

Sussex County Employee Pension Plan and Postemployment Benefits Plan



2022 Actuarial Valuations

November 17, 2022

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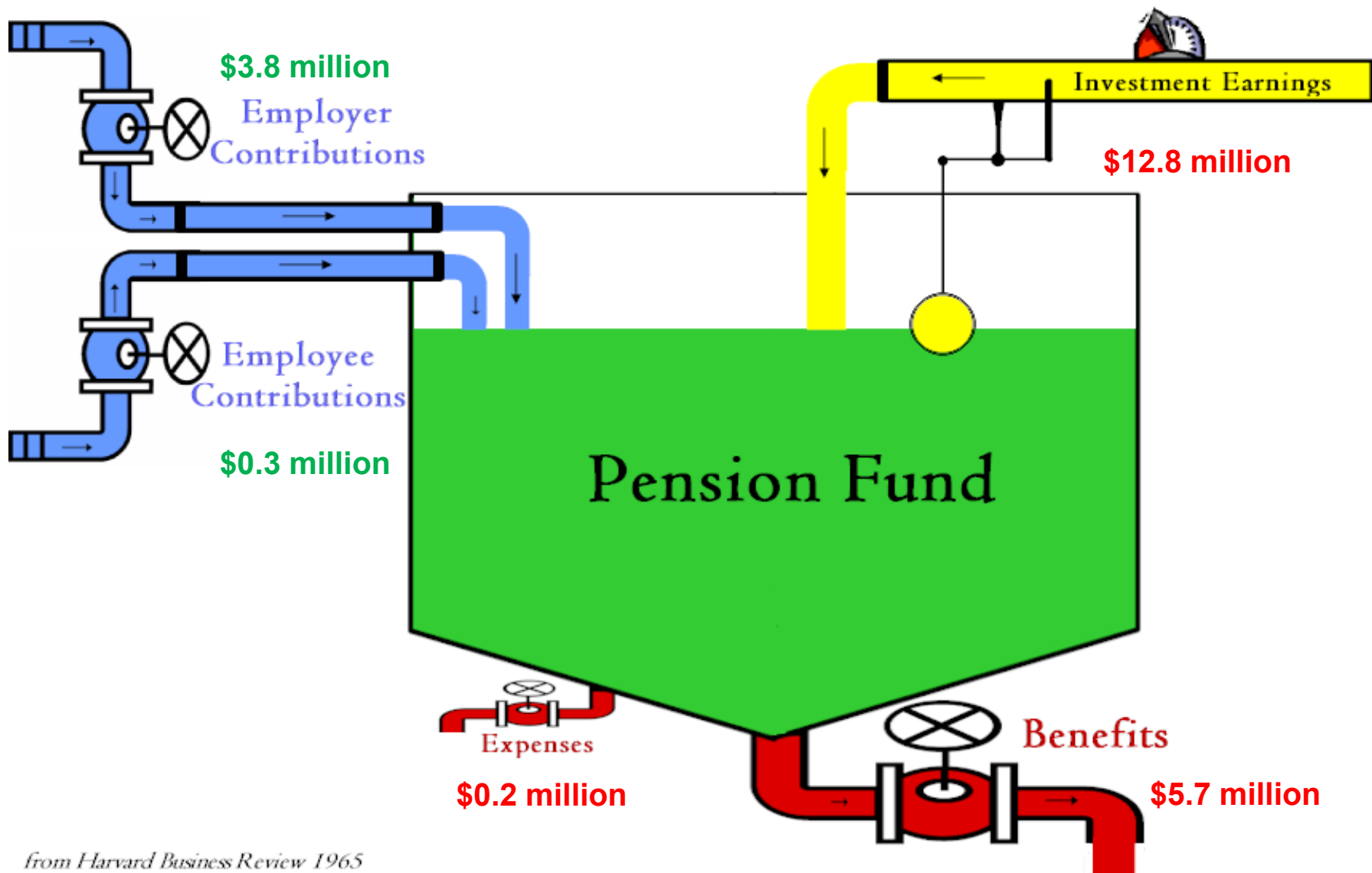


- 2022 Pension Actuarial Valuation
 - Historical Review
 - Identification and Assessment of Risk
 - Valuation Results
 - Projections
 - ASOP 4
- 2022 OPEB Actuarial Valuation
 - Historical Review
 - Valuation Results
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- Appendix – GASB 67/68/74/75



