Retirement Plan for Employees of South Broward Hospital District

Actuarial Valuation Report
Employer Contributions for Plan Year Beginning May 1, 2022

March 2023

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Purpose and actuarial statement

As requested by South Broward Hospital District (the "District"), this report documents the results of an actuarial valuation of the Retirement Plan for Employees of South Broward Hospital District.

The primary purposes of the valuation are to:

- Determine the contribution for the plan year beginning May 1, 2022 and the tax year ending April 30, 2023
- Meet the requirements of Part VII, Chapter 112 of the Florida Statutes
- Describe plan experience during the prior year and document the actuarial assumptions and methods used in the calculations

The report also documents the funded status of the plan under the assumptions used to determine the contribution and documents the provisions on which the valuation is based.

Limitations

This valuation has been conducted for the purposes described above and may not be suitable for any other purpose. This report does not determine liabilities on a plan termination basis, for which a separate extensive analysis would be required. No funded status measure included in this report is intended to assess, and none may be appropriate for assessing, the sufficiency of plan assets to cover the estimated cost of settling benefit obligations, as all such measures differ in some way from plan termination obligations. In addition, funded status measures shown in this report do not reflect the current costs of settling obligations by offering immediate lump sum payments to participants and/or purchasing annuity contracts for the remaining participants (e.g., insurer profit, insurer pricing of contingent benefits and/or provision for anti-selection in the choice of a lump sum vs. an annuity).

The comparison of the plan's actuarial accrued liability to its actuarial value of assets (the unfunded actuarial accrued liability shown in Section 1) is used in determining required contributions for the coming year, and a contribution made on the valuation date equal to the shortfall would be considered to "fully fund" the plan for benefits accrued as of the valuation date under the funding rules, and thus is useful for assessing the need for and amount of future contributions. However, the unfunded actuarial accrued liability cannot be relied upon to determine either the need for or the amount of future contributions. The unfunded actuarial accrued liability is based on the interest rate elected to be used for funding purposes, which may not reflect current market conditions and will in any event change over time. It is also based on the actuarial value of assets, so it would be different than if based on market value of assets. In addition, asset gains and losses, demographic experience different from assumed, and future benefit accruals (if any) will all affect the need for and amount of future contributions.

Reliances

In preparing the results presented in this report, WTW has relied upon information regarding plan provisions, participants, assets, and sponsor accounting policies and methods provided by the District and other persons or organizations designated by the District. We may also have relied on certain models developed by others; any such reliance is discussed in Appendix A.

We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. Based on discussions with and concurrence by the plan sponsor, assumptions or estimates may have been made if data were not available. We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

We have relied on all the data and information provided as complete and accurate. The results presented in this report are directly dependent upon the accuracy and completeness of the underlying data and information. Any material inaccuracy in the data, assets, plan provisions or other information provided to us may have produced results that are not suitable for the purposes of this report and such inaccuracies, as corrected by the District, may produce materially different results that could require that a revised report be issued.

Assumptions and methods under Part VII, Chapter 112 of the Florida Statutes for funding purposes

The plan sponsor selected, as prescribed by the Florida Statutes, key assumptions and funding methods (including the mortality assumption and asset valuation method) employed in the development of the contribution amounts. To the extent not prescribed by Part VII, Chapter 112 of the Florida Statutes or selected by the sponsor, the actuarial assumptions and methods employed in the development of the contribution amounts have been selected by WTW, with the concurrence of the plan sponsor. It is beyond the scope of this actuarial valuation to analyze the reasonableness and appropriateness of prescribed methods and assumptions, or to analyze other options from among the alternatives available for methods and assumptions.

Other than prescribed assumptions, Part VII, Chapter 112 of the Florida Statutes require the use of assumptions each of which is “reasonable (taking into account the experience of the plan and reasonable expectations), and which, in combination, offer the actuary’s best estimate of anticipated experience under the plan.” The results shown in this report have been developed based on actuarial assumptions that, to the extent evaluated or selected by WTW, we consider to be reasonable. Other actuarial assumptions could also be considered to be reasonable. Thus, reasonable results differing from those presented in this report could have been developed by selecting different reasonable assumptions.

A summary of the assumptions, methods, models and sources of data and other information used for funding purposes is provided in Appendix A. Note that any subsequent changes in methods or assumptions for the May 1, 2022 plan year will change the results shown in this report.

Nature of actuarial calculations

The results shown in this report are estimates based on data that may be imperfect and on assumptions about future events that cannot be predicted with any certainty. The effects of certain plan provisions may be approximated, or determined to be insignificant and therefore not valued. Assumptions may be made, in consultation with the District, about participant data or other factors. Reasonable efforts were made in preparing this valuation to confirm that items that are significant in the context of the actuarial liabilities or costs are treated appropriately, and are not excluded or included inappropriately. Any rounding (or lack thereof) used for displaying numbers in this report is not intended to imply a degree of precision, which is not a characteristic of actuarial calculations.

If overall future plan experience produces higher benefit payments or lower investment returns than assumed, the relative level of plan costs or contribution requirements reported in this valuation will likely increase in future valuations (and vice versa). Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for the measurements (such as the end of an amortization period or additional contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. It is beyond the scope of this valuation to analyze the potential range of future pension contributions, but we can do so upon request. See Appendix C for disclosures required under ASOP No. 51 of significant risks related to the plan.

Limitations on use

This report is provided subject to the terms set out herein and in our engagement letter signed by the District on September 12, 2022 and any accompanying or referenced terms and conditions.

The information contained in this report was prepared for the internal use of the District and its auditors and any organization that provides benefit administration services for the plan, in connection with our actuarial valuation of the pension plan as described in Purposes of Valuation above. It is not intended for and may not be used for other purposes, and we accept no responsibility or liability in this regard. The District may distribute this actuarial valuation report to the appropriate authorities who have the legal right to require the District to provide them this report, in which case the District will use best efforts to notify WTW in advance of this distribution. Further distribution to, or use by, other parties of all or part of this report is expressly prohibited without WTW's prior written consent. WTW accepts no responsibility for any consequences arising from any other party relying on this report or any advice relating to its contents.

Professional Qualifications

The undersigned consultants of WTW with actuarial credentials meet the “Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States” relating to pension plans. Our objectivity is not impaired by any relationship between the District and our employer, Willis Towers Watson US LLC.

To the best of our knowledge, all plan participants and all plan provisions have been reflected in the valuation. In our opinion, all methods, assumptions, calculations and procedures are in conformity with generally accepted actuarial principles and practices; and the results presented comply with the requirements of the Internal Revenue Code and Chapter 112 of the Florida Statutes, as applicable.

