

Sussex County Employee Pension Plan and Postemployment Benefits Plan



2023 Actuarial Valuations

November 16, 2023

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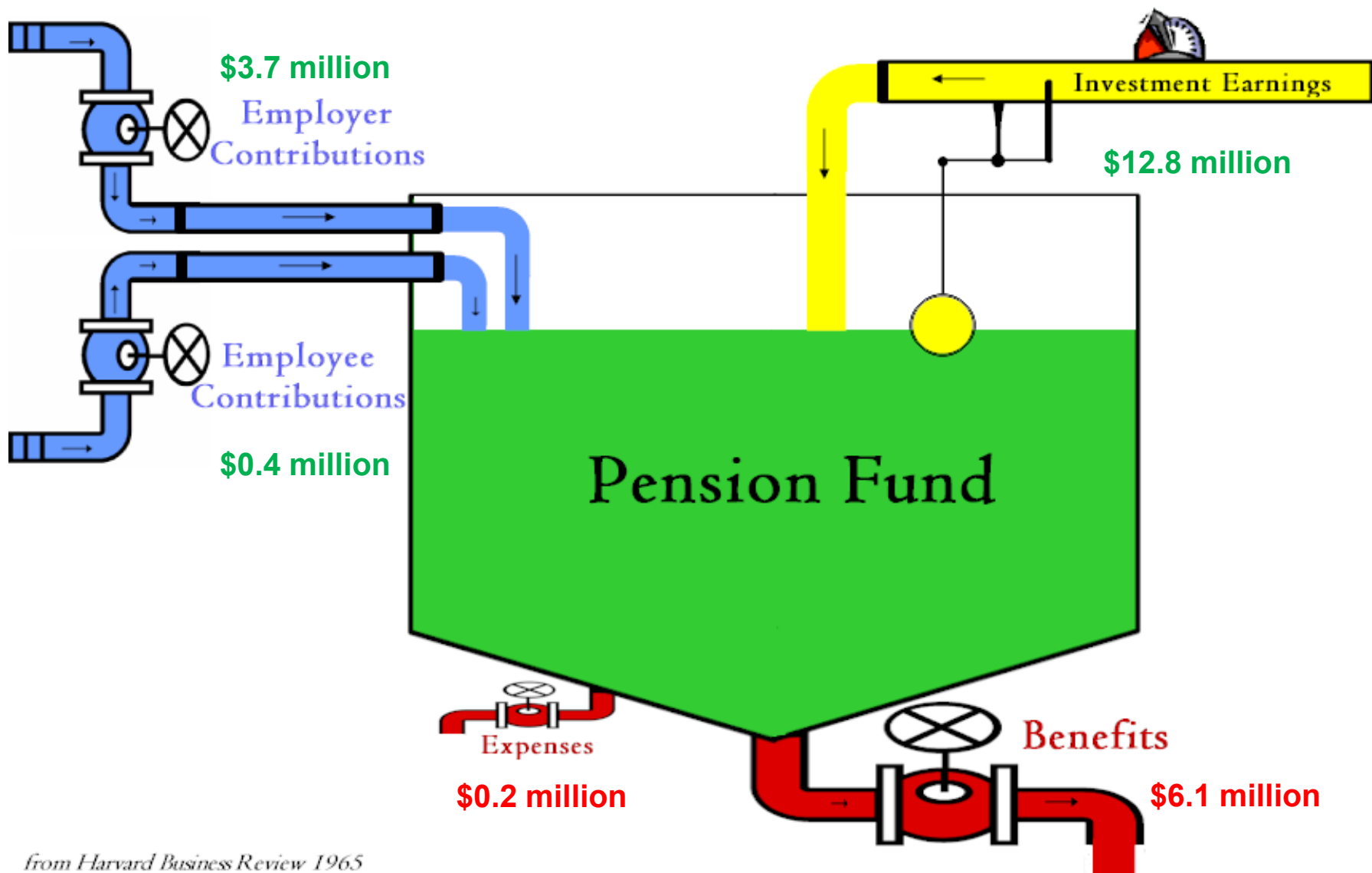


- 2023 Pension Actuarial Valuation
 - Historical Review
 - Identification and Assessment of Risk
 - Valuation Results
 - Projections
 - ASOP 4
- 2023 OPEB Actuarial Valuation
 - Historical Review
 - Valuation Results
 - Projections
- Appendix – GASB 67/68/74/75



