



August 29, 2024

Ms. Bethany Rhodes, Director
Ohio Retirement Study Council
Rhodes State Office Tower
30 East Broad Street, 2nd Floor
Columbus, OH 43215

Dear Ms. Rhodes:

In accordance with Ohio Revised Code Section 5505.12(A), I am attaching the actuarial valuation of the Highway Patrol Retirement System as of December 31, 2023.

If you have any questions, please contact me.

Sincerely,

A handwritten signature in blue ink that reads "Carl Roark". The signature is written in a cursive, flowing style.

Carl Roark, Ph.D.
Executive Director
direct dial 614.430.3557
c.roark@ohprs.org

cc: The Honorable Mike DeWine, Governor
The Ohio Retirement Study Council
Director Kimberly Murnieks, Office of Budget and Management
The Honorable Jason Stephens, Speaker of the House
The Honorable Matt Huffman, Senate President
The Honorable Mark Romanchuk, Chair, Ohio Retirement Study Council
The Honorable Jean Schmidt, Chair, House Families & Aging
The Honorable Terry Johnson, Chair, Senate Veterans & Public Safety

OHIO STATE HIGHWAY PATROL RETIREMENT SYSTEM

ACTUARIAL VALUATION
AS OF DECEMBER 31, 2023



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

August 21, 2024

Board of Trustees
Ohio State Highway Patrol Retirement System
Columbus, Ohio

Dear Board:

We are pleased to present to the Board this report of the December 31, 2023 actuarial valuation of the Ohio State Highway Patrol Retirement System (OHPRS or the System).

The valuation was performed as of December 31, 2023 to determine the current funding status, funding period, the experience of the System over the past year, and provide information and trend data schedules for use in the Annual Financial Report. Use of the results for other purposes may not be applicable and produce significantly different results. Successive valuations will be performed every year.

This report does not include the related results for GASB Statements No. 67 and No. 68. Foster & Foster provided the disclosure information under Statements No. 67 and No. 68 in a separate report dated May 28, 2024. Foster & Foster prepares a separate valuation of OHPRS retiree health care benefits.

Data Sources

In preparing this report, we have relied on personnel, plan design and asset information supplied by OHPRS. In our opinion, the assumptions used in the valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated fund experience. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

Experience

The experience of the System over the last year is outlined in this report. The System experienced an actuarial loss of \$11.4 million, which consists of a \$3.5 million gain on the Fund's actuarial value of assets and a \$14.9 million loss on the System's actuarial accrued liability. Based on the actuarial value of assets, the Fund earned 7.60% compared to the assumed 7.25% return. The primary source of the liability loss was due to an average salary increase of 11.2% which exceeded the 5.0% assumption and inactive mortality experience. The loss was offset in part by the effect of favorable retirement experience. Offsetting the increase, the actuarial accrued liability decreased by \$1.75 million attributable to the assumption changes as a result of our actuarial experience study performed in February 2024.

Changes Since Prior Report

The Board of Trustees adopted changes to the following Plan assumptions in conjunction with the December 31, 2023 valuation:

- Salary Increase
- Retirement Rates
- Withdrawal Rates
- Disability Rates

- Mortality Rates
- Marriage Percentage
- DROP election
- Payroll Growth Rate

Specific changes to the above assumptions are disclosed in the Actuarial Assumptions and Methods section of this report.

Contribution Amounts

As established by Ohio Revised Code Section 5505.15, the Statutory Employer and Employee contribution rates are set as follows:

Annual Contributions to the Fund (as a % of Active Payroll)		
Employer	Employee	Totals
26.50%	10.00% to 14.00%	36.50% to 40.50%

The funding objective of the Fund is to comply with the amortization requirement of Section 5505.121 of the Revised Code, which requires the retirement board to set a policy with a period of not more than thirty years to amortize the system's unfunded actuarial accrued pension liabilities. If the funding period exceeds 30 years, a plan shall be prepared and submitted by the Board of Trustees to the Ohio retirement study commission (ORSC) to reduce the funding period to not more than 30 years. With the enactment of Senate Bill 345, the Board has the discretion to set the member contribution rate and the Cost of Living Allowance (COLA) percentage to comply with the amortization requirement of Section 5505.121 of the Revised Code.

The results presented in this report are based upon the Board decision to adopt a member contribution rate of 14.0% and a COLA rate of 0.0% beginning in calendar year 2024 and thereafter.

The purpose of this report is to provide information on the results of the December 31, 2023 actuarial valuation based upon these decisions.

Based on the results of this valuation, the unfunded actuarial accrued liabilities of the pension program are expected to be amortized over a 19-year period, so no 30-year funding plan is required.

Schedules for Annual Financial Report

The report includes information and trend data schedules for use in the Annual Financial Report. The following information and exhibits are included in the body of the report and Supplementary Tables section:

- Present Value of Future Benefits
- Membership Note Data
- Participant Statistics
- History of Change in Unfunded Accrued Liability
- History of Annuitants and Survivors Added/Dropped from Rolls
- Summary of Annuitants and Survivors by Age
- Breakdown of Aggregate Accrued Liabilities
- Expected Development of Members contributing to the System

Actuarial Certification

The valuations have been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of Chapter 5505 of the Ohio Revised Code, as amended by Senate Bill No. 345, as well as applicable federal laws and regulations. The funding percentages and unfunded accrued liability as measured based on the actuarial value of assets will differ from similar measures based on the market value of assets. These measures, as provided, are appropriate for determining the adequacy of future contributions, but may not be appropriate for the purpose of settling a portion or all of its liabilities. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements. Additionally, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models that apply the funding and accounting rules to generate the results. All internally developed models are reviewed as part of the valuation process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

In our opinion, the following valuation results fairly present the financial condition of the Ohio State Highway Patrol Retirement System as of December 31, 2023.

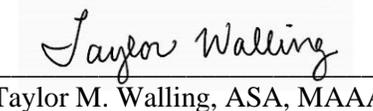
The undersigned is familiar with the immediate and long-term aspects of pension valuations and meets the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All the sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on this report has any direct financial interest or indirect material interest in the Ohio State Highway Patrol Retirement System, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Ohio State Highway Patrol Retirement System. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

We look forward to discussing the results with you.

Regards,

By: 
Bradley R. Heinrichs, FSA, EA, MAAA

By: 
Taylor M. Walling, ASA, MAAA

Foster & Foster, Inc.

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SUMMARY OF RESULTS

The table below contains a summary of key valuation results compared to the prior year values.

	December 31, 2023	December 31, 2022
Membership Data		
Active Members (Includes DROP members)		
Number	1,399	1,380
Covered Payroll	\$ 122,123,467	\$ 112,476,672
Valuation Payroll	\$ 126,389,220	\$ 116,550,531
Retirees and Beneficiaries		
Number	1,887	1,852
Annual Allowances	\$ 81,370,307	\$ 78,364,733
Vested Former Members		
Number	45	49
Deferred Annual Allowances	\$ 1,733,996	\$ 1,950,793
Inactive Members eligible for Refunds only		
Number	592	606
Contributions Refund Due	\$ 3,209,210	\$ 3,861,569
Funded Status		
Total Actuarial Liability	\$ 1,301,525,066	\$ 1,263,806,590
Actuarial Value of Assets	<u>969,142,895</u>	<u>934,493,628</u>
Unfunded Actuarial Liability	\$ 332,382,171	\$ 329,312,962
Funded Ratio	74.5%	73.9%
Market Value of Assets	\$ 952,865,676	\$ 861,142,491
Unfunded Liability (MVA basis)	\$ 348,659,390	\$ 402,664,099
Funded Ratio (MVA basis)	73.2%	68.1%
Funding Period on AVA basis	19 Years	21 Years
Contribution Rates (as a Percentage of Payroll)		
Applicable Fiscal Year	2024	2023
Statutory Contribution Rates:		
Employer	26.50%	26.50%
Member	<u>14.00%</u>	<u>13.00%</u>
Totals	40.50%	39.50%
Allocation of Employer Contribution Rate:		
Pension Contribution Rate:		
Employer Normal Cost	5.59%	6.87%
Unfunded Actuarial Accrued Liabilities	<u>20.91%</u>	<u>19.63%</u>
Total Employer Pension Rate	26.50%	26.50%
Health Care Contribution Rate	<u>0.00%</u>	<u>0.00%</u>
Total Employer Contribution Rate	26.50%	26.50%

ACTUARIAL LIABILITY AND FUNDED RATIO

Below are details regarding the actuarial liability and funded ratio as of December 31, 2023.

1.	Present Value of Future Benefits		1,479,980,114
2.	Active Members Actuarial Liability		
	Retirement	\$	435,051,044
	Termination		13,818,343
	Death & Disability		<u>7,115,564</u>
	Total	\$	455,984,951
3.	Members Receiving Benefits		
	Retirement Annuities	\$	709,933,348
	Disability Annuities		69,455,675
	Survivor Annuities/Children		<u>46,134,851</u>
	Total	\$	825,523,874
4.	Vested Former Members	\$	16,807,031
5.	Contributions Refund Due	\$	3,209,210
6.	Total Actuarial Liability	\$	1,301,525,066
7.	Actuarial Value of Assets	\$	969,142,895
8.	Unfunded Actuarial Liability	\$	332,382,171
9.	Funded Ratio		74.5%

EMPLOYER'S NORMAL COST

Below is a summary of the employer's share of the normal cost for the year beginning January 1, 2024.

Normal Cost	Normal Cost	Percent of Total Payroll
Retirement	\$ 16,678,844	13.20%
Termination	2,697,464	2.13%
Death & Disability	1,955,308	1.55%
Total Normal Cost as of beginning of year	<u>\$ 21,331,616</u>	<u>16.88%</u>
Total Normal Cost (with interest)	\$ 22,104,887	17.49%
Expected Member Contributions	\$ 17,694,491	14.00%
Employer's share of Normal Cost	\$ 4,410,396	3.49%
Expected Administrative Expenses (with interest)	\$ 1,708,615	1.35%
Purchase of Military Service	\$ 947,919	0.75%
Employer's share of Normal Cost, adjusted for expected administrative expenses and purchase of military service	\$ 7,066,930	5.59%
Unfunded Actuarial Accrued Liabilities Amortization Rate		20.91%
Pension Employer Contribution Rate		26.50%
Post-Retirement Health Care	\$ -	0.00%
Total Employer Contribution Rate		26.50%
Valuation Payroll	<u>\$ 126,389,220</u>	

UNFUNDED ACTUARIAL LIABILITY

1. Unfunded Actuarial Accrued Liability (UAAL) as of December 31, 2022	\$	329,312,962
2. Total Normal Cost, Developed as of December 31, 2022		21,509,696
3. Expected Interest (7.25%) on 1. and 2.		25,434,643
4. Contributions		51,699,296
5. Expected Interest (7.25%, mid-year) on 4.		1,841,310
6. Expected UAAL as of December 31, 2023 (1)+(2)+(3)-(4)-(5)		322,716,695
7. Change in UAAL due to actuarial (gain)/loss, by component		
Decrease in UAAL due to investment return higher than assumed		(3,542,558)
Increase in UAAL due to salary increases higher than assumed		13,745,478
Decrease in UAAL due to decrement experience		(916,865)
Increase in UAAL due to inactive mortality experience		2,383,873
Decrease in UAAL due to other changes		<u>(251,430)</u>
Net increase in UAAL due to actuarial experience		11,418,498
8. Change in UAAL due to assumption changes		(1,753,022)
9. Change in UAAL due to benefit changes		-
10. Unfunded Actuarial Accrued Liability as of December 31, 2023	\$	332,382,171

ANALYSIS OF PLAN EXPERIENCE

Below is the detail analysis of Gains and Losses due to plan experience resulting in differences between Assumed and Actual Experience.

Type of Activity	(Gain) or Loss for Year Ended 12/31	
	2023	2022
Age & Service Retirements. If members retire at older ages or with lower final average pay than assumed, there is a gain. If younger ages or higher average pays, a loss.	(\$ 2,691,271)	\$ 3,880,308
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	519,215	2,059,179
Death-in-Service Benefits. If more liabilities are released by death-in-service claims than assumed, there is a gain. If smaller releases, a loss.	306,107	296,429
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	949,084	(2,052,060)
Salary Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	13,745,478	7,815,539
Investment Return. If there is greater investment return on pension assets than assumed, there is a gain. If less return, a loss.	(3,542,558)	(19,794,133)
Inactive Mortality Experience. If more deaths occur than assumed, there is a gain. If fewer deaths than assumed, there is a loss.	2,383,873	(876,461)
Other Changes. Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, DROP account interest crediting, etc.	(251,430)	(256,441)
(Gain) or Loss During Year from Experience	\$ 11,418,498	(\$ 8,927,640)
Non-Recurring Items Effect of Assumption Changes/Method Changes/Benefit Changes	(1,753,022)	32,517
Composite (Gain) or Loss During Year	\$ 9,665,476	(\$ 8,895,123)

CHANGE IN FUNDED RATIO

1. Funded ratio as of December 31, 2022	73.9%
2. Expected funded ratio as of December 31, 2023	75.0%
3. Change in funded ratio due to actuarial (gain)/loss, by component	
Increase in funded ratio due to investment return higher than assumed	0.2%
Decrease in funded ratio due to salary increases higher than assumed	-0.8%
Increase in funded ratio due to decrement experience	0.1%
Decrease in funded ratio due to inactive mortality experience	-0.2%
Increase in funded ratio due to other changes	<u>0.1%</u>
Net decrease in funded ratio due to actuarial experience	-0.6%
4. Change in UAAL due to assumption changes	0.1%
5. Change in UAAL due to the benefit changes	0.0%
6. Funded Ratio as of December 31, 2023	74.5%

UNFUNDED ACTUARIAL ACCRUED LIABILITY

FUNDING PERIOD

Below is the schedule illustrating the Amortization of the Total Unfunded Actuarial Accrued Liability as of December 31, 2023.