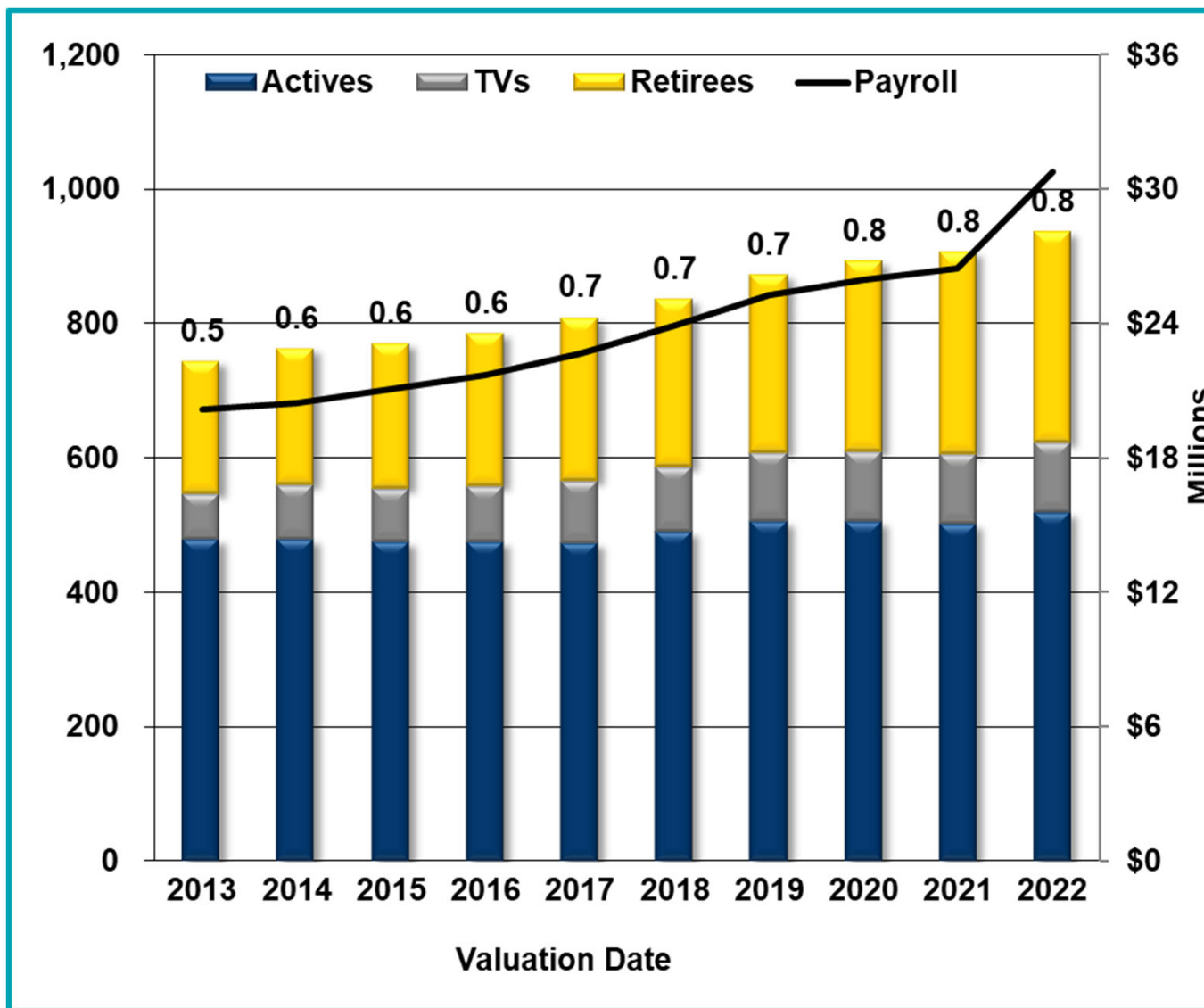
2022 Pension Actuarial Valuation

The Actuarial Valuation Process

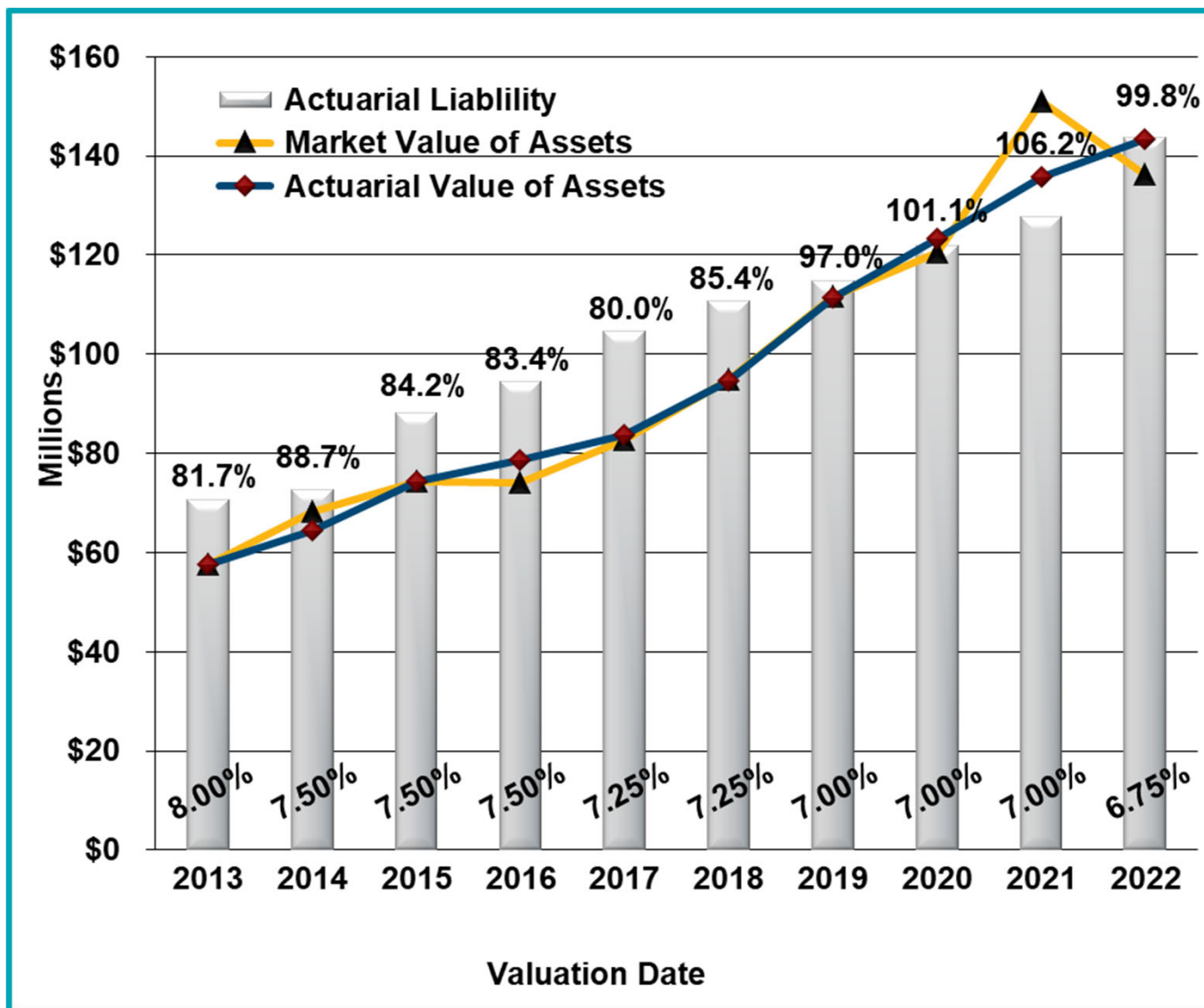


from Harvard Business Review 1965

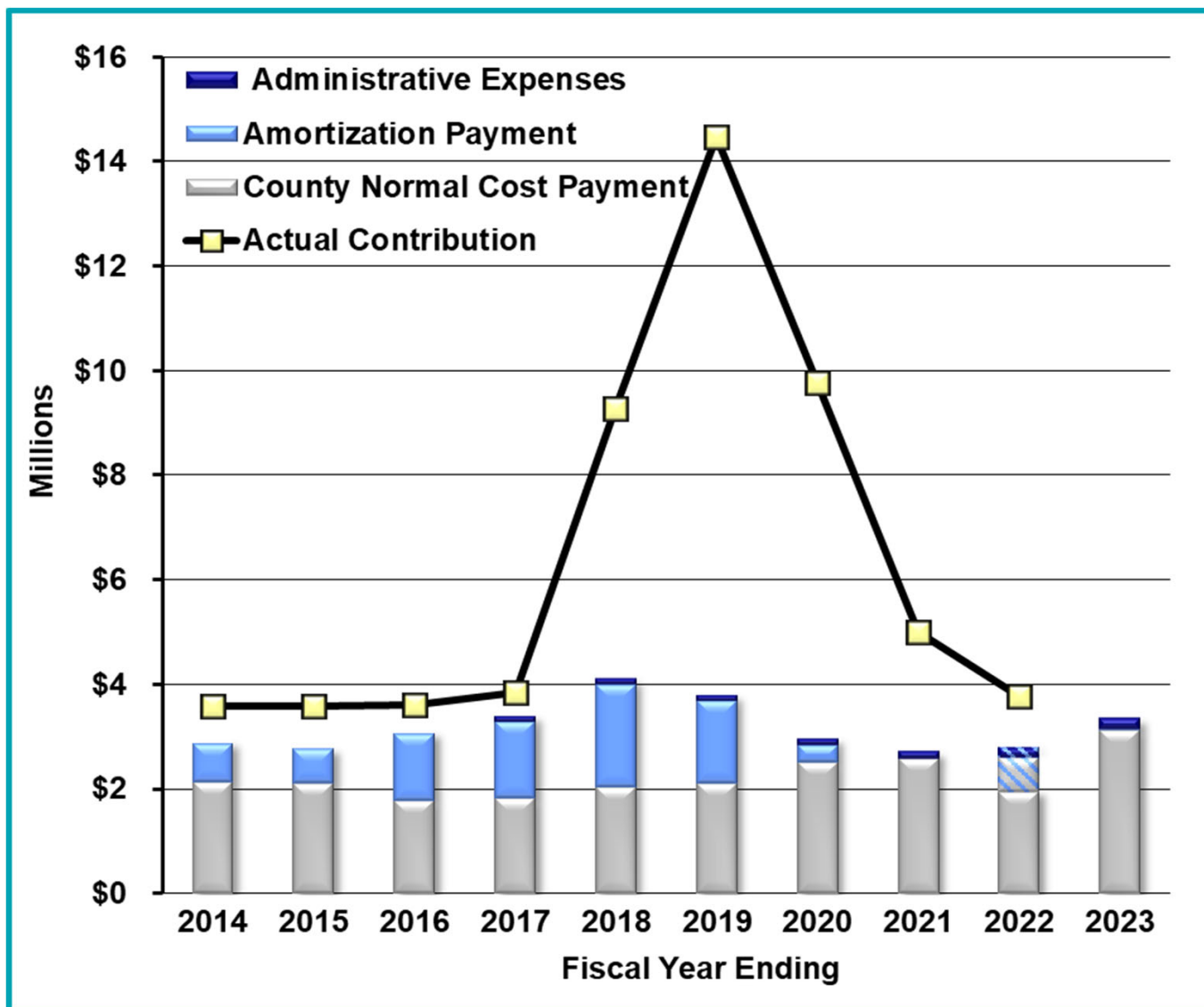
Historical Trends – Participation



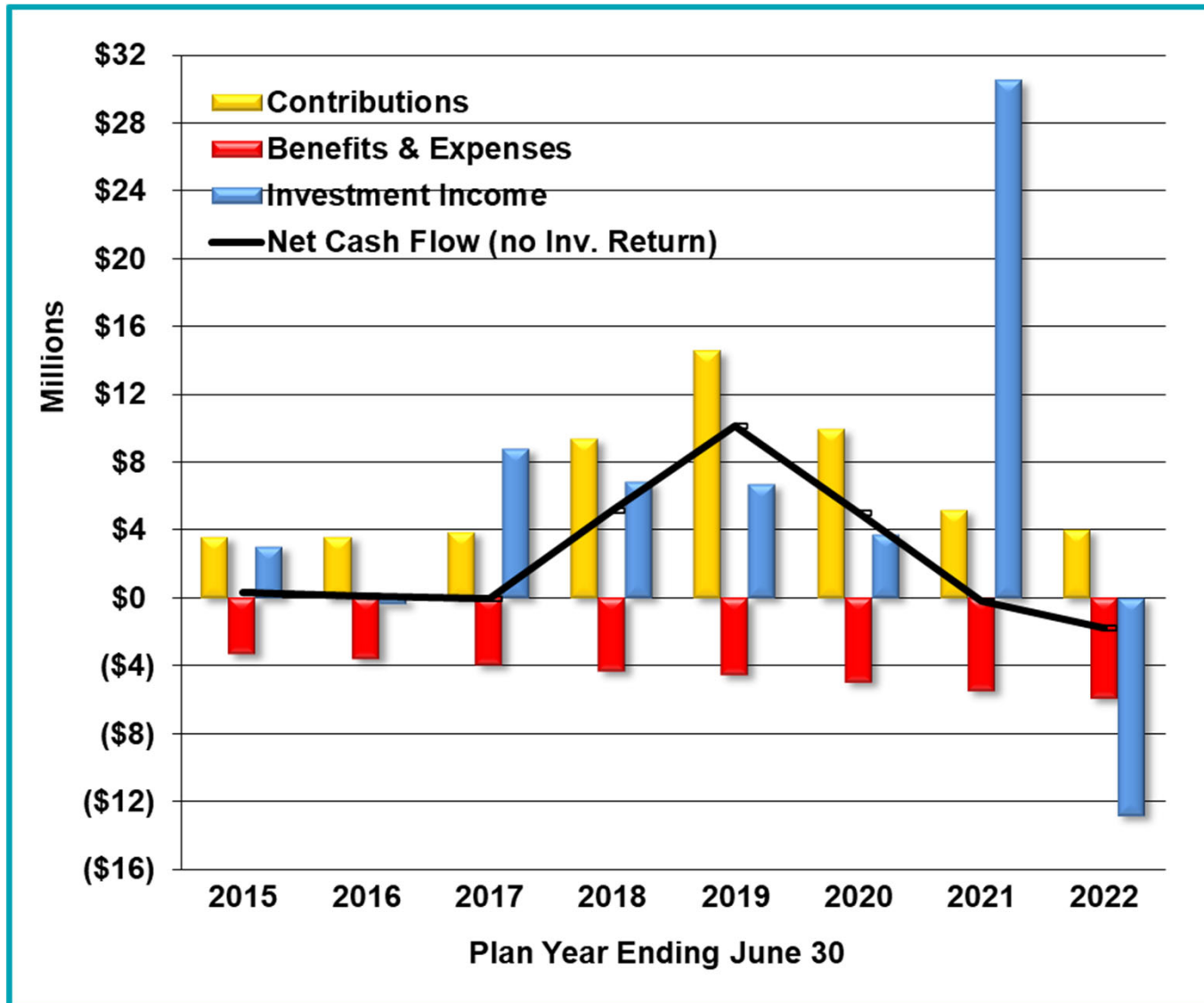
Historical Trends – Assets and Liabilities



