%	5.59%
41	5.36%	5.39%
42	5.16%	5.19%
43	5.06%	5.09%
44	4.96%	4.99%
45	4.86%	4.89%

Base Salary Increases		
Age	Current Rates	Proposed Rates
46	4.76%	4.79%
47	4.71%	4.74%
48	4.66%	4.69%
49	4.61%	4.64%
50	4.56%	4.59%
51	4.51%	4.54%
52	4.46%	4.49%
53	4.41%	4.44%
54	4.36%	4.39%
55	4.31%	4.34%
56	4.21%	4.24%
57	4.11%	4.14%
58	3.96%	3.98%
59	3.86%	3.89%
60	3.80%	3.84%
61	3.75%	3.78%
62	3.70%	3.74%
63	3.65%	3.68%
64	3.60%	3.63%
65	3.55%	3.58%
66	3.50%	3.53%
67	3.45%	3.48%
68	3.40%	3.43%
69	3.35%	3.38%
70	3.30%	3.33%

Overtime Assumption		
Age	Current Rates	Proposed Rates
<35	16.00%	18.00%
35	15.00%	19.00%
36	15.00%	19.00%
37	15.00%	19.00%
38	15.00%	19.00%
39	15.00%	19.00%
40	15.00%	19.00%
41	15.00%	19.00%
42	15.00%	19.00%
43	15.00%	19.00%
44	14.80%	18.80%
45	14.60%	18.60%
46	14.40%	18.40%
47	14.20%	18.00%
48	14.00%	18.00%
49	13.80%	17.80%
50	13.60%	17.60%
51	13.40%	17.40%
52	13.20%	17.20%
53	13.00%	17.00%
54	12.80%	16.80%
55	12.60%	16.60%
56	12.20%	16.20%
57	11.90%	15.90%
58	11.60%	15.60%
59	11.30%	15.30%
60	10.90%	14.90%
61	10.30%	14.30%
62	9.50%	14.20%
63	8.50%	14.10%
64	7.50%	14.00%
65	6.50%	13.90%
66	6.00%	13.80%
67	6.00%	10.80%
68	6.00%	8.80%
69	6.00%	6.80%
70+	6.00%	4.80%

Proposed assumption will include partial 2022 market match valued by increasing salary increases by 6.25% for salaried employees (including executives) and 0.6% for wage scale and utility worker employees for 2023. PTO 2-week buy out valued by loading salary increases by approximately 3.85% for 2025.