Year	Projected Unfunded Actuarial Accrued Liability at Beginning of the Year	Assumed Amortization Contribution Rate ¹	Assumed Payroll 2.75% Growth Rate	Mid-Year Amortization Contribution Amount	Projected Unfunded Actuarial Accrued Liability at End of the Year
1	\$ 332,382,171	20.91%	\$ 126,389,220	\$ 26,427,986	\$ 329,110,640
2	329,110,640	20.94%	129,864,924	27,193,715	324,808,922
3	324,808,922	20.96%	133,436,209	27,968,229	319,393,230
4	319,393,230	20.96%	137,105,705	28,737,356	312,788,380
5	312,788,380	20.97%	140,876,112	29,541,721	304,871,666
6	304,871,666	20.98%	144,750,205	30,368,593	295,524,668
7	295,524,668	21.01%	148,730,836	31,248,349	284,588,924
8	284,588,924	21.00%	152,820,934	32,092,396	271,986,230
9	271,986,230	20.99%	157,023,510	32,959,235	257,572,129
10	257,572,129	20.99%	161,341,657	33,865,614	241,174,345
11	241,174,345	21.00%	165,778,553	34,813,496	222,606,080
12	222,606,080	21.00%	170,337,463	35,770,867	201,700,147
13	201,700,147	21.01%	175,021,743	36,772,068	178,241,675
14	178,241,675	21.01%	179,834,841	37,783,300	152,035,216
15	152,035,216	21.00%	184,780,299	38,803,863	122,871,877
16	122,871,877	20.97%	189,861,757	39,814,010	90,548,072
17	90,548,072	20.96%	195,082,955	40,889,387	54,767,114
18	54,767,114	20.93%	200,447,736	41,953,711	15,289,806
19	15,289,806	20.90%	205,960,049	15,834,364	0

Funding Period = 19 Years

1. The amortization contribution rate is the total statutory contribution rate, minus the total normal cost rate, minus the health care contribution rate. The statutory contribution rate is assumed to remain unchanged except for any legislated increases. The administrative expense is projected to increase at the assumed inflation rate of 2.50% per year. The impact of House Bill 362 and Funding Policy adopted by the Board of Trustees is reflected in the above.

DEVELOPMENT OF ASSETS

Development of Investment Gain/(Loss)

Market Value of Assets, 12/31/2022	\$ 976,278,287
Contributions Less Benefit Payments & Admin Expenses	(43,111,191)
Expected Investment Earnings for 2023	<u>69,217,395</u>
Expected Market Value of Assets, 12/31/2023	\$ 1,002,384,490
Actual Net Investment Income/(Loss) for 2023	\$ 143,597,863
2023 Investment Gain/(Loss), (Actual less Expected)	\$ 74,380,468

Development of Actuarial Value of Assets

Plan Year Ending	Gain/(Loss)	Gains/(Losses) Not Yet Recognized by Valuation Year		
		2023	2024	2025
12/31/2020	71,468,544	0	0	0
12/31/2021	81,945,517	20,486,379	0	0
12/31/2022	(189,330,890)	(94,665,445)	(47,332,722)	0
12/31/2023	74,380,468	<u>55,785,351</u>	<u>37,190,234</u>	<u>18,595,117</u>
Total		(18,393,715)	(10,142,488)	18,595,117

Market Value of Assets, 12/31/2023	\$ 1,076,764,958
Less: Unrecognized Amounts as of 12/31/2023	<u>(18,393,715)</u>
Preliminary Actuarial Value of Assets, 12/31/2023	\$ 1,095,158,673
Corridor Percent	20%
Upper Corridor Limit	1,292,117,950
Lower Corridor Limit	861,411,967
Actuarial Value of Assets, 12/31/2023	\$ 1,095,158,673

Calculation of Rates of Return

Rates of return calculated below are based on a formula defined by the IRS. Therefore, the returns may differ from investment returns calculated for other purposes. The formula is defined as $(2 * I)$ divided by $(A + B - I)$ where A, B and I are as follows:

(A) 12/31/2022 Actuarial Assets:	\$ 1,059,436,560
(I) Net Investment Income:	
1. Interest, Dividends, & Realized/Unrealized Gain/Loss (net of investment expenses)	143,597,863
2. Change in Actuarial Value	<u>(64,764,558)</u>
Total	\$ 78,833,305
(B) 12/31/2023 Actuarial Assets:	\$ 1,095,158,673
Actuarial Asset Rate of Return = $2I/(A+B-I)$:	7.6%
Market Value of Assets Rate of Return:	15.0%
12/31/2023 Limited Actuarial Assets:	1,095,158,673

STATEMENT OF FIDUCIARY NET POSITION
 December 31, 2023

	MARKET VALUE		TOTAL
	PENSION	HEALTH	
<u>ASSETS</u>			
Cash and Cash Equivalents:			
Cash and Short Term Investments	44,829,053	5,830,968	50,660,021
Total Cash and Equivalents	44,829,053	5,830,968	50,660,021
Receivables:			
Employer Contributions Receivable	1,410,541	0	1,410,541
Member Contributions Receivable	1,123,697	0	1,123,697
Accrued Investment Income	7,273,090	946,020	8,219,110
Health Care Receivable	0	59,741	59,741
Miscellaneous Receivable	2,491	0	2,491
Total Receivables	9,809,819	1,005,761	10,815,580
Investments:			
Domestic Equity	194,467,599	25,280,585	219,748,184
International Equity	50,683,305	6,588,231	57,271,536
Fixed Income	99,435,525	12,925,444	112,360,969
Real Estate	73,785,986	9,591,307	83,377,293
Private Equity	223,573,409	29,061,903	252,635,312
Hedge Funds	52,753,408	6,857,320	59,610,728
Direct Infrastructure	17,161,501	2,230,793	19,392,294
Global Equity	198,679,379	25,825,973	224,505,352
Total Investments	910,540,112	118,361,556	1,028,901,668
Other	102,728	1,292	104,020
Total Assets	<u>965,281,712</u>	<u>125,199,577</u>	<u>1,090,481,289</u>
Deferred Outflows of Resources	559,380	110,356	669,736
<u>LIABILITIES</u>			
Payables:			
Accounts Payable	337,756	43,932	381,688
Accrued Payroll Liabilities	288,054	37,468	325,522
Accrued Pension Liabilities	11,151,939	0	11,151,939
Accrued Health Care Liabilities	0	1,275,970	1,275,970
Net Pension Liability	1,161,515	0	1,161,515
Net OPEB Liability	0	32,594	32,594
Total Liabilities	<u>12,939,264</u>	<u>1,389,964</u>	<u>14,329,228</u>
Deferred Inflows of Resources	36,152	20,686	56,838
Net Assets:			
Active and Retired Members' Equity	952,865,676	123,899,283	1,076,764,959
Employees' Savings Fund			130,246,404
Employer Accumulation Fund			123,899,283
Pension Reserve Fund			822,619,273
Survivors Benefit Fund			0
Health Care Fund			123,899,283
Income Fund			(123,899,284)
Total Fund Balance			1,076,764,959
NET POSITION			1,076,764,959

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
 FOR THE YEAR ENDED December 31, 2023
 Market Value Basis

	PENSION	HEALTH	TOTAL
ADDITIONS			
Contributions:			
Member Contribution	16,212,050	2,473,472	18,685,522
Employer Contributions	33,039,696	0	33,039,696
Medicare Reimbursement		495,588	495,588
Transfers	2,447,550		2,447,550
Total Contributions	51,699,296	2,969,060	54,668,356
Net Investment Income ¹	127,085,384	16,512,479	143,597,863
Total Additions	178,784,680	19,481,539	198,266,219
DEDUCTIONS			
Distributions to Members:			
Benefit Payments	84,411,578	10,462,275	94,873,853
Refund of Member Contributions	543,483		543,483
Death Benefit	140,000		140,000
Total Distributions	85,095,061	10,462,275	95,557,336
Administrative Expenses	1,966,434	255,777	2,222,211
Total Deductions	87,061,495	10,718,052	97,779,547
Net Increase in Net Position	91,723,185	8,763,487	100,486,672
NET POSITION			
Beginning of the Year	861,142,491	115,135,796	976,278,287
End of the Year	952,865,676	123,899,283	1,076,764,958
Actuarial Value End of Year ²	969,142,895	126,015,778	1,095,158,673

¹ Investment related expenses include investment management, investment consulting, custodial and securities lending bank fees.

² Actuarial Value is allocated in proportion to the Market Value

PARTICIPANT DATA

Participant Information	December 31, 2023	December 31, 2022	Change
Number Total Active Members	1,399	1,380	1.4%
Number Active DROP Members	164	144	13.9%
Number Receiving Benefits			
Retirement Annuities	1,409	1,382	2.0%
Surviving Annuities	317	312	1.6%
Disability Annuities	161	158	1.9%
Number Inactive Members - Vested	45	49	-8.2%
Total Members	3,331	3,281	1.5%
Active Statistics – Total			
Number	1,399	1,380	1.4%
Average Age	38.8	39.1	-0.8%
Average Service	13.6	13.9	-1.7%
Covered Payroll	\$ 122,123,467	\$ 112,476,672	8.6%
Average Payroll	\$ 87,293	\$ 81,505	7.1%
Active Statistics – DROP Members			
Number	164	144	13.9%
Average Age	52.7	52.7	0.1%
Average Service	26.5	26.8	-1.1%
Average Age at DROP	50.3	50.2	0.3%
Average Service at DROP	24.1	24.3	-0.8%
Covered Payroll	\$ 17,242,912	\$ 14,107,538	22.2%
Average Payroll	\$ 105,140	\$ 97,969	7.3%
Annual Benefit Payments for Members			
Receiving Benefits			
Retirement Annuities	\$ 69,100,895	\$ 66,477,315	3.9%
Surviving Annuities	\$ 6,073,212	\$ 5,890,491	3.1%
Disability Annuities	\$ 6,196,200	\$ 5,996,927	3.3%

Participant Reconciliation

	Active	Active DROP	Inactive Vested	Retiree	Survivors	Disabled	Total Count
<i>As of 12/31/2022</i>	1,236	144	49	1,382	312	158	3,281
DROPs In	(50)	50					0
Terminations							
Vested	(5)		5				0
Not Vested	(29)						(29)
Retirements	(14)	(30)	(9)	53			0
Disabled	(5)					5	0
Deaths							
w/o Beneficiary				(4)	(16)	(1)	(21)
w/ Beneficiary				(22)	24	(1)	1
New Member	94						94
Return to Work	8						8
Benefit Expired					(3)		(3)
Adjustments	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net Change	(1)	20	(4)	27	5	3	50
<i>As of 12/31/2023</i>	1,235	164	45	1,409	317	161	3,331

Active Member Statistics

DROP Status	Sex	Count	Avg Age	Avg Svc	Covered Payroll	
					Total	Average
Not Yet in DROP	M	1,134	37.1	12.1	96,677,359	85,253
	F	<u>101</u>	35.5	10.3	<u>8,203,196</u>	81,220
	Total	1,235	37.0	11.9	104,880,555	84,924
In DROP	M	151	52.7	26.6	15,909,533	105,361
	F	<u>13</u>	52.8	25.9	<u>1,333,379</u>	102,568
	Total	164	52.7	26.5	17,242,912	105,140
Total	M	1,285	39.0	13.8	112,586,892	87,616
	F	<u>114</u>	37.4	12.1	<u>9,536,575</u>	83,654
	Total	1,399	38.8	13.6	122,123,467	87,293

Active Age Service Grid - Total

Total Active Member Count and Covered Payroll by Age and Service

Age	Years of Service									Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<25	57	40								97
	\$42,356	\$61,461								\$50,234
25-29	22	90	97							209
	\$40,889	\$67,056	\$81,697							\$71,097
30-34	13	25	144	64	1					247
	\$45,267	\$65,846	\$84,887	\$89,735	\$87,932					\$82,143
35-39	4	6	49	109	21	2				191
	\$44,263	\$70,295	\$82,820	\$91,582	\$96,209	\$89,144				\$88,158
40-44			11	43	89	65	3			211
			\$89,242	\$90,403	\$97,372	\$102,332	\$106,388			\$97,184
45-49				12	45	118	72	1		248
				\$91,382	\$95,399	\$99,553	\$105,271	\$139,554		\$100,225
50-54				1	15	62	57	26	1	162
				\$89,900	\$91,638	\$93,276	\$106,125	\$115,505	\$125,164	\$101,389
55-59				1		5	9	19		34
				\$98,739		\$92,052	\$100,671	\$105,913		\$102,276
60-64										
65-69										
70+										
Total	96	161	301	230	171	252	141	46	1	1,399
	\$42,493	\$65,599	\$83,682	\$90,861	\$96,152	\$98,494	\$105,346	\$112,066	\$125,164	\$87,293

Active Age Service Grid – DROP Members

Active DROP Member Count and Covered Payroll by Age and Service

Age	Years of Service									Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<25										
25-29										
30-34										
35-39										
40-44										
45-49							28	1		29
							\$106,368	\$139,554		\$107,512
50-54						31	47	26	1	105
						\$92,566	\$106,749	\$115,505	\$125,164	\$104,905
55-59						3	8	19		30
						\$93,814	\$102,030	\$105,913		\$103,667
60-64										
65-69										
70+										
Total						34	83	46	1	164
						\$92,676	\$106,165	\$112,066	\$125,164	\$105,140

Annuitant Statistics

Retirement Annuities

Sex	Count	Avg Age	Total Annuity	Average Annuity
M	1,335	68.1	65,746,561	49,248
F	<u>74</u>	58.7	<u>3,354,334</u>	45,329
Total	1,409	67.6	69,100,895	49,043

Survivor Annuities

Sex	Count	Avg Age	Total Annuity	Average
M	13	31.4	65,158	5,012
F	<u>304</u>	73.3	<u>6,008,054</u>	19,763
Total	317	71.6	6,073,212	19,158

Disability Retirement Annuities

Sex	Count	Avg Age	Total Annuity	Average
M	138	56.8	5,321,029	38,558
F	<u>23</u>	55.2	<u>875,171</u>	38,051
Total	161	56.5	6,196,200	38,486

Deferred Annuities

Sex	Count	Avg Age	Total Annuity	Average
M	41	48.3	1,612,852	39,338
F	<u>4</u>	50.4	<u>121,144</u>	30,286
Total	45	48.5	1,733,996	38,533

Distribution of Retirement Annuities by Age

	Male			Female			Total		
	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities
x < 45	0	0	0	0	0	0	0	0	0
45 <= x < 50	19	1,005,947	52,945	6	308,037	51,340	25	1,313,984	52,559
50 <= x < 55	146	7,085,511	48,531	18	789,213	43,845	164	7,874,724	48,017
55 <= x < 60	195	8,818,613	45,224	18	775,794	43,100	213	9,594,407	45,044
60 <= x < 65	202	10,056,946	49,787	22	1,027,856	46,721	224	11,084,802	49,486
65 <= x < 70	190	10,022,947	52,752	7	337,182	48,169	197	10,360,129	52,589
70 <= x < 75	174	9,334,971	53,649	2	80,658	40,329	176	9,415,629	53,498
75 <= x < 80	231	11,570,707	50,090	1	35,594	35,594	232	11,606,301	50,027
80 <= x < 85	116	5,479,198	47,234	0	0	0	116	5,479,198	47,234
85 <= x < 90	45	1,841,547	40,923	0	0	0	45	1,841,547	40,923
90 <= x	17	530,174	31,187	0	0	0	17	530,174	31,187
Total	1,335	65,746,561	49,248	74	3,354,334	45,329	1,409	69,100,895	49,043

