



# **DUKES COUNTY CONTRIBUTORY RETIREMENT SYSTEM**

**ACTUARIAL VALUATION  
as of  
January 1, 2022**

KMS Actuarial, LLC  
52 Hunt Road  
Kingston, NH 03848

September, 2022





September 13, 2022

Dukes County Contributory Retirement Board  
9 Airport Road  
Suite 1  
Vineyard Haven, MA 02568

Dear Board Members:

We are pleased to present the enclosed report providing the results of our actuarial valuation of the Dukes County Contributory Retirement System as of January 1, 2022. Our valuation was performed in accordance with the provisions contained in Chapter 32 of the Massachusetts General Laws, "M.G.L.", as of January 1, 2022. Disclosures under GASB Statement No. 67, Financial Reporting for Pension Plans (GASB 67) and GASB Statement No. 68, Accounting and Financial Reporting for Pensions (GASB 68) are provided in a separate report.

The principal results of our valuation are summarized in Section 2. The Summary of Plan Provisions and Actuarial Assumptions and Methods are shown in Sections 5 and 6, respectively. Section 7 summarizes the demographic profile of active members, retired plan members and beneficiaries and disabled plan members. Asset information and actuarial liabilities are presented in Section 2. The development of the required appropriations pursuant to Chapter 32 of the M.G.L. is shown in Section 3, including a 30-year forecast of the required appropriations and projected cash flows. Section 4 includes a summary of valuation information for PERAC as well as information relating to the primary risks to the System and an assessment of those risks.

This valuation is based upon member data provided by the Dukes County Contributory Retirement Board and asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Retirement Board. Although we did not audit the data used in the valuation, we believe that the information is complete and reliable.

Liabilities presented in this report are based on a long-term investment return rate assumption of 7%, net of investment expense, compounded annually.

This report was completed in accordance with generally accepted actuarial standards and procedures, and conforms to the Code of Professional Conduct of the American Academy of Actuaries. The actuarial assumptions used in the determination of costs are reasonably related to the experience of the System and to reasonable expectations, and represent our best estimate of anticipated long-term experience under the System.

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K M S A C T U A R I E S

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Future actuarial valuation results may differ significantly from the current results presented in this report. Examples of potential sources of volatility include plan experience differing from that anticipated by the economic or demographic assumptions, the effect of new entrants, changes in economic or demographic assumptions, the effect of law changes and the delayed effect of smoothing techniques.

Our valuation follows generally accepted actuarial methods and we perform such tests as we consider necessary to assure the accuracy of the results. The amounts presented in this report have been appropriately determined according to the actuarial assumptions and methods stated herein.

This report is intended for the sole use of the Dukes County Contributory Retirement Board and is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

The undersigned credentialed actuaries are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. They are available to answer any questions with regard to this report.

Respectfully submitted,



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# SECTION 1 - EXECUTIVE SUMMARY

## Background

We have completed the Actuarial Valuation of the Dukes County Contributory Retirement System as of January 1, 2022. This valuation is based upon census data provided by the Retirement Board and asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Dukes County Contributory Retirement Board. Information for the prior valuation completed as of January 1, 2020 was obtained from the valuation report prepared by KMS Actuaries, LLC.

## Massachusetts General Laws

The valuation was prepared in accordance with Chapter 32 of the Massachusetts General Laws ("M.G.L."). The results are based on the active, inactive and retired members and beneficiaries as of December 31, 2021, the assets as of December 31, 2021 and assumptions regarding investment returns, salary increases, mortality, turnover, disability and retirement.

The valuation does not take into consideration:

- ◆ Changes in the law after the valuation date,
- ◆ Transfers between retirement systems pursuant to Section 3(8)(c) of Chapter 32,
- ◆ State-mandated benefits and
- ◆ Cost-of-living increases granted to members in pay status between 1982 and 1997.

## GASB Statement Numbers 67 and 68

In June 2012, the GASB approved two related Statements that significantly changed the way pension plans and governments account and report pension liabilities. Effective for plans with fiscal years beginning after June 15, 2013, GASB Statement No. 67, Financial Reporting for Pension Plans, replaced the requirements of Statement No. 25 and effective for employers with fiscal years beginning after June 15, 2014, GASB Statement No. 68, Accounting and Financial Reporting for Pensions, replaced the requirements of Statement No. 27.

The pension standards reflect changes from those previously in place regarding how governments calculate total pension liability and pension expense. Further, the standards contain requirements for disclosing information in the notes to financial statements and presenting required supplementary information following the notes.