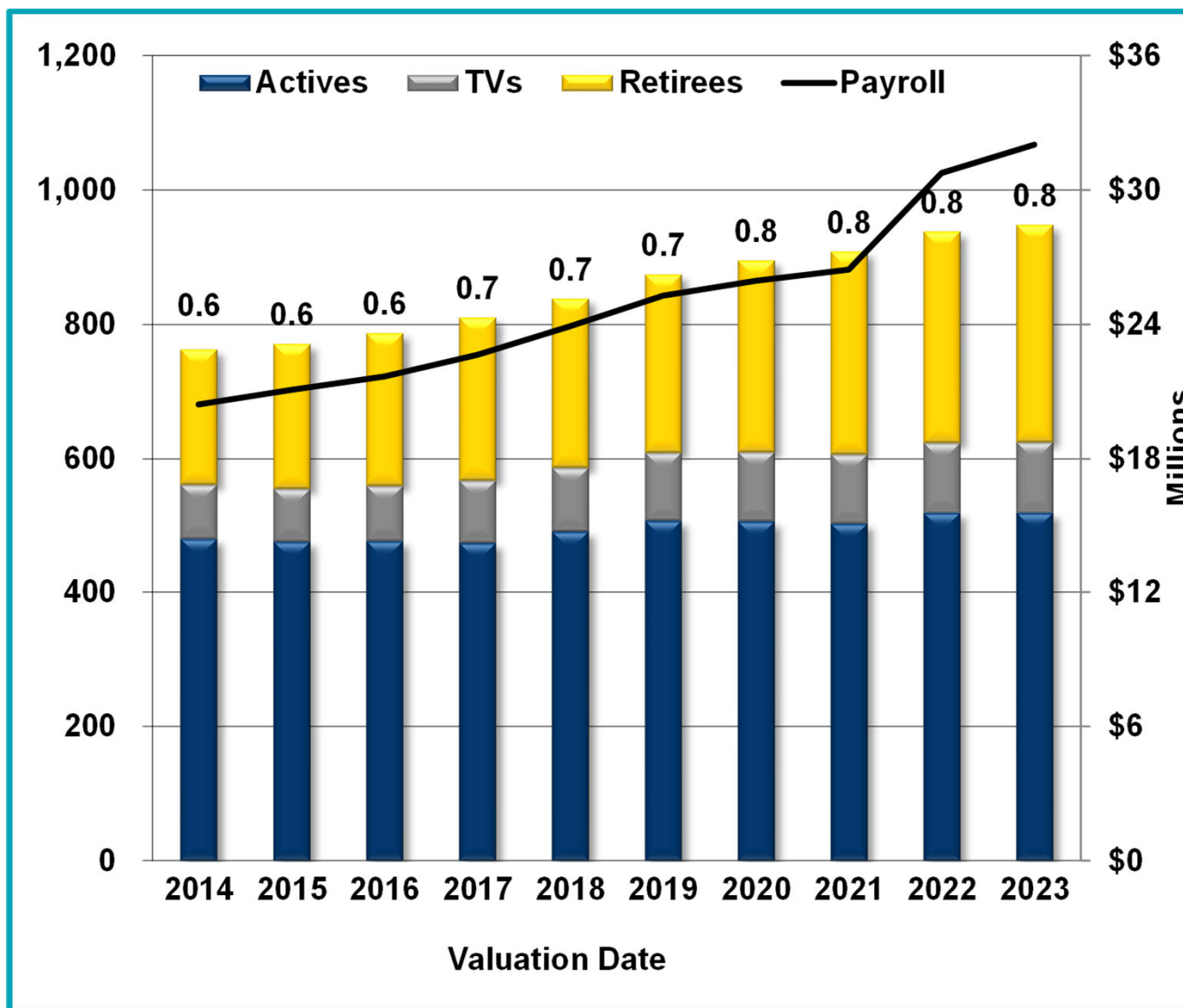
2023 Pension Actuarial Valuation

The Actuarial Valuation Process

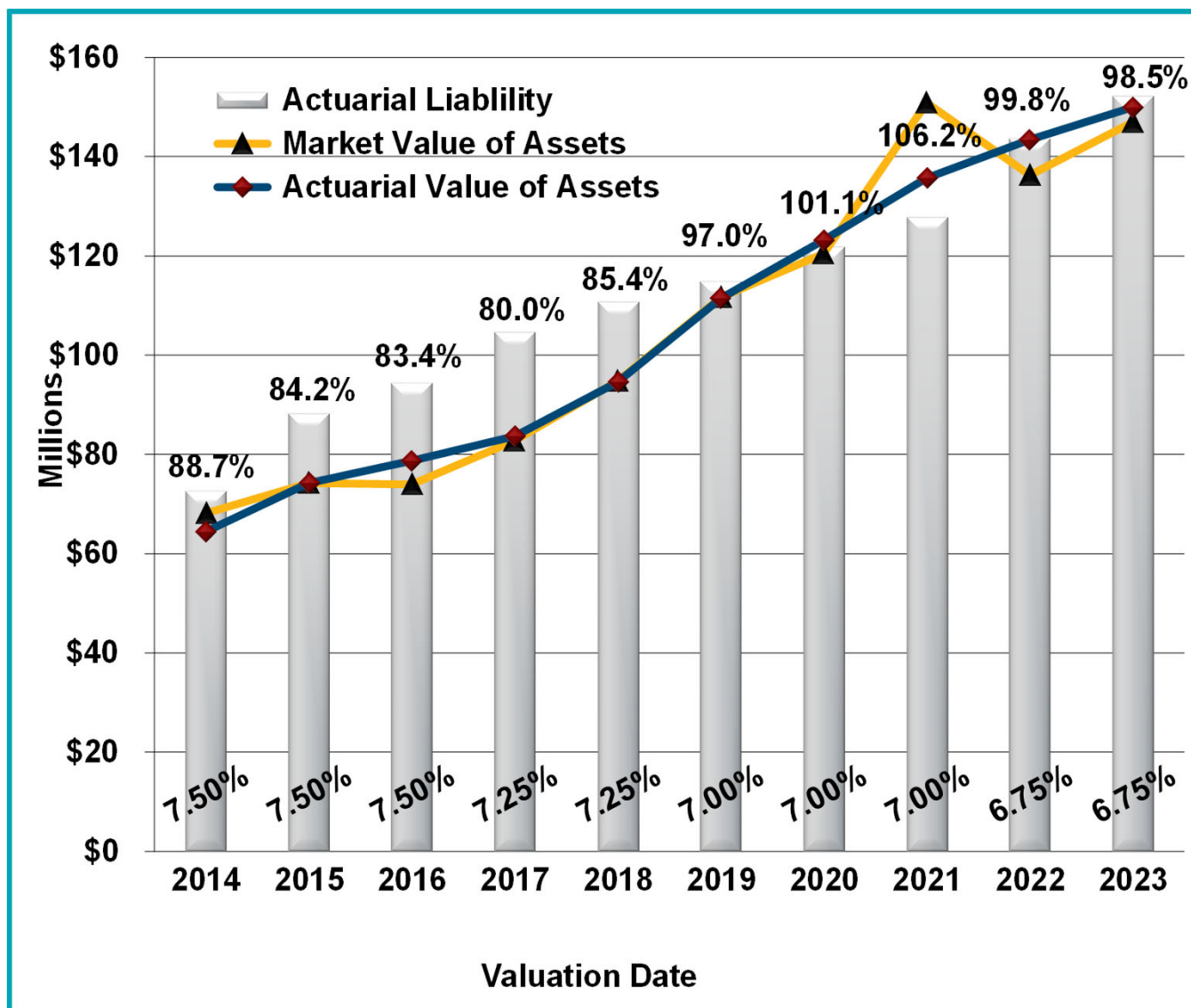


from Harvard Business Review 1965