Distribution of Survivor Annuities by Age

	Male			Female			Total		
	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities
x < 20	7	12,600	1,800	13	23,400	1,800	20	36,000	1,800
20 <= x < 25	1	1,800	1,800	4	7,200	1,800	5	9,000	1,800
25 <= x < 30	0	0	0	1	11,583	11,583	1	11,583	11,583
30 <= x < 35	0	0	0	0	0	0	0	0	0
35 <= x < 40	0	0	0	2	38,301	19,151	2	38,301	19,151
40 <= x < 45	1	10,935	10,935	3	27,936	9,312	4	38,871	9,718
45 <= x < 50	1	1,800	1,800	6	74,992	12,499	7	76,792	10,970
50 <= x < 55	1	14,247	14,247	8	135,003	16,875	9	149,250	16,583
55 <= x < 60	1	20,756	20,756	10	196,462	19,646	11	217,218	19,747
60 <= x < 65	1	3,020	3,020	15	348,835	23,256	16	351,855	21,991
65 <= x < 70	0	0	0	23	515,929	22,432	23	515,929	22,432
70 <= x < 75	0	0	0	35	835,714	23,878	35	835,714	23,878
75 <= x < 80	0	0	0	57	1,241,269	21,777	57	1,241,269	21,777
80 <= x < 85	0	0	0	59	1,245,497	21,110	59	1,245,497	21,110
85 <= x < 90	0	0	0	31	633,307	20,429	31	633,307	20,429
90 <= x	0	0	0	37	672,626	18,179	37	672,626	18,179
Total	13	65,158	5,012	304	6,008,054	19,763	317	6,073,212	19,158

Distribution of Disability Annuities by Age

	Male			Female			Total		
	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities
x < 20	0	0	0	0	0	0	0	0	0
20 <= x < 25	0	0	0	0	0	0	0	0	0
25 <= x < 30	3	101,956	33,985	0	0	0	3	101,956	33,985
30 <= x < 35	2	72,717	36,359	0	0	0	2	72,717	36,359
35 <= x < 40	6	202,147	33,691	0	0	0	6	202,147	33,691
40 <= x < 45	9	309,268	34,363	2	82,276	41,138	11	391,544	35,595
45 <= x < 50	17	662,722	38,984	3	103,871	34,624	20	766,593	38,330
50 <= x < 55	27	1,050,402	38,904	6	239,918	39,986	33	1,290,320	39,101
55 <= x < 60	20	725,568	36,278	7	285,185	40,741	27	1,010,753	37,435
60 <= x < 65	19	838,485	44,131	3	104,144	34,715	22	942,629	42,847
65 <= x < 70	14	606,861	43,347	2	59,777	29,889	16	666,638	41,665
70 <= x < 75	11	413,537	37,594	0	0	0	11	413,537	37,594
75 <= x < 80	9	313,465	34,829	0	0	0	9	313,465	34,829
80 <= x < 85	1	23,901	23,901	0	0	0	1	23,901	23,901
85 <= x < 90	0	0	0	0	0	0	0	0	0
90 <= x	0	0	0	0	0	0	0	0	0
Total	138	5,321,029	38,558	23	875,171	38,051	161	6,196,200	38,486

Distribution of Deferred Annuities by Age

	Male			Female			Total		
	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities	Count	Total Annuities	Average Annuities
x < 40	1	16,857	16,857	0	0	0	1	16,857	16,857
40 <= x < 45	6	235,614	39,269	0	0	0	6	235,614	39,269
45 <= x < 50	24	1,060,676	44,195	2	53,550	26,775	26	1,114,226	42,855
50 <= x < 55	9	271,148	30,128	2	67,594	33,797	11	338,742	30,795
55 <= x < 60	0	0	0	0	0	0	0	0	0
60 <= x < 65	0	0	0	0	0	0	0	-	0
65 <= x < 70	1	28,557	28,557	0	0	0	1	28,557	28,557
70 <= x	0	0	0	0	0	0	0	0	0
Total	41	1,612,852	39,338	4	121,144	30,286	45	1,733,996	38,533

ACTUARIAL ASSUMPTIONS AND METHODS

Below is a summary of the actuarial assumptions for the December 31, 2023 valuation. An experience study was performed in February of 2024 based on data for the period December 31, 2017 through December 31, 2022. The assumptions below are based on the experience study and were adopted effective December 31, 2023.

Interest Rate	7.25% (net of investment-related expenses)
Mortality Rates	<p><i>Healthy Active Lives:</i> PubS-2010 (amount-weighted, below-median) employee tables adjusted by 100.4%.</p> <p><i>Retiree and Vested Terminated Lives:</i> PubS-2010 (amount-weighted) healthy retiree tables adjusted by 94.5%.</p> <p><i>Contingent Survivor Lives:</i> PubS-2010 (amount-weighted, above-median) contingent survivor tables adjusted by 109.7%.</p> <p><i>Disabled Lives:</i> PubS-2010 (amount-weighted) disabled retiree tables adjusted by 101.6%.</p> <p>The mortality assumptions for all participants are sex distinct with generational mortality improvement using 75% of most recent projection scale (currently scale MP-2021) and a base year of 2010. We feel these assumptions sufficiently accommodate anticipated future mortality improvements.</p>
Cost-of-Living Adjustment	0.00% for calendar year 2021; 3.00% for calendar year 2022 & 2023 and then 0.00% thereafter.
Inflation	2.50%
Salary Increases	See Table 1 later in this section.
Retirement Rates	See Table 2 later in this section.
Termination Rates	See Table 3 later in this section.
Disability Rates	See Table 4 later in this section.
Percent Married	75% (Previously 80%)

Spousal Age Difference	Spouse of male member assumed to be 3 years younger than member; Spouse of female member assumed to be 3 years older than member.
Purchasing Military Service Load	0.75% of payroll is included in pension normal cost calculations.
Dependent Children	Members who receive a death-in-service benefit are assumed to have two children for whom benefits are paid for 10 years.
Contribution Rates	Members – 13.0% in 2023 and 14.0% in 2024 and later. State – 26.50%
Actuarial Cost Method	Entry Age Normal, with costs allocated on basis of earnings. Actuarial gains and losses are reflected in the unfunded actuarial liability.
Actuarial Asset Method	Market value of assets adjusted by the unrecognized investment gains and losses for each of the four years prior to the valuation date. Gains and losses are recognized at a rate of 25% per year. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.
Low-Default-Risk Obligation Measure	Based on the Entry Age Normal Actuarial Cost Method and an interest rate of 4.00% per year compounded annually, net of investment related expenses. This rate is consistent with the Yield to Maturity of the S&P Municipal Bond 20-Year High Grade Rate Index as of December 29, 2023. All other assumptions for the Low-Default-Risk Obligation Measure are consistent with the assumptions shown in this section unless otherwise noted.
Payroll Growth	2.75%(Previously 3.00%)for purposes of amortizing the Unfunded Actuarial Accrued Liability.
Administrative Expenses	\$1,648,844 annually, based on the average of actual expenses incurred in the prior two fiscal years and then increases based on 2.5% inflation rate annually.
DROP Duration	5 years.
DROP Election	20% (Previously 15%) of active members eligible for unreduced retirement/DROP do not enter the DROP or retire in any given year prior to age 60.
Source of Data	Data and audited financial information is provided by the Fund.
Valuation Date	December 31, 2023.

Assumption Table

Table 1 – Salary Increase Rates

Service	Salary Increase Rate	
	Current	Prior
0	20.50%	13.50%
1	10.50%	13.50%
2	9.50%	9.50%
3	9.50%	9.50%
4	8.50%	8.00%
5	7.00%	8.00%
6-11	5.00%	5.00%
12+	3.90%	3.80%

Table 2 – Retirement Rates

Age	Normal Retirement Rate		Early Retirement Rate	
	Current	Prior	Current	Prior
48	22%	20%	7.5%	5%
49	15%	15%	7.5%	5%
50	16%	15%	7.5%	5%
51	22%	15%	13.5%	10%
52	20%	20%		
53	15%	10%		
54	20%	20%		
55	30%	30%		
56	40%	40%		
57-58	35%	40%		
59	60%	40%		
60+	100%	100%		

Table 3 – Termination Rates

Service	Termination Rate	
	Current	Prior
0	12.50%	13.00%
1-2	6.50%	6.50%
3-4	6.50%	4.50%
5	5.00%	4.50%
6-8	3.50%	2.50%
9	2.50%	2.50%
10	2.50%	1.00%
11-17	1.00%	1.00%
18	1.25%	1.00%
19-20	1.75%	1.00%
21+	4.00%	2.50%

Table 4 – Disability Rates (Sample Rates)

Age	Disability Rate	
	Current	Prior
20	0.06%	0.06%
25	0.06%	0.06%
30	0.16%	0.17%
35	0.29%	0.32%
40	0.49%	0.53%
45	0.59%	0.64%
50	0.78%	0.85%
55	0.85%	1.00%
60	0.00%	0.00%

60% (Previously 55%) of disabilities assumed to be service-incurred.

Changes in Funding Assumptions/Methods Since the Prior Valuation

The valuation reflects the following assumption changes to better reflect anticipated experience. These changes were based on an experience study performed February 8, 2024:

- Updated retirement rates, withdrawal rates, disability rates and mortality rates.
- Updated salary increase rates.
- Updated the DROP election to assume that 20% of active members eligible for unreduced retirement/DROP do not enter the DROP or retire in any given year prior to age 60.
- Lowered the payroll growth assumption from 3.00% to 2.75%.
- Decreased marriage percentage from 80% to 75%.

There have been no changes of methods since the prior valuation.

GLOSSARY

Actuarial Value of Assets is the asset value used in the valuation to determine contribution requirements. It represents the plan's Market Value of Assets (see below), with adjustments according to the plan's Actuarial Asset Method. These adjustments produce a "smoothed" value that is likely to be less volatile from year to year than the Market Value of Assets.

Covered Payroll is the annualized pensionable salary earned during the year ended on the valuation date.

Entry Age Normal Cost Method - Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

- (a) The normal cost accrual rate equals:
 - (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
 - (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.
- (b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.
- (c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.
- (d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

Market Value of Assets is the fair market value of plan assets as of the valuation date. This amount may be adjusted to produce an Actuarial Value of Assets for plan funding purposes.

Normal (Current Year's) Cost is the current year's cost for benefits yet to be funded. Under the Entry Age Normal cost method, it is determined for each participant as the present value of future benefits, determined as of the Member's entry age, amortized as a level percentage of compensation over the anticipated number of years of participation, determined as of the entry age.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current plan participants.

Unfunded Actuarial Accrued Liability (UAAL) is the difference between the actuarial accrued liability (described above) and the Actuarial Value of Assets. Under the Entry Age Normal Actuarial Cost Method, an actuarial gain or loss, based on actual versus expected UAAL, is determined in conjunction with each valuation of the plan.

Valuation Payroll is the projected annual pensionable salary starting on the valuation date of all active participants who are not subject to a 100% probability of retirement on the valuation date.

Actuarial Determined Contribution (ADC) is the level of employer contribution effort that would be required on a sustained, ongoing basis to:

- (a) fund the normal cost (cost associated with new service received) each year and
- (b) amortize the total unfunded actuarial accrued liability (or funding excess) attributed to past services over a funding period, which is no more than thirty years.

DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined under various assumption scenarios. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's amortization period. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization period could potentially grow to an unmanageable level.

- **Investment Return:** When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, amortization periods can vary in the future.
- **Salary Increases:** When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- **Payroll Growth:** The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization period can increase significantly even if all assumptions other than the payroll growth assumption are realized since anticipated contribution rely upon membership payroll.
- **Demographic Assumptions:** Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

- **Amortization Period:** Risks associated with the items outlined above will inherently create varying liabilities and assets resulting in volatility in the amortization period. Actuarial losses on assets and liabilities will lead to longer amortization periods, while actuarial gains on assets and liabilities will lead to shorter amortization periods.
- **Contribution Risk:** This risk results from the potential that the total annual contributions, based on fixed-rates for the State and membership, may deviate from actuarially determined contributions. The actuarially determined contributions are adjusted in conjunction with each actuarial valuation to take into account the deviation in actual versus expected experience between valuation dates. Fixed-rate contribution structures include the risk that scheduled contributions do not reflect the actual cost of plan benefits, meaning that in order to maintain actuarially sound funding levels, contribution rate increases, or benefit reductions may be required.

Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature plans with a substantial inactive liability. Similarly, mature plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the Fund, we have provided some relevant metrics in the table following titled “Fund Maturity Measures and Other Risk Metrics”. Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has decreased from 104.9% on December 31, 2013 to 72.4% as of December 31, 2023, indicating that the plan has been maturing during the period.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the Fund, to the Total Accrued Liability, is 64.7%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors must be made up over a shorter time horizon than would be needed for a less mature plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has increased from 69.8% on December 31, 2013 to 74.5% on December 31, 2023.

- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, is around -5.1% to -4.0%. A Net Cash Flow Ratio in this range indicates that contributions are not sufficient to cover the Fund's benefit payments and administrative expenses.

Low Default-Risk Obligation Measure

ASOP No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, was revised as of December 2021 to include a "low-default-risk obligation measure" (LDROM). This liability measure is consistent with the determination of the actuarial accrued liability shown on page 2 in terms of member data, plan provisions, and assumptions/methods, including the use of the Entry Age Normal Cost Method, except that the interest rate is tied to low-default-risk fixed income securities. The S&P Municipal Bond 20 Year High Grade Rate Index (daily rate closest to, but not later than, the measurement date) was selected to represent a current market rate of low risk but longer-term investments that could be included in a low-risk asset portfolio. The interest rate used in this valuation was 4.00%, resulting in an LDROM of \$1,869,447,815. The LDROM should not be considered the "correct" liability measurement; it simply shows a possible outcome if the Board elected to hold a very low risk asset portfolio. Given that plan benefits are paid over time through the combination of contributions and investment returns, prudent investments selected by the Board help to balance asset accumulation through these two sources.

It is important to note that the actuary has identified the risks above as the most significant risks based on the characteristics of the Fund and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed in the cover letter of this report.