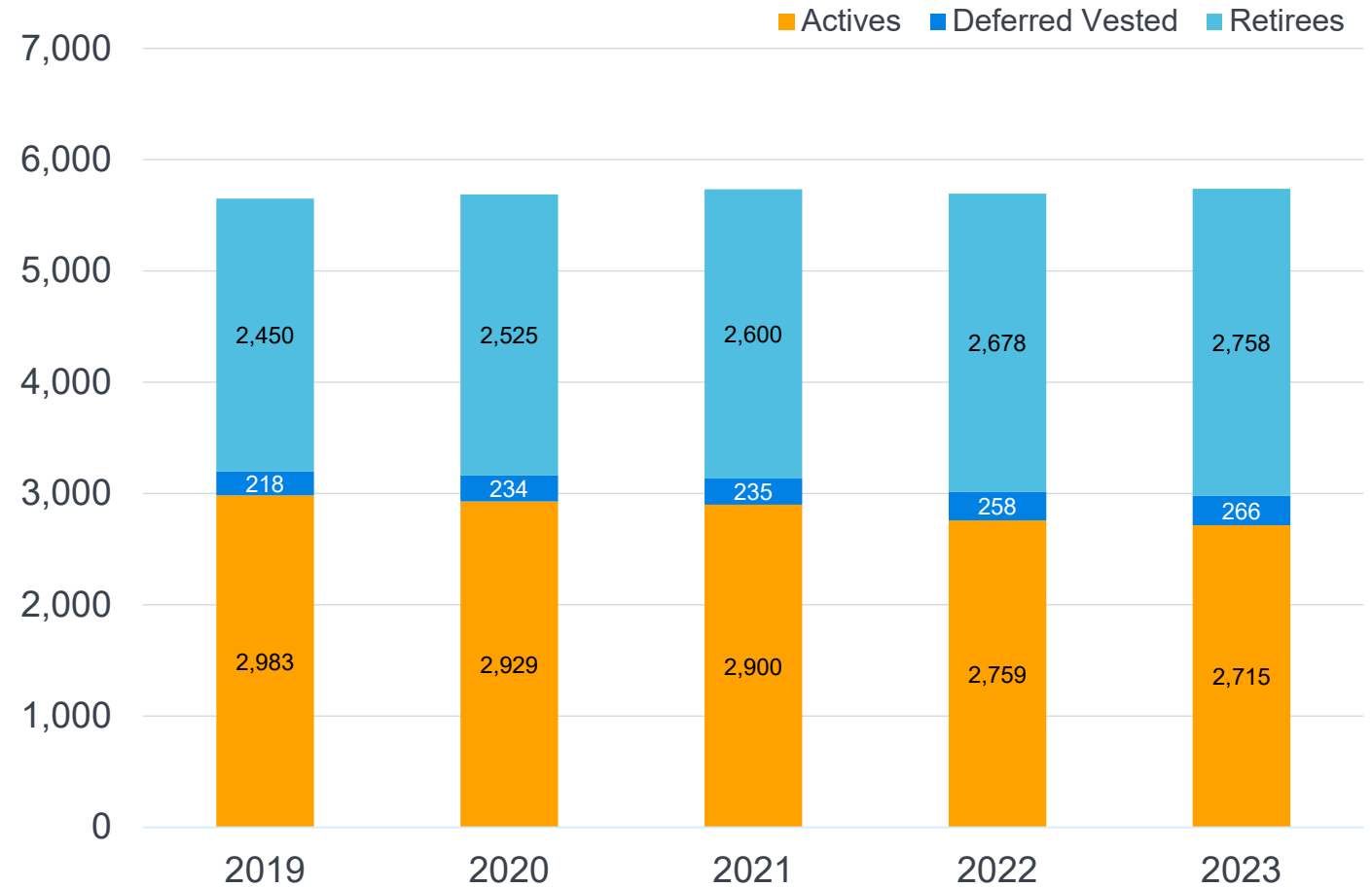


Appendices

Participants

Pension Plan

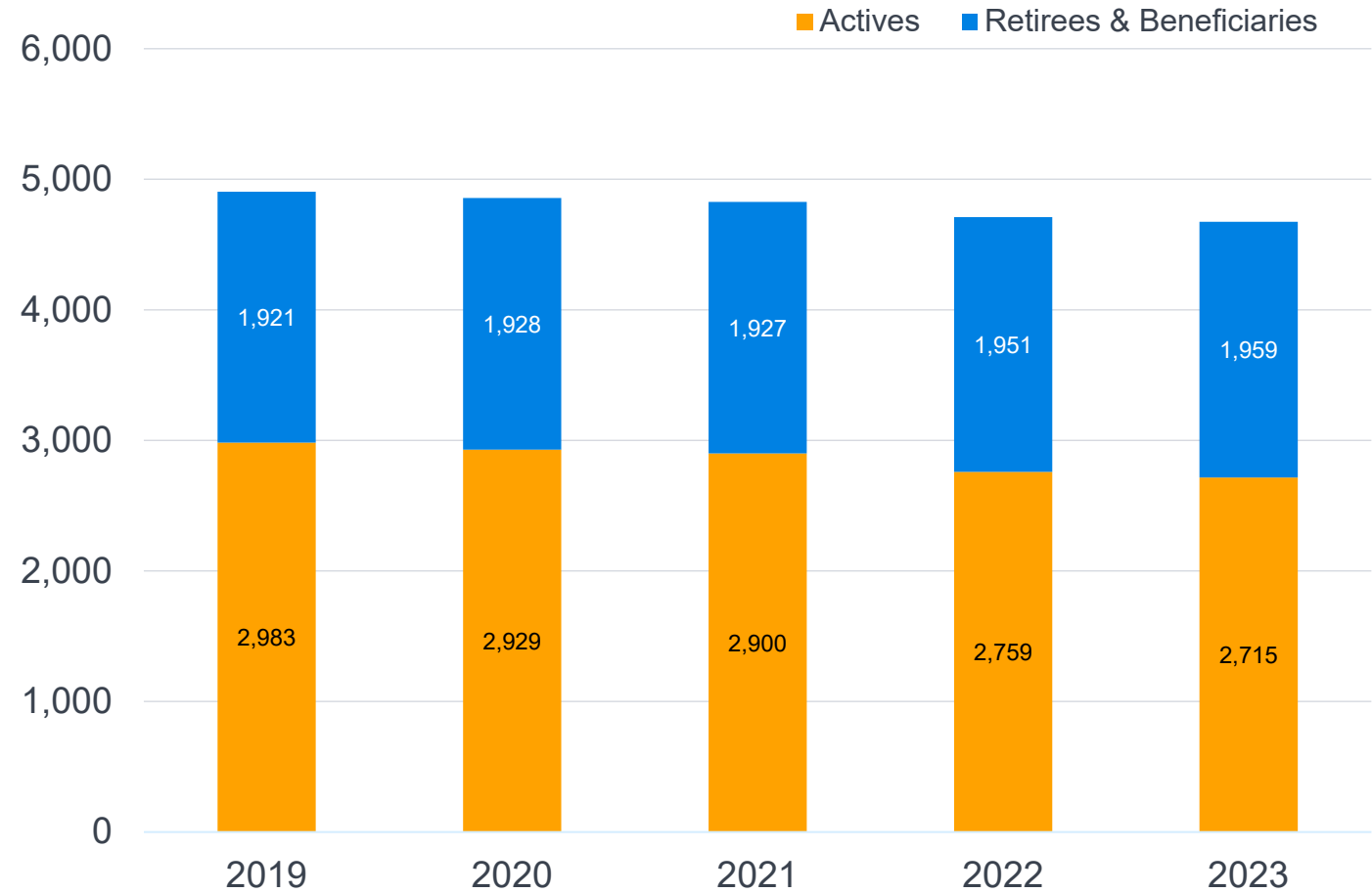
As of January 1	2022	2023
Active	2,759	2,715
Deferred Vested	258	266
Retirees	2,678	2,758
Total	5,695	5,739



Participants

Group Retiree Health Plan

As of January 1	2022	2023
Active	2,759	2,715
Retirees & Beneficiaries	1,951	1,959
Total	4,710	4,674