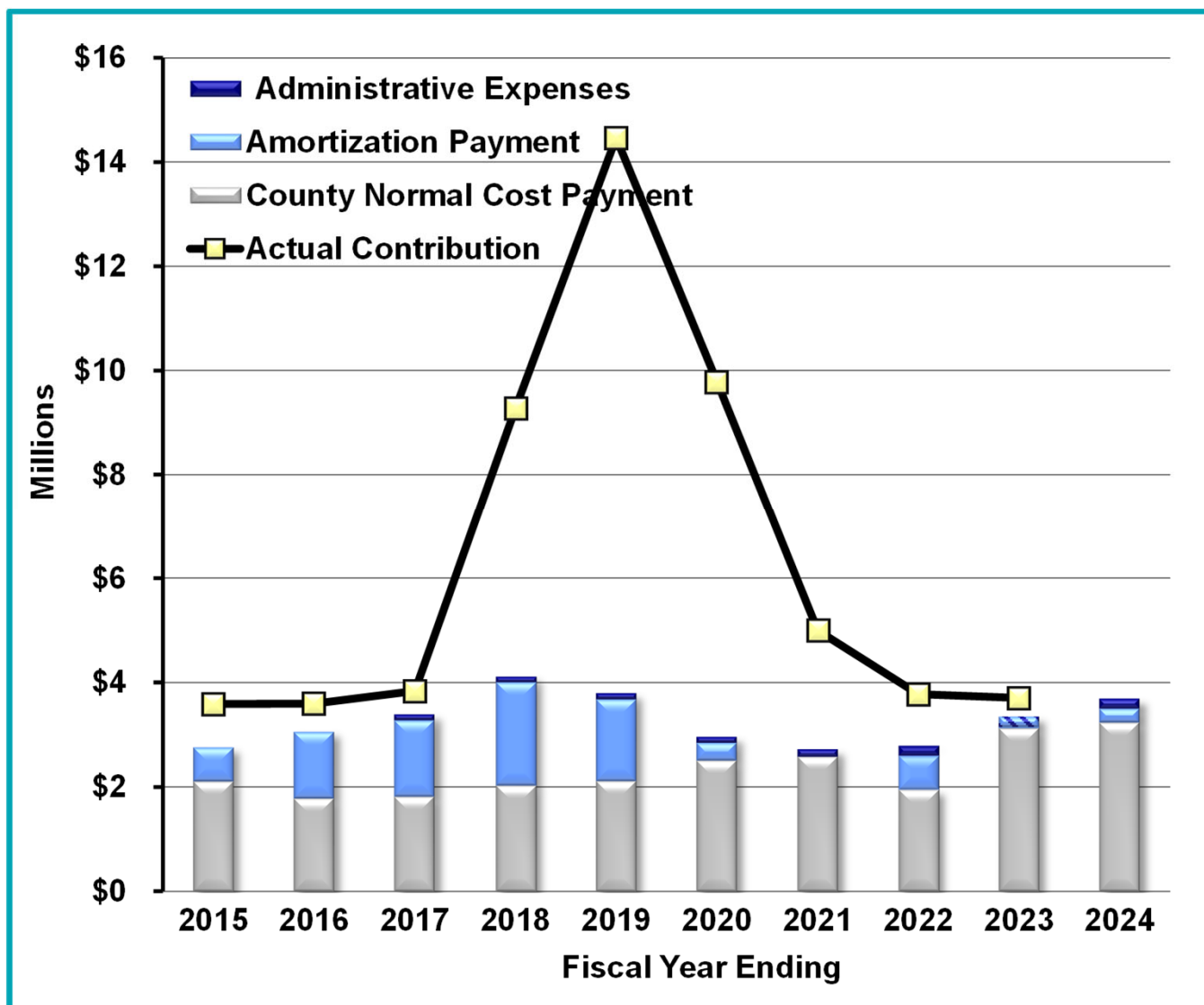
Historical Trends – Participation



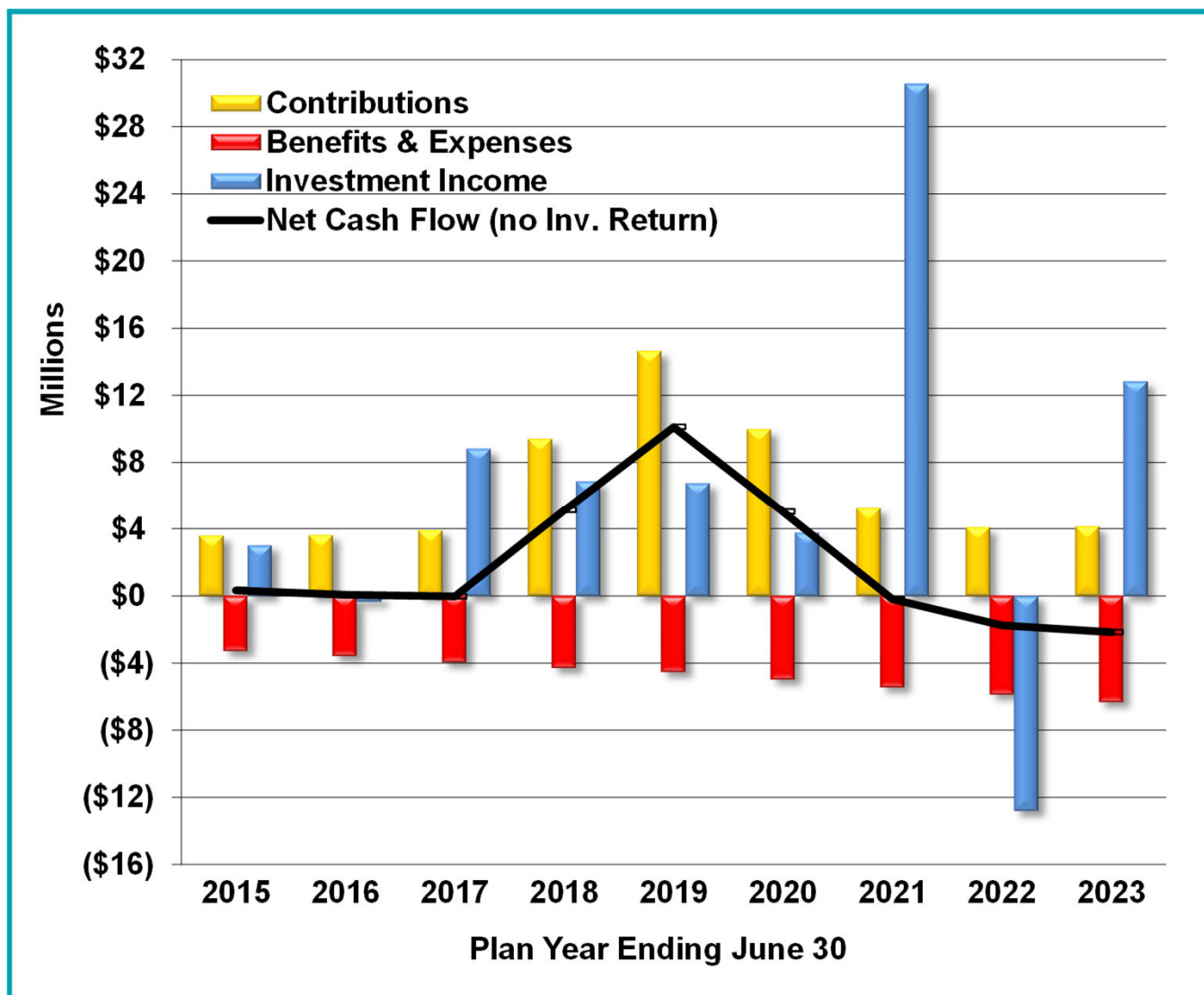
Historical Trends – Assets and Liabilities