Fund Maturity Measures and Other Risk Metrics

	12/31/2023	12/31/2022	12/31/2018	12/31/2013
<u>Support Ratio</u>				
Total Actives	1,399	1,380	1,668	1,613
Total Inactives	1,932	1,901	1,688	1,537
Actives / Inactives	72.4%	72.6%	98.8%	104.9%
<u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	952,865,676	861,142,491	715,480,960	728,968,175
Total Covered Payroll	122,123,467	112,476,672	116,009,622	98,519,844
MVA / Total Covered Payroll	780.2%	765.6%	616.7%	739.9%
<u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	842,330,905	830,076,790	706,952,911	601,342,081
Total Accrued Liability	1,301,525,066	1,263,806,590	1,158,179,566	989,101,470
Inactive AL / Total AL	64.7%	65.7%	61.0%	60.8%
<u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	969,142,895	934,493,628	769,097,204	690,605,582
Total Accrued Liability	1,301,525,066	1,263,806,590	1,158,179,566	989,101,470
AVA / Total Accrued Liability	74.5%	73.9%	66.4%	69.8%
<u>Net Cash Flow Ratio</u>				
Net Cash Flow ¹	(37,809,749)	(43,659,740)	(33,264,229)	(30,436,760)
Market Value of Assets (MVA)	952,865,676	861,142,491	715,480,960	728,968,175
Ratio	-4.0%	-5.1%	-4.6%	-4.2%

¹ Determined as total contributions minus benefit payments and administrative expenses.

PLAN PROVISIONS

The following describe and reflect provisions in effect as described in Chapter 5505 of the Ohio Revised Code.

Membership Eligibility

All sworn officers and cadets in training at the academy are required to become members of the retirement system. The beginning date of membership in the system for sworn officers hired prior to June 30, 1991, is the commission date. All cadets entering the academy after that date become members of OHPRS upon entering the academy. Any persons hired prior to November 2, 1989, in the radio division are HPRS members. The beginning date of membership of the radio division member is the date of hire.

Highway Patrol Retirement System

The Plan is established and administered as prescribed by “Chapter 5505-Highway Patrol Retirement System” of the Ohio Revised Code.

Plan Administration

The Plan is administered by a Board of Trustees comprised of:

- a) The superintendent of the state highway patrol,
- b) Two retired Members who reside in Ohio,
- c) Five active Members,
- d) One member appointed by the treasurer of state, and
- e) Two investment expert members. One is appointed by the governor, and the other is jointly appointed by the speaker of the house of representatives and the president of the senate.

Credited Service

Total service credit is the total years of contributing service, or part thereof, purchased service credit and any additional service credit approved by the Board.

Normal Retirement

Eligibility

Age 52 and 20 years of Credited Service. or
Age 48 with 25 years of Credited Service if hired prior to January 1, 2020.

Benefit

Sum of:

- a) 2.5% of final average salary [average of salaries during highest 5 years (3 years prior to January 1, 2015)] times years of service not in excess of 20,
- b) 2.25% of final average salary times years of service in excess of 20 but not in excess of 25 and,
- c) 2% of final average salary times years of service in excess of 25. The maximum pension payable is 79.25% of the member’s final average salary.

A member must retire upon attainment of age 60 or completion of 20 years of service, whichever occurs later.

Form of Benefit

A member can elect one of the following options:

- a) A Single Life Annuity or,
- b) Actuarial equivalent Joint and Survivor Annuity with designating any percentage over 10% to the beneficiary or,
- c) Life Annuity Certain and Continuous between 5 to 20 years or,
- d) Partial Lump Sum if a member who is at least 52 with 20 years of total service; the partial lump sum benefit is not less than 6 times the monthly amount payable to the member as a single lifetime pension and not more than 60 times that amount

Early Retirement

Eligibility

Age 48 through 51 and has accumulated at least 20 years but less than 25 years of Credited Service. Or
 Age 48 through 51 and has accumulated at least 20 years of Credited Service if hired on or after January 1, 2020.

Benefit

Normal Retirement benefit, reduced as followed

Attained Age	Percent of normal retirement benefit
48	75%
49	80%
50	86%
51	93%

Form of Benefit

Same as Normal Retirement.

Disability Benefit

Eligibility

Total and permanent as determined by the Board of Trustees incapacitated for in the line of duty or five or more years of service for disability incurred off-duty.

Benefit Amount

- A maximum of:
- a) 61.25% of final average salary, and;
 - b) The normal retirement pension that the Member is entitled to receive if he or she retired immediately.

For off-duty disabilities, a benefit is the larger of:

- a) 30% of final average salary or
- b) normal retirement pension.

Cost-of-Living Adjustment

Retirees: A cost of living allowance (COLA) will be received after age 60 (age 53 for members retired or entered the DROP prior to 1/7/2013) or twelve months after they retire, whichever is later.

Disability members retired prior to 1/7/2013 are eligible for the increase after receiving benefits for sixty months or age 53 whichever occurs first.

The board establishes an annual COLA between 0% and 3% and must be based on compliance with the amortization period requirement of section 5505.121 of the Ohio Revised Code. The board's determination shall be based on the annual actuarial valuation required by section 5505.12 of the Ohio Revised Code. If the board determines that an increase may be made, the increase shall not exceed three percent (3%) of the eligible person's pension. The base pension used in the first calculation for the additional COLA amount shall remain as the COLA base for all future increases. The current COLA is as follows:

Calendar Year	COLA
2021	0.00%
2022-2023	3.00%
2024+	0.00%

Survivor Benefit

Eligibility

A surviving spouse is considered to be the wife or husband as set forth in a statutory valid certificate of marriage or as recognized by judgment of a court. A surviving child is considered to be the child by birth or the legally adopted child of the member or retiree.

Benefit Amount

Surviving spouse and dependent children pension amounts are established by statute as follows:

- a) A surviving spouse is eligible to receive pension benefits for the remainder of his/her life.
 - 1. A surviving spouse of a member who retired or entered DROP before May 11, 2018, will receive an amount equal to 50% of the retiree's pension benefit or \$900.00/month, whichever is greater.
 - 2. A surviving spouse of a member who retired or entered DROP on or after May 11, 2018, will receive a set amount (\$900.00/month in 2018), but this amount increases annually by a COLA amount set by the board. The survivor benefit is in addition to any amount selected through a Joint and Survivor Annuity (JSA).
 - 3. A surviving spouse of an active member who is not eligible for retirement will receive a set amount (\$900.00/month in 2018), but this amount increases annually by a COLA amount set by the board.

4. A surviving spouse of an active member who is eligible for retirement but has not elected to enter DROP or retire will receive a 50% JSA calculated on what the member's pension would have been had he/she retired the day after death. In addition, the surviving spouse will receive the established survivor benefit set for that year.

b) A surviving child is considered to be the child by birth or the legally adopted child of the member or retiree.

1. A surviving child is eligible for benefits until attainment of age 18 or marriage; however, survivor benefits will continue until age 23 if such dependent child is a full-time student. Benefits are \$150 per month.

2. A surviving child who is physically or mentally incompetent and who was totally dependent on the deceased member or retiree at the time of death is eligible for benefits until recovery or death. Benefits are \$150 per month.

Additionally, a \$5,000 lump sum benefit is payable upon the death of the retiree.

Vesting (Termination) Benefit:

Vesting Service Requirement 15 or more years of credit service.

Non-Vested Benefit Refund of Member Contributions.

Vested Benefit Payable upon reaching age 55 (or 48 with reduced benefit or 52 with unreduced benefit, if a member who has accumulated at least 20 years), provided contributions are not withdrawn, or a refund of member contributions. The termination benefit is 1.50% of average final salary times creditable service. If a member has completed 20 years of service and retires, they are eligible to receive a pension computed in the same manner as a retirement benefit.

Minimum Benefit:

All members who retired with a Retirement or Disability Benefit are eligible to receive a minimum benefit of \$1,050 per month.

Contributions

Member Set by the retirement board annually. The percentage shall be not less than 10.0% and no more than 14.0% of a member's Salary.

Employer The employer contribution rate is set by statute, currently set at 26.5%.

SUPPLEMENTARY TABLES

Table 1 – History of the Development of Unfunded Actuarial Accrued Liability

	Year Ending December 31				
	2023	2022	2021	2020	2019
1. Unfunded Actuarial Accrued Liability (UAAL), as of beginning of year	329,312,962	339,064,208	359,142,477	376,870,851	389,082,362
2. Total Normal Cost, as of beginning of year	21,509,696	21,642,376	23,185,205	23,052,454	23,248,328
3. Expected Interest on 1. and 2.	25,434,643	26,151,227	27,718,757	28,994,440	29,893,975
4. Contributions, with interest	53,540,606	48,649,726	48,238,010	52,776,845	51,117,770
5. Expected UAAL as of end of year (1)+(2)+(3)-(4)	322,716,695	338,208,085	361,808,429	376,140,900	391,106,895
6. Change in UAAL Due to Actuarial (Gain)/Loss, by component:					
Investment Return	(3,542,558)	(19,794,133)	(33,827,426)	(23,558,102)	154,476
Salary Increases	13,745,478	7,815,539	(4,141,467)	(504,174)	1,711,714
Decrement Experience	(916,865)	4,183,856	1,297,889	(4,186,700)	(7,319,472)
Inactive Mortality Experience	2,383,873	(876,461)	1,112,614	(670,280)	5,696,925
Other Changes	(251,430)	(256,441)	2,070,445	1,016,334	772,615
Total change due to (Gain)/Loss	11,418,498	(8,927,640)	(33,487,944)	(27,902,922)	1,016,258
7. Change in UAAL Due to Assumption Changes/ Method Changes/Benefit Changes	(1,753,022)	32,517	10,743,723	10,904,499	(15,252,302)
8. Unfunded Actuarial Accrued Liability, as of end of year	332,382,171	329,312,962	339,064,208	359,142,477	376,870,851

Table 2 – History of Active Member Data

Actuarial Valuation Date	Active Members	Percent Increase	Annual Covered Payroll	Percent Increase	Average Covered Payroll	Percent Increase
12/31/2014	1,622		99,211,756		61,166	
12/31/2015	1,621	-0.1%	99,983,224	0.8%	61,680	0.8%
12/31/2016	1,670	3.0%	108,788,871	8.8%	65,143	5.6%
12/31/2017	1,650	-1.2%	112,705,188	3.6%	68,306	4.9%
12/31/2018	1,668	1.1%	116,009,622	2.9%	69,550	1.8%
12/31/2019	1,614	-3.2%	118,370,595	2.0%	73,340	5.4%
12/31/2020	1,542	-4.5%	117,996,230	-0.3%	76,522	4.3%
12/31/2021	1,454	-5.7%	111,621,001	-5.4%	76,768	0.3%
12/31/2022	1,380	-5.1%	112,476,672	0.8%	81,505	6.2%
12/31/2023	1,399	1.4%	122,123,467	8.6%	87,293	7.1%
5-year Average Increase/ (Decrease)		-3.4%		1.1%		4.7%

Table 3 – History of Retiree and Survivor Annuitant Data

Actuarial Valuation Date	Number of Annuitant	Total Annuities (Annual)	Average Annuities (Annual)	Increase in Average Benefit
12/31/2014	1,558	58,292,436	37,415	
12/31/2015	1,548	59,723,304	38,581	3.12%
12/31/2016	1,580	62,458,476	39,531	2.46%
12/31/2017	1,637	65,661,636	40,111	1.47%
12/31/2018	1,671	67,722,984	40,528	1.04%
12/31/2019	1,699	69,831,187	41,101	1.41%
12/31/2020	1,730	71,554,792	41,361	0.63%
12/31/2021	1,807	74,823,557	41,408	0.11%
12/31/2022	1,852	78,364,733	42,314	2.19%
12/31/2023	1,887	81,370,307	43,122	1.91%

Table 4 – History of Employee Annuity and Survivors Added to Payroll

Year of Retirement	Added		Removed		Total	
	Number	Annual Benefits ¹	Number	Annual Benefits	Number	Annual Benefits
2014	66	3,008,568	31	723,492	1,558	58,292,436
2015	73	3,102,744	83 ²	1,671,876	1,548	59,723,304
2016	69	3,576,372	37	841,200	1,580	62,458,476
2017	83	3,878,244	26	675,084	1,637	65,661,636
2018	72	3,127,464	38	1,066,116	1,671	67,722,984
2019	63	2,881,148	35	772,944	1,699	69,831,187
2020	83	3,372,681	52	1,649,076	1,730	71,554,792
2021	120	4,613,439	43	1,344,674	1,807	74,823,557
2022	99	5,358,174	54	1,816,998	1,852	78,364,733
2023	82	4,392,480	47	1,386,906	1,887	81,370,307

1. Includes added benefits due to COLA increases for continuing retirees and survivors.
2. Includes Alternate Payee records, which were combined with Participant records beginning with the December 31, 2015 valuation.