Assets – January 1

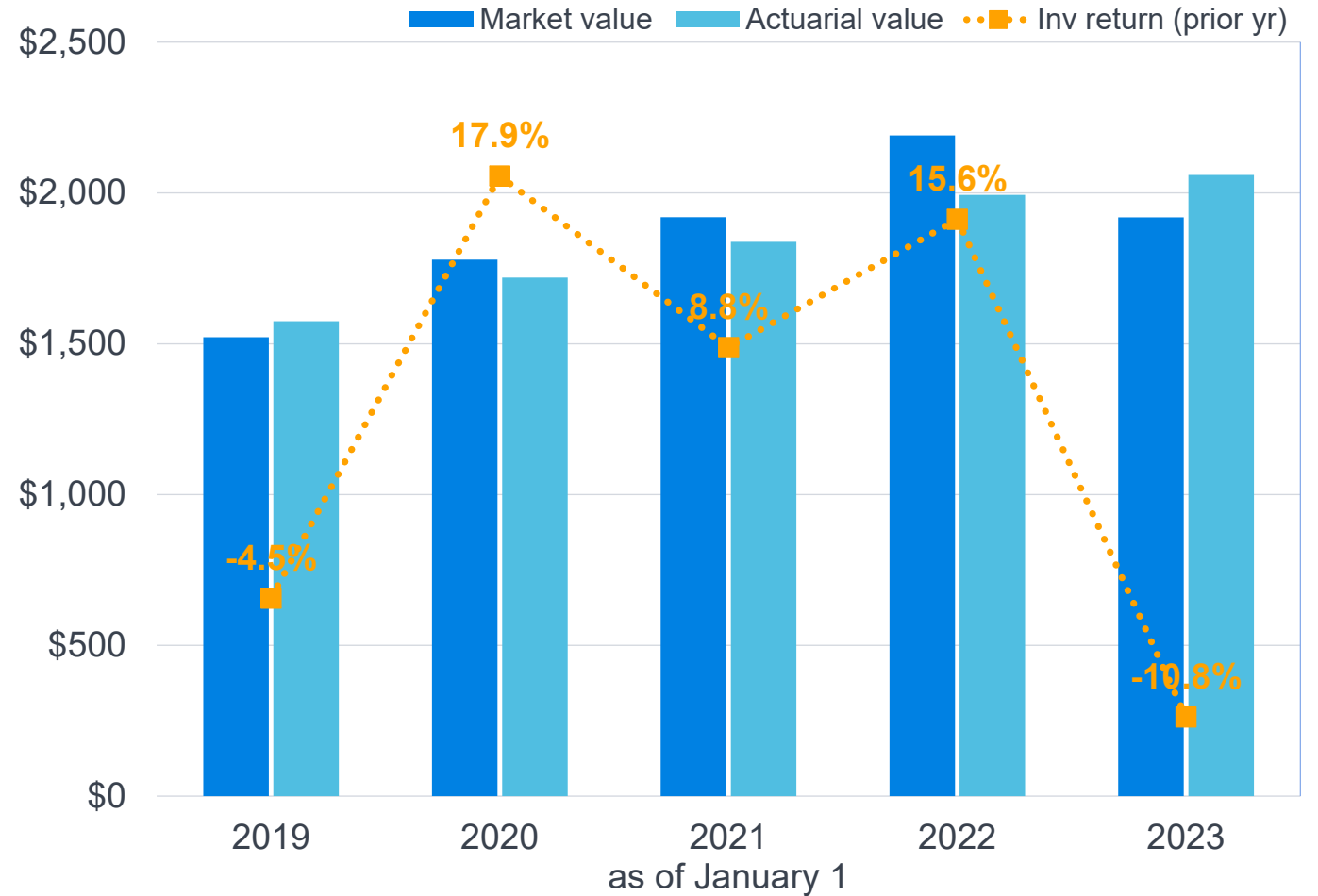
Funding and GASB 67 – Pension Plan (\$ in millions)

Assets as of January 1, 2023

Cash	\$12.7
Receivables	10.7
Equity	1,036.9
Fixed Income	390.0
Other	468.9

Total \$1,919.2

Beginning of year	\$2,191.0
Employer Contributions	59.2
Employee Contributions	14.9
Benefit payments	(122.8)
Administrative expenses	(0.5)
Investment gain / (loss)	(222.6)
End of year	\$1,919.2