Historical Trends – Contributions



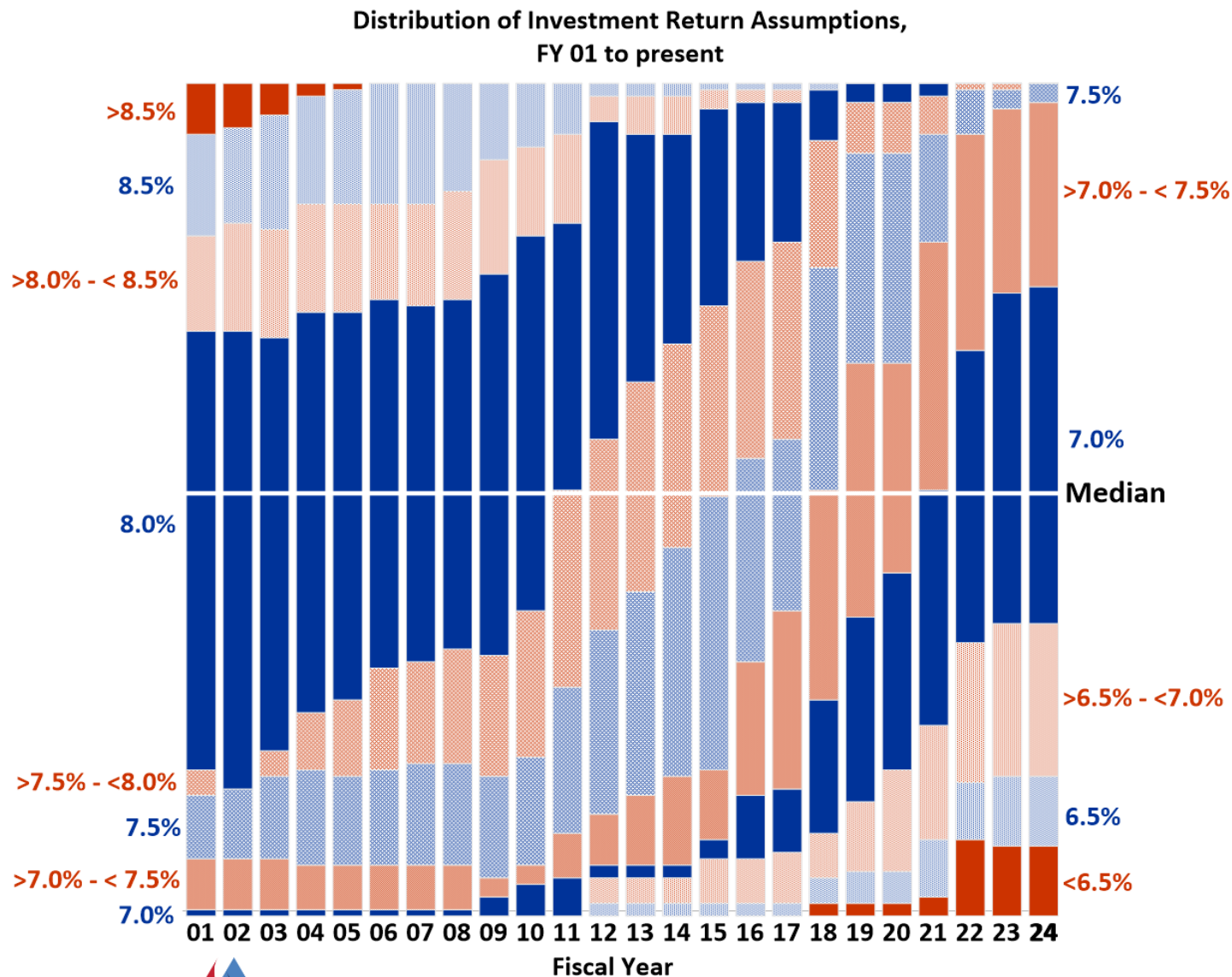
Historical Trends – Cash Flow



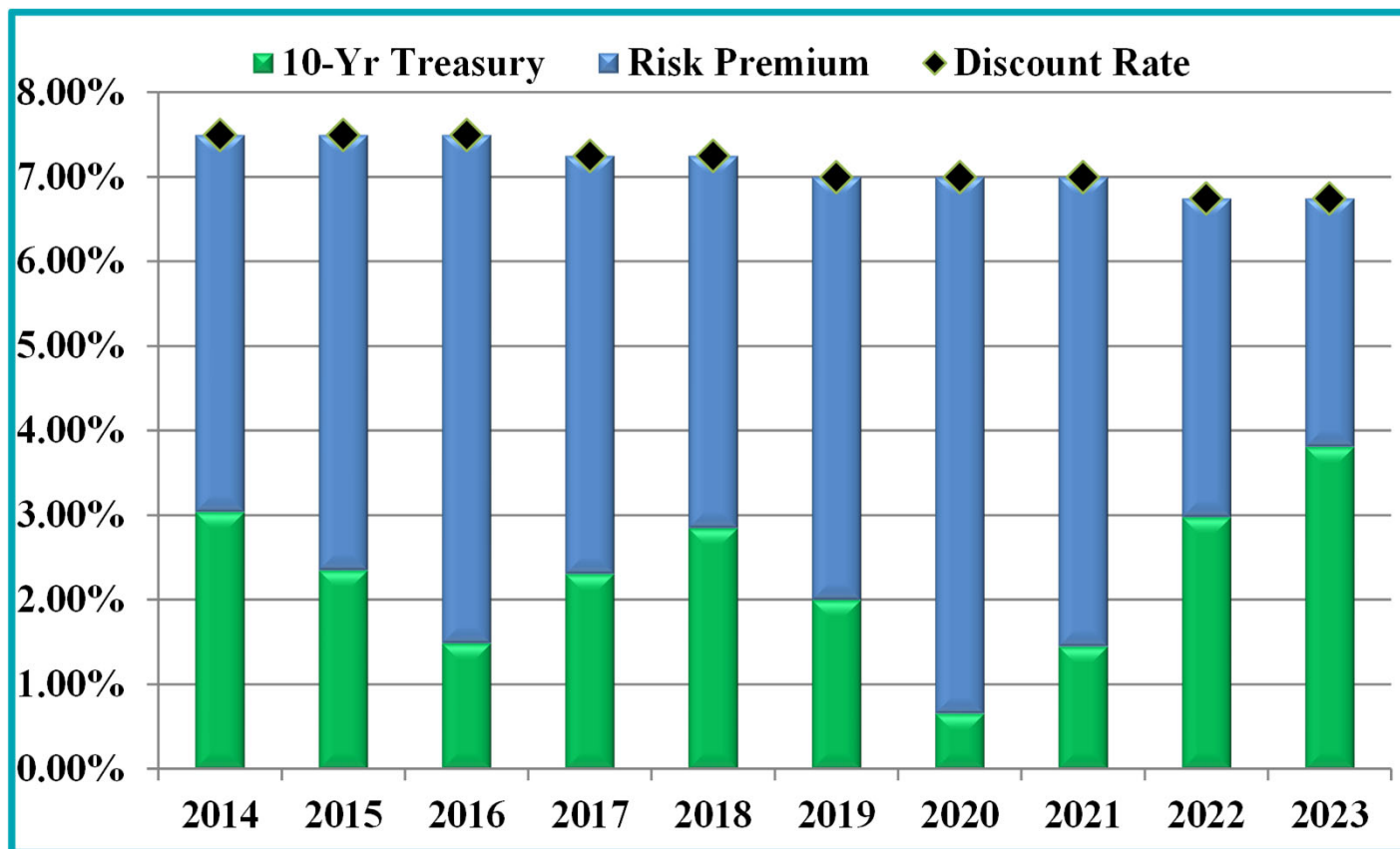


- Material risks identified:
 - **Investment Risk** – the potential for investment returns to be different than expected
 - **Interest Rate Risk** – the potential for interest rates to be different than expected
 - **Longevity and other Demographic Risk** – the potential for mortality and other demographic 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