Table 5 – History of Annual Financial Report Asset Information

Year Ended	Pension Fund								Health Care Fund			
	Addition By Source				Deductions By Type				Addition By Source		Deductions By Type	
	Employer Contributions	Employee Contributions	Net Investment Income	Transfers from Other Systems	Administrative Expenses	Benefit Payments	Refunds	Transfers to Other Systems	Employer Contributions & Retiree Drug Subsidy and Prescription Drug Rebates	Net Investment Income	Benefits	Administrative Expenses
12/31/2014	22,325,421	11,577,268	45,104,959	586,929	1,031,473	64,525,978	2,177,476	165,945	5,859,320	6,799,267	12,308,478	156,176
12/31/2015	22,895,242	13,686,292	(5,649,718)	947,265	1,084,161	66,213,253	857,626	160,888	5,637,420	(647,032)	11,362,048	157,150
12/31/2016	25,383,684	14,101,171	46,423,126	773,206	1,352,722	65,720,438	1,730,725	416,679	5,944,616	6,834,760	11,676,450	193,246
12/31/2017	26,109,836	14,504,919	101,482,224	619,110	1,437,267	75,392,803	1,074,973	140,562	6,777,825	14,467,179	11,571,393	204,198
12/31/2018	26,014,314	14,451,649	(37,810,306)	410,250	1,435,864	71,577,589	716,739	210,895	7,784,260	(5,852,119)	11,699,575	203,812
12/31/2019	33,107,047	15,618,020	129,802,232	781,873	1,649,904	73,577,433	1,556,151	147,156	2,983,659	18,006,553	11,602,364	229,044
12/31/2020	32,855,342	17,334,068	121,212,655	826,595	1,509,348	78,580,417	2,552,672	54,203	3,321,187	16,140,521	11,624,232	200,961
12/31/2021	30,089,578	15,896,368	136,722,435	638,854	970,978	85,808,565	3,597,674	45,739	5,816,018	17,793,515	11,977,400	126,296
12/31/2022	28,972,464	17,361,370	(96,156,340)	804,605	1,331,254	84,877,194	3,785,126	161,821	5,523,742	(12,854,216)	7,484,527	177,933
12/31/2023	33,039,696	16,212,050	127,085,384	2,719,652	1,966,434	84,551,578	543,483	272,102	495,588	16,512,479	7,988,803	255,777

Table 6 – Funding Progress

Fiscal Year	Actuarial Accrued Liability	Actuarial Value of Assets	Fair Value of Net Assets	AVA / FVA	UAAL (AVA)	UAAL (FVA)	Funded Ratio (AVA)	Funded Ratio (FVA)	Covered Payroll	Funding Years
2014	1,012,752,337	712,285,604	740,661,880	96.17%	300,466,733	272,090,457	70.3%	73.1%	99,211,756	29
2015	1,078,984,597	739,848,920	704,225,033	105.06%	339,135,677	374,759,564	68.6%	65.3%	99,983,224	30
2016	1,127,927,927	763,667,712	721,685,656	105.82%	364,260,215	406,242,271	67.7%	64.0%	108,788,871	29
2017	1,153,619,256	774,670,663	786,356,140	98.51%	378,948,593	367,263,116	67.2%	68.2%	112,705,188	27
2018	1,158,179,566	769,097,204	715,480,960	107.49%	389,082,362	442,698,606	66.4%	61.8%	116,009,622	23
2019	1,173,155,313	796,284,462	817,859,488	97.36%	376,870,851	355,295,825	67.9%	69.7%	118,370,595	23
2020	1,203,886,606	844,744,129	907,391,508	93.10%	359,142,477	296,495,098	70.2%	75.4%	117,996,230	22
2021	1,233,493,873	894,429,665	1,000,315,787	89.41%	339,064,208	233,178,086	72.5%	81.1%	111,621,001	24
2022	1,263,806,590	934,493,628	861,142,491	108.52%	329,312,962	402,664,099	73.9%	68.1%	112,476,672	21
2023	1,301,525,066	969,142,895	952,865,676	101.71%	332,382,171	348,659,390	74.5%	73.2%	122,123,467	19

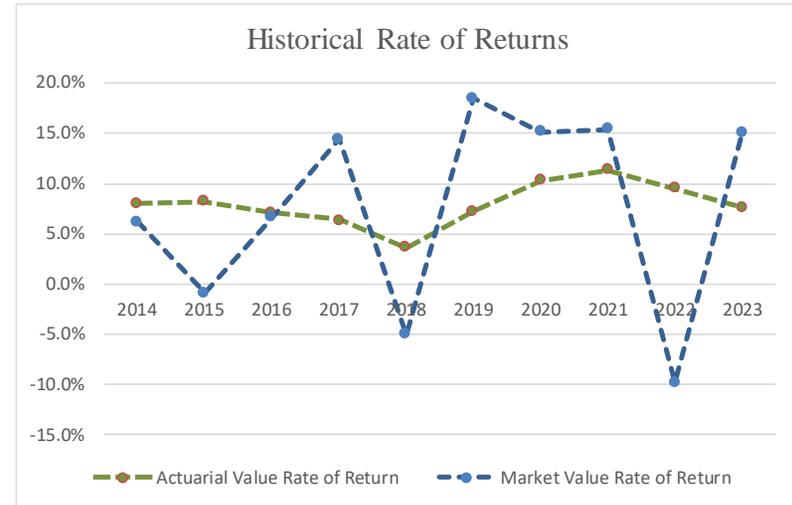
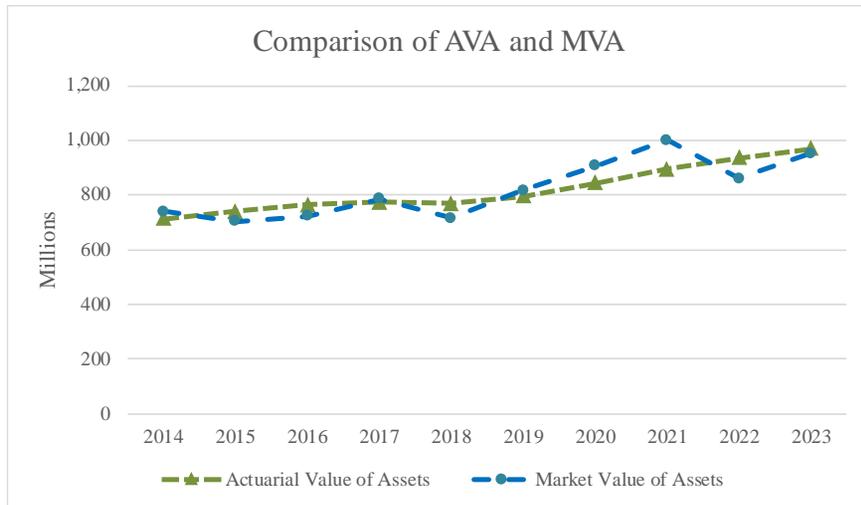


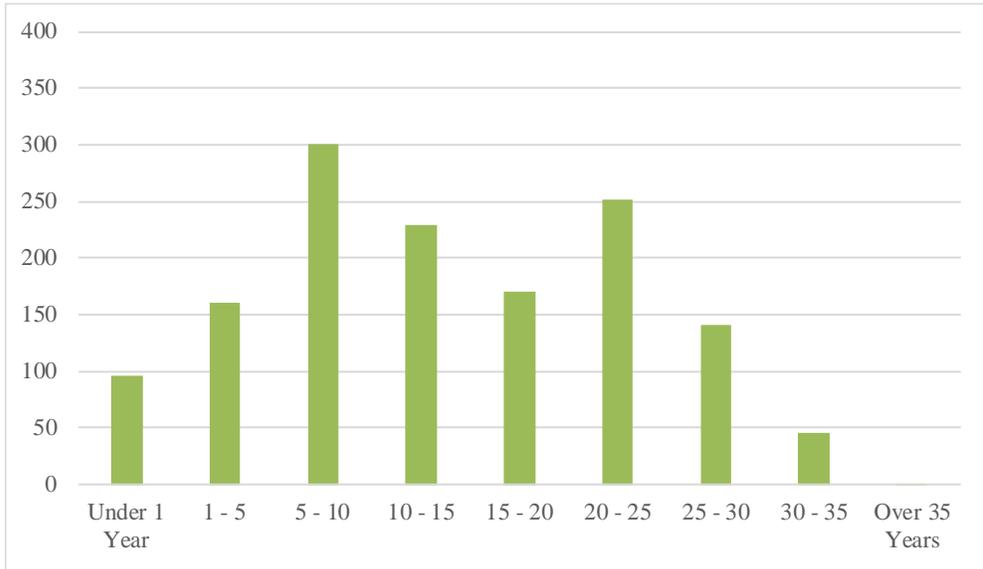
Table 7 – Solvency Test

	Actuarial Accrued Liabilities			Actuarial Value of Assets	Portion of Liabilities Covered by Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
Year Ended	Active Member Contributions	Retirees, Survivors and Vested Deferreds	Active Members (ER Financed)		Active Member Contributions	Retirees, Survivors and Vested Deferreds	Active Members (ER Financed)
12/31/2014	117,441,639	622,719,141	272,591,557	712,285,604	100%	96%	0%
12/31/2015	122,286,821	662,562,480	294,135,296	739,848,920	100%	93%	0%
12/31/2016	127,311,764	688,936,795	311,679,368	763,667,712	100%	92%	0%
12/31/2017	130,494,700	717,621,283	305,503,273	774,670,663	100%	90%	0%
12/31/2018	138,101,643	706,952,911	313,125,012	769,097,204	100%	89%	0%
12/31/2019	143,160,097	719,452,018	310,543,198	796,284,462	100%	91%	0%
12/31/2020	147,608,705	748,539,825	307,738,076	844,744,129	100%	93%	0%
12/31/2021	144,993,174	797,843,018	290,657,681	894,429,665	100%	94%	0%
12/31/2022	144,460,309	830,076,790	289,269,491	934,493,628	100%	95%	0%
12/31/2023	150,265,962	842,330,905	308,928,199	969,142,895	100%	97%	0%

Table 8 – Contribution History

Year Ended	Actuarially Determined Contribution for Fiscal Year End	Actual Contribution	Deficiency (Excess) in Annual Contribution	% of Actuarially Determined Contribution Contributed
12/31/2014	29,767,228	22,325,421	7,441,807	75%
12/31/2015	22,446,316	22,895,242	(448,926)	102%
12/31/2016	24,407,389	25,383,684	(976,295)	104%
12/31/2017	25,349,355	26,109,836	(760,481)	103%
12/31/2018	26,014,314	26,014,314	0	100%
12/31/2019	31,269,882	33,107,047	(1,837,165)	106%
12/31/2020	32,265,286	32,855,342	(590,056)	102%
12/31/2021	31,938,478	30,089,578	1,848,900	94%
12/31/2022	28,708,522	28,972,464	(263,942)	101%
12/31/2023	30,818,072	33,039,696	(2,221,624)	107%

Graph 9 – Distribution of Active Members by Service



Graph 10 – Distribution of Active Members by Age

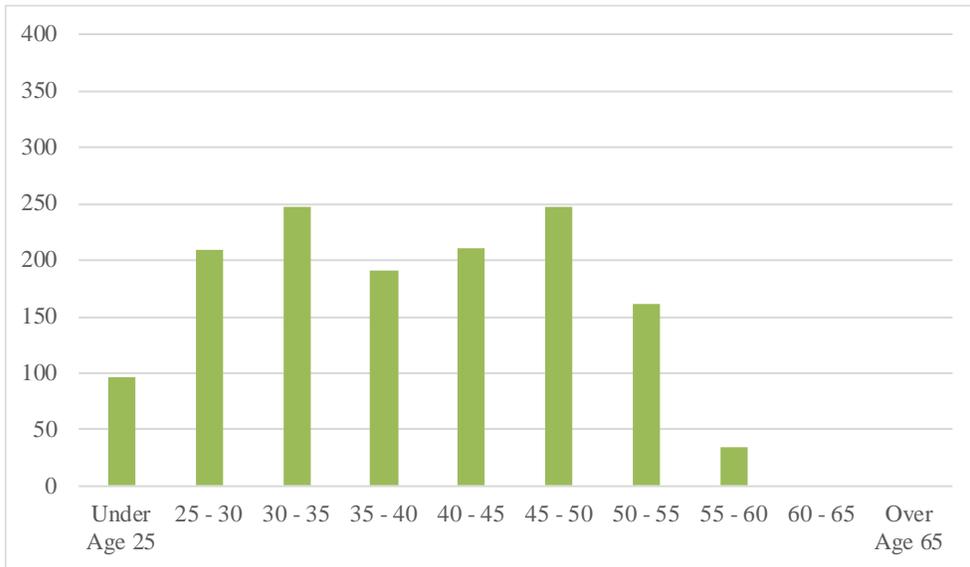
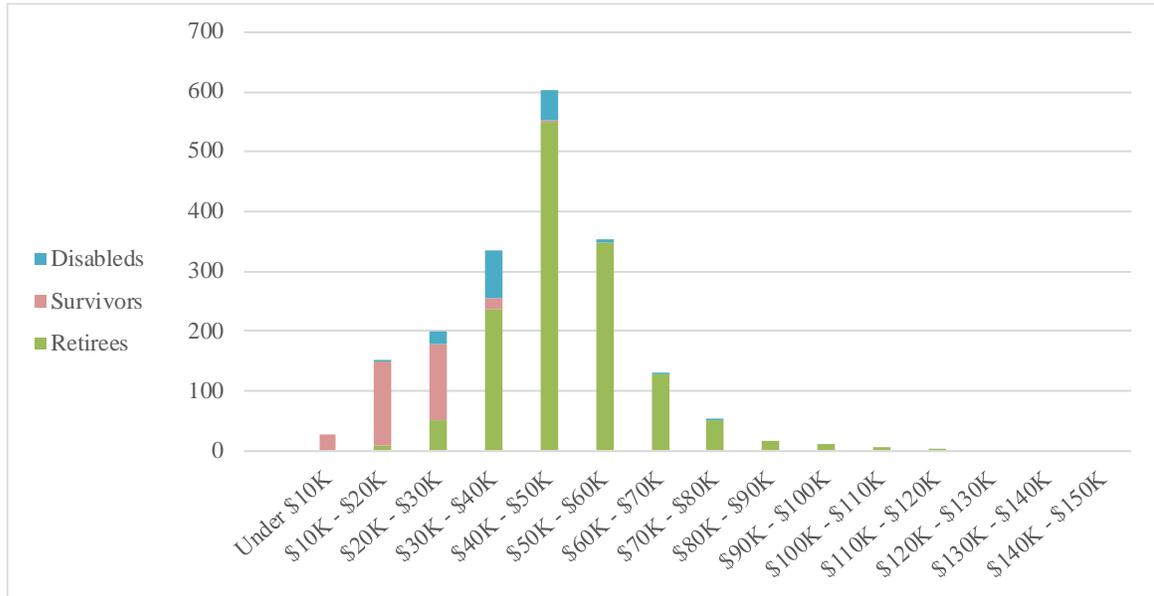
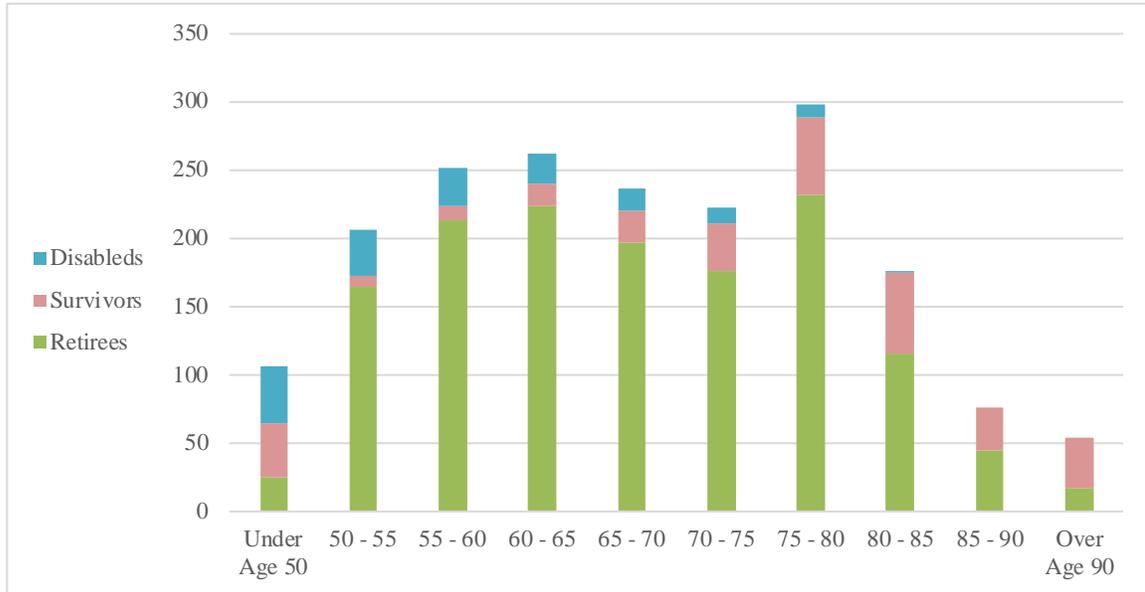