Denise Miller

Denise Miller, E.A.
Associate Director, Retirement

Jason Naddell

Jason Naddell, F.S.A., E.A.
Senior Director, Retirement

March 09, 2023

Section 1: Summary of results

Summary of key results

All monetary amounts shown in US Dollars

Funding Plan Years Beginning		05/01/2022	05/01/2021
Financial Information - Funding	Actuarial Accrued Liability	900,328,309	832,743,433
	Market Value of Assets	855,992,769	883,742,453
	Actuarial Value of Assets	855,910,039	794,034,379
	Unfunded Actuarial Accrued Liability	44,418,270	38,709,054
	Normal Cost	20,173,200	19,487,747
	Actuarially-Determined Contribution (ADC)	36,277,899	33,648,356
	ADC as a percent of payroll	11.8%	11.1%
	Discount Rate	6.60%	6.60%
Participant Information	Participating Employees	3,265	3,496
	Retirees and Beneficiaries	2,799	2,610
	Terminated Vested Participants	2,240	2,368
	Total Plan Participants	8,304	8,474
	Covered Payroll	308,228,851	304,097,765
Current Year Contribution Funding	The minimum contribution requirement for the plan year beginning May 1, 2022 is $34,031,800, assuming the contribution is fully paid on May 1, 2022. Under Part VII, Chapter 112 of the Florida Statutes, the State requires contributions to be made on at least a quarterly basis and interest adjustments are required. Assuming that contributions are made by the District on a monthly basis, we recommend that the District contribute at least a total of $36,277,899 for the 2022/2023 plan year during the 2022/2023 plan year.		

Analysis and review of changes since last year

Actuarial gains and losses are the result of plan experience differing from assumptions. The net actuarial loss for the 2021/2022 plan year was $18.0 million. The components of this net actuarial loss are:

- $10.1 million asset-related gain due to higher than expected return on the actuarial value of assets. The investment return on the market value of assets was -3.1%, which was lower than the 6.60% assumption for 2021/2022. However, due to the 5-year smoothing of investment gains and losses, the investment return on the actuarial value of assets during 2021/2022 was 7.9%, which is higher than the 6.60% assumption for 2021/2022.

- $28.1 million liability loss due to plan experience. This represents about a 3.1% variance in plan liabilities resulting from experience different than assumed. This loss is mainly attributable to salary increases higher than assumed.

Basis for valuation

Appendix A summarizes the assumptions, methods, models and sources of data and other information used to determine plan liabilities for cash funding contribution requirements. Appendix B summarizes the main provisions of the plan as of the valuation date. These appendices include a summary of any changes since the prior valuations. Unless otherwise described below under Subsequent Events, assumptions were selected based on information known as of the measurement date.

Certain models (as described in ASOP No. 56) were used in preparing the information presented herein. Further information on these models can be found in Appendix A.

Subsequent Events

The results provided in this report reflect data and assumptions appropriate for the purpose of the measurement. Effects of COVID-19 on the financial markets, regulations, and experience are uncertain and still evolving. Per discussions, the results in this report make no specific allowances for the effects of COVID-19. There may be significant effects on plan experience and/or assumptions, both demographic and economic when consideration of effects are made for future measurements.

WTW is not aware of any other material events that have occurred and are not reflected in the valuation.

Special disclosure information required under State of Florida Statute 112

Investment Return

	Annual Rate of Return		
Period	Market Value	Actuarial Value	Assumed[1]
05/01/2012 - 04/30/2013	10.8%	4.6%	7.5%
05/01/2013 - 04/30/2014	9.2%	9.4%	7.5%
05/01/2014 - 04/30/2015	4.6%	7.2%	7.5%
05/01/2015 - 04/30/2016	(2.0%)	4.4%	7.0%
05/01/2016 - 04/30/2017	10.7%	5.7%	7.0%
05/01/2017 - 04/30/2018	8.5%	6.0%	7.0%
05/01/2018 - 04/30/2019	7.7%	6.2%	7.0%
05/01/2019 - 04/30/2020	(1.3%)	5.0%	7.0%
05/01/2020 - 04/30/2021	28.8%	9.9%	6.75%
05/01/2021 - 04/30/2022	(3.1%)	7.9%	6.60%

The annual rate of return is determined by using the formula 2I/(A+B-I), where I is the dollar amount of the investment return under each of the asset valuation methods, A is the value of assets one year ago, and B is the value of assets on the current valuation date.

Allocation of assets in plan portfolio

	Actual allocation percentage for the period ending				
Investment	04/30/2022	04/30/2021	04/30/2020	04/30/2019	04/30/2018
Cash	0.5%	0.4%	0.5%	3.6%	0.6%
Equity	67.8%	71.4%	65.0%	64.5%	66.8%
Bond	31.7%	28.2%	34.5%	31.9%	32.6%
Alternative Investments	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100%	100%	100%	100%	100%

1 This assumed rate of return is net of investment experience.

Salary Increases

Period	Annualized Rates Actual	Annualized Rates Assumed[1]
05/01/2012 - 04/30/2013	2.1%	5.2%
05/01/2013 - 04/30/2014	3.7%	5.2%
05/01/2014 - 04/30/2015	2.9%	3.1%
05/01/2015 - 04/30/2016	4.3%	3.3%
05/01/2016 - 04/30/2017	3.3%	3.5%
05/01/2017 - 04/30/2018	2.7%	3.7%
05/01/2018 - 04/30/2019	3.3%	4.0%
05/01/2019 - 04/30/2020	3.3%	4.2%
05/01/2020 - 04/30/2021	2.9%	2.9%
05/01/2021 - 04/30/2022	8.4%	2.9%

Unfunded Liabilities

Valuation Date	Unfunded Liability	Amortization Charge
May 1, 2022	44,418,270	13,696,600
May 1, 2023	32,749,300	13,696,600
May 1, 2024	20,310,178	13,696,600

Above schedule is based on the unfunded liability as it exists on May 1, 2022 and assumes no gains and losses after May 1, 2022. The final year of amortization ends April 30, 2030.

[1] Annualized rate determined by taking a weighted average of the expected pay rate increases by age grouping based on the age-graded compensation increase assumption in effect during the valuation period.

Required Actuarial Certification

This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise provided for in the valuation. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account in the valuation.

Denise Miller, E.A.

March 09, 2023

20-06274
Enrollment No.