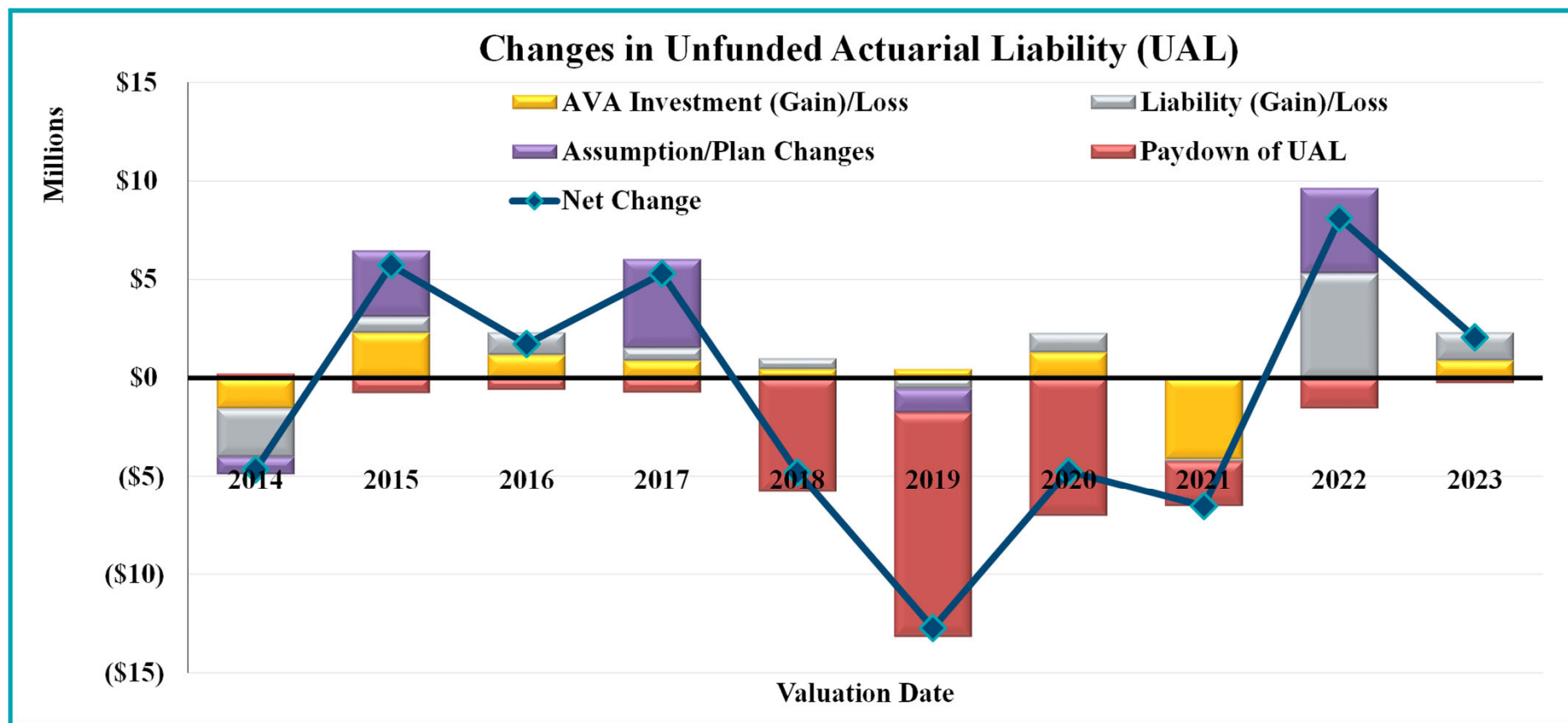
Investment Risk



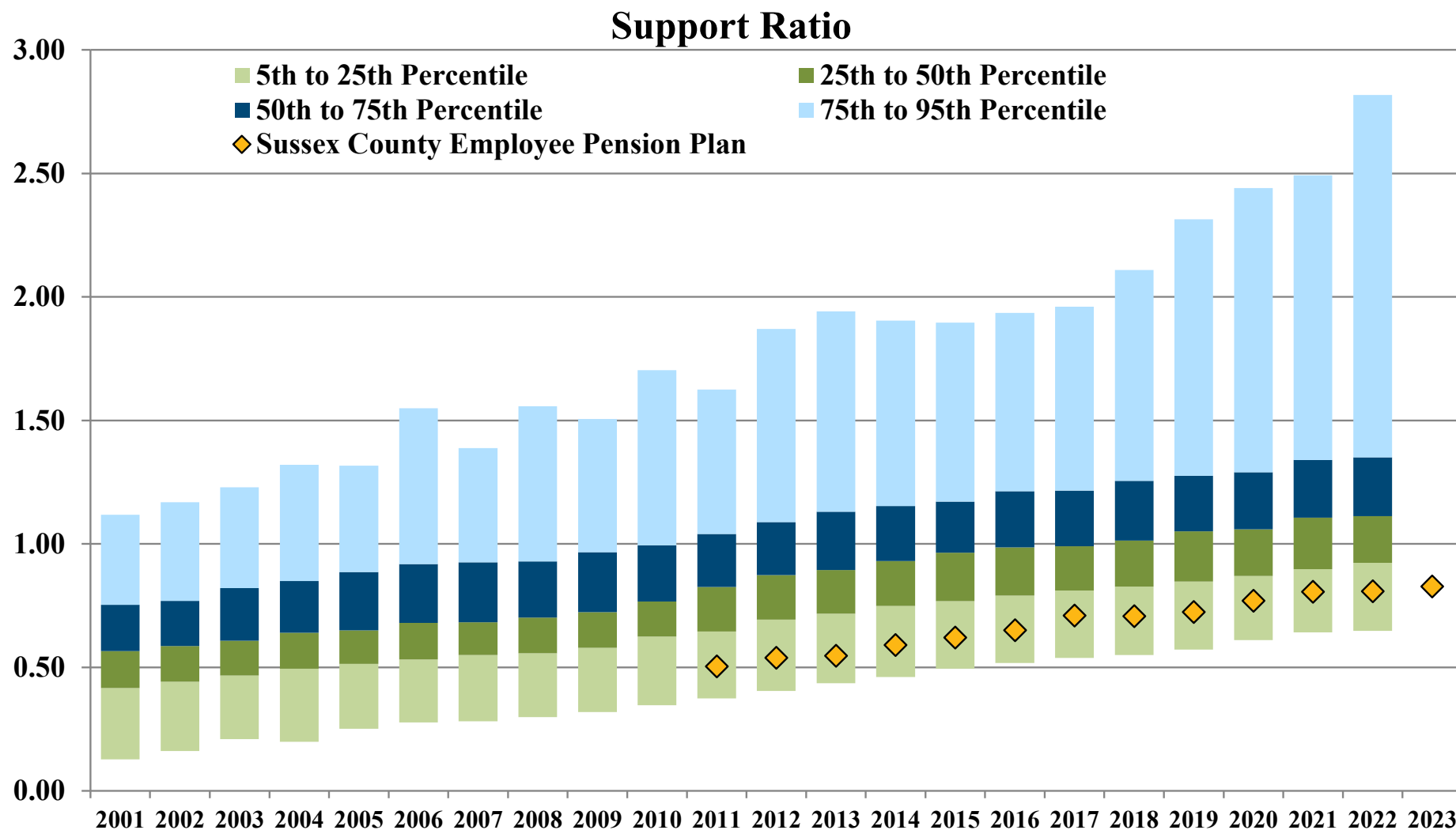
Interest Rate Risk



Material Risks – Changes in UAL

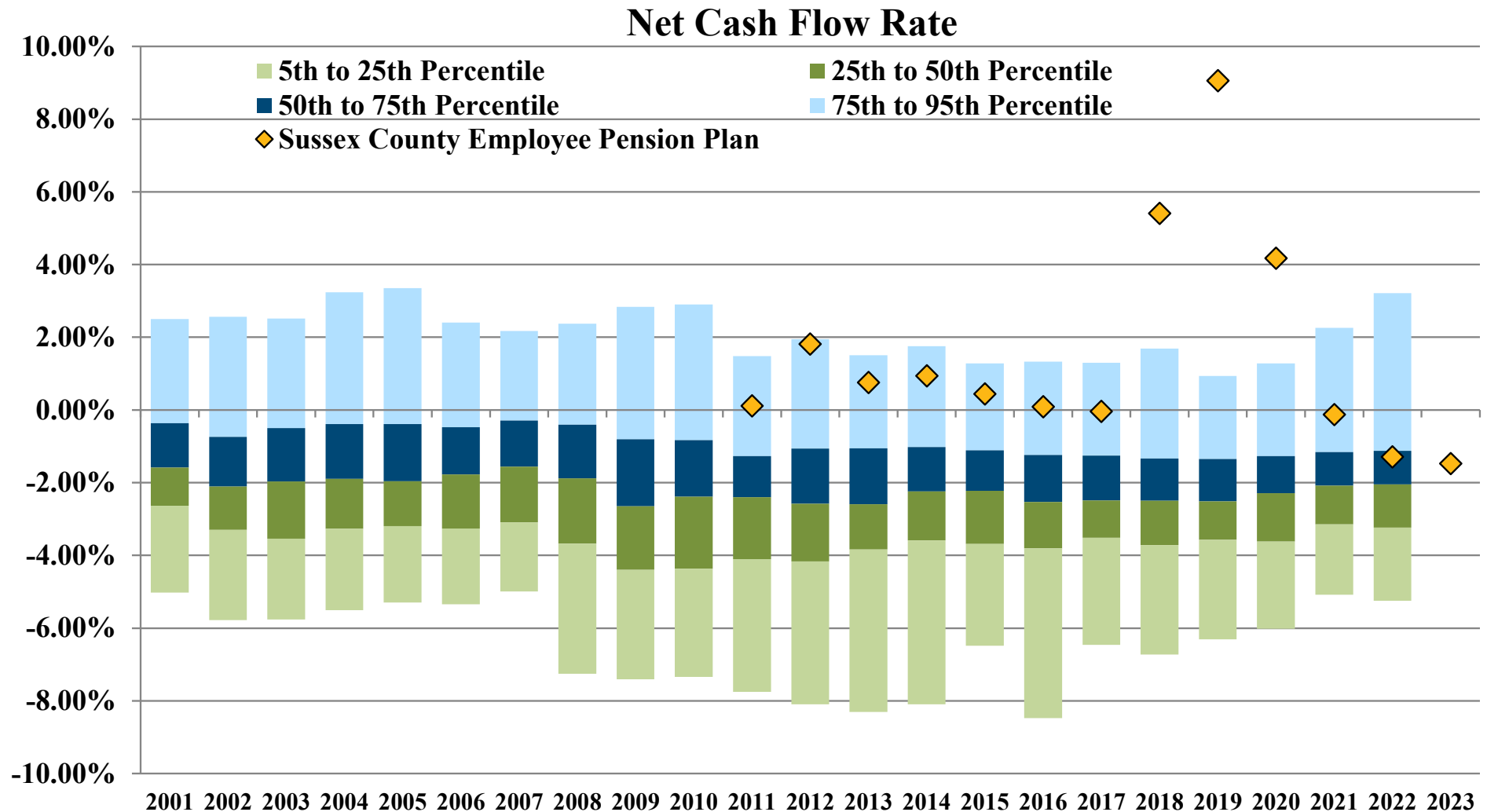


Plan Maturity Measures – Support Ratio



Survey Data from Public Plans Data as of 7/26/2023

Plan Maturity Measures – Net Cash Flow



Survey Data from Public Plans Data as of 7/26/2023



- Contributions
 - Actuarially Determined Contribution (ADC) increased from \$3.3 million to \$3.7 million
 - Primarily due to the demographic losses
- Unfunded actuarial liability (UAL) and funded status
 - UAL increased from \$0.2 million to \$2.3 million
 - Actuarial experience asset loss of \$0.9 million
 - 9.50% on market value (compared to 6.75% assumption)
 - 6.12% on actuarial value (assumes phase-in of 5-year asset smoothing)
 - Actuarial experience liability loss of \$1.4 million
 - Funded ratio (actuarial value of assets divided by actuarial liability) decreased from 99.8% to 98.5%

2023 Valuation – Participants



Participant Information

	7/1/2022	7/1/2023	Percent Change
Number of Actives	519	519	0.0 %
Total Salary	\$30,753,827	\$32,019,688	4.1 %
Average Salary	\$59,256	\$61,695	4.1 %
Number of In-Pay	314	323	2.9 %
Total Benefits	\$5,897,139	\$6,289,399	6.7 %
Average Benefits	\$18,781	\$19,472	3.7 %
Number of Terminated Vested	105	106	1.0 %
Total Benefits	\$1,004,591	\$1,002,196	-0.2 %
Average Benefits	\$9,568	\$9,455	-1.2 %