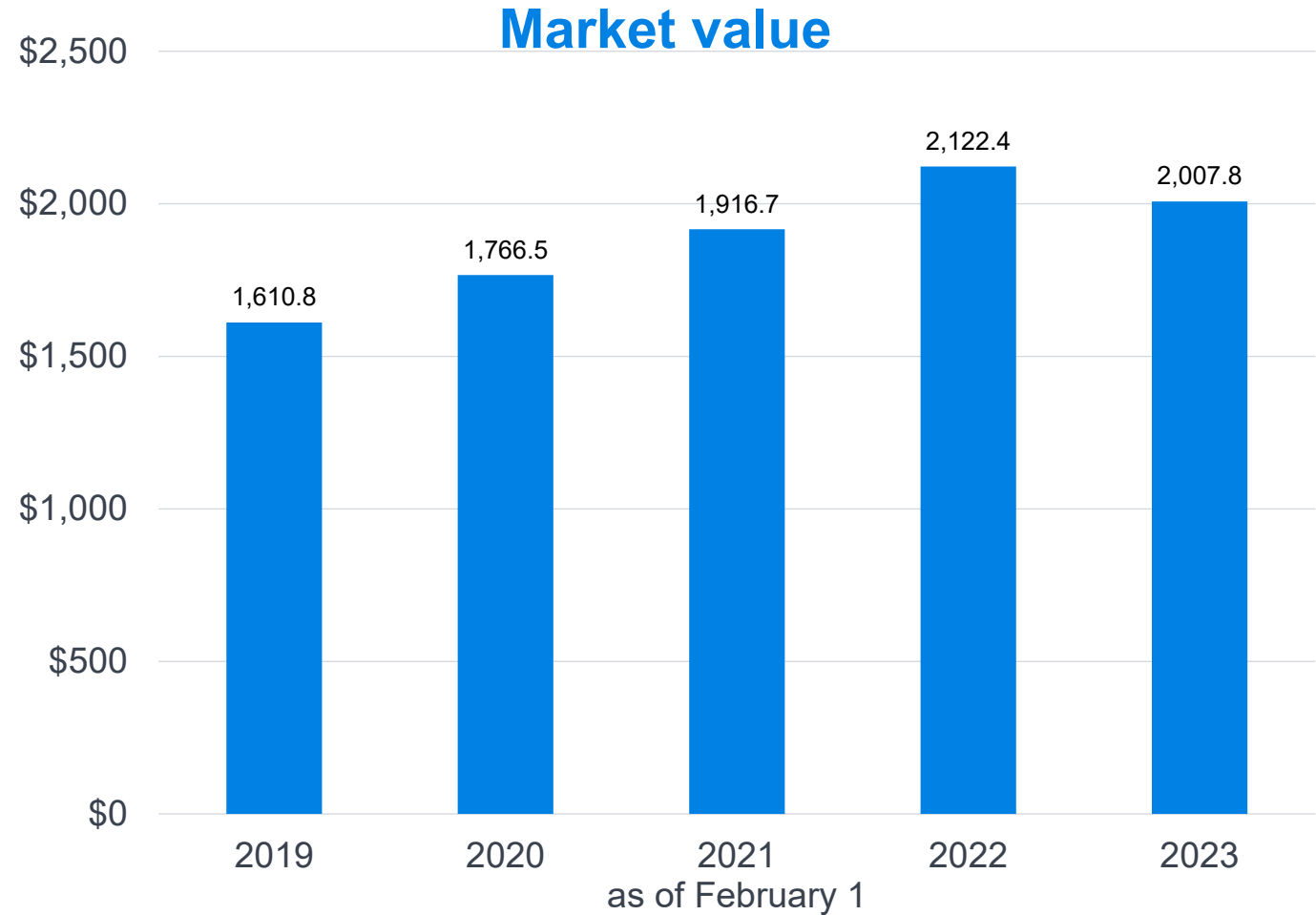
Assets – February 1

GASB 68 – Pension Plan (\$ in millions)

Assets as of February 1, 2023

Cash	\$15.3
Receivables	7.2
Equity	1,107.0
Fixed Income	403.6
Other	474.7
Total	\$2,007.8

Beginning of year	\$2,122.4
Employer Contributions	59.0
Employee Contributions	15.0
Benefit payments	(123.4)
Administrative expenses	(0.5)
Investment gain / (loss)	<u>(64.7)</u>
End of year	\$2,007.8



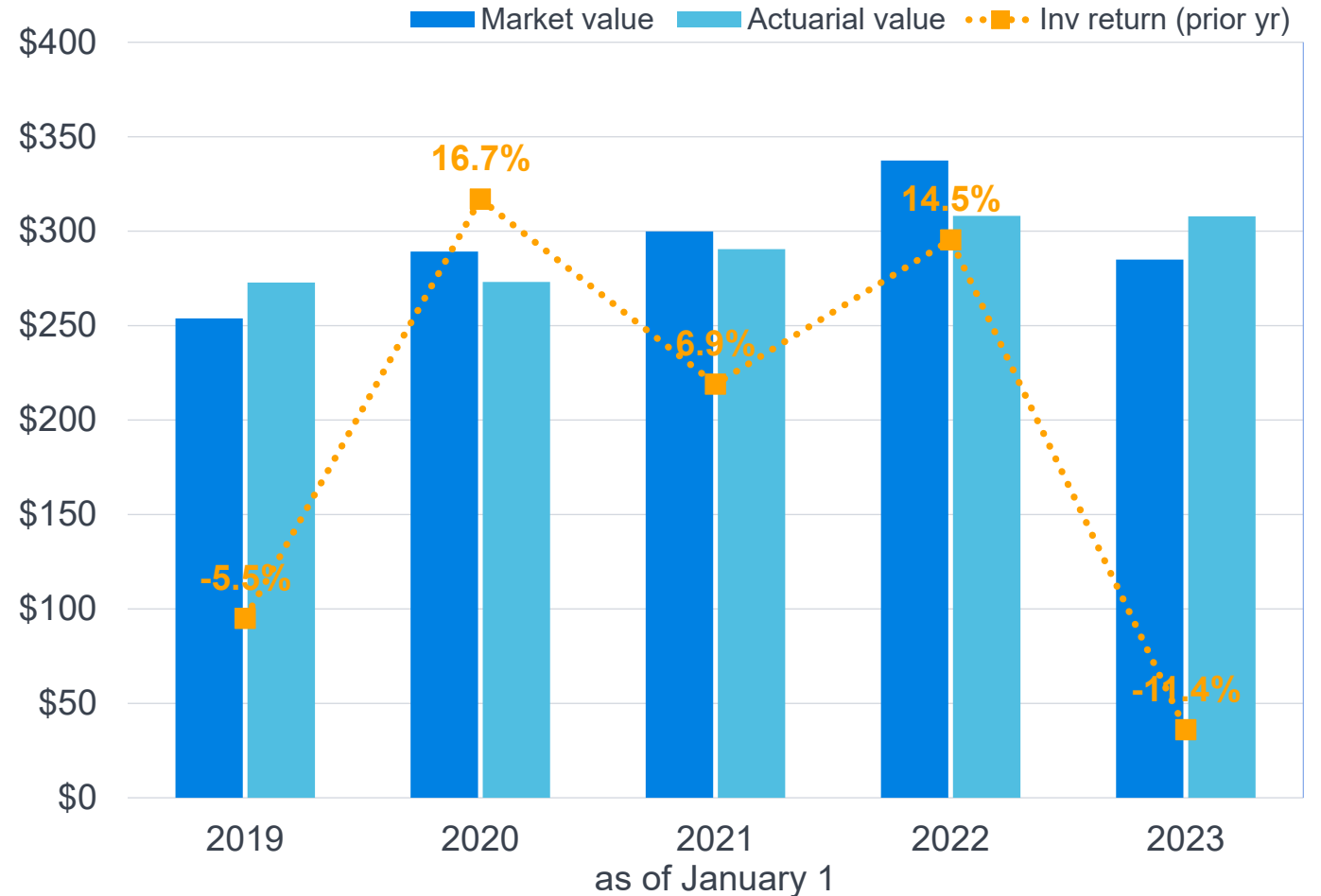
Assets – January 1

Funding and GASB 74 – Group Retiree Health Plan (\$ in millions)