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Section 2: Actuarial exhibits

2.1 Summary of results

All monetary amounts shown in US Dollars

Plan Years Beginning		May 1, 2022	May 1, 2021
Membership Information	Participating Employees	3,265	3,496
	Retirees and Beneficiaries	2,799	2,610
	Terminated Vested Participants	2,240	2,368
	Total	8,304	8,474
Payroll Information	Covered Payroll	308,228,851	304,097,765
	Present Value of Future Pay	2,039,080,511	2,043,172,736
Actuarial Present Value of Future Benefits	Participating Employees		
	▪ Retirement	506,666,970	479,106,511
	▪ Withdrawal	20,580,153	21,236,943
	▪ Death	5,331,936	5,103,767
	▪ Disability	37,337,770	35,672,964
	Retirees and Beneficiaries	360,099,427	317,340,280
	Terminated Vested Participants	114,692,571	115,783,163
	Total	1,044,708,827	974,243,628
Actuarial Present Value of Vested Benefits	Participating Employees	348,783,330	341,863,304
	Retirees and Beneficiaries	360,099,427	317,340,280
	Terminated Vested Participants	114,692,571	115,783,163
	Total	823,575,328	774,986,747
Actuarial Present Value of Accrued Benefits	Participating Employees	351,115,325	344,133,223
	Retirees and Beneficiaries	360,099,427	317,340,280
	Terminated Vested Participants	114,692,571	115,783,163
	Total	825,907,323	777,256,666
Projected Unit Credit Actuarial Accrued Liability	Participating Employees	425,536,311	399,619,990
	Retirees and Beneficiaries	360,099,427	317,340,280
	Terminated Vested Participants	114,692,571	115,783,163
	Total	900,328,309	832,743,433

Summary of funding results (cont.)

Plan Years Beginning		May 1, 2022	May 1, 2021
Assets	Market Value	855,992,769	883,742,453
	Actuarial Value	855,910,039	794,034,379
UAAL	Unfunded Actuarial Accrued Liability	44,418,270	38,709,054
Normal Cost	Retirement	17,638,572	16,937,266
	Withdrawal	1,026,558	1,092,405
	Death	189,637	184,611
	Disability	1,318,433	1,273,465
	Total	20,173,200	19,487,747
	As a % of pay	6.54%	6.41%
Actuarially Determined Contribution (ADC)	Normal Cost at Beginning of Year	20,173,200	19,487,747
	Amortization of UAAL	13,696,600	11,885,315
	Estimated Expenses	162,000	192,000
	ADC at Beginning of Year	34,031,800	31,565,062
	ADC at End of Year	36,277,899	33,648,356
	ADC as a % of pay	11.77%	11.06%

2.2 Actuarial gains/(losses)

Plan Year Beginning			May 1, 2022
A. Derivation of Experience Gain/(Loss)	1.	Total normal cost previous valuation (including expenses)	19,679,747
	2.	Unfunded actuarial accrued liability (UAAL) previous valuation	38,709,054
	3.	Contributions previous year	34,648,356
	4.	Interest on:	
		(a) Total normal cost	1,298,863
		(b) Unfunded actuarial accrued liability	2,554,798
		(c) Contributions	1,214,446
		(d) Net Total: (a) + (b) – (c)	2,639,215
	5.	Expected UAAL current year: 1. + 2. – 3. + 4.(d)	26,379,660
	6.	Actual UAAL current year before assumption changes	44,418,270
	7.	Experience gain/(loss): 5. – 6.	(18,038,610)
	8.	Experience gain/(loss) as percent of actuarial accrued liability as of May 1, 2021	(2.2%)
B. Approximate Portion of Experience Gain/(Loss) Due To Investments	1.	Actuarial value of assets previous year	794,034,379
	2.	Contributions during year	34,648,356
	3.	Disbursements during year (administrative expenses and benefits)	35,300,543
	4.	Expected appreciation for period	52,455,797
	5.	Expected actuarial value of assets current year: 1. + 2. – 3. + 4.	845,837,989
	6.	Actual actuarial value of assets current year	855,910,039
	7.	Approximate investment gain/(loss): 6. – 5.	10,072,050
C. Approximate Net Experience Gain/(Loss) Due to Liabilities	1.	Liability gain/(loss): A.7 – B.7	(28,110,660)
D. Reconciliation of Unfunded Actuarial Accrued Liability as of May 1, 2022	1.	Expected UAAL as of May 1, 2022	26,379,660
	2.	Adjustments	
		- Actuarial experience (gain)/loss	18,038,610
		- Plan amendments	0
		- Assumption changes	0
		- Cost method changes	0
		Total Adjustments	18,038,610
	3.	Actual UAAL as of May 1, 2022: 1. + 2.	44,418,270

2.3 Deriviation of amortization payment

All monetary amounts shown in US Dollars

Type of Base	Date Established	Initial Amount	Remaining Balance	2022 Amortization Payment	Years Remaining
Fresh Start	05/01/2012	78,989,616	12,739,481	6,573,227	2 yrs.
Actuarial (Gain)/Loss	05/01/2013	5,285,574	1,342,270	476,304	3 yrs.
Assumption Change	05/01/2013	7,525,837	1,911,185	678,184	3 yrs.
Actuarial (Gain)/Loss	05/01/2014	(13,811,411)	(3,762,214)	(1,335,022)	3 yrs.
Assumption Changes	05/01/2014	6,528,450	1,778,342	631,045	3 yrs.
Actuarial (Gain)/Loss	05/01/2015	529,801	196,324	53,882	4 yrs.
Assumption Changes	05/01/2015	25,421,857	7,504,170	2,662,855	3 yrs.
Actuarial (Gain)/Loss	05/01/2016	14,722,582	5,891,417	1,616,916	4 yrs.
Assumption Changes	05/01/2016	(11,375,788)	(4,552,158)	(1,249,353)	4 yrs.
Actuarial (Gain)/Loss	05/01/2017	10,084,962	5,067,385	1,146,980	5 yrs.
Actuarial (Gain)/Loss	05/01/2018	(2,438,824)	(1,340,281)	(303,367)	5 yrs.
Actuarial (Gain)/Loss	05/01/2019	6,934,116	4,567,433	887,830	6 yrs.
Actuarial (Gain)/Loss	05/01/2020	8,498,849	6,382,549	1,240,658	6 yrs.
Assumption Changes	05/01/2020	(13,240,525)	(9,943,499)	(1,932,845)	6 yrs.
Actuarial (Gain)/Loss	05/01/2021	(16,547,402)	(14,434,310)	(2,477,579)	7 yrs.
Assumption Change	05/01/2021	14,939,307	13,031,566	2,236,805	7 yrs.
Actuarial (Gain)/Loss	05/01/2022	18,038,610	18,038,610	2,790,080	8 yrs.
Total			**44,418,270**	**13,696,600**	