The required disclosures and notes under GASB Statement Number 67 and 68 for the fiscal year ending December 31, 2021 are provided in a separate report.

## Assets

This valuation is based upon asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Dukes County Contributory Retirement Board. The market value of assets increased from \$186,551,108 as of December 31, 2019 to \$247,403,411 as of December 31, 2021. During the plan years ended 2020 and 2021, the market value rates of return were 12.77% and 19.32%, respectively.

The actuarial value of assets increased from \$173,576,041 as of January 1, 2020 to \$217,908,723 as of January 1, 2022. During the plan years ended 2020 and 2021, the rates of return on the actuarial value of assets were 11.25% and 13.48%, respectively.

# SECTION 1 - EXECUTIVE SUMMARY

## Changes Since the Last Valuation

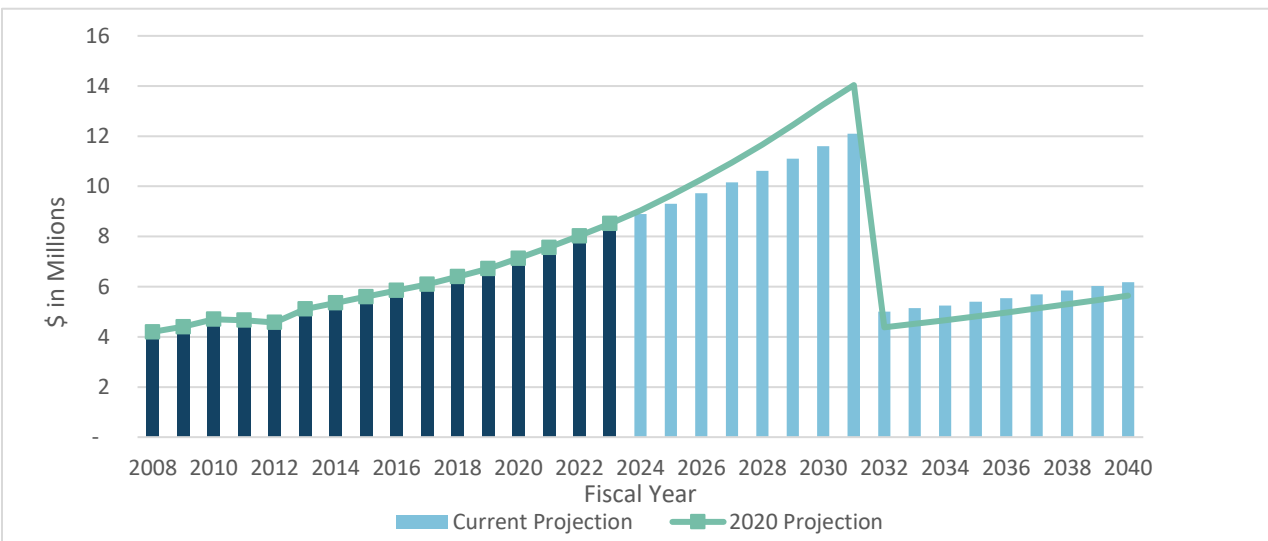
During the two years since the last valuation, the total unfunded actuarial accrued liability of the System was expected to decrease from \$48,275,095 as of January 1, 2020 to \$42,525,152 as of January 1, 2022, for a total decrease of \$5,749,943. The actual unfunded actuarial accrued liability, before any assumption or plan changes, was \$24,935,448, resulting in an actuarial gain of \$17,589,704. The actuarial gain was primarily due to an asset gain of approximately \$18,479,000 and a demographic experience loss of approximately \$889,000. The details of the gain and loss analysis are provided in Section 2, Actuarial Experience.

## Appropriations

The funding appropriation for each year is computed as the sum of the normal cost, net 3(8)(c) transfers and an amortization payment to pay off the Unfunded Actuarial Liability, adjusted for semi-annual payments of the appropriation made July 1 and January 1. The appropriation calculated as of the January 1, 2022 valuation is \$8,586,885, and is made up of a normal cost payment of \$3,464,212, net 3(8)(c) transfers of \$380,263, and an amortization payment of \$4,742,410. The amortization method is an increasing amortization of the unfunded actuarial accrued liability at 4% over 9 years and is expected to fully pay the unfunded actuarial accrued liability by the year 2031. The development of the appropriation as of January 1, 2022 is presented in Section 3, Annual Appropriations.