Historical Trends – Contributions



Historical Trends – Cash Flow



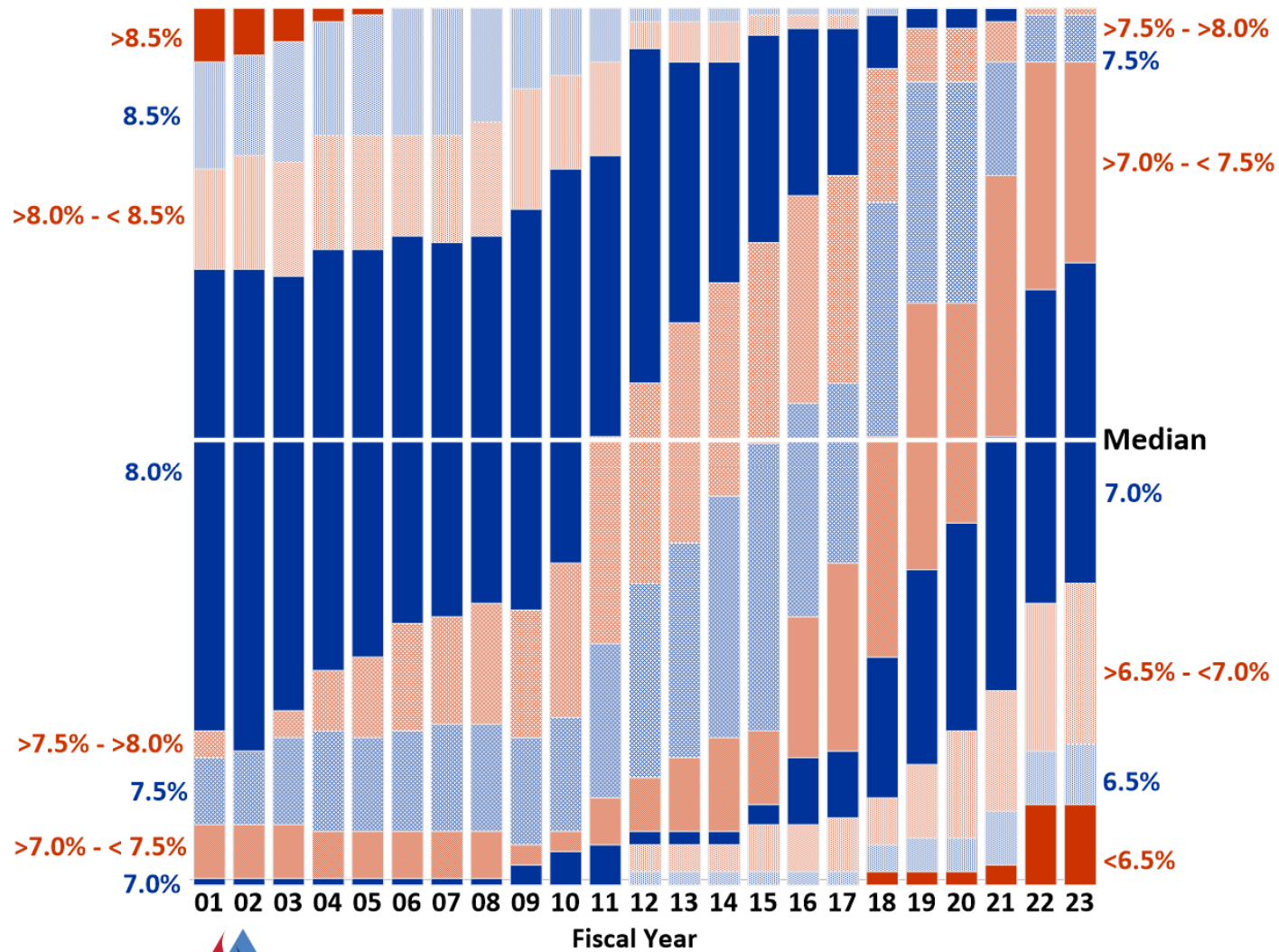


- Material risks identified:
 - **Investment Risk** – the potential for investment returns to be different than expected
 - **Interest Rate Risk** – the potential for interest rates to be different than expected
 - **Longevity and other Demographic Risk** – the potential for mortality and other demographic experience to be different than expected
 - **Assumption Change Risk** – the potential for the environment to change such that future valuation assumptions are different than the current assumptions