Table 11 – Distribution of Annuitants by Annual Benefit



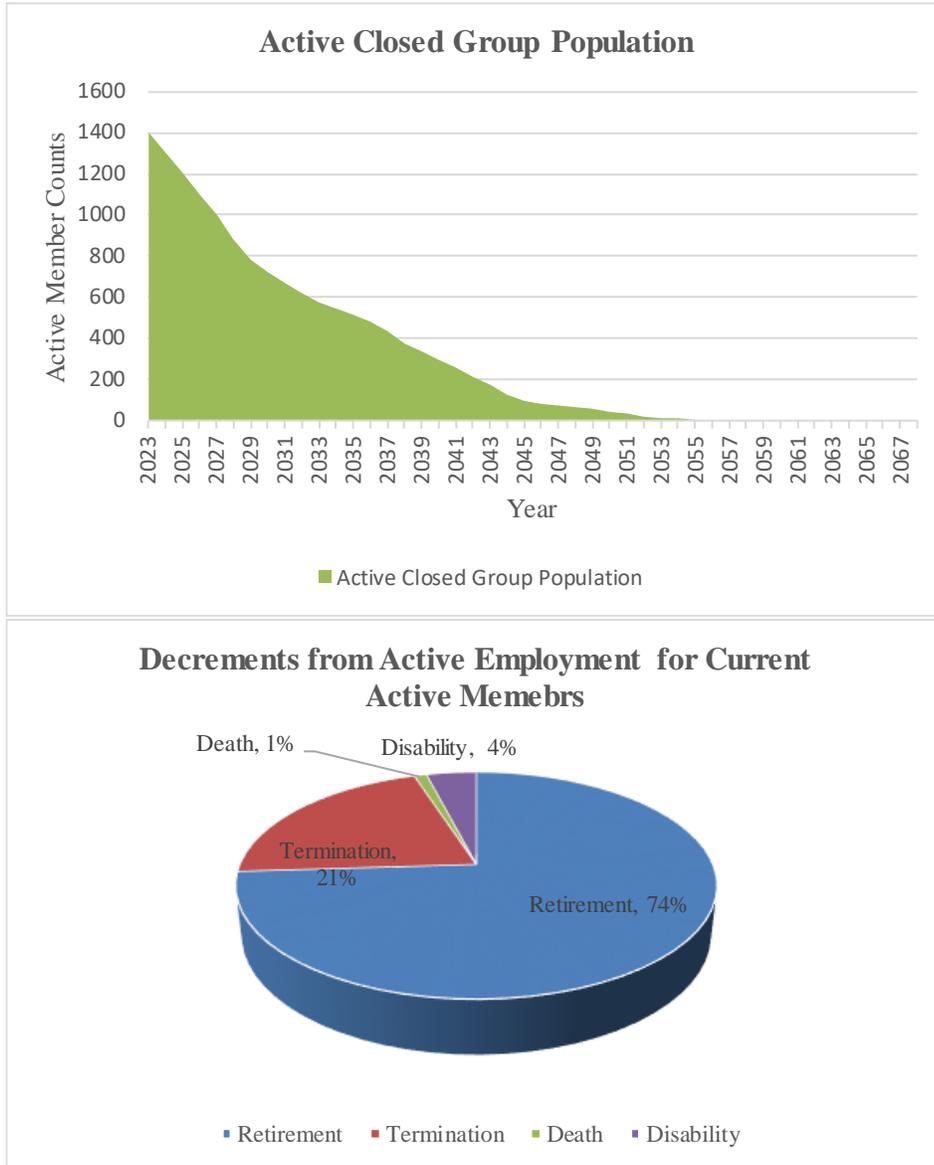
Annual Benefit	Retirees	Survivors	Disableds	Total
Under \$10K	0	28	0	28
\$10K - \$20K	8	140	1	149
\$20K - \$30K	50	129	20	199
\$30K - \$40K	236	19	79	334
\$40K - \$50K	551	1	52	604
\$50K - \$60K	347	0	6	353
\$60K - \$70K	129	0	1	130
\$70K - \$80K	52	0	2	54
\$80K - \$90K	16	0	0	16
\$90K - \$100K	11	0	0	11
\$100K - \$110K	5	0	0	5
	1409	317	161	1887

Table 12 – Distribution of Annuitants by Age



Age	Retirees	Survivors	Disableds	Total
Under Age 50	25	39	42	106
50 - 55	164	9	33	206
55 - 60	213	11	27	251
60 - 65	224	16	22	262
65 - 70	197	23	16	236
70 - 75	176	35	11	222
75 - 80	232	57	9	298
80 - 85	116	59	1	176
85 - 90	45	31	0	76
Over Age 90	17	37	0	54
Total	1,409	317	161	1,887

Graph 13-Projected Headcount of Present Population



The charts above show the expected future development of the present population in simplified terms. The Retirement System presently covers 1,399 active members. Eventually, 21% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit or separating from service without withdrawing contributions. 74% of the present population is expected to receive monthly retirement benefits by retiring directly from active service. 5% of the present population is expected to become eligible for death-in-service or disability benefits. Within 9 years, over half of the covered membership is expected to consist of new hires.

Table 14 – Active DROP Members as of December 31, 2023

Attained Ages	No.	Annual Benefit	DROP Account Balance
48	11	\$ 613,677	\$ 220,216
49	18	1,030,125	1,377,214
50	15	863,592	1,962,866
51	17	964,478	2,614,146
52	32	1,591,623	3,257,063
53	18	898,872	2,592,988
54	23	1,030,758	4,107,789
55	11	529,858	3,442,996
56	9	382,594	2,119,619
57	6	271,067	1,975,050
58	3	136,329	1,080,973
59	1	39,037	415,058
Total	164	\$ 8,352,010	\$ 25,165,978

OHIO STATE HIGHWAY PATROL RETIREMENT SYSTEM
OTHER POSTEMPLOYMENT BENEFITS PROGRAM

ACTUARIAL VALUATION
AS OF DECEMBER 31, 2023



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

August 21, 2024

Board of Trustees
Ohio State Highway Patrol Retirement System
1900 Polaris Parkway
Suite 201
Columbus, Ohio 43240-4037

Dear Board:

We are pleased to present to the Board this annual actuarial valuation of Ohio State Highway Patrol Retirement System's Other Postemployment Benefits (OPEB) Program. This valuation was performed to determine the current funded status of the Plan.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects all applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by OHPRS, represent reasonable expectations of anticipated plan experience.

In conducting the valuation, we have relied on personnel and plan design information supplied by OHPRS personnel, and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. Because of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following: 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 these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law. Due to the limited scope of this report, we did not provide an analysis of these potential differences.

In performing the analysis, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models to generate the costs. All internally developed models are reviewed as part of the process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

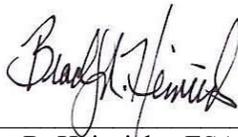
The undersigned are familiar with the immediate and long-term aspects of OPEB valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in OHPRS, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Directors of OHPRS. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 239-433-5500.

Respectfully submitted,

Foster & Foster, Inc.

By: 
Bradley R. Heinrichs, FSA, EA, MAAA
Enrolled Actuary #23-6901

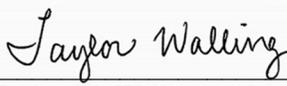
By: 
Taylor M. Walling, ASA, MAAA

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SUMMARY OF RESULTS

The annual actuarial valuation of OHPRS’s Other Postemployment Benefits Program as of December 31, 2023, has been performed and the results are presented in this Report. For purposes of this valuation health reimbursement, dental, and vision benefits were taken into consideration. The results described herein are applicable to the plan year ending December 31, 2023.

The following table shows the results of the December 31, 2023 valuation of the Plan:

Valuation Date	12/31/2023
Actuarially Determined Contribution As a Percent of Covered Payroll	4.71%
Actuarial Accrued Liability (AAL)	
Actives	\$ 62,920,193
Retirees	112,155,993
Total	\$ 175,076,186
Normal Cost	\$ 2,709,034
Funded Status as of the Valuation Date	
Actuarial Accrued Liability (AAL)	\$ 175,076,186
Actuarial Value of Assets (AVA)	126,015,778
Unfunded Actuarial Accrued Liability (UAAL)	\$ 49,060,408
Funded Ratio	72.0%
Covered Payroll	\$ 122,123,467
Ratio of UAAL to Covered Payroll	40.2%

Changes since the Prior Valuation

The following changes have been made since the prior valuation:

- The census data reflects changes in status for the twelve (12) month period since December 31, 2022.
- The valuation reflects a change in benefits from pre-Medicare retiree medical to a Health Reimbursement Arrangement for retirees before and after Medicare eligibility.
- An experience study was conducted in February 2024. The following assumptions were updated in conjunction with the study:
 - Retirement Rates
 - Mortality Rates
 - Withdrawal Rates
 - Disability Rates and incidence of Line-of-duty Disablements
 - Salary Increase Rates
 - Payroll Growth
- The per capita claims costs have been updated to reflect the most recent plan data for both dental and vision benefits.
- The actuarial value of assets was updated and is based on the market value of assets as of December 31, 2023.

The change in retiree benefits resulted in a decrease in the Actuarial Accrued Liability (AAL) of about \$59.9 million. This decrease was offset slightly due to demographic experience, updated premiums and updated assumptions. The combined impact of all changes was a decrease in the AAL of about \$53.8 million.

This actuarial valuation involves estimates of the value of reported amounts and assumptions about the probability of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to constant revision as actual experience is compared with past expectations and new estimates are made about the future.

Calculations are based upon the types of benefits provided under the terms of the substantive plan at the time of the valuation and on the pattern of sharing of costs between the employer and plan members to that point. Calculations reflect a long-term perspective, so methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial accrued liabilities and the actuarial value of assets.

UNFUNDED ACTUARIAL ACCRUED LIABILITY

1. Unfunded Actuarial Accrued Liability (UAAL) as of December 31, 2022	\$ 92,762,174
2. Employer Normal Cost, Developed as of December 31, 2022	3,651,049
3. Expected Interest on 1 and 2 (at 7.25%)	6,989,959
4. Contributions	2,969,060
5. Expected Interest on 4, mid-year	105,745
6. Expected UAAL as of December 31, 2023 (1)+(2)+(3)-(4)-(5)	\$ 100,328,377
7. Change in UAAL by component	
Decrease in UAAL due to investment experience	\$ (39,462)
Increase in UAAL due to demographic experience	1,863,749
Increase in UAAL due to premiums experience	1,597,189
Increase in UAAL due to updated assumptions	2,609,020
Decrease in UAAL due to plan change	(59,860,031)
Net decrease in UAAL	(53,829,535)
8. Unfunded Actuarial Accrued Liability as of December 31, 2023	\$ 49,060,408

ANALYSIS OF PLAN EXPERIENCE

Below is the analysis of Gains and Losses due to plan experience resulting in differences between Assumed and Actual Experience.

Type of Activity	(Gain)/Loss
1. Change in Benefits. The plan no longer provides retiree medical insurance. The benefit structure is now a Health Reimbursement Arrangement for retirees both before and after Medicare Eligibility.	(59,860,031)
2. Updated Assumptions. Assumptions were updated in conjunction with an experience study conducted in February 2024.	2,609,020
3. All Other Sources. Gains and losses resulting from demographic experience, updated dental and vision premiums, investment experience, timing of financial transactions, etc.	<u>3,421,476</u>
4. Composite (Gain)/Loss During the Year	\$ (53,829,535)

DEVELOPMENT OF ACTUARIALLY DETERMINED CONTRIBUTION

Valuation Date	12/31/2023
<i>Unfunded Actuarial Accrued Liability</i>	
Actuarial Accrued Liability	\$ 175,076,186
Actuarial Value of Assets	126,015,778
Unfunded Actuarial Accrued Liability	\$ 49,060,408
<i>Amortization Amount Component</i>	
Amortization Period	30
Amortization Method	Open
Discount Rate	7.25%
Payroll Growth Rate	2.75%
Total Amortization Amount	\$ 2,844,769
As of Percent of Covered Payroll	2.33%
<i>Normal Cost Component</i>	
Normal Cost	\$ 2,709,034
Interest on Normal Cost	196,405
Normal Cost Component	\$ 2,905,439
As of Percent of Covered Payroll	2.38%
<i>Development of Actuarially Determined Contribution</i>	
Normal Cost Component	\$ 2,905,439
As of Percent of Covered Payroll	2.38%
Amortization Component	\$ 2,844,769
As of Percent of Covered Payroll	2.33%
Actuarially Determined Contribution	\$ 5,750,208
As of Percent of Covered Payroll	4.71%
Covered Payroll	\$ 122,123,467

DEVELOPMENT OF ACTUARIALLY DETERMINED CONTRIBUTION

Determination of the Actuarially Determined Contribution for the Period July 1, 2024 to June 30, 2025	Contributions Expressed as a Percent of Payroll
Normal Cost	2.38%
UAAL Amortization	2.33%
Total Actuarially Determined Contribution	4.71%

The calculations above show the Employer’s Actuarially Determined Contribution for the year ended June 30, 2025. The Actuarially Determined Contribution for the year ended December 31, 2024 will be $\frac{1}{2}$ of 8.13% of covered payroll and $\frac{1}{2}$ of the 4.71% of covered payroll shown above.