2.4 Summary of market value of plan assets

	Beginning Balance (May 1, 2021)		**883,742,453**
Additions			
	Employer Contributions	34,648,356	
	Earned Income	17,288,957	
	Interest & Dividends	579	
	Net Increase in Accrued Income	0	
	Realized Gains	47,102,141	
	Unrealized Gains	0	
	Other Receipts	52,775,436	
A.	**Total Additions**	**151,815,469**	
Deductions			
	Pension Payments	35,138,676	
	Net Decrease in Accrued Income	0	
	Realized Losses	3,705,535	
	Unrealized Losses	86,712,348	
	Other Disbursements	52,789,764	
	Expenses - administrative	161,867	
	Expenses - investment	1,056,963	
B.	**Total Deductions**	**179,565,153**	
C.	**Net Increase/(Decrease) (A. - B.)**		**(27,749,684)**
	Ending Balance (April 30, 2022)		**855,992,769**

2.5 Development of actuarial value of assets

Expected Return

Market value of assets as of May 1, 2021: 883,742,453

Item	Amount	Weight for Timing	Weighted Amount
Contributions for prior plan year	34,648,356	53.11%	18,401,742
Benefits and admin expenses	(35,300,543)	50.00%	(17,650,272)
Total			751,470

Market value of assets plus total weighted amount	884,493,924
Assumed rate of return on plan assets for the year	6.60%
Expected return	58,376,530

Actual Return

Market value as of May 1, 2021	(883,742,453)
Contributions for prior plan year	(34,648,356)
Benefit payments and administrative expenses	35,300,543
Market value as of May 1, 2022	855,992,769
Actual return	(27,097,497)

Investment Gain/(Loss)

Actual return minus expected return	(85,474,027)

Actuarial Value of Assets

Market value of plan assets as of May 1, 2022: 855,992,769

Plan Year	Investment Gain/(Loss)	Percent Recognized	Percent Deferred	Deferred Gain/(Loss)
2018/2019	4,516,653	80.00%	20.00%	903,331
2019/2020	(57,464,095)	60.00%	40.00%	(22,985,638)
2020/2021	150,907,099	40.00%	60.00%	90,544,259
2021/2022	(85,474,027)	20.00%	80.00%	(68,379,222)
Total	12,485,630			82,730

Asset value minus total deferred gain/(loss): 855,910,039

Corridor for actuarial value

- 80% of market value: 684,794,215
- 120% of market value: 1,027,191,323

Actuarial value of plan assets as of May 1, 2022: 855,910,039

2.6 Reconciliation of present value of accumulated benefits

All monetary amounts shown in US Dollars

		Present Value
1	Present value of accumulated benefits at May 1, 2021	777,256,666
2	Changes during the year due to:	
a	Benefits accumulated	24,856,761
b	Actuarial (gains)/losses	7,152,662
c	Decrease in the discount period	51,779,910
d	Actual benefits paid	(35,138,676)
e	Plan amendment	0
f	Change of assumptions	0
g	Net increase/(decrease)	48,650,657
3	Present value of accumulated benefits at May 1, 2022	825,907,323

2.7 Expected future benefit payments

All monetary amounts shown in US Dollars

1	During plan year ending 04/30/2023	40,483,201
2	During plan year ending 04/30/2024	44,599,094
3	During plan year ending 04/30/2025	49,044,127
4	During plan year ending 04/30/2026	53,648,713
5	During plan year ending 04/30/2027	58,285,169
6	During plan year ending 04/30/2028	62,836,458
7	During plan year ending 04/30/2029	67,182,448
8	During plan year ending 04/30/2030	71,414,088
9	During plan year ending 04/30/2031	75,479,194
10	During plan year ending 04/30/2032	79,182,798
11	During plan year ending 04/30/2033 through 04/30/2037	440,765,969

Section 3: Participant data

3.1 Reconciliation of participant data

		Participating Employees	Retirees and Beneficiaries	Terminated Vested Participants	Total
Reconciliation of Participants by Status	Number as of 05/01/2021	3,496	2,610	2,368	8,474
	Changes by category:				
	a. New hire and rehire	0	0	0	0
	b. Non-vested termination	0			0
	c. Vested termination	(79)		79	0
	d. Retirement	(126)	229	(103)	0
	e. Disability	0	0	0	0
	f. Death	(5)	(45)	(5)	(55)
	g. New Beneficiary	0	6	0	6
	h. Cashout	(26)	0	(91)	(117)
	i. Miscellaneous	5	(1)	(8)	(4)
	j. Net change	(231)	189	(128)	(170)
	Number as of 05/01/2022	3,265	2,799	2,240	8,304

3.2 Comparison of participant data

		May 1, 2022	May 1, 2021
Membership	Participating Employees	3,265	3,496
	Retirees and Beneficiaries	2,799	2,610
	Terminated Vested Participants	2,240	2,368
	Total	8,304	8,474
Payroll	Covered Payroll	308,228,851	304,097,765
Statistical Averages	Active Participants		
	▪ Compensation	94,394	86,984
	▪ Age	55.27 yrs.	54.67 yrs.
	▪ Service	18.60 yrs.	17.85 yrs.
Monthly Benefit Averages for Inactives	Retirees & Beneficiaries	1,034	979
	Terminated Vested Participants	629[1,2]	613[3]

[1] *Does not include one participant with a lump sum benefit payable after May 1, 2022*

[2] *Normal retirement benefits were estimated for 94 terminated vested participants for whom a final benefit amount was not provided*

[3] *Normal retirement benefits were estimated for 82 terminated vested participants for whom a final benefit amount was not provided*

3.3 Age and service distribution of participating employees

Completed Years of Credited Service

Attained Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over	Total
Under 25	-	-	-	-	-	-	-	-	-	-
25-29	-	-	1	-	-	-	-	-	-	1
30-34	-	-	17	1	-	-	-	-	-	18
35-39	-	-	91	33	2	-	-	-	-	126
40-44	-	-	148	120	17	-	-	-	-	285
45-49	-	1	171	177	63	21	-	-	-	433
50-54	-	-	173	249	136	37	16	1	-	612
55-59	-	1	169	276	165	72	55	11	-	749
60-64	-	-	132	250	159	76	55	19	12	703
65-69	-	-	55	88	65	34	16	6	7	271
70 & Over	-	-	8	34	10	10	-	1	4	67
Total	-	2	965	1,228	617	250	142	38	23	3,265

Average:	Age	55.27	Number of participants:	Fully vested	3,265	Males	721
	Service	18.60		Partially vested	0	Females	2,544

Census Data as of May 1, 2022

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Appendix A: Statement of actuarial assumptions, methods and data sources

Plan Sponsor

South Broward Hospital District (SBHD)

Statement of Assumptions

The assumptions disclosed in this Appendix A are for the plan year beginning May 1, 2022 funding valuation.