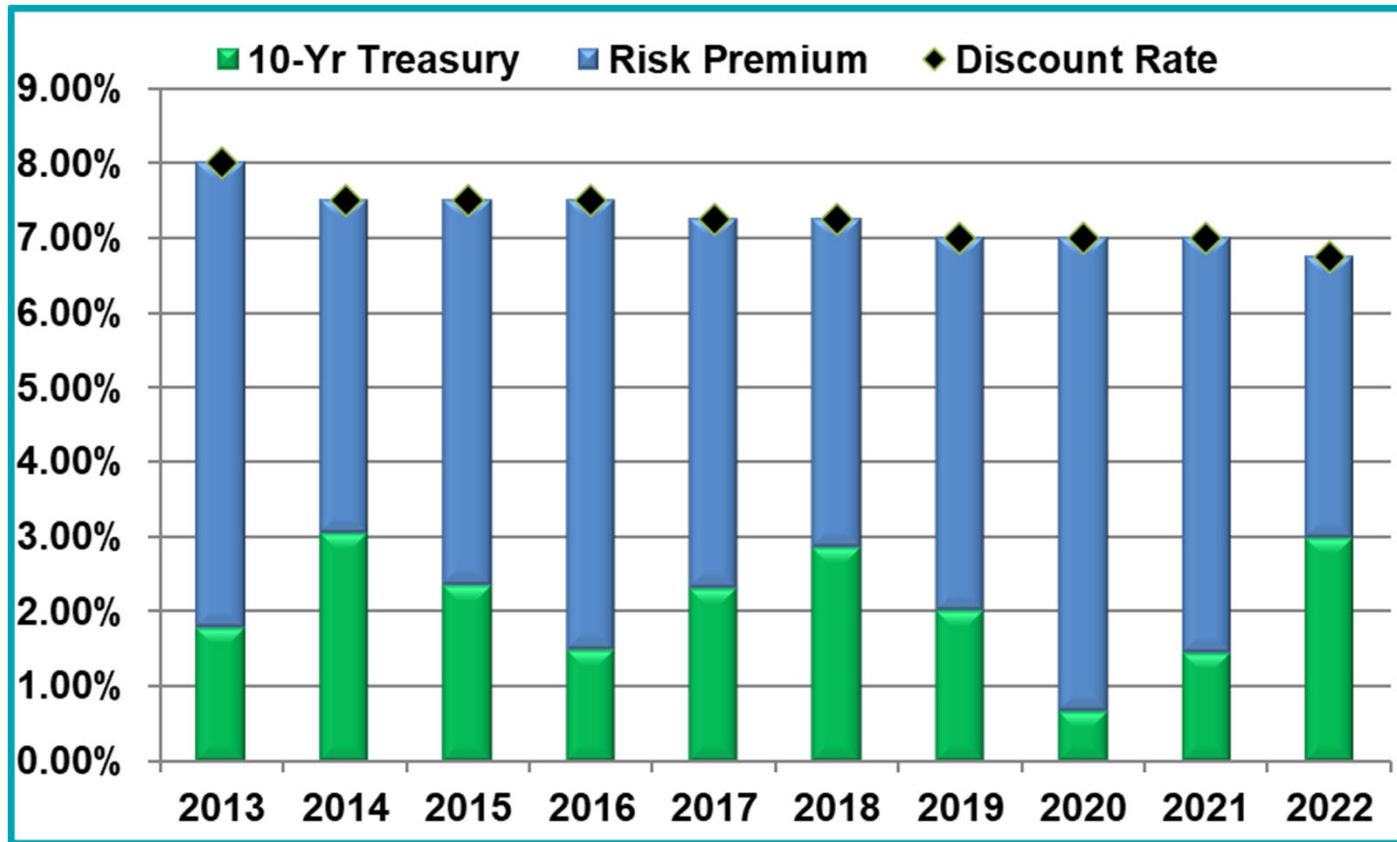
Investment Risk



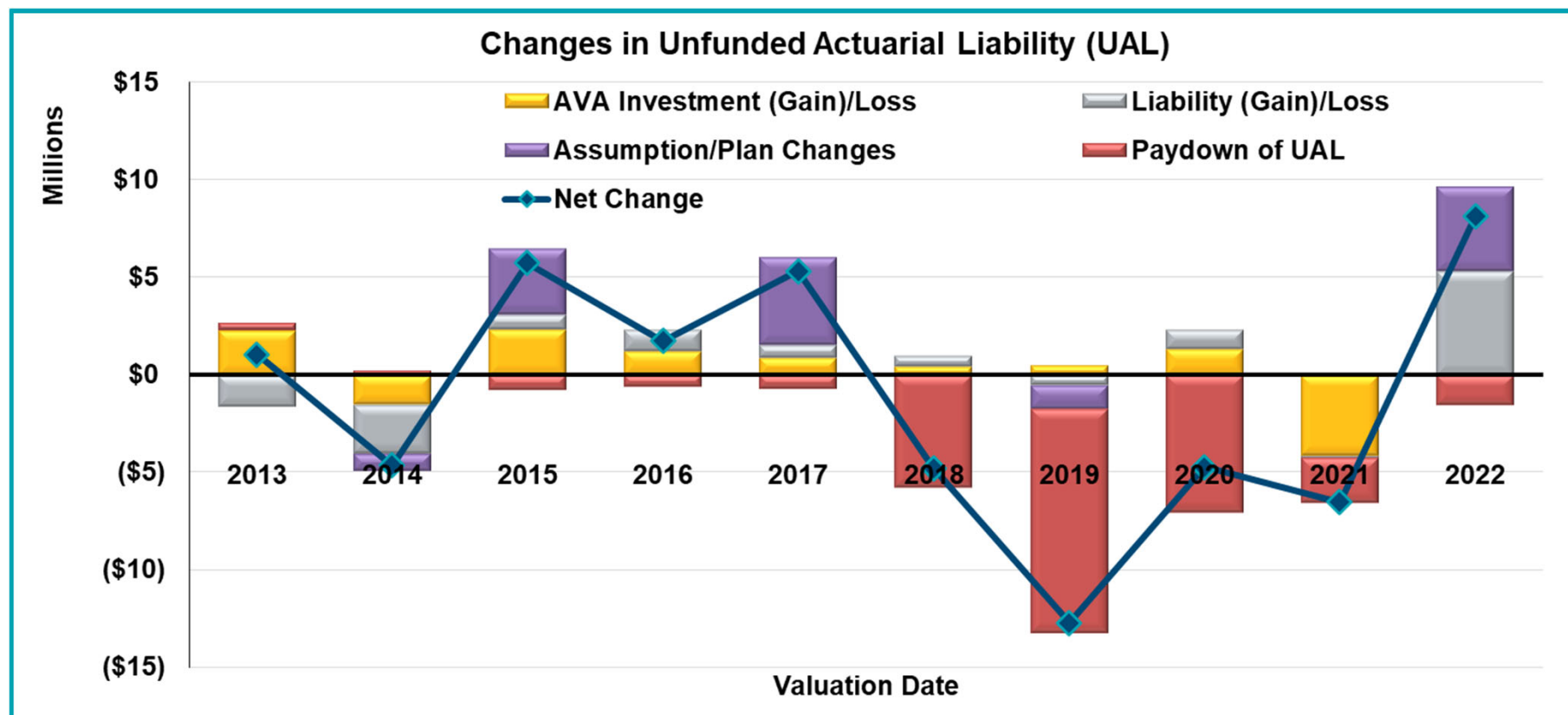
Distribution of Investment Return Assumptions,
FY 01 to present



Interest Rate Risk



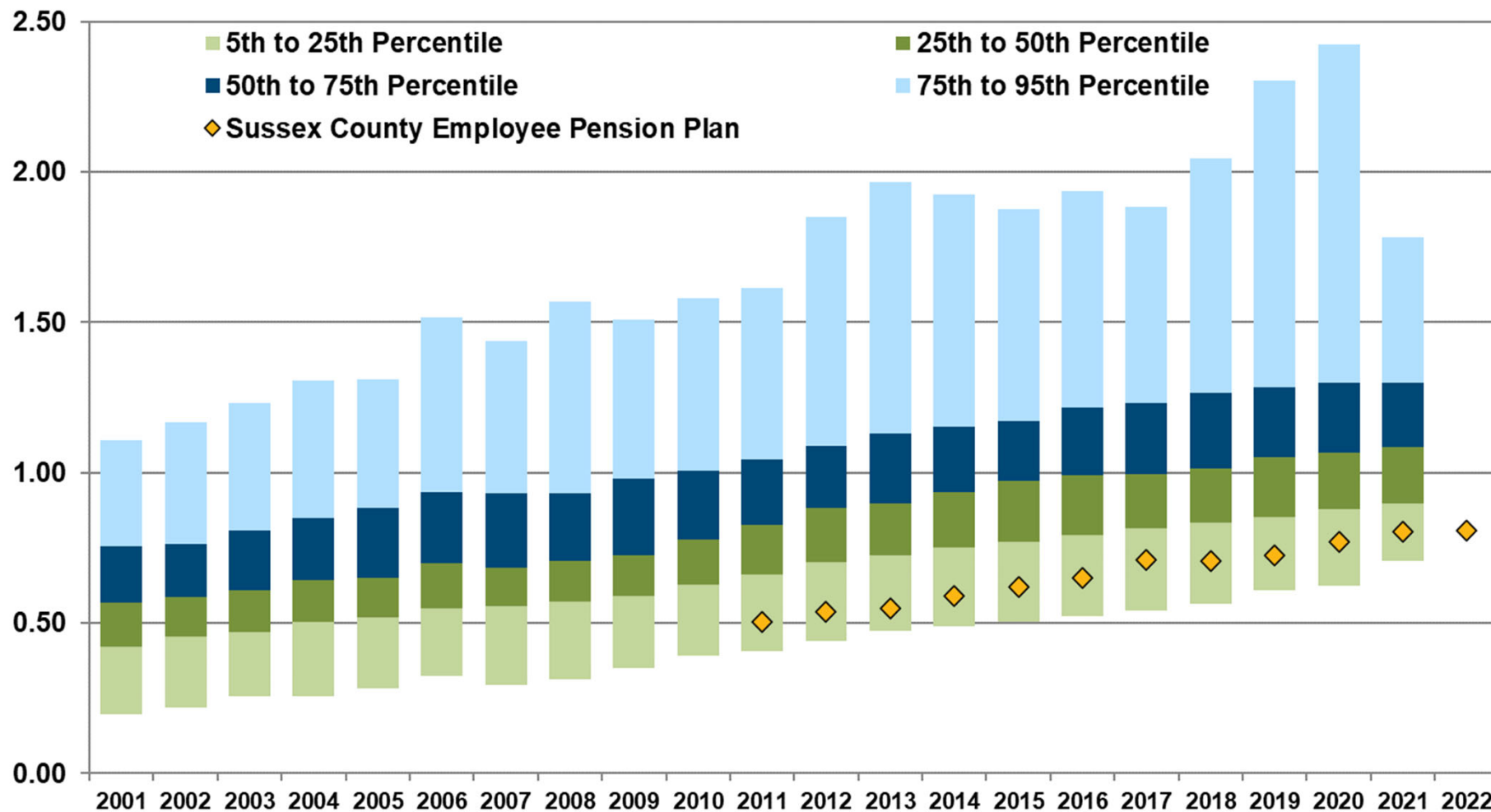
Material Risks – Changes in UAL



Plan Maturity Measures – Support Ratio



Support Ratio

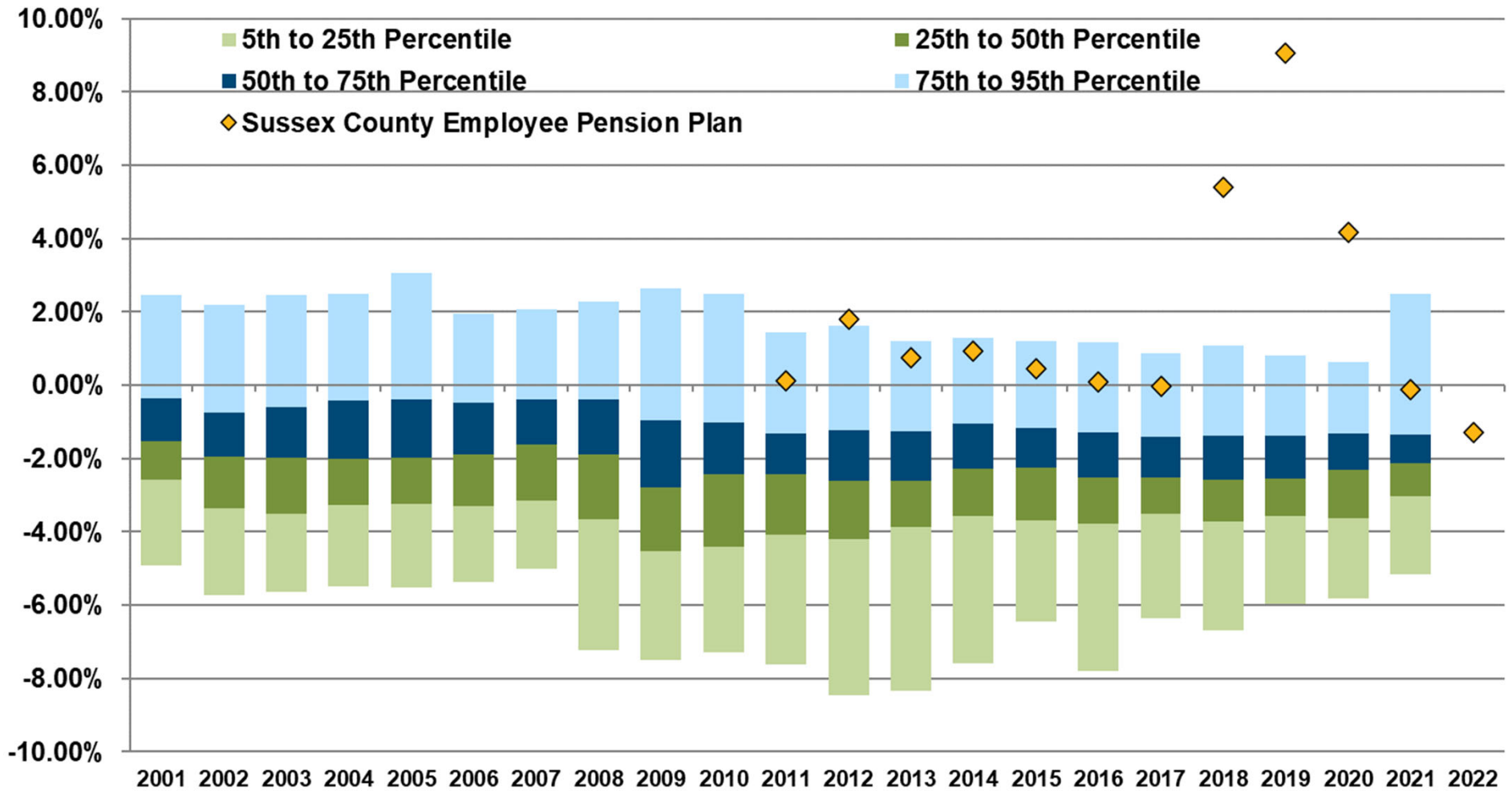


Survey Data from Public Plans Data as of 7/21/2022

Plan Maturity Measures – Net Cash Flow



Net Cash Flow Rate



Survey Data from Public Plans Data as of 7/21/2022



- Contributions
 - Actuarially Determined Contribution (ADC) increased from \$1.9 million to \$3.3 million
 - Primarily due to the assumption change and demographic losses
- Unfunded actuarial liability (UAL) and funded status
 - UAL increased from \$(7.9) million to \$0.2 million
 - Actuarial experience asset gain of \$0.04 million
 - -8.54% on market value (compared to 7.00% assumption)
 - 7.03% on actuarial value (assumes phase-in of 5-year asset smoothing)
 - Actuarial experience liability loss of \$5.3 million
 - Funded ratio (actuarial value of assets divided by actuarial liability) decreased from 106.2% to 99.8%