Assets as of January 1, 2023

Cash	(\$2.3)
Receivables	3.8
Equity	164.6
Fixed Income	71.5
Other	47.4
Total	\$285.0

Beginning of year	\$337.5
Employer Contributions	33.9
Member Contributions	11.2
Benefit payments	(59.8)
Administrative expenses	(3.8)
Medicare Part D Payment	1.0
Impact of Active Healthcare	(0.3)
Investment gain / (loss)	<u>(34.7)</u>
End of year	\$285.0



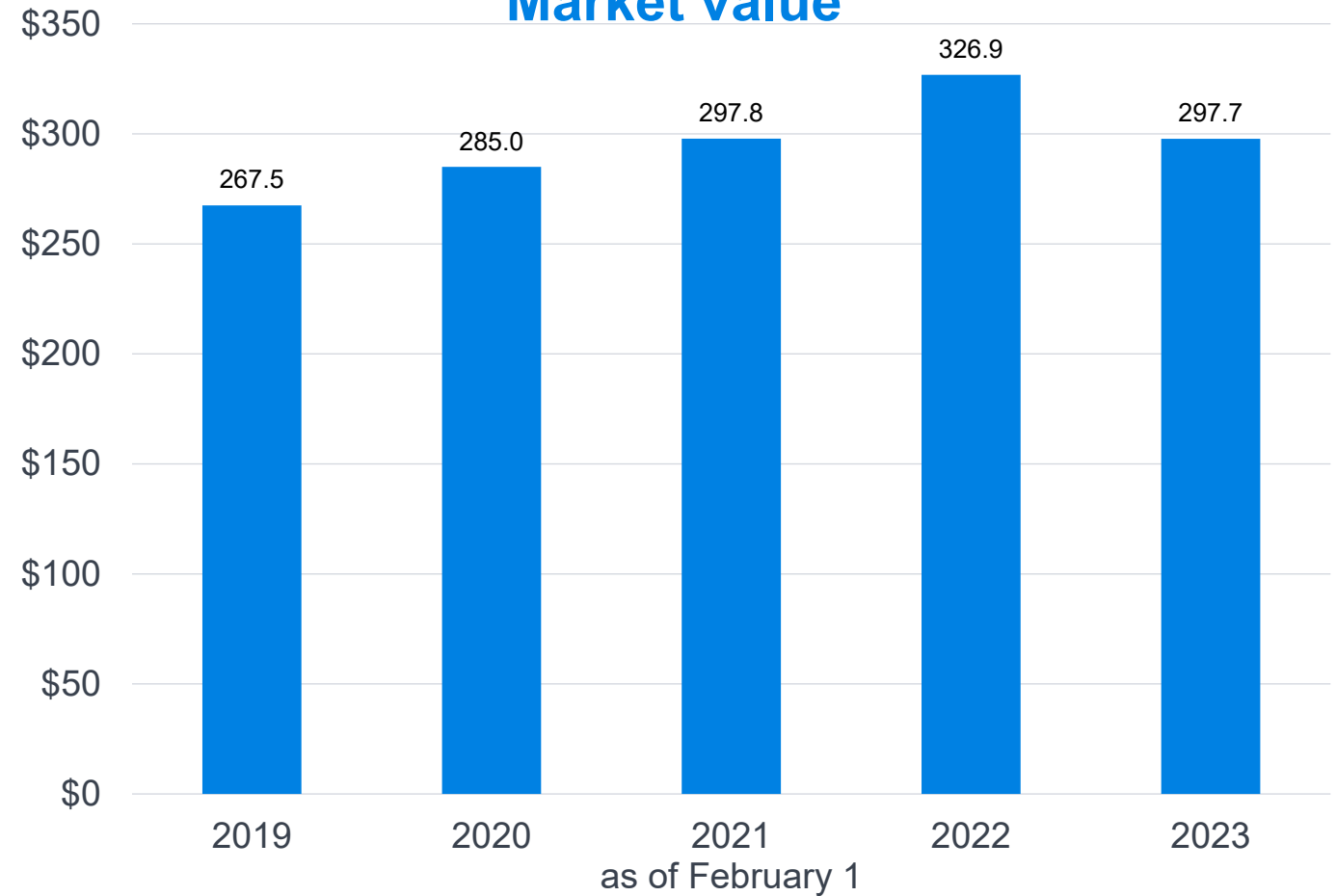
Assets – February 1

GASB 75 – Group Retiree Health Plan (\$ in millions)

Assets as of February 1, 2023

Cash	(\$1.6)
Receivables	1.7
Equity	175.8
Fixed Income	74.0
Other	47.8
Total	\$297.7
Beginning of year	\$326.9
Employer Contributions	34.1
Member Contributions	18.7
Benefit payments	(69.0)
Administrative expenses	(3.8)
Medicare Part D Payment	1.0
Impact of Active Healthcare	0.7
Investment gain / (loss)	<u>(10.9)</u>
End of year	\$297.7

Market value



Assumptions – Executive Summary

Healthcare Assumptions

Assumption

January 1, 2022

January 1, 2023

Medical and Dental Inflation (Trend Assumption)