Economic Assumptions

Discount rate and expected return on assets 6.60%

Compensation increases

Age	Percentage increase
Less than 35	6.00%
35 – 39	5.25%
40 – 44	4.00%
45 – 49	3.50%
50 – 54	3.00%
55 – 59	2.50%
60 or older	2.25%

Administrative expenses $162,000

Other Economic Assumptions

Future Increases in maximum benefits and plan compensation limitations It was assumed that maximum benefits and plan compensation limitations under the Internal Revenue Code will increase 2.50% per year in the future. Plan compensation limitations only apply to participants with a date of participation of May 1, 1996 and later.

Cost of living increases or Consumer Price Index (CPI) It was assumed that the cost of living or CPI will increase 2.50% per year in the future.

Future Increases in Social Security Taxable Wage Base It was assumed that the Social Security Taxable Wage Base will increase 3.00% per year in the future.

Demographic Assumptions	
Healthy mortality	Base Mortality Table [Male Table used for males; Female Table used for females] 1. Base table: Pub-2010 2. Base mortality table year: 2010 3. Table type: Below Median 4. Healthy or Disabled: Healthy 5. Table weighting: Headcount 6. Blending of annuitants and non-annuitants: Separate rates for annuitants and non-annuitants (based on Employees table) 7. Blending of retirees and contingent annuitants: Combined non-disabled annuitant mortality 8. Other: Males set back 1 year Mortality Improvement Scale [Male Table used for males; Female Table used for females] 1. Base scale: MP-2018 2. Projection Type: “Generational” 3. Convergence period: N/A 4. Ultimate mortality improvement rate: N/A 5. Pattern during convergence period: N/A
Disabled mortality	Base Mortality Table [Male Table used for males; Female Table used for females] 1. Base table: Pub-2010 2. Base mortality table year: 2010 3. Table type: Non-Safety 4. Healthy or Disabled: Disabled 5. Table weighting: Headcount 6. Blending of annuitants and non-annuitants: N/A 7. Blending of retirees and contingent annuitants: N/A 8. Other: Males and females set forward 3 years Mortality Improvement Scale: None

Retirement

Rates at which participants are assumed to retire by age are shown below:

Age	Rate of Retirement
52-54 *	2%
55-60	5%
61	6%
62-63	11%
64	14%
65	22%
66	30%
67	25%
68	20%
69	15%
70-74	30%
75 and older	100%

** Prior Plan participants only*

Disability rates

The representative rates at which participants are assumed to become disabled by age and gender are shown below:

Age	Males	Females
25	0.038%	0.047%
30	0.048%	0.080%
35	0.069%	0.136%
40	0.117%	0.211%
45	0.202%	0.323%
50	0.358%	0.533%
55	0.722%	0.952%
60	1.256%	1.159%

Termination (not due to disability or retirement) rates

Rates at which participants are assumed to terminate by age are shown below:

Age	Rate of Termination
Under 30	19%
30 - 34	15%
35 - 39	9%
40 - 44	7%
45 - 59	6%
60 - 64	9%
65 and older	0%

Marriage

85% of active participants are assumed to be married, with female spouses being three years younger than male spouses.

Additional Assumptions

Form of payment	▪ 50% of participants with a lump sum benefit value up to \$50,000 are assumed to elect an immediate lump sum and 50% are assumed to elect the normal form of payment (life annuity). ▪ 100% of participants with a lump sum benefit value greater than \$50,000 are assumed to elect the normal form of payment (life annuity).
Benefit commencement date	
▪ Preretirement death benefit	The later of the death of the active participant or the date the participant would have reached earliest retirement age
▪ Deferred vested benefit	The later of the normal retirement date or termination of employment for those assumed to elect an annuity.
▪ Disability benefit	Normal retirement date
▪ Retirement benefit	Upon termination of employment
Inclusion date	The valuation date coincident with or next following the date on which the employee becomes a participant
Compensation for plan participants	Compensation assumed paid in the current year beginning on the valuation date is based on the rate of pay as of the valuation date supplied by the District's third party plan administrator, increased by a half year's assumed compensation increase.
Cash flow	
Decrement timing	The assumptions used are collectively called rounded middle of year (rounded MOY) decrement timing. Most events are assumed to occur at the middle of year during which the eligibility condition will be met or the start/end date will occur. For death and disability decrements, the rate applied is based on the participant's rounded age (nearest integer age) at the beginning of the year, to align with the methodology generally used to create those rate tables. For retirement and withdrawal decrements: the age is generally the participant's rounded age at the middle of the year.
Timing of benefit payments	Benefit payments are assumed to be made uniformly throughout the year and, on average, at mid-year.
Funding Policy	MHS's funding policy is to contribute at least the minimum contribution requirement determined under Chapter 112 of the Florida Statues. Contributions are required to be made no less frequently than on a quarterly basis.

Methods

Census date	May 1, 2022
Measurement date	May 1, 2022 The benefit obligations for funding are based on census data collected as of May 1, 2022.
Asset method	The actuarial value of assets is calculated under an adjusted market value method by starting with market value of assets at May 1, 2002. For subsequent years the value is determined by adjusting the market value of assets to reflect the investment gains and losses (the difference between the actual investment return and the expected investment return) during each of the last 5 years or, if fewer, the completed years at the rate of 20% per year. The actuarial value is subject to a restriction that it not be less than 80% or more than 120% of market value.
Cost Method	The Projected Unit Credit Method divides the cost of funding benefits into two parts: normal cost and actuarial accrued liability. The normal cost is the estimated cost of the benefits that are considered to be accrued in that plan year. The actuarial accrued liability is the estimated cost of all benefits that are considered to have been accrued to the valuation date. The benefit that is considered to be accrued at any point in time is based on actual accrued service, but projected compensation. The unfunded actuarial liability is the actuarial accrued liability minus plan assets. An actuarial gain or loss is calculated each year based on the change in the unfunded actuarial accrued liability. The total contribution is the normal cost plus assumed administrative expenses plus payments to amortize the initial actuarial accrued liability, gains or losses, plan amendments, and changes in assumptions.
Amortization method	Beginning May 1, 2012, the unfunded liability is amortized on a level dollar basis over the average future working lifetime of active participants (rounded to the nearest whole year). Average future working lifetime is 8 years as of May 1, 2022.

Benefits not Valued

WTW is not aware of any significant benefits required to be valued that were not.

Sources of Data and Other Information Sources

The District's third party plan administrator, Transamerica, furnished participant data as of May 1, 2022. Information on assets, contributions, and plan provisions was supplied by the plan sponsor. Data were reviewed for reasonableness and consistency, but no audit was performed. Based on discussions with the plan sponsor, assumptions or estimates were made when data were not available, and the data was adjusted to reflect any significant events that occurred between the date the data was collected and the measurement date. In consultation with MHS, the following assumptions were made for missing or apparently inconsistent data elements:

- Normal retirement benefits were estimated for 94 terminated vested participants for whom a final benefit amount was not available.