DEVELOPMENT OF ASSETS

STATEMENT OF FIDUCIARY NET POSITION			
December 31, 2023			
	MARKET VALUE		
	PENSION	HEALTH	TOTAL
ASSETS			
Total Cash and Equivalents	44,829,053	5,830,968	50,660,021
Receivables:			
Employer Contributions Receivable	1,410,541	0	1,410,541
Member Contributions Receivable	1,123,697	0	1,123,697
Accrued Investment Income	7,273,090	946,020	8,219,110
Health Care Receivable	0	59,741	59,741
Miscellaneous Receivable	2,491	0	2,491
Total Receivables	9,809,819	1,005,761	10,815,580
Investments:			
Domestic Equity	194,467,599	25,280,585	219,748,184
International Equity	50,683,305	6,588,231	57,271,536
Fixed Income	99,435,525	12,925,444	112,360,969
Real Estate	73,785,986	9,591,307	83,377,293
Private Equity	223,573,409	29,061,903	252,635,312
Hedge Funds	52,753,408	6,857,320	59,610,728
Direct Infrastructure	17,161,501	2,230,793	19,392,294
Global Equity	198,679,379	25,825,973	224,505,352
Total Investments	910,540,112	118,361,556	1,028,901,668
Other	102,728	1,292	104,020
Total Assets	965,281,712	125,199,577	1,090,481,289
Deferred Outflows of Resources	559,380	110,356	669,736
LIABILITIES			
Payables:			
Accounts Payable	337,756	43,932	381,688
Accrued Payroll Liabilities	288,054	37,468	325,522
Accrued Pension Liabilities	11,151,939	0	11,151,939
Accrued Health Care Liabilities	0	1,275,970	1,275,970
Net Pension Liability	1,161,515	0	1,161,515
Net OPEB Liability	0	32,594	32,594
Total Liabilities	12,939,264	1,389,964	14,329,228
Deferred Inflows of Resources	36,152	20,686	56,838
Net Assets:			
Active and Retired Members' Equity	952,865,676	123,899,283	1,076,764,959
Employees' Savings Fund			130,246,404
Employer Accumulation Fund			123,899,283
Pension Reserve Fund			822,619,273
Survivors Benefit Fund			0
Health Care Fund			123,899,283
Income Fund			(123,899,284)
Total Fund Balance			1,076,764,959
NET POSITION			1,076,764,959

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION FOR THE YEAR ENDED December 31, 2023 Market Value Basis			
	PENSION	HEALTH	TOTAL
ADDITIONS			
Contributions:			
Member Contribution	16,212,050	2,473,472	18,685,522
Employer Contributions	33,039,696	0	33,039,696
Medicare Reimbursement		495,588	495,588
Transfers	2,447,550		2,447,550
Total Contributions	51,699,296	2,969,060	54,668,356
Net Investment Income ¹	127,085,384	16,512,479	143,597,863
Total Additions	178,784,680	19,481,539	198,266,219
DEDUCTIONS			
Distributions to Members:			
Benefit Payments	84,411,578	10,462,275	94,873,853
Refund of Member Contributions	543,483		543,483
Death Benefit	140,000		140,000
Total Distributions	85,095,061	10,462,275	95,557,336
Administrative Expenses	1,966,434	255,777	2,222,211
Total Deductions	87,061,495	10,718,052	97,779,547
Net Increase in Net Position	91,723,185	8,763,487	100,486,672
NET POSITION			
Beginning of the Year	861,142,491	115,135,796	976,278,287
End of the Year	952,865,676	123,899,283	1,076,764,958
Actuarial Value End of Year ²	969,142,895	126,015,778	1,095,158,673

¹ Investment related expenses include investment management, investment consulting, custodial and securities lending bank fees.

² Actuarial Value is allocated in proportion to the Market Value.

CASH FLOW PROJECTION

Cash Flow Projection Based on the December 31, 2023 Actuarial Valuation at 7.25%										
Calendar Year	Fund Balance BOY \$	Employer Contributions \$	Benefits \$	Net \$	Investment Return %	Investment Return \$	Fund Balance EOY		% of Payroll	
							Nominal \$	Real \$	Contrib.	Benefits
2024	\$ 126,015,778	\$ 0	\$ 9,906,260	\$ (9,906,260)	7.25%	\$ 8,783,325	\$ 124,892,843	\$ 124,892,843	0.00%	8.08%
2025	124,892,843	0	10,019,312	(10,019,312)	7.25%	8,697,886	123,571,417	120,557,480	0.00%	8.13%
2026	123,571,417	0	10,237,993	(10,237,993)	7.25%	8,594,294	121,927,718	116,052,557	0.00%	8.30%
2027	121,927,718	0	10,485,771	(10,485,771)	7.25%	8,466,301	119,908,248	111,346,728	0.00%	8.50%
2028	119,908,248	0	10,909,484	(10,909,484)	7.25%	8,304,798	117,303,562	106,271,238	0.00%	9.11%
2029	117,303,562	0	11,443,626	(11,443,626)	7.25%	8,096,935	113,956,871	100,721,269	0.00%	9.24%
2030	113,956,871	0	11,664,713	(11,664,713)	7.25%	7,846,426	110,138,584	94,972,156	0.00%	9.41%
2031	110,138,584	0	12,047,361	(12,047,361)	7.25%	7,555,971	105,647,194	88,877,311	0.00%	9.65%
2032	105,647,194	0	12,362,438	(12,362,438)	7.25%	7,219,124	100,503,880	82,488,215	0.00%	9.94%
2033	100,503,880	0	12,510,208	(12,510,208)	7.25%	6,840,971	94,834,643	75,936,788	0.00%	10.02%
2034	94,834,643	0	12,604,627	(12,604,627)	7.25%	6,426,588	88,656,604	69,258,397	0.00%	9.99%
2035	88,656,604	0	12,712,313	(12,712,313)	7.25%	5,974,845	81,919,136	62,434,242	0.00%	7.97%
2036	81,919,136	0	12,820,023	(12,820,023)	7.25%	5,482,543	74,581,656	55,455,629	0.00%	7.89%
2037	74,581,656	0	12,939,495	(12,939,495)	7.25%	4,946,320	66,588,481	48,304,641	0.00%	7.80%
2038	66,588,481	0	13,119,413	(13,119,413)	7.25%	4,360,407	57,829,475	40,927,492	0.00%	7.75%
2039	57,829,475	0	13,194,553	(13,194,553)	7.25%	3,722,703	48,357,625	33,389,274	0.00%	7.65%
2040	48,357,625	0	13,310,384	(13,310,384)	7.25%	3,031,868	38,079,109	25,651,037	0.00%	7.51%
2041	38,079,109	0	13,474,786	(13,474,786)	7.25%	2,280,821	26,885,144	17,668,784	0.00%	7.43%
2042	26,885,144	0	13,784,018	(13,784,018)	7.25%	1,458,245	14,559,371	9,334,972	0.00%	7.44%
2043	14,559,371	0	14,171,532	(14,171,532)	7.25%	550,825	938,664	587,160	0.00%	7.54%
2044	938,664	0	14,486,156	(14,486,156)	7.25%	(447,882)	(13,995,374)	(8,540,970)	0.00%	7.68%
2045	(13,995,374)	0	14,758,723	(14,758,723)	7.25%	(1,540,308)	(30,294,405)	(18,036,873)	0.00%	7.69%

The above projection of the health care fund shows the fund will remain solvent until 2044. This is based on the following projection assumptions:

1. Actuarial assumptions and methods are as described in the Actuarial Assumptions and Funding Methods section of this report. All future demographic experience is assumed to be exactly realized.
2. Assume a 0% increase in the total active member population. All new future members are expected to enter the plan upon their date of hire, under applicable plan provisions.
3. Employer contribution rates and benefit provisions continue at their present levels.
4. All cash flows are assumed to occur mid-year.
5. Inflation rate is 2.50% annually.

SHORT-TERM HEALTHCARE SOLVENCY TEST

The funding progress exhibit below demonstrates the Trust’s solvency over time. In a short-term solvency test, assets available for benefits are compared to the actuarial accrued liability for future benefits payable to persons who have retired or terminated, and the actuarial accrued liability for future projected benefits payable to current active members.

Generally, if a system has been using level contribution rate financing, the portion fully funded in each category will increase over time.

Valuation Year	(1) Retirees, Beneficiaries & Deferreds	(2) Active Members (Employer Financed Portion)	Healthcare Valuation Assets	Portion of Accrued Liabilities Covered by Reported Assets	
				(1)	(2)
2019	\$ 168,752,009	\$ 134,575,043	\$ 108,058,572	64%	0%
2020	\$ 162,432,699	\$ 122,895,230	\$ 110,433,029	68%	0%
2021	\$ 130,826,489	\$ 98,410,633	\$ 116,354,253	89%	0%
2022	\$ 132,026,693	\$ 85,678,413	\$ 124,942,932	95%	0%
2023	\$ 112,155,993	\$ 62,920,193	\$ 126,015,778	100%	22%

APPROXIMATE IRC SECTION 401(H) COMPUTATION

Year	(1)	(2) Pension			(5)	(6)	(7)	(8)	(9)
	Covered Pay	EAN NC %	PUC NC %	PUC NC \$	Health Contribution	(4) + (5)	Sum of (5)	Sum of (6)	IRC Ratio (7) / (8)
1999	\$ 69,030	24.96%	26.08%	\$ 18,003.0	\$ 3,278.9	\$ 21,281.9	\$ 33,616.4	\$ 216,929.5	15.5%
2000	68,505	24.96%	26.08%	17,866.1	3,254.0	21,120.1	36,870.4	238,049.6	15.5%
2001	74,140	23.10%	23.63%	17,519.3	3,521.7	21,041.0	40,392.1	259,090.6	15.6%
2002	79,594	23.14%	23.71%	18,871.7	3,780.7	22,652.4	44,172.8	281,743.0	15.7%
2003	80,641	21.88%	22.72%	18,321.6	3,395.7	21,717.3	47,568.5	303,460.3	15.7%
2004	81,931	21.91%	22.83%	18,704.8	2,867.6	21,572.4	50,436.1	325,032.7	15.5%
2005	85,828	21.68%	22.59%	19,388.5	3,006.4	22,394.9	53,442.5	347,427.6	15.4%
2006	87,563	20.99%	21.83%	19,115.0	3,384.8	22,499.8	56,827.3	369,927.4	15.4%
2007	95,032	20.78%	21.92%	20,831.0	4,575.1	25,406.1	61,402.4	395,333.5	15.5%
2008	93,029	20.81%	21.89%	20,364.0	4,668.0	25,032.0	66,070.4	420,365.5	15.7%
2009	93,339	21.21%	22.92%	21,393.3	4,794.7	26,188.0	70,865.1	446,553.5	15.9%
2010	92,226	21.23%	23.25%	21,445.7	3,699.8	25,145.5	74,564.9	471,699.0	15.8%
2011	92,790	21.72%	24.03%	22,297.8	2,418.4	24,716.2	76,983.3	496,415.2	15.5%
2012	96,022	21.80%	24.19%	23,227.8	2,553.0	25,780.8	79,536.3	522,196.0	15.2%
2013	100,250	18.23%	20.37%	20,418.9	4,718.7	25,137.6	84,255.0	547,333.6	15.4%
2014	100,569	18.13%	21.00%	21,117.3	5,859.3	26,976.6	90,114.3	574,310.2	15.7%
2015	101,751	18.13%	21.01%	21,375.1	5,637.4	27,012.5	95,751.7	601,322.7	15.9%
2016	112,811	19.70%	21.55%	24,305.2	5,944.6	30,249.8	101,696.3	631,572.5	16.1%
2017	116,038	19.73%	21.18%	24,574.0	6,777.8	31,351.8	108,474.1	662,924.3	16.4%
2018	115,613	19.10%	20.50%	23,700.0	7,784.3	31,484.3	116,258.4	694,408.6	16.7%
2019	118,371	20.04%	22.86%	27,062.1	2,983.7	30,045.8	119,242.1	724,454.4	16.5%
2020	117,996	20.18%	22.66%	26,734.9	3,321.2	30,056.1	122,563.2	754,510.4	16.2%
2021	111,621	20.35%	24.03%	26,820.6	5,816.0	32,636.6	128,379.2	787,147.0	16.3%
2022	112,477	20.11%	21.76%	24,479.7	5,523.7	30,003.4	133,903.0	817,150.4	16.4%
2023	122,123	19.87%	21.71%	26,508.2	495.6	27,003.8	134,398.5	844,154.2	15.9%

As shown in the above table, the retiree health plan is subordinate to the pension plan in the trust based on the 25% threshold requirement for Column 9. Therefore, the calculations shown above indicate compliance with IRC Section 401(h).

PER CAPITA CLAIMS COSTS AND CONTRIBUTION AMOUNTS

HRA Base Rates:

Base HRA monthly contributions for those who have not yet attained Medicare eligibility are \$800 per month and \$350 per month for eligible dependents and surviving spouses.

HRA contributions for post-65 retirees are \$225 per month and \$112.50 per month for eligible dependents and surviving spouses.

Dental Benefits:

Dental coverage under the Delta Dental PPO (Point-of-Service) plan is available to eligible retirees and their dependents. The premium rates shown below are effective January 1, 2024 through December 31, 2024. The rates represent the full cost of coverage as of the valuation date.

Delta Dental Monthly Premium Rates Calendar Year 2024	
Member Only	\$ 27.78
Member and Spouse	\$ 53.86
Member, Spouse, and Child	\$ 91.99
Member and Child	\$ 56.92

Vision Benefits:

Vision coverage under the Aetna Vision Preferred Plan is available to eligible retirees and their dependents. The premium rates shown below are effective January 1, 2024 through December 31, 2024. The rates represent the full cost of coverage as of the valuation date.

Aetna Vision Preferred Plan Premium Rates Calendar Year 2024	
Member Only	\$ 9.84
Member and Spouse	\$ 19.63
Member, Spouse, and Child	\$ 27.31
Member and Child	\$ 17.18

PARTICIPANT DATA

Summary of All Participants

Participant Group	Number
Retirees and surviving spouses who are currently receiving benefits	1,887
Inactive plan members who are entitled to, but not currently receiving benefits	45
Active members (including DROP participants)	<u>1,399</u>
Total	3,331

Summary of Current Inactive Participants

Summary of Current Inactives Health Plan Enrollment Election							
As of December 31 st	Inactives Currently Enrolled ³					Inactives That May Enroll in the Future	
	Medical	Vision	Dental	HRA	Total Number Enrolled	Vested Term	All Other Inactives
2019	1,329	1,455	1,449	N/A	1,479	11	219
2020	1,313	1,463	1,452	N/A	1,486	9	244
2021	465	1,477	1,468	1,015	1,529	9	276
2022	391	1,472	1,460	1,091	1,564	39	287
2023	N/A	1,453	1,455	1,887	1,887	45	0

Number of Retired Lives Covered by Medical Mutual, AETNA, and Medicare Advantage			
December 31 st	Added to Rolls	Removed from Rolls	Totals
2016			1,395
2017	78	87	1,386
2018	42	77	1,351
2019	32	54	1,329
2020	48	64	1,313
2021	38	886	465
2022	38	112	391
2023	0	391	0

³ The number based on the type of coverage elected, as shown in the two exhibits that follow. They are compiled from data files provided by HPRS Staff. This is the number of retired members covered and will differ from the number of actual lives covered.