Pre-65		Post-65		Dental		Pre-65		Post-65		Dental	
Year	Trend	Year	Trend	Year	Trend	Year	Trend	Year	Trend	Year	Trend
2022	5.70%	2022	5.50%	2022 - 2069	4.00%	2023	6.60%	2023	6.40%	2023 - 2068	4.00%
2023	5.40%	2023	5.20%	2070 - 2071	3.90%	2024	7.00%	2024	6.80%	2069 - 2070	3.90%
2024	5.10%	2024	5.00%	2072 - 2073	3.80%	2025	6.40%	2025	6.30%	2071 - 2073	3.80%
2025	5.00%	2025	4.90%	2074+	3.70%	2026	5.80%	2026	5.70%	2074+	3.70%
2026	4.90%	2026	4.80%			2027	5.10%	2027	5.00%		
2027	4.80%	2027	4.70%			2028	4.90%	2028	4.90%		
2028	4.60%	2028	4.60%			2029	4.70%	2029	4.70%		
2029	4.50%	2029	4.50%			2030	4.50%	2030	4.50%		
2030 - 2034	4.40%	2030 - 2037	4.40%			2031	4.30%	2031	4.30%		
2035 - 2036	4.50%	2038 - 2061	4.30%			2032 - 2050	4.10%	2032 - 2056	4.10%		
2037 - 2038	4.40%	2062 - 2065	4.20%			2051 - 2064	4.20%	2057 - 2063	4.20%		
2039 - 2064	4.30%	2066 - 2067	4.10%			2065 - 2066	4.10%	2064 - 2066	4.10%		
2065	4.20%	2068 - 2069	4.00%			2067 - 2068	4.00%	2067 - 2068	4.00%		
2066 - 2067	4.10%	2070 - 2071	3.90%			2069 - 2070	3.90%	2069 - 2070	3.90%		
2068 - 2069	4.00%	2072 - 2073	3.80%			2071 - 2073	3.80%	2071 - 2072	3.80%		
2070 - 2071	3.90%	2074+	3.70%			2074+	3.70%	2073+	3.70%		
2072 - 2073	3.80%										
2074+	3.70%										

The medical trend assumptions are shown in the following table. These trends have changed from the prior valuation, due to updates in the trend model that we use. The model is based on the Society of Actuaries' (SOA) published report on long-term medical trend. That report includes detailed research performed by a committee of economists and actuaries, and proposes the use of the "Getzen Model" named after the professor who developed the model. We believe that the research and the model are fundamentally and technically sound and advance the body of knowledge available to actuaries to more accurately project long-term medical trends. Milliman uses this model as the foundation for the trend that it recommends to our clients for OPEB valuations.

These trend rates assume that over time, deductibles and out of pocket maximums will be periodically increased as trends increase.

The trend assumptions for medical/pharmacy (including RDS subsidy) and dental costs and retiree premiums are summarized below and use a base inflation of 2.30%. These assumptions are assumed for both current and future retirees and their dependents.



Assumptions – Executive Summary

Healthcare Assumptions

Assumption

January 1, 2022

January 1, 2023

The annual medical (including pharmacy) and dental benefit costs shown below are calculated based on 36 months of actual claims costs through December 2022 for 2023 and 48 months for Medicare Non-Grandfathered and 36 months for all other groups of actual claims costs through December, 2021 for these groups for 2022. Pharmacy rebates are considered in the medical benefit costs shown below. The under age 65 claims were adjusted to account for the morbidity differences we expect to see between an active and retiree population. The resulting estimated retiree claims plus administrative costs were age and gender adjusted based on Milliman's Health Cost Guidelines™. Spouses of disabled retirees have the standard spouse claim costs.

Per Capita Medical Benefit Costs

Age	Standard				Disabled	
	Retiree		Spouse		Retiree	
	Male	Female	Male	Female	Male	Female
45	\$7,603	\$11,421	\$6,178	\$7,796	\$8,773	\$10,698
50	\$8,692	\$10,917	\$7,263	\$8,699	\$9,022	\$10,502
55	\$9,922	\$10,604	\$8,471	\$9,496	\$8,829	\$9,394
60	\$11,438	\$11,452	\$9,994	\$10,404	\$8,167	\$8,730
64	\$13,691	\$12,657	\$11,958	\$11,444	\$7,844	\$8,666

Age	Standard				Disabled	
	Retiree		Spouse		Retiree	
	Male	Female	Male	Female	Male	Female
45	\$8,562	\$12,861	\$6,905	\$8,727	\$10,039	\$12,242
50	\$9,788	\$12,294	\$8,126	\$9,743	\$10,324	\$12,017
55	\$11,173	\$11,941	\$9,487	\$10,641	\$10,103	\$10,750
60	\$12,880	\$12,896	\$11,201	\$11,663	\$9,346	\$9,989
64	\$15,418	\$14,254	\$13,413	\$12,834	\$8,976	\$9,916

Age	Grandfathered (GF) Coordination of Benefits				Not Grandfathered (Not GF) Carve-Out			
	Retiree		Spouse		Retiree		Spouse	
	Male	Female	Male	Female	Male	Female	Male	Female
65	\$3,306	\$3,088	\$3,306	\$3,088	\$4,017	\$3,753	\$4,017	\$3,753
70	\$3,951	\$3,572	\$3,951	\$3,572	\$4,801	\$4,341	\$4,801	\$4,341
75	\$4,504	\$3,909	\$4,504	\$3,909	\$5,473	\$4,750	\$5,473	\$4,750
80	\$4,783	\$4,025	\$4,783	\$4,025	\$5,812	\$4,891	\$5,812	\$4,891
85	\$4,662	\$3,835	\$4,662	\$3,835	\$5,666	\$4,660	\$5,666	\$4,660
90	\$4,424	\$3,570	\$4,424	\$3,570	\$5,376	\$4,338	\$5,376	\$4,338