We are not aware of any errors or omissions in the data that would have a significant effect on the results of our calculations.

Assumptions Rationale - Significant Economic Assumptions

Discount rate

The discount rate is equal to the expected return on assets. See below for rationale.

Expected return on plan assets

The long-term expected rate of return on pension plan investments was determined using the March 31, 2022 Memorial Healthcare System Asset Allocation Study dated May 18, 2022 and a memorandum dated May 26, 2022 (Study) provided by the District's investment consultants. The Study indicates a mean 10-year geometric return using the Plan's current target asset allocation is 6.18% and a mean 30-year return of 7.13%. With consideration given to the current market conditions driving the results of the Study and the value added by the active asset management, the long-term expected rate of return on pension plan investments assumption of 6.60% was chosen by the District for the Measurement Date.

WTW's determination that this assumption does not significantly conflict with what would be reasonable is informed by WTW's April 2022 Expected Return Estimator model.

The target asset allocation as of the Measurement Date and best estimate of long-term nominal and real rates of return used in the Study for each major asset class were provided by the District's investment consultants and are summarized in the following table

Asset Class	Target Allocation	Long-Term Expected Nominal Rate of Return[1]	Long-Term Expected Real Rate of Return[2]
Broad Fixed Income	25.0%	3.4%	1.2%
High Yield	5.0%	6.0%	3.7%
Bank Loans	5.0%	4.8%	2.5%
Broad US Equity (All Cap Core)	10.0%	6.6%	4.3%
Defensive Equity	10.0%	6.0%	3.8%
Global Equity	40.0%	6.7%	4.5%
Global Low Volatility Equity	5.0%	6.4%	4.1%
Total	100.0%		

1 Annual 10-year geometric returns, net of pension plan investment expenses.
2 Annual 10-year geometric returns excluding inflation and net of pension plan investment expenses.

Rates of increase in compensation	Assumed compensation increases are based on a combination of assumed future (i) cost-of-living increases (CPI), (ii) productivity increases and (iii) promotional increases. CPI increases assumed are as described above. Productivity increases are consistent with the assumed real increases in NAW described above (i.e., increases in assumed NAW less increases in assumed CPI). Promotional increases were based on plan sponsor expectations and a 2020 study of increases received by plan participants for the five-year period May 1, 2014 to May 1, 2019. The new assumed rates were first used in the May 1, 2020 funding valuation. For the reasons discussed above, we believe the assumptions selected do not significantly conflict with what would be reasonable.
Administrative expenses	Amount equal to prior year's administrative expenses (rounded). We believe that this approach to setting assumed future expenses does not significantly conflict with what would be reasonable because the annual change in amount of administrative expenses has historically been de minimis.

Assumptions Rationale - Significant Demographic Assumptions

Mortality	Healthy and disabled mortality assumptions used are based the assumptions mandated by the State of Florida for local governmental plans with valuation dates on or after January 1, 2016, which requires plans to use the mortality assumption in one of the two latest FRS valuations.
Retirement and Termination	Termination rates are based on an experience study conducted in 2020, with annual consideration of whether any conditions have changed that would be expected to produce different results in the future. The review of the termination rate assumption was based on five years of experience for the period May 1, 2014 to April 30, 2019 and first effective for the May 1, 2020 funding valuation. For the reasons discussed above, we believe the assumptions selected do not significantly conflict with what would be reasonable.
Disability	Disability rates were based on a published table for pension participants believed to have reasonably similar characteristics participating in pension plans with similar disability provisions. For the reasons discussed above, we believe the assumptions selected do not significantly conflict with what would be reasonable.

Prescribed Methods	
Funding methods	The methods used for funding purposes as described in this appendix are based on a choice made by the plan sponsor from the funding methods permissible under Chapter 112 of the Florida Statutes and clarified by Chapter 60T of the Florida Administrative Code.

Changes in Assumptions, Methods and Estimation Techniques	
Change in assumptions since prior valuation	None
Change in methods since prior valuation	None
Change in estimation techniques since prior valuation	None

Model Descriptions and Disclosures in accordance with ASOP No. 56	
Quantify	Quantify is the WTW centrally developed, tested and maintained Global actuarial valuation system. It is used to perform valuations of clients' benefit plans. Quantify provides the ability to process data, calculate benefits and value benefit liabilities, develop results using applicable standards, and generate client reports. Quantify parameters provide significant flexibility to model populations and plan designs. Various demographic, economic and benefit related assumptions exist for users to model multiple demographic and economic situations. Plan liabilities are calculated based on standard actuarial techniques, developing actuarially reasonable results using the population and parameters entered. The calculation and presentation of liabilities in Quantify relies on the assumptions used and the reasonability of the assumptions selected. Quantify incorporates standard liability methodologies that are intended to reasonably reflect a variety of economic or demographic conditions. The model itself does not evaluate any assumptions entered for reasonableness, consistency or probability of occurrence. Quantify is designed specifically for these purposes, and we know of no material limitations that would prevent the system from being suitable for these intended purposes. The actuaries signing this report have relied on the actuaries who develop, test and maintain this system, and have also performed a limited review of results to ensure that system parameters have been set appropriately and plan provisions coded correctly.

Expected Return Estimator	The Expected Return Estimator is used to help inform the choice of an expected return assumption (e.g., as one data point to consider) for returns on the assets of the trust for purposes of the interest rate for valuing the actuarial accrued liabilities and normal cost and developing the minimum required contributions shown in Section 2.1. The tool depends on the capital market assumptions chosen at the starting date of the simulation. These assumptions reflect currently prevailing capital market conditions, assumed future conditions ("normative conditions"), and the transition from the current conditions to the normative ones. The assumed normative conditions incorporate a blend of historical capital market data and future expectations. The sources consulted in the determination of normative levels include practitioners in our global actuarial and investment consulting practices, plan sponsors, investment managers, economists, and academics. The model includes 22 asset classes, and may not have an appropriate classification for every type of asset a plan may hold, or the allocation provided to us by the client may be oversimplified or inaccurate.
Published Demographic Tables	Certain demographic tables described above are standard published tables or are based on standard published tables from models developed by organizations with the requisite expertise

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Appendix B: Summary of principal plan provisions

Plan Sponsor

South Broward Hospital District (SBHD)

Effective Date

Established May 1, 1969

Latest plan restatement effective as of May 1, 2015 and latest plan amendment effective January 1, 2021.