Number of Retired Lives Covered by Medical Mutual, AETNA, Medicare Advantage or HRA										
	Census Date									
	12/23	12/22	12/21	12/20	12/19	12/18	12/17	12/16	12/15	12/14
Recipients:										
w/o Medicare A	N/A	391	465	470	499	546	606	654	685	645
Medicare A	N/A	0	0	919	894	874	841	821	780	753
HRA	1,887	1,091	1,015	N/A						
Spouses:										
w/o Medicare A	N/A	123	202	196	207	217	253	287	302	325
Medicare A	N/A	N/A	N/A	452	451	434	402	386	372	360
Dependent Children	N/A	69	85	94	98	104	208	251	261	273
Orphans	0	0	0	0	0	0	0	0	0	0
Totals	1,887	1,674	1,767	2,131	2,149	2,175	2,310	2,399	2,400	2,356

Summary of Recipients and Dependents Covered by Medical Mutual, AETNA, Medicare Advantage or HRA					
December 31 st	AETNA	Advantage	Mutual	HRA	Totals
2009	1,260		835	0	2,095
2010	190	819	1,157	0	2,166
2011	197	891	1,181	0	2,269
2012	183	975	1,152	0	2,310
2013	162	1,056	1,141	0	2,359
2014	0	1,114	1,242	0	2,356
2015	0	1,152	1,248	0	2,400
2016	0	1,207	1,192	0	2,399
2017	0	1,244	1,066	0	2,310
2018	0	1,259	866	0	2,125
2019	0	1,290	803	0	2,093
2020	0	1,304	758	0	2,062
2021	0	0	752	1,015	1,767
2022	0	0	583	1,091	1,674
2023	0	0	0	1,887	1,887

Summary of Current Active and DROP Participants

Actives & DROPs Combined Service										
	Total Past Service									Total
	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 -34	35 +	
<25	57	40	0	0	0	0	0	0	0	97
25 - 29	22	90	97	0	0	0	0	0	0	209
30 - 34	13	25	144	64	1	0	0	0	0	247
35 - 39	4	6	49	109	21	2	0	0	0	191
40 - 44	0	0	11	43	89	65	3	0	0	211
45 - 49	0	0	0	12	45	118	72	1	0	248
50 - 54	0	0	0	1	15	62	57	26	1	162
55 - 59	0	0	0	1	0	5	9	19	0	34
60 - 64	0	0	0	0	0	0	0	0	0	0
Total	96	161	301	230	171	252	141	46	1	1,399

DROPs Service										
Age	Total Past Service									
	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 -34	35 +	Total
<25	0	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0	0
30 - 34	0	0	0	0	0	0	0	0	0	0
35 - 39	0	0	0	0	0	0	0	0	0	0
40 - 44	0	0	0	0	0	0	0	0	0	0
45 - 49	0	0	0	0	0	0	28	1	0	29
50 - 54	0	0	0	0	0	31	47	26	1	105
55 - 59	0	0	0	0	0	3	8	19	0	30
60 - 64	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	34	83	46	1	164

Actives Service										
Age	Total Past Service									
	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 -34	35 +	Total
<25	57	40	0	0	0	0	0	0	0	97
25 - 29	22	90	97	0	0	0	0	0	0	209
30 - 34	13	25	144	64	1	0	0	0	0	247
35 - 39	4	6	49	109	21	2	0	0	0	191
40 - 44	0	0	11	43	89	65	3	0	0	211
45 - 49	0	0	0	12	45	118	44	0	0	219
50 - 54	0	0	0	1	15	31	10	0	0	57
55 - 59	0	0	0	1	0	2	1	0	0	4
60 - 64	0	0	0	0	0	0	0	0	0	0
Total	96	161	301	230	171	218	58	0	0	1,235

ACTUARIAL ASSUMPTIONS AND FUNDING METHODS

<u>Valuation Date</u>	December 31, 2023.
<u>Fiscal Year End</u>	December 31, 2023.
<u>Interest Rate</u>	7.25%
<u>Mortality Rates</u>	<p><i>Healthy Active Lives:</i> PubS-2010 (amount-weighted, below-median) employee tables adjusted by 100.4%</p> <p><i>Retiree and Vested Terminated Lives:</i> PubS-2010 (amount-weighted) healthy retiree tables adjusted by 94.5%.</p> <p><i>Contingent Survivor Lives:</i> PubS-2010 (amount-weighted, above-median) contingent survivor tables adjusted by 109.7%.</p> <p><i>Disabled Lives:</i> PubS-2010 (amount-weighted) disabled retiree tables adjusted by 101.6%</p> <p>The mortality assumptions for all participants are sex distinct with generational mortality improvement using 75% of most recent projection scale (currently scale MP-2021) and a base year of 2010. We feel these assumptions sufficiently accommodate anticipated future mortality improvements.</p>
<u>Inflation</u>	2.50%

Salary Increase Rates

Years of Service	Total Increase (Next Year)
0	20.50%
1	10.50%
2–3	9.50%
4	8.50%
5	7.00%
6–11	5.00%
12+	3.90%

Retirement Rates

Annual Rates of Retirement			
Age	Unreduced Benefit Retire Immediately	Unreduced Benefit Enter DROP	Reduced Benefit
48	22.00%	58.00%	7.50%
49	15.00%	65.00%	7.50%
50	16.00%	64.00%	7.50%
51	22.00%	58.00%	13.50%
52	20.00%	60.00%	
53	15.00%	65.00%	
54	20.00%	60.00%	
55	30.00%	50.00%	
56	40.00%	40.00%	
57	35.00%	45.00%	
58	35.00%	45.00%	
59	60.00%	20.00%	
60+	100.00%		

Termination Rates

Years of Service	Annual Rate of Withdrawal
0	12.50%
1–4	6.50%
5	5.00%
6–8	3.50%
9–10	2.50%
11–17	1.00%
18	1.25%
19–20	1.75%
21+	4.00%

Disability Rates

The table below provides a sample of the age-based annual rates of disability at various ages (adopted December 31, 2023). 60% of disability cases are assumed to service-related.

Age	Annual Rate of Disability
20	0.06%
25	0.06%
30	0.16%
35	0.29%
40	0.49%
45	0.59%
50	0.78%
55	0.85%
60+	0.00%

Health Care Inflation

The assumed annual rates of increase in retiree expected health care costs and contributions during each period subsequent to the valuation date are shown below.

Medical

Fiscal Year Beginning January 1	Pre-Medicare HRA	Medicare HRA
2023	2.50%	5.60%
2024	2.50%	5.45%
2025	2.50%	5.25%
2026	2.50%	5.05%
2027	2.50%	4.90%
2028	2.50%	4.85%
2029	2.50%	4.80%
2030	2.50%	4.75%
2031	2.50%	4.75%
2032	2.50%	4.75%
2033+	2.50%	4.75%

Dental

4.00% for every year

Vision

3.25% for every year

HRA Participation Rates

All eligible retirees are assumed to participate in the pre-Medicare and Medicare HRA plans. None are assumed to have eligible dependents.

Medicare Eligible Enrollment

100% of current and future retirees and their dependents are assumed to be eligible for, and enroll in, Medicare when they reach age 65.

Actuarial Cost Method

Entry Age Normal (Level Percentage of Pay), with costs allocated on basis of earnings. Actuarial gains and losses are reflected in the unfunded actuarial liability.

Actuarial Asset Method

Market value of assets adjusted by the unrecognized investment gains and losses for each of the four years prior to the valuation date. Gains and losses are recognized at a rate of 25% per year. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Payroll Growth

2.75% (previously 3.00%) for purposes of amortizing the Unfunded Actuarial Accrued Liability.

Administrative Expenses

\$216,855 annually, based on the average of actual expenses incurred in the prior two fiscal years.

DROP Duration

5 years

DROP Election

20% (previously 15%) of active member eligible for unreduced retirement/DROP do not enter DROP or retire in any given year prior to age 60.

Source of Data

Data and audited financial information is provided by the Fund.

Spousal Age Difference

Actual spouse age and gender is used where available, otherwise, spouse of male member is assumed to be 3 years younger than member; Spouse of female member assumed to be 3 years older than member. Members are assumed to be married to the opposite gender.

Dental and Vision Benefit Election Percentages

Member Attained Age	Dental / Vision Annual Member Election Rate	Dental / Vision Annual Spouse Coverage Rate
Under 48	0.600	0.000
48	0.700	0.450
49	0.650	0.500
50	0.600	0.550
51	0.600	0.550
52	0.700	0.550
53	0.725	0.500
54	0.750	0.400
55	0.775	0.475
56	0.825	0.525
57	0.850	0.550
58	0.875	0.575
59	0.900	0.600
60	0.900	0.600
61	0.900	0.625
62	0.925	0.650
63–64	0.950	0.650
65–66	0.975	0.650
67	0.975	0.650
68–69	0.975	0.675
70	0.975	0.700
71	0.975	0.725
72	0.975	0.750
73	0.975	0.775
74	0.975	0.750
75	0.975	0.700
76	0.950	0.650
77–79	0.925	0.650
80–81	0.925	0.700
82	0.900	0.650
83	0.900	0.600
84	0.875	0.550
85 +	0.850	0.450
Disabled Pre-65	0.750	0.400
Disabled Post-64	0.950	0.550

Changes in Funding Assumptions/Methods Since the Prior Valuation

Method Changes

- None

Assumption Changes

The valuation reflects the following assumption changes to better reflect anticipated experience.

- Dental and Vision claims costs have been updated to reflect the most recent Plan experience.
- Contribution rates paid by retirees and covered dependents have been updated to reflect the Plan's rates effective January 1, 2024.
- The following assumptions were updated in conjunction with an experience study conducted in February 2024:
 - Retirement Rates
 - Mortality Rates
 - Withdrawal Rates
 - Disability Rates and incidence of Line-of-duty Disablements
 - Salary Increase Rates
 - Payroll Growth

SUMMARY OF PLAN PROVISIONS

The following describe and reflect provisions in effect as described in Chapter 5505 of the Ohio Revised Code.

Membership Eligibility

All sworn officers and cadets in training at the academy are required to become members of the retirement system. The beginning date of membership in the system for sworn officers hired prior to June 30, 1991, is the commission date. All cadets entering the academy after that date become members of OHPRS upon entering the academy. Any person hired prior to November 2, 1989, in the radio division are HPRS members. The beginning date of membership of the radio division member is the date of hire.

Credited Service

Total years, or part thereof, employed with OHPRS, purchased service credit, and any additional service credit approved by the Board.

Eligibility for Pension

Normal Retirement

Age 52 and 20 years of Credited Service, or Age 48 with 25 years of Credited Service if hired prior to January 1, 2020.

Early Retirement

Age 48 through 51 and has accumulated at least 20 years but less than 25 years of Credited Service.

Disability Benefit

Total and permanent as determined by the Board of Trustees incapacitated for in the line of duty, or 5 or more years of service for disability incurred off-duty.

Survivor Benefit

A surviving spouse is considered to be the wife or husband as set forth in a statutory valid certificate of marriage or as recognized by judgment of a court. A surviving child is considered to be the child by birth or the legally adopted child of the member or retiree.

DROP

The DROP program was established in 2006 and affords eligible members a one-time election to “DROP in” upon attainment of unreduced retirement eligibility.

Vesting (Termination)

15 or more years of credit service.

Eligibility for OPEB

Eligibility is the same as the conditions set forth to be eligible for Pension benefits, but for Vesting (Terminated) employees, he/she must have 20 years of Credited Service.

Eligible retirees who elect to enroll in a dental or vision coverage option under the Plan contribute a monthly amount based on the selected coverage tier during the enrollment process.

Health Reimbursement Arrangement

Pre-65

Base Reimbursement Amount: \$800 per month

Total Health Care Service	% of Base
20	61%
21	64%
22	67%
23	70%
24	73%
25	76%
26	79%
27	82%
28	85%
29	88%
30	91%
31	94%
32	97%
33+	100%

Line-of-Duty Disabled: Receive 25 year service credit toward benefit.

Non-Line-of-Duty Disabled: Receive at least 61% of base amount.

Surviving Spouses/Eligible Dependents: \$350 per month

Post-65

Retirees: \$225 per month

Surviving Spouses/Eligible Dependents: \$112.50 per month

Monthly Contributions

The following tables provide the monthly dental and vision care contributions for retiree and dependent coverage options during the period January 1, 2024 through December 31, 2024:

Monthly Contribution Amounts for Dental and Vision Coverage				
	Retiree	Spouse	Surviving Spouse	Dependent Child(ren)
Dental	\$ 5	\$ 20	\$ 5	\$ 20
Vision	\$ 8	\$ 10	\$ 10	\$ 8

Changes in Fund Provisions Since the Prior Valuation

The Plan eliminated retiree medical benefits and implemented a pre-65 Health Reimbursement Arrangement.

GLOSSARY OF ACTUARIAL TERMS

Actuarial Present Value is the amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

1. adjusted for the probable financial effect of certain intervening events
2. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and
3. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Cost Method is a procedure for determining the Present Value of plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Liability.

Total Annual Payroll is the annual rate of pay for the fiscal year prior to the valuation date of all covered members.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Normal (Current Year's) Cost is the portion of the Actuarial Present Value of plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Actuarial Accrued Liability is the portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of plan benefits and expenses which is not provided for by future Normal Costs.

Unfunded Actuarial Accrued Liability (UAAL) is a liability which arises when a plan is initially established or improved and such establishment or improvement is applicable to all years of past service. Under the Entry Age Normal Actuarial Cost Method, there is also a new UAAL created each year equal to the actuarial gain or loss for that year.

Actuarially Determined Contribution (ADC) represents the level of employer contribution effort that would be required on a sustained, ongoing basis to:

1. fund the Normal Cost (cost associated with new services received) each year and
2. amortize the total unfunded actuarial liabilities (or funding excess) attributed to past services over a period of time (as determined by the plan sponsor, but typically no more than thirty years).

The ADC is a basis for the allocation of the employer's projected cost of providing Other Post-Employment Benefits (OPEB) over periods that approximate the periods in which the employer receives services from the covered employees. Accordingly, the ADC may be used as the foundation on which the measurement of the employer's annual funding can be based.