Age	Grandfathered (GF) Coordination of Benefits				Not Grandfathered (Not GF) Carve-Out			
	Retiree		Spouse		Retiree		Spouse	
	Male	Female	Male	Female	Male	Female	Male	Female
65	\$2,905	\$2,714	\$2,905	\$2,714	\$4,597	\$4,294	\$4,597	\$4,294
70	\$3,472	\$3,139	\$3,472	\$3,139	\$5,494	\$4,968	\$5,494	\$4,968
75	\$3,957	\$3,435	\$3,957	\$3,435	\$6,262	\$5,436	\$6,262	\$5,436
80	\$4,203	\$3,537	\$4,203	\$3,537	\$6,651	\$5,597	\$6,651	\$5,597
85	\$4,097	\$3,370	\$4,097	\$3,370	\$6,483	\$5,333	\$6,483	\$5,333
90	\$3,888	\$3,137	\$3,888	\$3,137	\$6,152	\$4,964	\$6,152	\$4,964

Assumptions – Executive Summary

Healthcare Assumptions

Assumption	January 1, 2022				January 1, 2023			
------------	-----------------	--	--	--	-----------------	--	--	--

Per Capita Dental Benefit Costs

Age	Retiree		Spouse	
	Male	Female	Male	Female
45	\$276	\$322	\$328	\$374
50	\$302	\$347	\$354	\$399
55	\$342	\$382	\$394	\$434
60	\$394	\$421	\$446	\$473
65	\$460	\$463	\$512	\$515
70+	\$524	\$499	\$576	\$550

Age	Retiree		Spouse	
	Male	Female	Male	Female
45	\$281	\$328	\$333	\$380
50	\$308	\$354	\$359	\$405
55	\$349	\$389	\$400	\$441
60	\$402	\$430	\$454	\$481
65	\$469	\$472	\$521	\$523
70+	\$535	\$509	\$586	\$560

Medicare Part D Subsidy (funding only)

\$568 per participant; Calculated by using the total of \$1,155,059 in 2021 divided by 2,146 (the average post-65 enrollment for 2021) and then increased by one year using Medical Inflation (Trend).

\$565 per participant; calculated by using the total of \$1,119,771 in 2022 divided by 2,109 (the average post-65 enrollment for 2022) and then increased by one year using Medical Inflation (Trend).



Assumptions – Executive Summary

Healthcare Assumptions

Assumption

January 1, 2022

January 1, 2023

Base contribution rate plus the results of the equity percentage calculation described below. Annual Medicare Part B premiums are incorporated into post-65 retiree contributions.

The annualized medical annual rates and base contributions shown below are the weighted average for Plans A, B, and C based on elections for the subgroup’s current population. Dependent contribution amounts are the weighted average of 80% spousal premium cost and 20% family premium cost. Note for dental and vision, actual annual rates / base contributions are used.

Retiree Contributions

	Annual Rate	Base Contribution
Pre-65		
Retiree	\$7,568	\$1,282
Dependent	\$9,384	\$2,825
Post-65 GF		
Retiree	\$7,211	\$874
Dependent	\$8,640	\$2,015
Post-65 Not GF		
Retiree	\$6,576	\$245
Dependent	\$8,004	\$1,388
Dental		
Retiree	\$361	\$61
Dependent	\$448	\$160
Vision		
Retiree	\$78	\$15
Dependent	\$91	\$35

	Annual Rate	Base Contribution
Pre-65		
Retiree	\$7,587	\$1,307
Dependent	\$9,408	\$2,857
Post-65 GF		
Retiree	\$7,264	\$896
Dependent	\$8,700	\$2,045
Post-65 Not GF		
Retiree	\$6,583	\$255
Dependent	\$8,011	\$1,398
Dental		
Retiree	\$361	\$61
Dependent	\$448	\$160
Vision		
Retiree	\$78	\$15
Dependent	\$91	\$35

Assumptions – Executive Summary

Healthcare Assumptions

Assumption	January 1, 2022	January 1, 2023
------------	-----------------	-----------------

The annual contribution to the Health Savings Account (HSA) is valued based on the weight of elections for the subgroup’s (pre-65 retirees enrolled in Plan C) current population. Dependent contribution amounts are the weighted average of 80% spousal premium cost and 20% family premium cost. The employer contributions to the HSA does not have aging or trend since these amounts are not expected to increase.

Health Savings Account

		Employer Contribution
Pre-65		
Retiree		\$13
Dependent		\$15

		Employer Contribution
Pre-65		
Retiree		\$14
Dependent		\$17

The annual contribution to the Health Reimbursement Arrangement (HRA) is valued based on the weight of elections for the subgroup’s (post-65 retirees enrolled in Plan A) current population. Dependent contribution amounts are the weighted average of 80% spousal premium cost and 20% family premium cost. The employer contributions to the HRA does not have aging or trend since these amounts are not expected to increase.

Health Reimbursement Arrangement

		Employer Contribution
Post-65 GF		
Retiree		\$237
Dependent		\$284
Post-65 Not GF		
Retiree		\$224
Dependent		\$268

		Employer Contribution
Post-65 GF		
Retiree		\$229
Dependent		\$275
Post-65 Not GF		
Retiree		\$219
Dependent		\$263



Risk Disclosure

The purpose of this appendix is to identify, assess, and provide illustrations of risks that are significant to the Plan, and in some cases to the Plan's participants. Historical data is included.

The results of the actuarial valuation are based on one set of reasonable assumptions. However, it is almost certain that future experience will not exactly match the assumptions. As an example, investments may perform better or worse than assumed in any single year and over any longer time horizon. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the Plan, or of the Plan's participants.

In addition, as plans mature they accumulate larger pools of assets and liabilities. This increases the potential risk to plan funding and the finances of those who are responsible for plan funding. As an example,

it is more difficult for a plan sponsor to deal with the effects of a 10% investment loss on a plan with \$1 billion in assets and liabilities than if the same plan sponsor is responsible for a 10% investment loss on a plan with \$1 million in assets and liabilities. Since pension plans make long-term promises and rely on long-term funding, it is important to consider how mature the Plan is today, and how mature it may become in the future.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the Plan.
- Assess the risks identified as significant to the Plan. The assessment does not need to include numerical calculations.