Coverage and Participation

Status:	All full-time regular employees hired or rehired prior to November 1, 2011. Any participant as of December 31, 2014 who transfers to South Florida Community Care Network (SFCCN) between January 1, 2015 to September 30, 2015, continues to participate while employed by SFCCN.
Age:	Attained age 21
Service:	One year of Credited Service with 1,000 hours
Entry Date:	First of month coincident with or following meeting above requirements

Credited Service

Completed months of continuous service from date of employment to date of termination. Prior Credited Service of participants re-employed prior to November 1, 2011 is restored, subject to certain conditions.

Compensation

Basic compensation received during a plan year, including 403(b) and Section 125 deferrals, but excluding overtime, bonuses or other special compensation.

Average Compensation (Annual)

Average compensation during the highest consecutive 60-month period in the last 120 months preceding retirement or termination multiplied by 12.

Social Security Taxable Wage Base

The contribution and benefit base (as determined under Section 230 of the United States Social Security Act) in effect as of the first day of the plan year of benefit determination.

Normal Retirement Dates

For employees hired prior to May 1, 2010, the earliest of the following:

- Attainment of age 65 with 5 years of Credited Service
- Attainment of age 62 with 20 years of Credited Service
- Attainment of age 55 with 30 years of Credited Service

For employees hired or non-vested rehires on or after May 1, 2010 and prior to November 1, 2011:

- Attainment of age 65 with 5 years of Credited Service

Early Retirement Dates

First of the month (after termination of employment) coincident with or following attainment of age 55 and completion of 10 years of Credited Service.

For participants hired prior to May 1, 2010 the earliest of the above or the first of the month coincident with or following attainment of age 52 and completion of 20 years of Credited Service.

Late Retirement Dates

First of the month (after termination of employment) following Normal Retirement Date.

Normal Retirement Benefits (Annual)

<u>Prior Plan (for participants hired prior to May 1, 2010)</u>:
3.0% x Credited Service x Average Compensation over $191,620; plus
1.5% x Credited Service x Average Compensation over $79,670 and not more than $191,620; plus
1.0% x Credited Service x Average Compensation up to $79,670.

(The $79,670 and $191,620 integration levels apply for the 2022/2023 plan year and increase annually by 3% per year and are rounded to the nearest $5.)

<u>New Plan (for participants hired on or after May 1, 2010 and prior to November 1, 2011):</u>
1.75% x Credited Service x Average Compensation over the Social Security Taxable Wage Base; plus
1.25% x Credited Service x Average Compensation over one-half of the Social Security Taxable Wage Base but not more than the Social Security Taxable Wage Base; plus
0.75% x Credited Service x Average Compensation up to one-half of the Social Security Taxable Wage base.

The minimum annual benefit is $2,400 per year for the Prior Plan and New Plan.

Early Retirement Benefit (Annual)

Accrued normal retirement benefit reduced by 0.6% for each of the first 60 months early retirement precedes normal retirement and by 0.3% for each of the next 60 months that early retirement precedes normal retirement.

Late Retirement Benefit (Annual)

Based on Credited Service and Average Compensation up to actual retirement date.

Termination of Employment

Eligibility: Vesting in accordance with the following schedule:

Years of Credited Service	Vested Percentage
Less than 5	0%
5 or more	100%

Annual Benefit: Accrued annual benefit at date of termination times vested percentage. Payments begin at Normal Retirement Date. Reduced monthly benefits before Normal Retirement Date are available upon meeting requirements for early retirement.

Disability Retirement Benefit

Eligibility: 100% vesting of benefits upon total and permanent disability. Total and permanent disability will be deemed to occur if the participant is eligible for Social Security disability benefits.

Annual Benefit: Accrued normal retirement benefit payable as early as disability date, subject to actuarial reduction if benefit starts prior to Normal Retirement.

Death Benefit

<u>Pre-Retirement</u>

Benefit for life, beginning when participant would have been eligible to retire, payable to the surviving spouse of a deceased participant who has attained age 55 with 10 years of Credited Service or who has completed 20 years of Credited Service regardless of age, determined under the joint and 50% contingent form of payment.

<u>Post-Retirement</u>

Benefit pursuant to the option elected.

Normal Form of Payment

Monthly annuity payable for life commencing at Normal Retirement Date.

Optional Forms

Preretirement death benefits are payable only as described above. All other monthly pension benefits are paid under the Normal Form of Payment. Optional forms of payment are a 50% or 100% joint and survivor annuity, a ten-year or twenty-year certain and life annuity, or a lump sum (if present value is under $50,000).

Employee Contributions

None.

Employer Contributions

Amounts necessary to satisfy the funding requirements of the plan.

Amendments or Changes in Plan Provisions from Previous Valuation

None

Appendix C: Statement of funding-related risks of plan in accordance with ASOP No. 51

Potentially Significant Risks Associated with the Plan

The following sections discuss certain risks associated with the plan. The specific risks discussed below do not represent a comprehensive list of all risks that could potentially affect the plan, its participants, the sponsor, or any other party. In our professional judgment, we believe these risks to be most relevant to the plan's future financial condition. Not all possible sources of risk were considered. We have not evaluated the ability or willingness of the plan sponsor (or members of their controlled group) to make contributions to the plan when due, nor have we assessed the likelihood or consequences of potential future changes in applicable law. Nothing contained in this report is intended to provide investment advice.

The results shown in this report rely on assumptions regarding future economic and demographic experience. Actual future experience will deviate from the actuarial assumptions, and thus future actuarial measurements and future contribution requirements will differ (perhaps significantly) from the current measurements and contribution requirements presented in this report. Following is a discussion of some of the risks that have the potential to significantly increase the future contributions needed to satisfy legal requirements and secure the benefits of participants. While the discussion below focuses on elements that can increase contributions, contributions may also significantly decline, although not below zero, if these elements move in the opposite direction than discussed below. *Note also that any assessment of the risk provided below is speculative and made by the actuary who may not have all the information necessary to evaluate the significance of the risk to the company or plan participants of changes in the plan's funded status; the plan sponsor and its advisors should consider the assessment and any reasons given, and other information, and come to their own conclusions as to the significance of the risk presented.* A more complete understanding of these or other risks would require a separate analysis. Such analysis would provide information about the consequences of different plausible experience and about the severity of adverse experience that could be tolerated within a range of funding levels.

We also note that the financial condition of a plan, as well as the contributions caused by this condition, tend to be highly leveraged amounts. When referring to a plan's financial condition below, we generally mean the difference between the plan's assets and its liabilities. As each of these numbers is typically much larger than their difference, even a small change in either one can cause a large percentage change in the financial condition and the resulting contributions.

Financial Risks

Asset-Liability Mismatch Risk

There is generally a substantial risk to a plan's financial condition if the changes in asset values are not matched by changes in the value of liabilities. In this situation, this risk exists because the liabilities are not measured using a market discount rate.