- Assumption changes
 - Investment return assumption decreased from 7.00% to 6.75%
 - Increased UAL by \$4.3 million
 - Increased ADC by \$0.7 million

2022 Valuation – Participants



Participant Information

	7/1/2021	7/1/2022	Percent Change
Number of Actives	503	519	3.2 %
Total Salary	\$26,440,763	\$30,753,827	16.3 %
Average Salary	\$52,566	\$59,256	12.7 %
Number of In-Pay	301	314	4.3 %
Total Benefits	\$5,417,643	\$5,897,139	8.9 %
Average Benefits	\$17,999	\$18,781	4.3 %
Number of Terminated Vested	104	105	1.0 %
Total Benefits	\$955,415	\$1,004,591	5.1 %
Average Benefits	\$9,187	\$9,568	4.1 %

2022 Valuation – Principal Results

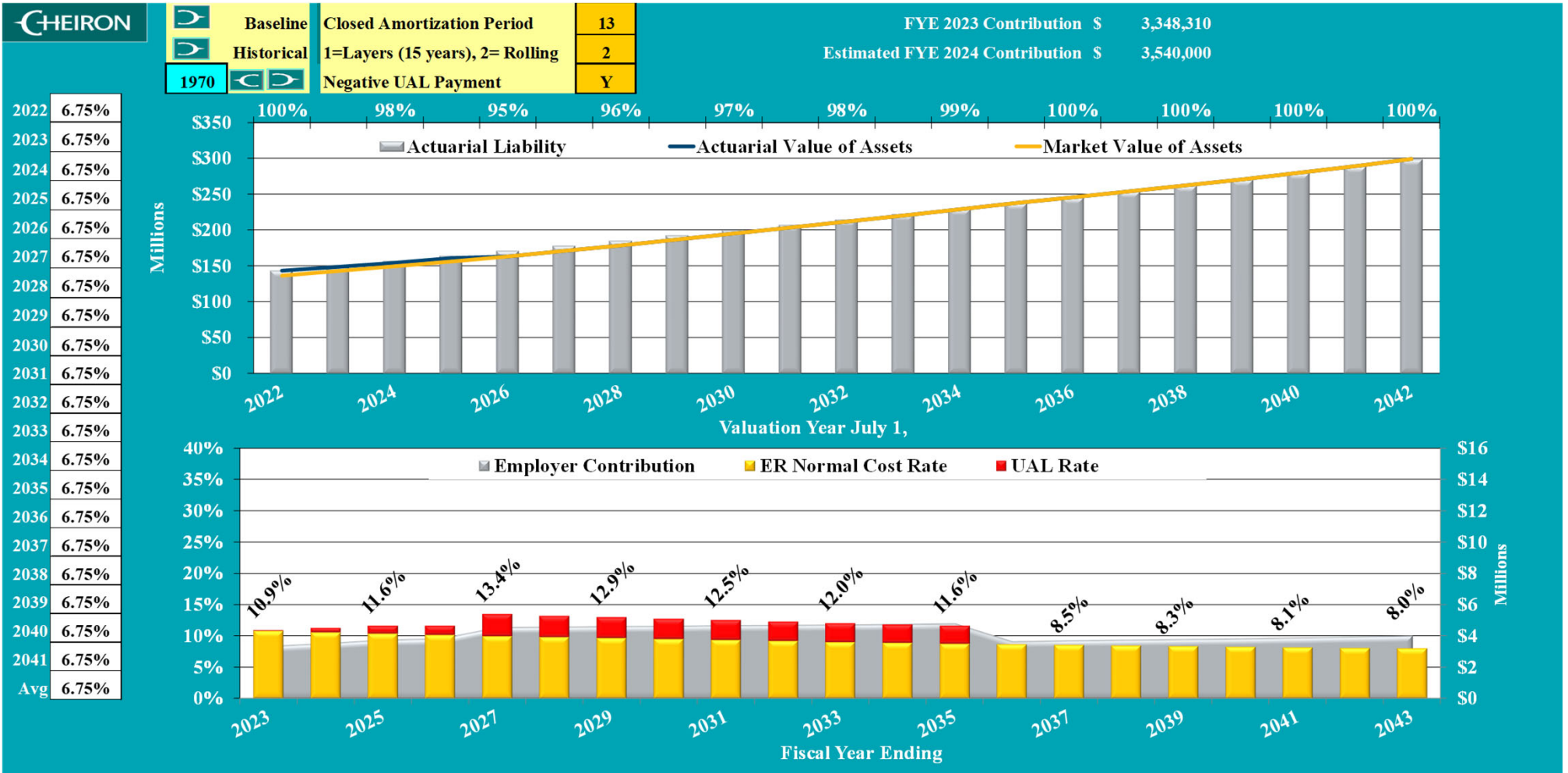


Principal Results

	7/1/2021	7/1/2022
Actuarial Liability (AL)	\$127,820,118	\$143,638,831
Actuarial Values of Assets	135,686,339	143,401,802
Unfunded AL (UAL)	\$(7,866,221)	\$237,029
Actuarial Funded Ratio	106.2%	99.8%
Market Value of Assets	\$150,840,125	\$136,274,753
Market Funded Ratio	118.0%	94.9%
FYE Contribution Applicable to	2022	2023
Employer Normal Cost	\$2,602,569	\$3,127,185
UAL Amortization Payment	(840,619)	\$26,192
Administrative Expense	185,498	194,933
Total County Contribution	\$1,947,448	\$3,348,310
Contribution as a Percentage of Payroll	7.37%	10.89%

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Projected Outlook





- ASOP 4: Measuring Pension Obligations and Determining Pension Plan Costs or Contributions
- [Revised ASOP 4](#) is effective for measurement dates on/after February 15, 2023
- First effective with the July 1, 2023 valuation



- Major changes include:
 - Low-Default-Risk Obligation Measure (LDROM)
 - Assess Implications of Funding Policy (current valuation report already includes this)
 - Disclose a Reasonable Actuarially Determined Contribution (Sussex County ADC already complies)



- For funding valuations, actuary must calculate and disclose a Low-Default-Risk Obligation Measure (LDROM). Requirements include:
 - Discount rate(s) “derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future” such as
 - US Treasury yields
 - Yields on highly rated corporate or municipal bonds



- Difference between LDRROM and Actuarial Liability can be viewed as:
 - The expected reduction in taxpayer cost from investing in diversified portfolio, or
 - The expected cost of eliminating investment risk

Required Disclosures



The purpose of this presentation is to present the July 1, 2022 actuarial valuation results for the Sussex County Employee Pension Plan. Other users of this presentation are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

In preparing this presentation, we relied on information, some oral and some written, supplied by the Sussex County staff. This information includes, but is not limited to, the plan provisions, member data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The analysis was based on financial data through June 30, 2022 and the July 1, 2022 membership data. The July 1, 2022 actuarial valuation report should be referred to for a summary of the plan provision, methods and assumptions, and other disclosure information. Future results may differ significantly from this presentation due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

The deterministic projections are based on our proprietary model P-Scan developed by our firm that utilize the results shown in the July 1, 2022 actuarial valuation report. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of July 1, 2022 and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after July 1, 2022 unless otherwise indicated. While the assumptions individually are reasonable for the underlying valuation that supports the projections, specifically for projection purposes, they are also considered reasonable in the aggregate. The future outcomes become increasingly uncertain over time, and therefore the general trends and not the absolute values should be considered in the review of these projections.

This presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

Janet H. Cranna, FSA, FCA, EA, MAAA
Principal Consulting Actuary

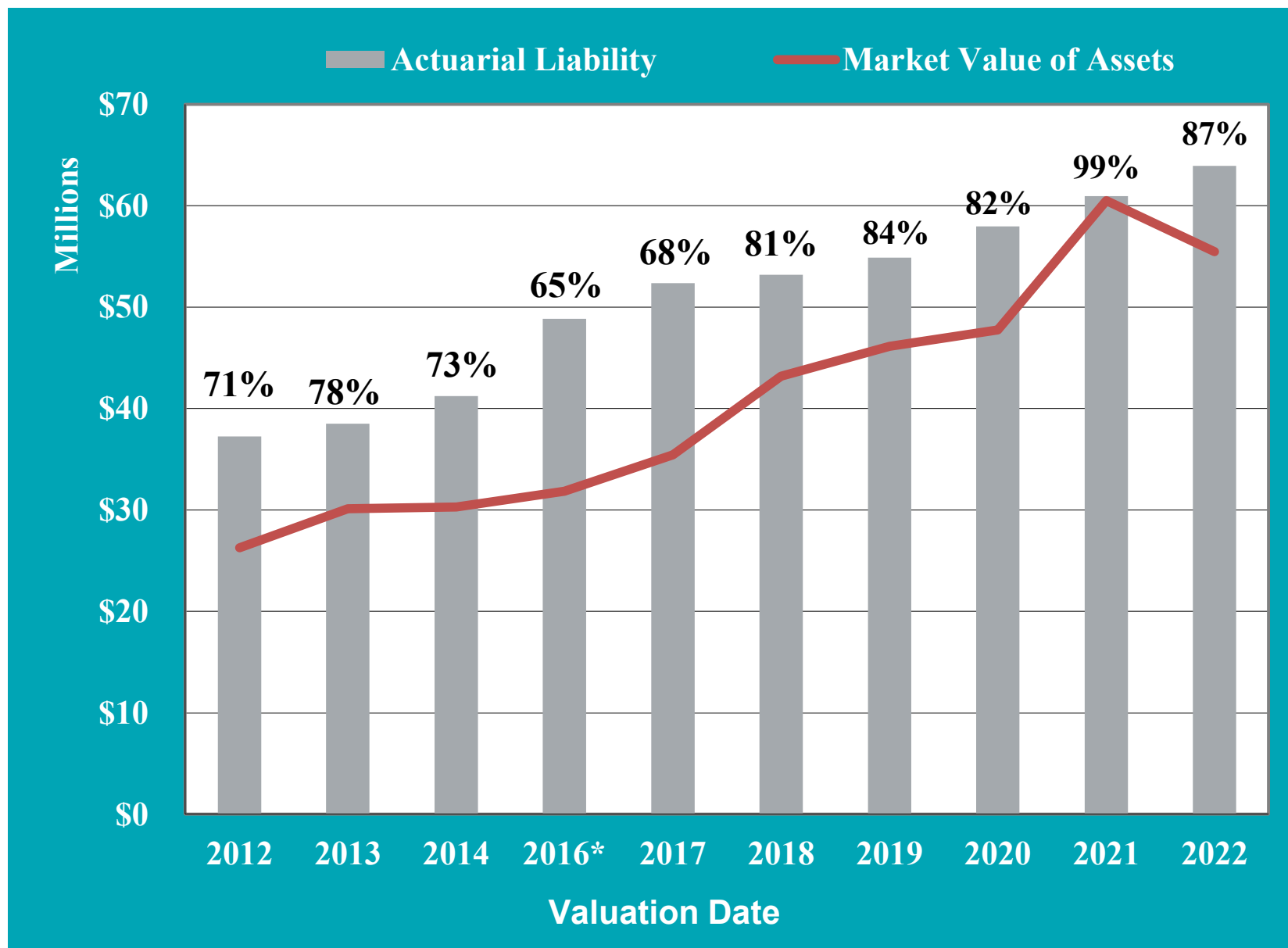
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Consulting Actuary

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2022 OPEB Actuarial Valuation

Historical Review – Assets and Liabilities

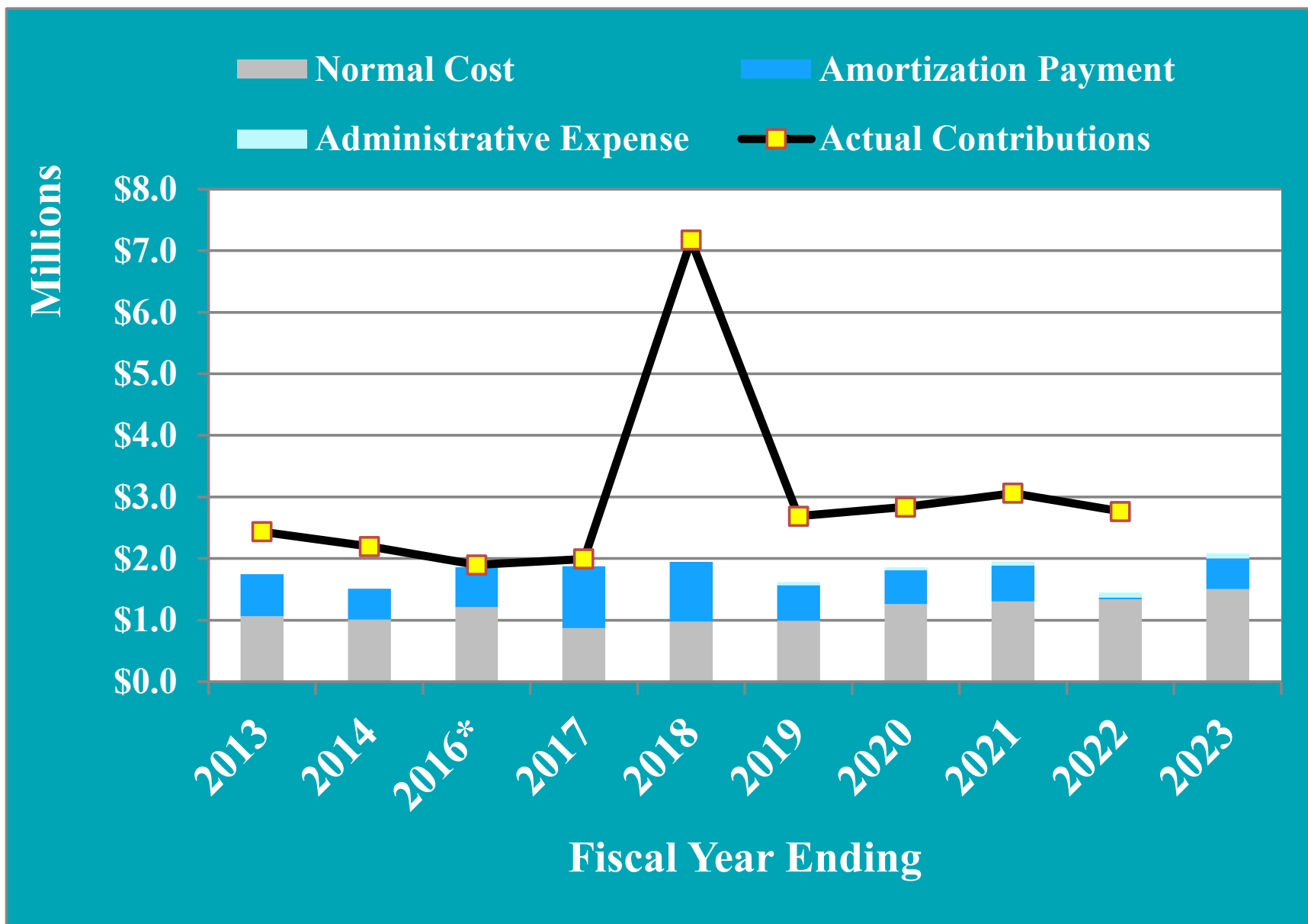


* Valuation date change to 6/30 from 12/31

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Classic Values, Innovative Advice

Historical Review – Contributions



2022 Valuation – Principal Results



Principal Results

	7/1/2021	7/1/2022
Active Employees	474	486
Retirees	195	211
Disabled	12	11
Survivors	22	23
Total Participants	703	731
Actuarial Liability (AL)	\$ 60,922,730	\$ 63,909,777
Assets	60,494,601	55,456,756
Unfunded AL (UAL)	\$ 428,129	\$ 8,453,021
Actuarial Funded Ratio	99.3%	86.8%
FYE Contribution Applicable to	2022	2023
Employer Normal Cost	\$ 1,326,789	\$ 1,488,294
UAL Amortization Payment	23,632	465,874
Interest	94,529	131,906
Total County Contribution	\$ 1,444,950	\$ 2,086,074
Contribution as a Percentage of Payroll	5.77%	7.24%
Covered Payroll	\$ 25,039,079	\$ 28,802,366

Projected Outlook – Baseline



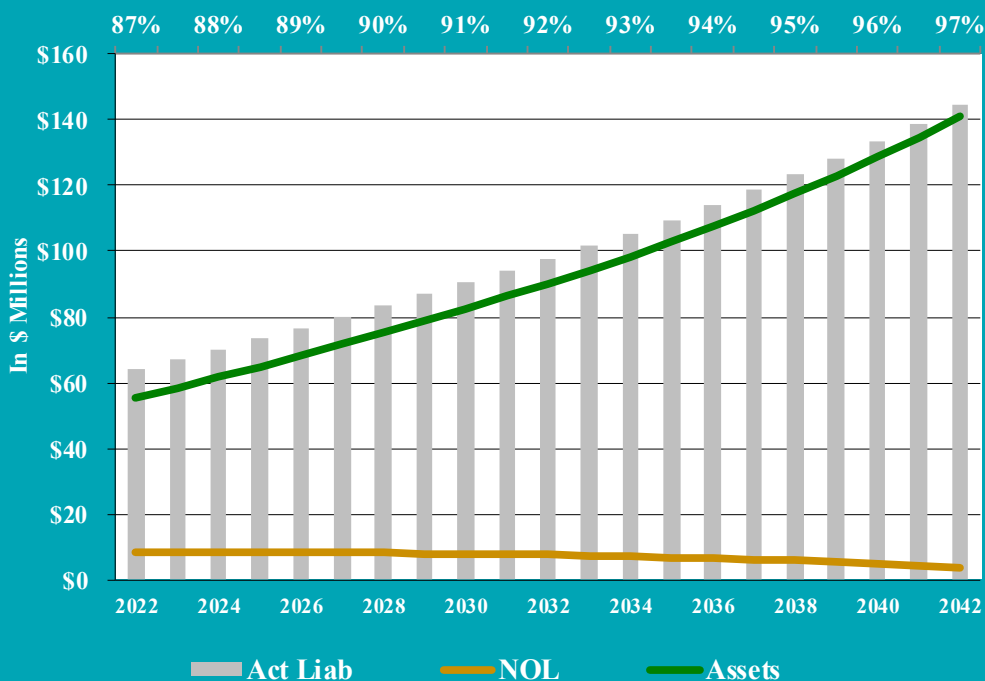
Projection assumptions:

6.75% discount rate

ADC contributions

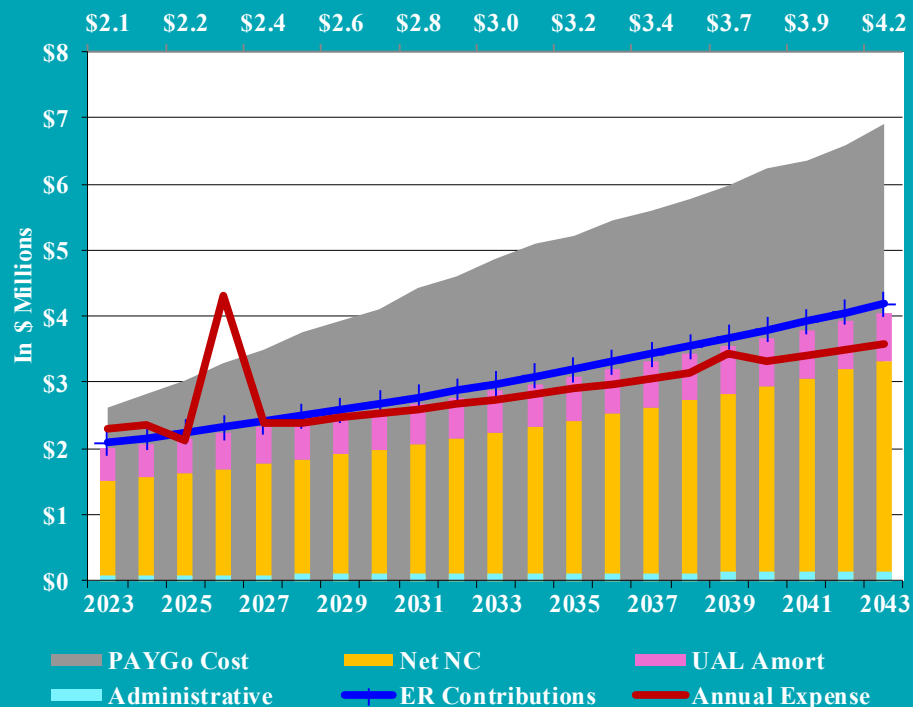
26 year closed amortization

Assets and Liabilities



Plan Expense and Funding

Fiscal Year Ending



Projected Outlook – MAPD



Projection assumptions:

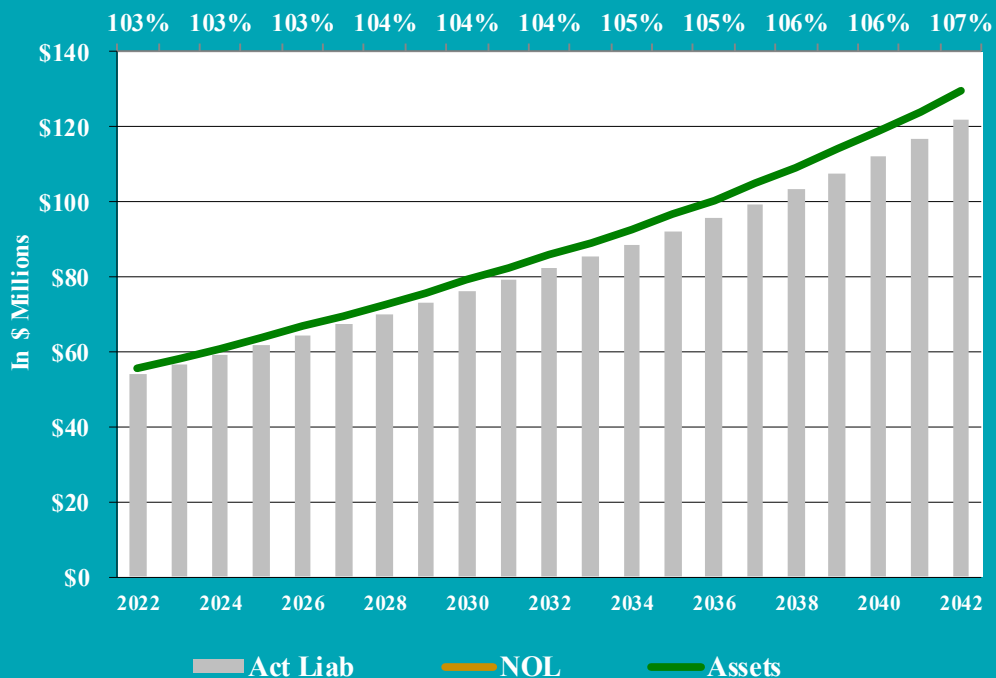
6.75% discount rate

ADC contributions

26 year closed amortization

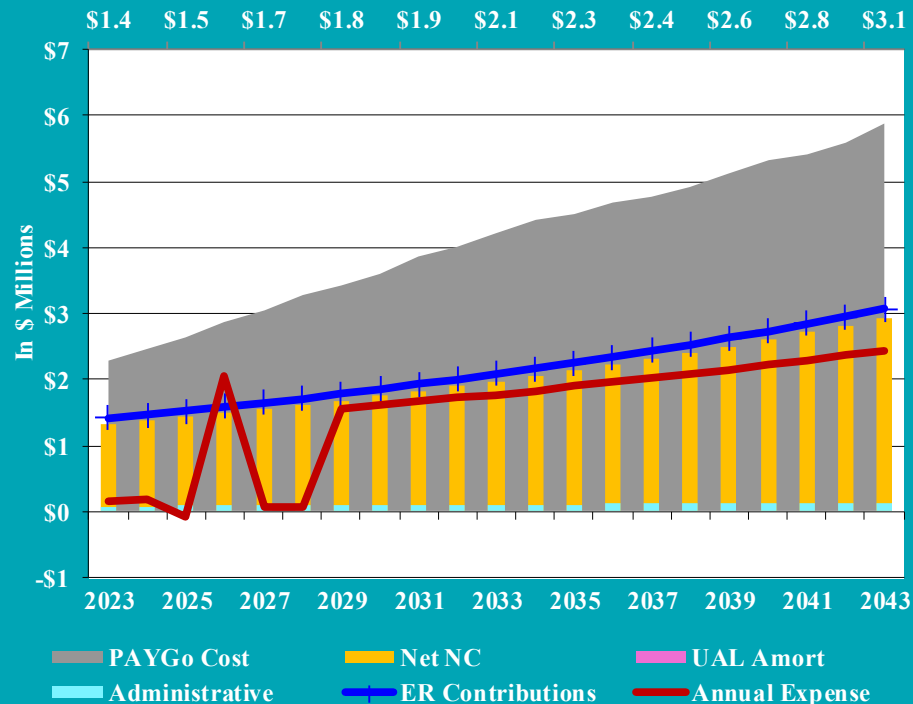
Assumes Medicare Advantage Prescription Drug Plan Enrollment for eligible retirees

Assets and Liabilities



Plan Expense and Funding

Fiscal Year Ending



Actuarial Asset Smoothing – 4-years



Development of Actuarial Value of Assets (AVA)

Market Value of Assets at June 30, 2021	\$	60,494,601
Employer Contributions		2,766,223
Employee Contributions		0
Benefit Payments and Refunds		(2,531,838)
Administrative Expenses		<u>(81,712)</u>
Expected Return at 7.00%		4,239,875
Expected Value at June 30, 2022	\$	64,887,149
Actual Value of Assets at June 30, 2022		<u>55,456,756</u>
Investment Gain/(Loss)	\$	(9,430,393)
	Total	Excluded
	Gain/(Loss)	Portion
Exclude 20% of 2019 Gain/(Loss)	\$ (196,274)	\$ (39,255)
Exclude 40% of 2020 Gain/(Loss)	(1,498,341)	(599,336)
Exclude 60% of 2021 Gain/(Loss)	8,997,204	5,398,322
Exclude 80% of 2022 Gain/(Loss)	(9,430,393)	<u>(7,544,314)</u>
Total Excluded Gain/(Loss) for AVA Calculation	\$	(2,784,583)
Market Value of Assets at June 30, 2022		55,456,756
Total Gain/(Loss) Excluded		<u>(2,784,583)</u>
Actuarial Value of Assets at June 30, 2022	\$	58,241,339

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Projected Outlook – Asset Smoothing



Projection assumptions:

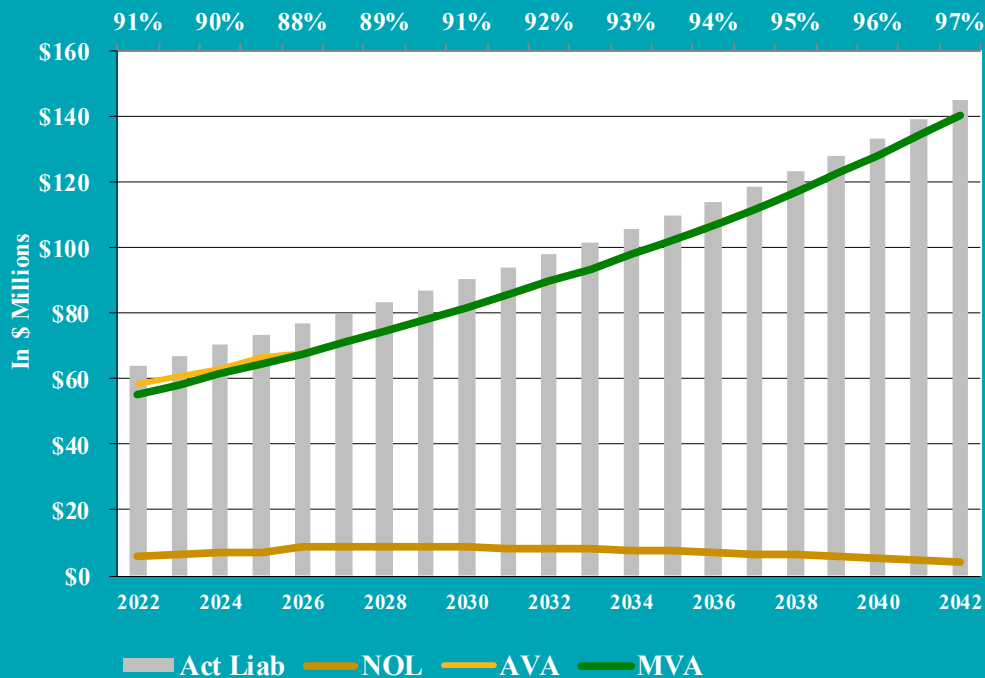
6.75% discount rate

ADC contributions

26 year closed amortization

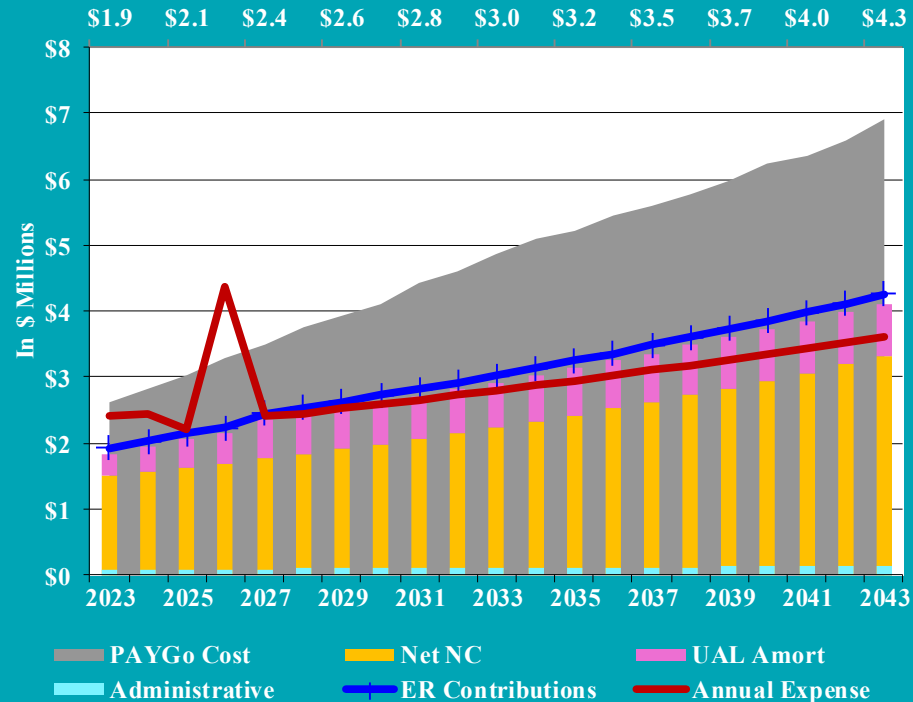
Actuarial Value of Assets: 4-year smoothing of asset gains/losses

Assets and Liabilities



Plan Expense and Funding

Fiscal Year Ending



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Margaret Tempkin, FSA, EA, MAAA
Principal Consulting Actuary

Ryan Benitez, ASA, MAAA
Consulting Actuary



Appendix – GASB 67/68/74/75



- County first adopted GASB 67 in the June 30, 2014 financial statements
- Similar actuarial methods and assumptions used in developing the actuarial liability for funding purposes
- Assets will differ from funding since GASB requires using market value with no smoothing (funding uses 5-year smoothing)
- Discount rate for GASB 67 is 6.75% (same as funding)
 - Projections indicated that plan assets are expected to cover all future benefit payments for current plan members (if not, some blending with a municipal bond index (3.54% for 2022) would have been required)

GASB 68 – Pension Expense



- Under GASB 68, the pension expense is equal to the change in the plan's net pension liability (NPL), with adjustments for deferrals
 - Chart on next page shows the pension expense development two ways for both the 2022 and 2021 plan years
 - The County's FY 2022 expense will be based on the County's 2022 plan year results
- Treatment of deferrals
 - Asset gains or losses recognized over 5 years
 - Liability gains or losses and assumption changes recognized over average future working lifetime (6 years for the Plan)
 - No deferrals on plan changes
 - Deferred gains called “deferred inflows”; deferred losses called “deferred outflows”



Sensitivity of Net Pension Liability to Changes in Discount Rate

	1% Decrease 5.75%	Discount Rate 6.75%	1% Increase 7.75%
Total Pension Liability	\$ 163,187,917	\$ 143,638,831	\$ 127,515,526
Plan Fiduciary Net Position	<u>136,274,753</u>	<u>136,274,753</u>	<u>136,274,753</u>
Net Pension Liability	<u>\$ 26,913,164</u>	<u>\$ 7,364,078</u>	<u>\$ (8,759,227)</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	83.5%	94.9%	106.9%

GASB 68 – Results



Calculation of Pension Expense

	Measurement Year Ending	
	2022	2021
Change in Net Pension Liability	\$ 30,384,085	\$ (24,404,713)
Change in Deferred Outflows	(14,256,745)	3,799,064
Change in Deferred Inflows	(15,469,526)	14,970,899
Employer Contributions	<u>3,776,535</u>	<u>4,997,516</u>
Pension Expense	\$ 4,434,349	\$ (637,234)
Pension Expense as % of Payroll	14.42%	-2.41%
Operating Expenses		
Service cost	\$ 2,889,714	\$ 2,824,325
Employee contributions	(324,090)	(251,807)
Administrative expenses	<u>190,179</u>	<u>180,974</u>
Total	\$ 2,755,803	\$ 2,753,492
Financing Expenses		
Interest cost	\$ 8,954,565	\$ 8,545,756
Expected return on assets	<u>(10,498,237)</u>	<u>(8,425,516)</u>
Total	\$ (1,543,672)	\$ 120,240
Changes		
Benefit changes	\$ 0	\$ 0
Recognition of assumption changes	1,056,605	336,558
Recognition of liability gains and losses	1,143,242	447,471
Recognition of investment gains and losses	<u>1,022,371</u>	<u>(4,294,995)</u>
Total	\$ 3,222,218	\$ (3,510,966)
Pension Expense	\$ 4,434,349	\$ (637,234)

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OPEB GASB 74/75



- Similar actuarial methods and assumptions used in developing the actuarial liability for funding purposes.
- GASB 74/75 requires using market value of assets
- Discount rate for GASB 74 is 6.75%

	Change in Net OPEB Liability		
	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
Balances at 6/30/2021	\$ 60,922,728	\$ 60,494,601	\$ 428,127
Changes for the year:			
Service cost	1,252,760		1,252,760
Interest	4,265,169		4,265,169
Changes of benefits	0		0
Differences between expected and actual experience	531,288		531,288
Changes of assumptions	(530,330)		(530,330)
Contributions - employer		2,766,223	(2,766,223)
Contributions - member		0	0
Net investment income		(5,190,518)	5,190,518
Benefit payments	(2,531,838)	(2,531,838)	0
Administrative expense		(81,712)	81,712
Net changes	<u>2,987,049</u>	<u>(5,037,845)</u>	<u>8,024,894</u>
Balances at 6/30/2022	<u>\$ 63,909,777</u>	<u>\$ 55,456,756</u>	<u>\$ 8,453,021</u>

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GASB 74 – 2022 Results Sensitivity



Sensitivity of Net OPEB Liability to Changes in Discount Rate

	1% Decrease 5.75%	Discount Rate 6.75%	1% Increase 7.75%
Total OPEB Liability	\$ 73,326,499	\$ 63,909,777	\$ 56,243,687
Plan Fiduciary Net Position	55,456,756	55,456,756	55,456,756
Net OPEB Liability	<u>\$ 17,869,743</u>	<u>\$ 8,453,021</u>	<u>\$ 786,931</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	75.6%	86.8%	98.6%

Sensitivity of Net OPEB Liability to Changes in Healthcare Cost Trend Rates

	1% Decrease	Healthcare Trend	1% Increase
Total OPEB Liability	\$ 55,615,026	\$ 63,909,777	\$ 74,301,891
Plan Fiduciary Net Position	55,456,756	55,456,756	55,456,756
Net OPEB Liability	<u>\$ 158,270</u>	<u>\$ 8,453,021</u>	<u>\$ 18,845,135</u>
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	99.7%	86.8%	74.6%

GASB 75 – 2022 OPEB Expense



Calculation of OPEB Expense

	Measurement Year Ending	
	2022	2021
Change in Net OPEB Liability	\$ 8,024,894	\$ (9,775,221)
Change in Deferred Outflows	(2,853,443)	1,183,909
Change in Deferred Inflows	(6,261,947)	5,734,668
Employer Contributions	<u>2,766,223</u>	<u>3,063,250</u>
OPEB Expense	\$ 1,675,727	\$ 206,606
OPEB Expense as % of Payroll	5.82%	0.83%
Operating Expenses		
Service cost	\$ 1,252,760	\$ 1,215,719
Employee contributions	0	0
Administrative expenses	<u>81,712</u>	<u>77,280</u>
Total	\$ 1,334,472	\$ 1,292,999
Financing Expenses		
Interest cost	\$ 4,265,169	\$ 4,052,973
Expected return on assets	<u>(4,239,875)</u>	<u>(3,356,380)</u>
Total	\$ 25,294	\$ 696,593
Changes		
Benefit changes	\$ 0	\$ 0
Recognition of assumption changes	(515,789)	(440,028)
Recognition of liability gains and losses	411,532	335,634
Recognition of investment gains and losses	<u>420,218</u>	<u>(1,678,592)</u>
Total	\$ 315,961	\$ (1,782,986)
OPEB Expense	\$ 1,675,727	\$ 206,606

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CHEIRON



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***Cheiron** (pronounced kī·ron), the immortal centaur from Greek mythology, broke away from the pack and was educated by the gods. Cheiron became a mentor to classical Greek heroes, then sacrificed his immortality and was awarded in eternity as the constellation Sagittarius.*