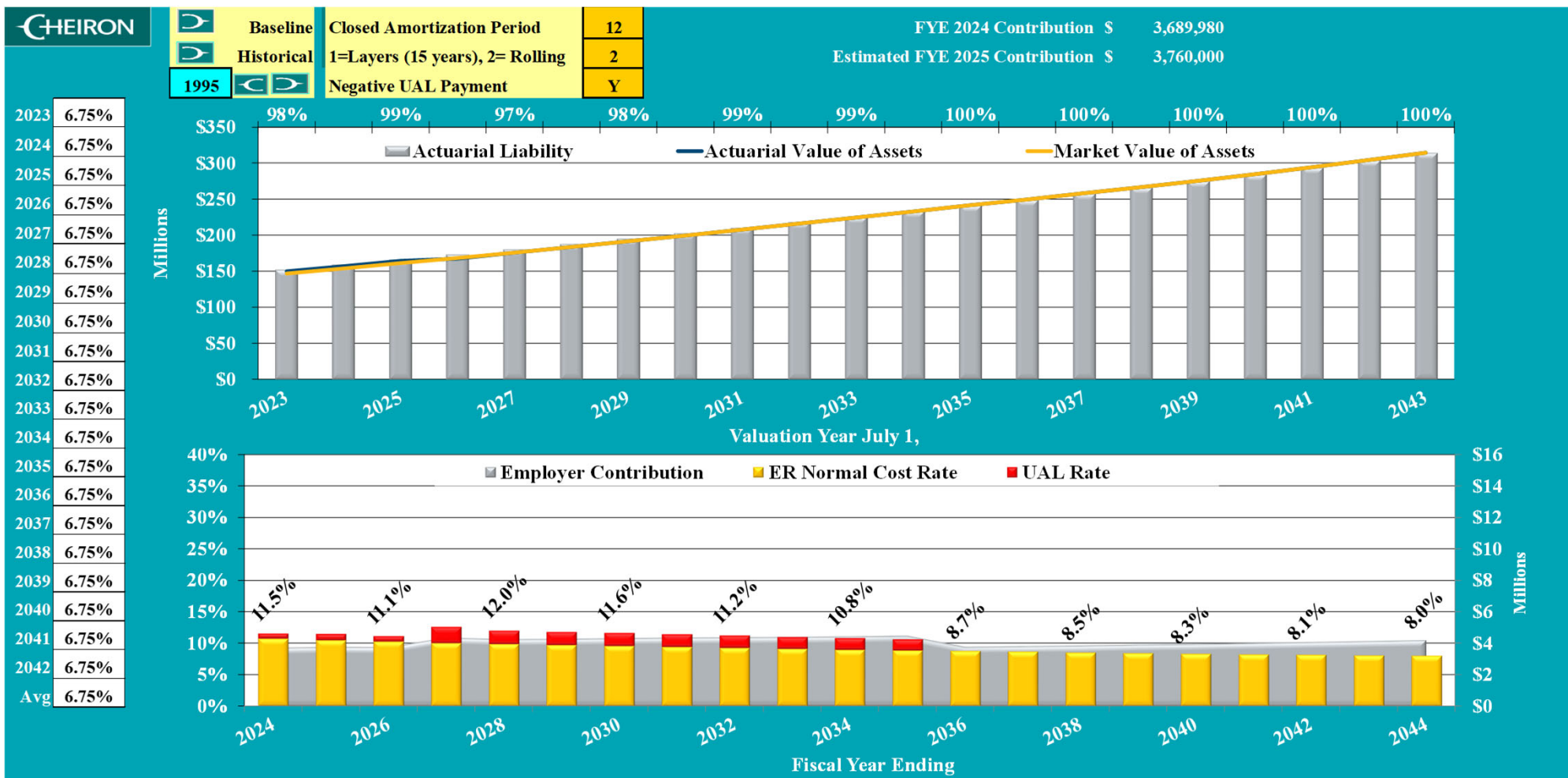
2023 Valuation – Principal Results



Principal Results

	7/1/2022	7/1/2023
Actuarial Liability (AL)	\$143,638,831	\$152,230,175
Actuarial Values of Assets	143,401,802	149,940,488
Unfunded AL (UAL)	\$237,029	\$2,289,687
Actuarial Funded Ratio	99.8%	98.5%
Market Value of Assets	\$136,274,753	\$146,945,986
Market Funded Ratio	94.9%	96.5%
FYE Contribution Applicable to	2023	2024
Employer Normal Cost	\$3,127,185	\$3,237,042
UAL Amortization Payment	\$26,192	266,461
Administrative Expense	194,933	186,477
Total County Contribution	\$3,348,310	\$3,689,980
Contribution as a Percentage of Payroll	10.89%	11.52%

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 current 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
- Valuation uses 4.91% recommended rate
 - Based on the June 30, 2023 FTSE Pension Liability Index using plan benefit projections



- LDROM is \$193.66 mil. @ 4.91%
 - \$152.23 mil. in Actuarial Liability @ 6.75%
- Difference between LDROM and Actuarial Liability (\$41.43 mil.) can be viewed as:
 - The expected reduction in taxpayer cost from investing in diversified portfolio, or
 - The expected cost of eliminating investment risk
- There are other options in the discount rate and methodologies used for LDROM, but this recommended basis is consistent with what many clients are using

Required Disclosures



The purpose of this presentation is to present the July 1, 2023 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, Data Quality.

The analysis was based on financial data through June 30, 2023 and the July 1, 2023 membership data. The July 1, 2023 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, 2023 Actuarial Valuation report. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of July 1, 2023 and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after July 1, 2023 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.

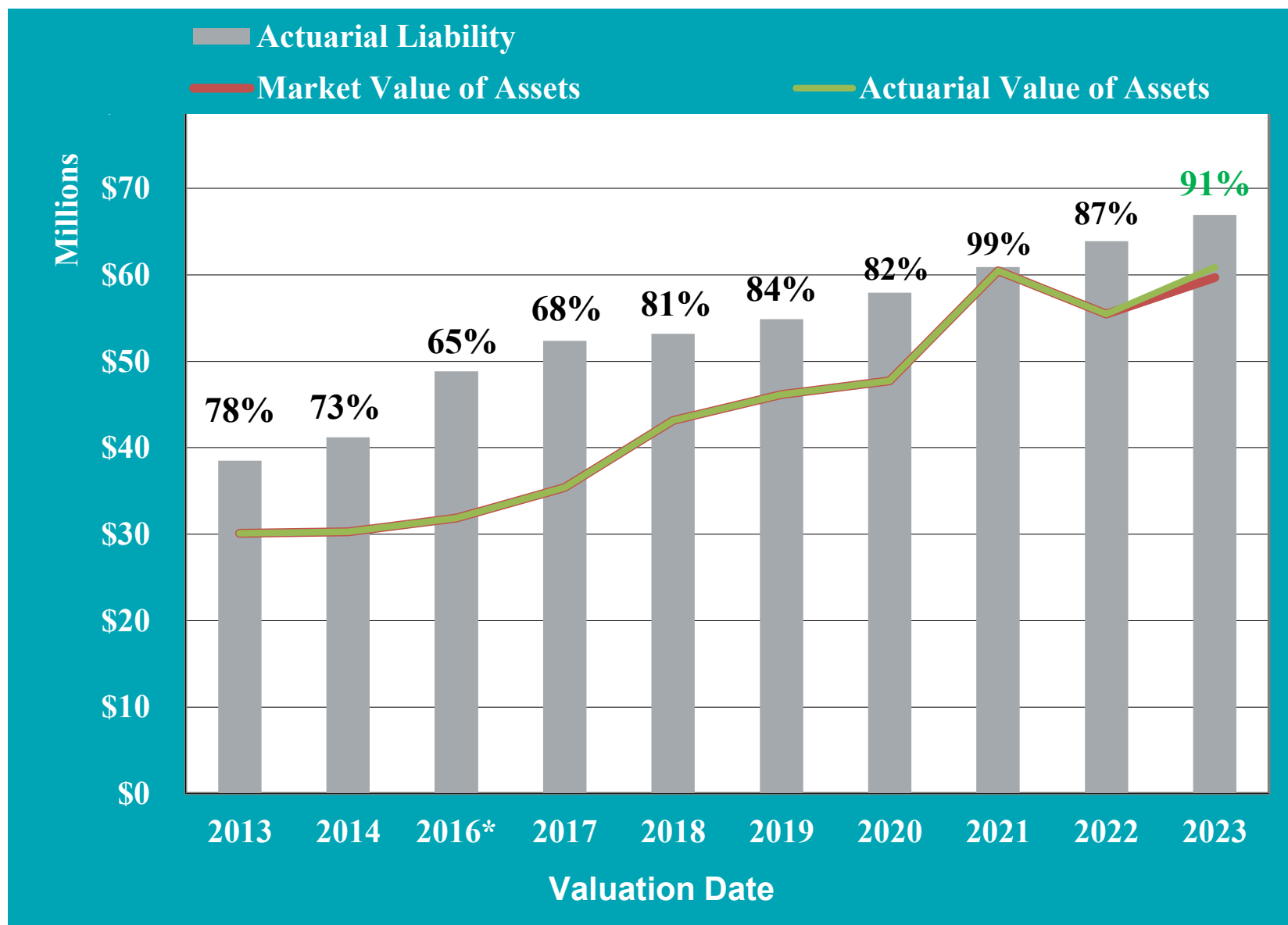
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Consulting Actuary