We believe that a more detailed assessment would be beneficial to understanding this risk.

Investment Risk

Much of the plan's assets are invested in return-seeking asset classes that can experience volatile returns. Several consecutive years of moderately poor returns or a single year of exceptionally poor returns may cause a significant increase in minimum required contributions or in contributions required to reach desired funding targets (e.g., to fully fund plan termination liability, to fully fund the plan under the minimum funding rules or to meet other goals of the plan sponsor). Failure to compensate for adverse investment experience with increased contributions could result in further degradation of the funded status of the plan over time, even if investments return at expected rates thereafter.

Generally there is a substantial risk to a plan's financial condition if investment returns are lower than expected. In this situation the risk is present because some of the plan's assets are invested in assets that would not be expected to move in any predictable pattern relative to plan liabilities.

We believe that a more detailed assessment would be beneficial to understanding this risk.

Interest Rate Risk

There is generally a substantial risk to a plan's financial condition due to changes in interest rates because plan liabilities increase as interest rates decline. In this situation the risk is mitigated because the plan's liabilities used to determine policy contributions are determined based on the plan's long-term expected rate of return on investments.

Contribution Risk

We believe there is risk to the plan's financial condition if the minimum required contribution is not satisfied. This risk is present because the plan has a shortfall since the plan's assets are less than the plan's liabilities. We have not evaluated the ability of the plan sponsor to make required contributions

Demographic Risks

The demographic risks discussed below are typically not as significant as the economic risks discussed above since both the degree of variation from assumptions and the effect on funded status tend to be smaller. However, situations do exist such as certain plan designs or corporate activity where the risks below may be more significant.

Longevity Risk

Measurements of the plan obligations are based on the assumptions of participant longevity described in Appendix A. Expert opinions about future longevity vary widely. If lifespans of plan participants exceed those expected under the assumptions used in preparing the results presented in this report, future measures of the plan obligation and future contribution requirements will gradually increase over time. Furthermore, an emerging pattern of longer lifespans or new research that increases the plausibility of longer lifespans may require a future adjustment in the mortality assumptions that results in a permanent significant increase in the plan obligation measurements and contribution requirements.

There is risk to the plan's financial condition if participant lifespans are longer than expected. Note that the liabilities under the plan primarily consist of benefits owed active employees, and so the effect of future changes in retiree mortality rates will be higher than it would be if more of the liabilities were attributable to older participants. Additionally, lump sums under $50,000 are available to participants and, since healthier individuals are expected to choose annuities at higher rates, the obligations under the plan are likely predominantly attributable to individuals with longer than average expected lifespans.

We believe that a more detailed assessment would be beneficial to understanding this risk.

Retirement Risk

The plan includes valuable early retirement subsidies. As a result, plan costs will increase if participants retire at younger ages than assumed. This might occur, for example, if business conditions were to cause reductions in force. Currently, retirements are expected to occur at various ages, using the retirement rates summarized in Appendix A.

There is risk to the plan's financial condition if participants retire earlier than currently assumed. Note that an experience study was recently performed, the assumed retirement rates were updated for the May 1, 2020 valuation based on that study and plan sponsor expectations, and we are not aware of any business conditions that would cause a change in such expectations.

We believe that a more detailed assessment would not be beneficial to understanding this risk because a detailed assessment was most recently performed in 2020.

Lump Sum Risk

The plan includes a lump sum provision for lump sum values under $50,000. There is a risk that the financial condition of the plan may decline, and required contributions increase, if more participants retire or terminate employment and elect to receive lump sums than assumed due to the valuation discount rate being lower than the actuarial equivalence interest rate used to convert annuities to lump sums.

We believe that a more detailed assessment would not be beneficial to understanding this risk because the $50,000 maximum lump sum value limits the impact this has on the valuation.

Plan Maturity Risk

The plan closed to new entrants effective November 1, 2011. As a result, the plan population has been decreasing and the plan has been becoming more mature (over 50% of the total population is inactive). Therefore, unlike most other employment-related expenses, the contributions required to fund this plan will not diminish proportionately with reductions in personnel. Instead, the per capita contribution requirement could increase rapidly with a decrease in the active employees or with the realization of any of the financial risks described above. If a business downturn is correlated with losses in the financial markets, the per capita increase in required contributions will be especially severe.

We believe that a more detailed assessment would be beneficial to understanding this risk.

Other Risks

The interest rate used to value the plan's liability is the sponsor's long term expected rate of return. If the plan were to terminate and purchased annuities, the cost would be significantly higher than indicated by the liability.

Additional risks exist, including but not limited to liquidity risk, inflation risk, business-specific risk, and compliance risk.

Historical Information

The following information is provided to demonstrate how actuarial value of assets, actuarial accrued liability, and funded percentage have varied over time. Note that the asset values and actuarial accrued liabilities shown below were affected by the levels of plan sponsor contributions and benefits accruing, in addition to interest rates, asset gains and losses, and other experience.

Plan Year	Actuarial Value of Assets	Actuarial Accrued Liability	Funded Percentage
2022	855,910,039	900,328,309	95.07%
2021	794,034,379	832,743,433	95.35%
2020	720,562,831	772,443,160	93.28%
2019	681,014,229	752,046,443	90.55%
2018	629,748,669	704,721,667	89.36%
2017	577,074,775	665,099,307	86.77%
2016	527,808,623	614,996,237	85.82%
2015	484,827,183	577,134,059	84.01%
2014	434,246,732	506,889,962	85.67%
2013	374,137,052	460,516,238	81.24%
2012	335,263,885	414,253,501	80.93%
2011	306,234,702	372,639,108	82.18%

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Glossary of funding terms

Actuarial Accrued Liability

This is computed differently under different actuarial cost methods. Generally, the actuarial accrued liability represents the portion of the cost of the participants' anticipated retirement, termination and/or death and disability benefits allocated to the years before the current plan year.

Actuarial Gain or Loss

From one plan year to the next, if the experience of the plan differs from that anticipated using the actuarial assumptions, an actuarial gain or loss occurs. For example, an actuarial gain would occur if the assets in the trust earned 12% for the year while the assumed rate of return used in the valuation was 8%.

Normal Cost

Computed differently under different actuarial cost methods, the normal cost generally represents the portion of the cost of the participants' anticipated retirement, termination and/or death and disability benefits allocated to the current plan year.

Value of Accumulated Benefits

This is the present value of a participant's accrued benefit as of the valuation date, assuming the participant will earn no more credited service and will receive no future salary.

Present Value of Future Benefits

This is computed by projecting the total future benefit cash flow from the plan, using actuarial assumptions, and then discounting the cash flow to the valuation date.