- Disclose plan maturity measures and historical information that are significant to understanding the Plan's risks.

ASOP 51 states that if in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the Plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed.

This appendix uses the framework of ASOP 51 to communicate important information about: significant risks to the Plan, the Plan's maturity, and relevant historical plan data.

Risk Disclosure

Liquidity Risk

Definition: This is the potential that assets must be liquidated at a loss earlier than planned in order to pay for the Plan's benefits and operating costs. This risk is heightened for plans with negative cash flow, in which contributions do not exceed annual benefit payments plus expenses.

Identification: This Plan has high cash flow requirements because the sum of benefit payments plus expenses is significantly larger than contributions. The Plan also has a substantial allocation to illiquid assets such as real estate and private equity. As a result, there is a risk that assets may need to be liquidated at a loss before planned in order to pay benefits and expenses.

Demographic Risks

Definition: The potential that mortality or other demographic experience will be different than expected.

Identification: The pension liabilities reported herein have been calculated by assuming that participants will follow patterns of demographic experience (e.g., mortality, withdrawal, disability, retirement, form of payment election, etc.) as described in this presentation. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities, funding contributions, and funded status may differ significantly from those presented in this valuation.

Interest Rate Risk

Definition: The potential that interest rates will be different than expected.

Identification: The pension liabilities reported herein have been calculated by computing the present value of expected future benefit payments using the interest rate described in this presentation. If interest rates in future valuations differ from this valuation, future pension liabilities, funding contributions, and funded status may differ significantly from those presented in this valuation. As a general rule, using a higher interest rate to compute the present value of future benefit payments will result in a lower pension liability, and vice versa. One aspect that can be used to estimate the impact of different interest rates is a plan's duration.

Assessment: If the interest rate changes by 1%, the estimated percentage change in pension liability is a plan's duration in years. The approximate duration of this Plan is 11.3 years. As such, if the interest rate changes by 1%, the estimated change in pension liability is 11.3%.

Risk Disclosure

Retirement Risk

Definition: This is the potential for participants to retire and receive subsidized benefits more valuable than expected.

Identification: This Plan has valuable early retirement benefits. If participants retire at earlier ages than anticipated by the actuarial assumptions, it is expected that additional funding will be required.

Contribution Risk

Definition: This is the possibility that actual future contributions deviate from expected future contributions.

Identification: The Plan is subject to the contribution risk that the actuarially determined contributions will not be made. If contributions are deferred to the future, investment income is lost in the intervening period and the Plan becomes more expensive.

Investment Risk

Definition: The potential that investment returns will be different than expected.

Identification: To the extent that actual investment returns differ from the assumed investment return, the Plan's future assets, funding contributions, and funded status may differ significantly from those presented in this valuation.

Risk Disclosure

Covered Employment Risk

Definition: The potential that future covered employment is lower than expected due to a declining workforce in a company or industry, or a temporary workforce reduction due to market forces.

Identification: A reduction in the Plan's contribution base can potentially threaten its ability to recover from another market downturn.

Assessment: The Plan's active population decreased slightly from 2,759 to 2,715 over the past year. There are currently 0.9 inactive participants for every active, and a future decline in the active population may require even higher contributions to be paid on fewer active participants. Reduced contributions will also demand higher investment returns to make up for the contribution shortfall.

Inflation Risk

Definition: This is the potential of a pension to lose purchasing power over time due to inflation.

Identification: The participants of pension plans without fully inflation-indexed benefits are subject to the risk that their purchasing power will be reduced over time due to inflation.

Assessment: Participants in this Plan bear some of the inflation risk for benefits earned in the past, since cost of living increases are assumed to be 50% of CPI.

Maturity Risk

Definition: This is the potential for total plan liabilities to become more heavily weighted toward inactive liabilities over time.

Identification: The Plan is subject to maturity risk because as plan assets and liabilities continue to grow, the impact of any gains or losses on the assets or liabilities also becomes larger.

Assessment: Currently assets are equal to 6.8 times payroll indicating a one-year asset loss of 10% would be equal to 68% of payroll.

Statements of Reliance and Limitations

This presentation is intended as a high level discussion of current issues in employee benefits. It should be considered a supplement to our latest actuarial valuation, the January 1, 2022 actuarial funding valuations and the FYE 2024 GASB 68 and GASB 75 valuations and all caveats from those reports apply. Unless otherwise stated, any calculations herein are based on the same data and assumptions as disclosed in this presentation. Please refer to the most recent valuation report for additional details on plan provisions, assumptions, limitations, and information about the Plan's risks.

This information has been prepared for the internal use of and is only to be relied upon by CPS Energy. No portion of this presentation may be disclosed to any other party without Milliman's prior written consent.

The presentation itself is incomplete without attendance at the meeting in which the contents were delivered and discussed. Milliman does not intend to benefit any third party recipient of its work product.

To the extent that actual investment returns differ from the assumed investment return, the plan's future assets, funding contributions and funded status may differ significantly from those presented in this presentation. For the pension plan, based on expected asset returns and projected interest rates, the funding contributions are expected to gradually increase.

ASOP 56 provides guidance to actuaries in respect to the development and involvement of models used in their actuarial services. The results included were developed using

models intended for valuations that use standard actuarial techniques. Milliman has reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOP).

The information presented is only for the specific uses indicated within the presentation. Determinations for other purposes may be substantially different from those provided herein. Accordingly, other determinations will be needed for other purposes.



Thank you

Jake Pringle, EA, MAAA
jake.pringle@milliman.com

Abby Hirshkowitz
abby.hirshkowitz@milliman.com