2023 OPEB Actuarial Valuation

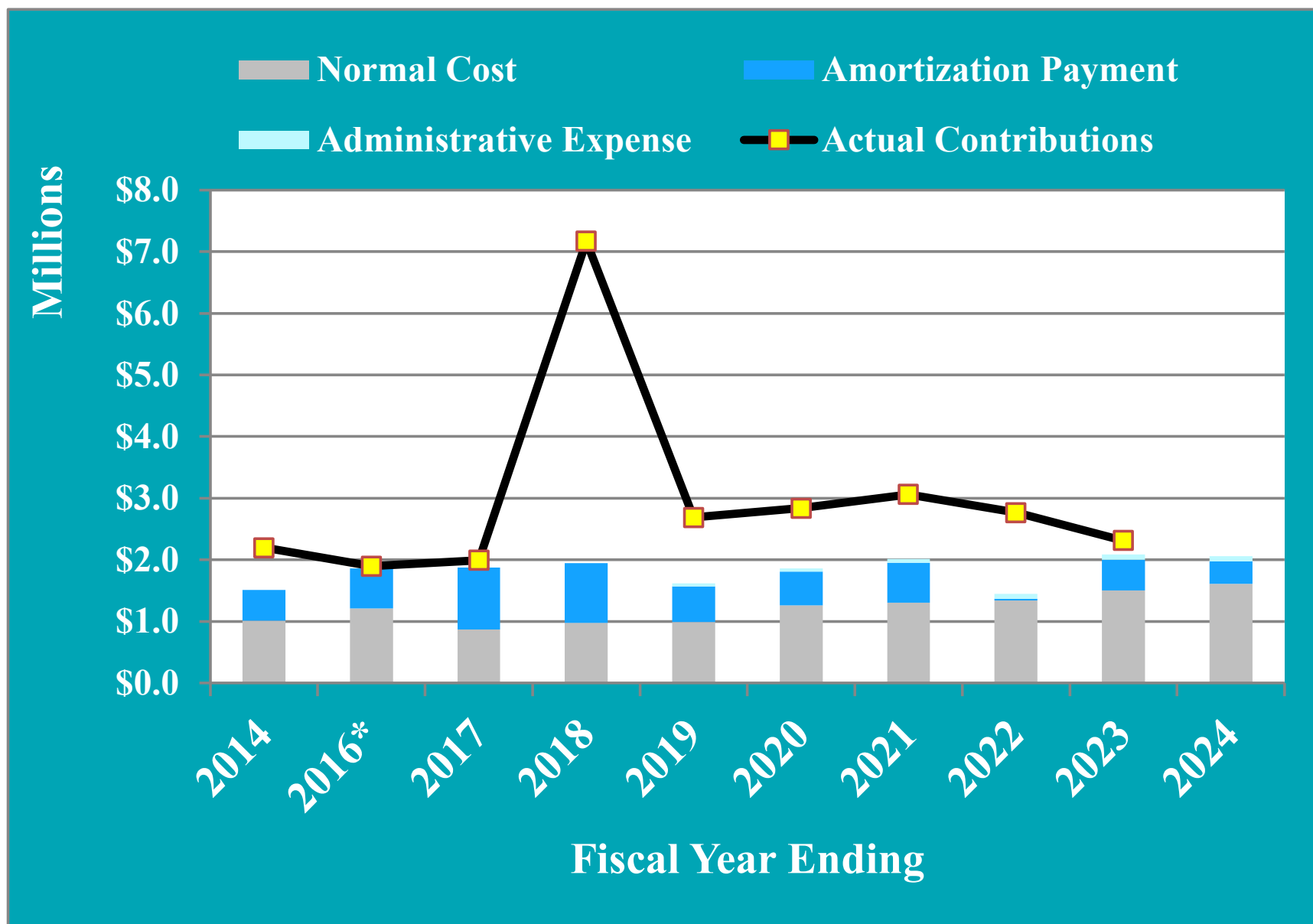
Historical Review – Assets and Liabilities



Funding ratio based on AVA Smoothed Method starting in 2023

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

Historical Review – Contributions



2023 Valuation – Principal Results



Principal Results

	7/1/2022	7/1/2023
Active Employees	486	489
Retirees	211	218
Disabled	11	11
Survivors	23	25
Total Participants	731	743
Actuarial Liability (AL)	\$ 63,909,777	\$ 66,931,089
Assets (MVA in 2022/AVA in 2023)	55,456,756	60,896,720
Unfunded AL (UAL)	\$ 8,453,021	\$ 6,034,369
Actuarial Funded Ratio	86.8%	91.0%
FYE Contribution Applicable to	2023	2024
Employer Normal Cost	\$ 1,488,294	\$ 1,586,171
UAL Amortization Payment	465,874	341,257
Interest	131,906	130,101
Total County Contribution	\$ 2,086,074	\$ 2,057,529
Contribution as a Percentage of Payroll	7.24%	6.83%
Covered Payroll	\$ 28,802,366	\$ 30,131,794

Actuarial Asset Smoothing – 4-years



Development of Actuarial Value of Assets (AVA)		
Market Value of Assets at June 30, 2022	\$	55,456,756
Employer Contributions		2,313,624
Employee Contributions		0
Benefit Payments and Refunds		(3,159,662)
Administrative Expenses		<u>(79,172)</u>
Expected Return at 6.75%		3,712,615
Expected Value at June 30, 2023	\$	58,244,161
Actual Value of Assets at June 30, 2023		<u>59,711,846</u>
Investment Gain/(Loss)	\$	1,467,685
	Total	Excluded
	Gain/(Loss)	Portion
Exclude 20% of 2020 Gain/(Loss)	\$ (1,498,341)	\$ (299,668)
Exclude 40% of 2021 Gain/(Loss)	8,997,204	3,598,882
Exclude 60% of 2022 Gain/(Loss)	(9,430,393)	(5,658,236)
Exclude 80% of 2023 Gain/(Loss)	1,467,685	<u>1,174,148</u>
Total Excluded Gain/(Loss) for AVA Calculation	\$	(1,184,874)
Market Value of Assets at June 30, 2023		59,711,846
Total Gain/(Loss) Excluded		<u>(1,184,874)</u>
Actuarial Value of Assets at June 30, 2023	\$	60,896,720

Projected Outlook – Baseline



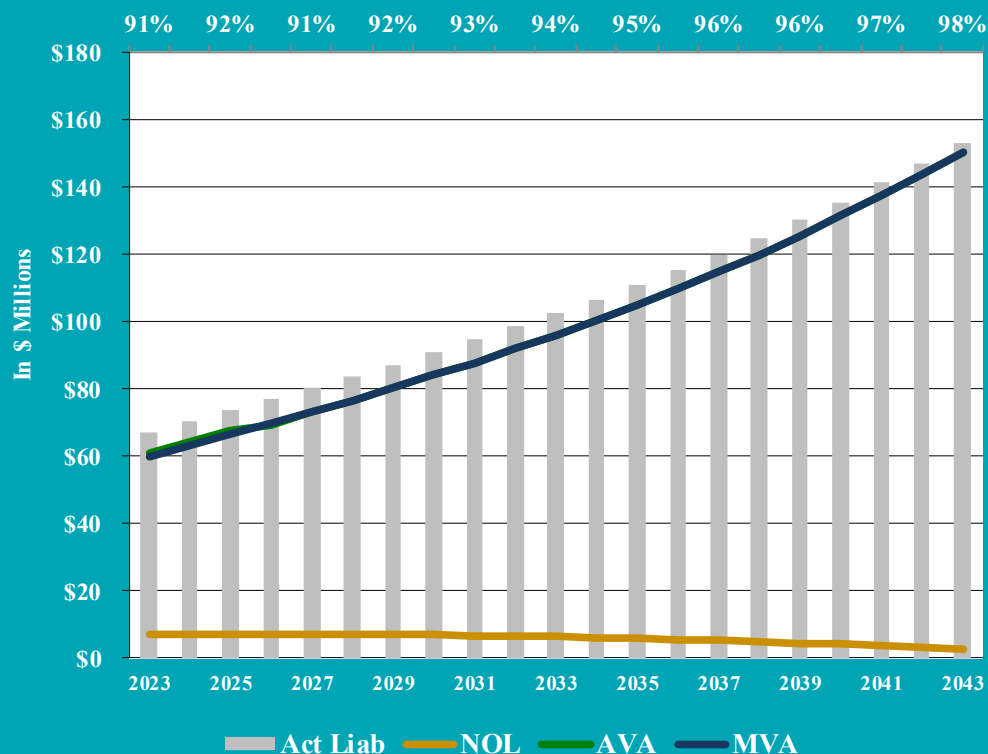
Projection assumptions:

6.75% discount rate

ADC contributions

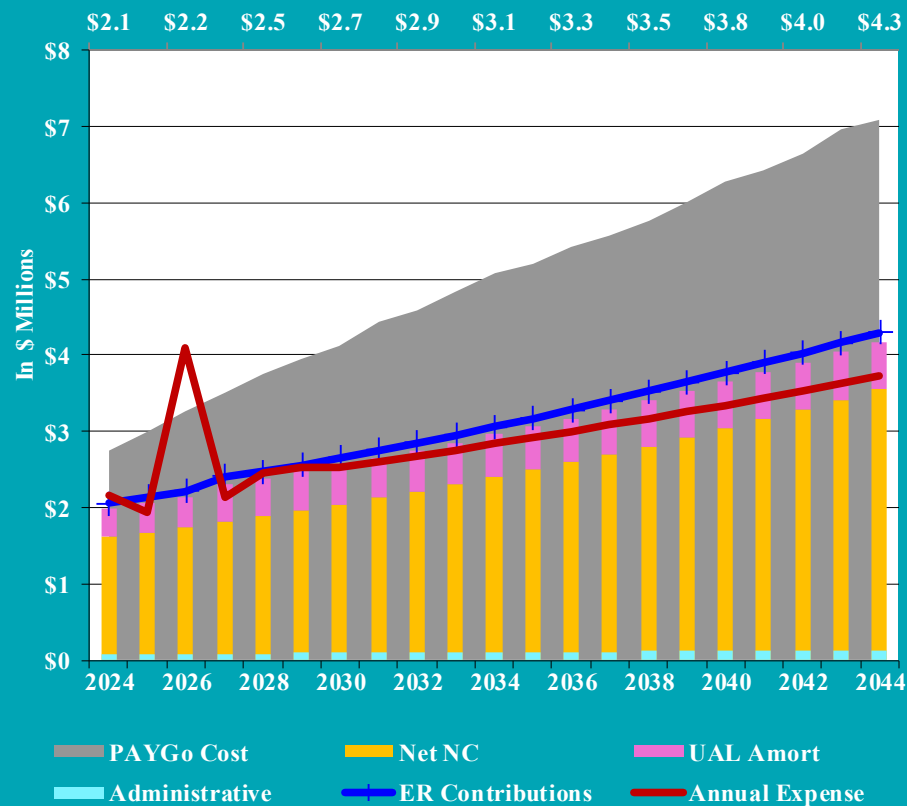
25 year closed amortization

Assets and Liabilities



Plan Expense and Funding

Fiscal Year Ending



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The purpose of this presentation is to present the July 1, 2023 OPEB valuation and GASB 74/75 results for the Sussex County Postemployment Benefit 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 user.

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The analysis was based on financial data through June 30, 2023 and the July 1, 2023 membership data. The July 1, 2023 OPEB valuation and/or GASB 74/75 report should be referred to for a summary of the methods and assumptions. 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.

This presentation and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and my 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 a credentialed actuary, 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.

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 (3.65% for 2023) 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 2023 and 2022 plan years
 - The County's FY 2023 expense will be based on the County's 2023 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"

GASB 67 – Results



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	\$ 172,831,607	\$ 152,230,175	\$ 135,236,063
Plan Fiduciary Net Position	<u>146,945,986</u>	<u>146,945,986</u>	<u>146,945,986</u>
Net Pension Liability	<u>\$ 25,885,621</u>	<u>\$ 5,284,189</u>	<u>\$ (11,709,923)</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	85.0%	96.5%	108.7%

GASB 68 – Results



Calculation of Pension Expense		
	Measurement Year Ending	
	2023	2022
Change in Net Pension Liability	\$ (2,079,889)	\$ 30,384,085
Change in Deferred Outflows	4,811,722	(14,256,745)
Change in Deferred Inflows	(315,737)	(15,469,526)
Employer Contributions	<u>3,703,694</u>	<u>3,776,535</u>
Pension Expense	\$ 6,119,790	\$ 4,434,349
Pension Expense as % of Payroll	19.11%	14.42%
Operating Expenses		
Service cost	\$ 3,571,368	\$ 2,889,714
Employee contributions	(447,964)	(324,090)
Administrative expenses	<u>181,929</u>	<u>190,179</u>
Total	\$ 3,305,333	\$ 2,755,803
Financing Expenses		
Interest cost	\$ 9,732,972	\$ 8,954,565
Expected return on assets	<u>(9,126,620)</u>	<u>(10,498,237)</u>
Total	\$ 606,352	\$ (1,543,672)
Changes		
Benefit changes	\$ 0	\$ 0
Recognition of assumption changes	514,747	1,056,605
Recognition of liability gains and losses	1,271,927	1,143,242
Recognition of investment gains and losses	<u>421,431</u>	<u>1,022,371</u>
Total	\$ 2,208,105	\$ 3,222,218
Pension Expense	\$ 6,119,790	\$ 4,434,349

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 6/30/2022	\$ 63,909,777	\$ 55,456,756	\$ 8,453,021
Changes for the year:			
Service cost	1,409,835		1,409,835
Interest	4,304,176		4,304,176
Changes of benefits	0		0
Differences between expected and actual experience	466,963		466,963
Changes of assumptions	0		0
Contributions - employer		2,313,623	(2,313,623)
Contributions - member		0	0
Net investment income		5,180,301	(5,180,301)
Benefit payments	(3,159,662)	(3,159,662)	0
Administrative expense		(79,172)	79,172
Net changes	<u>3,021,312</u>	<u>4,255,090</u>	<u>(1,233,778)</u>
Balances at 6/30/2023	<u>\$ 66,931,089</u>	<u>\$ 59,711,846</u>	<u>\$ 7,219,243</u>

GASB 75 – 2023 OPEB Expense



Calculation of OPEB Expense		
	Measurement Year Ending	
	2023	2022
Change in Net OPEB Liability	\$ (1,233,778)	\$ 8,024,894
Change in Deferred Outflows	1,661,883	(2,853,443)
Change in Deferred Inflows	(566,685)	(6,261,947)
Employer Contributions	<u>2,313,623</u>	<u>2,766,223</u>
OPEB Expense	\$ 2,175,043	\$ 1,675,727
OPEB Expense as % of Payroll	7.22%	5.82%
Operating Expenses		
Service cost	\$ 1,409,835	\$ 1,252,760
Employee contributions	0	0
Administrative expenses	<u>79,172</u>	<u>81,712</u>
Total	\$ 1,489,007	\$ 1,334,472
Financing Expenses		
Interest cost	\$ 4,304,176	\$ 4,265,169
Expected return on assets	<u>(3,712,615)</u>	<u>(4,239,875)</u>
Total	\$ 591,561	\$ 25,294
Changes		
Benefit changes	\$ 0	\$ 0
Recognition of assumption changes	(515,789)	(515,789)
Recognition of liability gains and losses	478,241	411,532
Recognition of investment gains and losses	<u>132,023</u>	<u>420,218</u>
Total	\$ 94,475	\$ 315,961
OPEB Expense	\$ 2,175,043	\$ 1,675,727



Classic Values, Innovative Advice.

***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.*