For fiscal year 2023, we show the actual appropriation developed under the previous funding schedule and reported on the PERAC "Required Fiscal Year 2023 Appropriation" letter dated November 30, 2021 of \$8,516,589. For fiscal year 2024, we developed an annual appropriation of \$8,900,688, which is made up of a normal cost of \$3,668,462 and net 3(8)(c) transfers of \$400,000 and payment toward the unfunded actuarial accrued liability of \$4,832,226. The unfunded actuarial accrued liability is expected to be fully paid by 2031. The Board adopted a schedule that limits the annual increase in appropriation to 4.51%. The current funding schedule is shown in Section 3, Exhibit 3.1.

The chart below shows the historical (navy bars) and projected (blue bars) annual appropriations compared to the projected amounts shown in the prior valuation and funding schedule (green line).



## SECTION 1 - EXECUTIVE SUMMARY

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### Plan Provisions

All Plan provisions used in this valuation are the same as those used in the prior valuation and are summarized in Section 5, Summary of Plan Provisions, except that the funding schedule selected by the Board assumes that the maximum amount of pension benefit subject to a COLA will increase to \$15,000 effective July 1, 2023.

### Actuarial Assumptions and Methods

Some Actuarial Assumptions and Methods used in this valuation have changed since the last valuation, including increasing the administrative expense assumption from \$400,000 to \$550,000, reducing the investment return rate assumption from 7.5% to 7%, and updating the mortality and mortality improvement rates. Changing these assumptions resulted in a net increase in the unfunded actuarial accrued liability of \$11,581,532 and an increase in the employer normal cost of \$668,684. The Actuarial Assumptions and Methods utilized in this valuation are detailed in Section 6, Actuarial Assumptions and Methods.

### Census Data

As of January 1, 2022, there are 665 active members who may be eligible for benefits in the future, 368 retirees and beneficiaries, 280 inactives and 30 disabled retirees. Summaries of the active, retired and disabled employees are included in Section 7, Plan Member Information.



## SECTION 1 - EXECUTIVE SUMMARY

A summary of principal valuation results from the current valuation and the prior valuation follows.

Valuation Date	January 1, 2022	January 1, 2020	% Change
<b>Census Data</b>			
Active Members	665	666	(0.2%)
Valuation Salary	\$46,309,045	\$44,437,598	4.2%
Average Salary	\$69,638	\$66,723	4.4%
Retired Members and Beneficiaries	368	338	8.9%
Total Annual Retirement Allowance	\$10,922,649	\$9,029,207	21.0%
Average Annual Retirement Allowance	\$29,681	\$26,714	11.1%
Disabled Members	30	31	(3.2%)
Total Annual Retirement Allowance	\$1,396,748	\$1,382,497	1.0%
Average Annual Retirement Allowance	\$46,558	\$44,597	4.4%
Inactive Members	280	238	17.6%
Annuity Savings Fund	\$3,520,131	\$3,293,244	6.9%
<b>Funded Status</b>			
Actuarial Accrued Liability (AAL)	\$255,515,047	\$221,851,136	15.2%
Market Value of Assets (MVA)	\$247,403,411	\$186,551,108	32.6%
Unfunded Accrued Liability on MVA	\$8,111,636	\$35,300,028	(77.0%)
Funded Status on MVA	96.8%	84.1%	15.1%
Actuarial Value of Assets (AVA)	\$217,908,723	\$173,576,041	25.5%
Unfunded Accrued Liability on AVA	\$37,606,324	\$48,275,095	(22.1%)
Funded Status on AVA	85.3%	78.2%	9.1%
<b>Appropriations</b>			
Fiscal Year 2022	N/A	\$8,026,946	N/A
Fiscal Year 2023	\$8,516,589	\$8,516,589	0.0%
Fiscal Year 2024	\$8,900,688	\$9,036,101	(1.5%)
Fiscal Year 2025	\$9,302,109	\$9,632,484	(3.4%)

## SECTION 2 - PRINCIPAL VALUATION RESULTS

### Market Value of Assets

Asset information is reported annually to the Public Employee Retirement Administration Commission by the Dukes County Contributory Retirement Board. The Market Value of Assets for the three most recent calendar years are as follows:

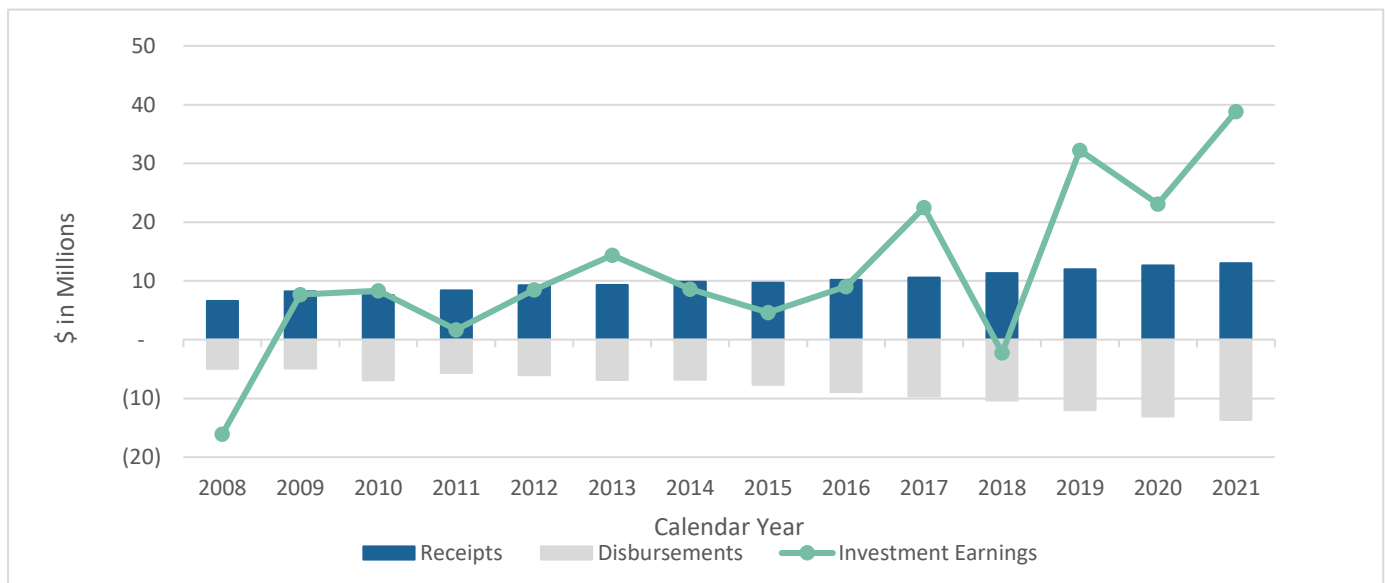
Calendar Year	2021	2020	2019
<b>Trust Fund Composition at Year-End</b>			
Cash	\$26,119,125	\$4,699,843	\$6,651,613
Short-Term Investments	0	1,780,000	0
Fixed Income Securities	0	21,423,371	18,880,649
Equities	75,538,139	82,259,763	71,437,484
Pooled Short Term Funds	0	0	0
Pooled Domestic Equity Funds	21,315,692	0	0
Pooled International Equity Funds	11,192,700	8,118,145	7,285,696
Pooled Global Equity Funds	0	0	0
Pooled Domestic Fixed Income Funds	0	0	0
Pooled International Fixed Income Funds	0	0	0
Pooled Global Fixed Income Funds	0	0	0
Pooled Alternative Investments	952,140	441,081	162,130
Pooled Real Estate Funds	20,365,010	14,238,505	14,150,991
Pooled Domestic Balanced Funds	0	0	0
Pooled International Balanced Funds	0	0	0
Hedge Funds	0	0	0
PRIT Cash	0	0	0
PRIT Fund	91,575,044	76,351,093	68,079,852
Interest Due & Accrued	0	117,769	102,140
Prepaid Expenses	0	0	0
Accounts Receivable	508,655	472,794	391,672
Land	0	0	0
Buildings	0	0	0
Accumulated Depreciation - Buildings	0	0	0
Accounts Payable	(163,094)	(682,236)	(591,119)
<b>Total Market Value of Assets</b>	<b>\$247,403,411</b>	<b>\$209,220,128</b>	<b>\$186,551,108</b>

## SECTION 2 - PRINCIPAL VALUATION RESULTS

### Market Value of Assets

Calendar Year	2021	2020	2019
<b>Funds</b>			
Annuity Savings Fund	\$40,497,846	\$39,587,515	\$38,072,792
Annuity Reserve Fund	14,116,474	13,380,613	12,472,374
Special Military Service Fund	30,257	30,227	30,197
Pension Fund	2,389,319	3,762,480	5,770,213
Expense Fund	0	0	0
Pension Reserve Fund	190,369,515	152,459,293	130,205,532
<b>Total Market Value of Assets</b>	<b>\$247,403,411</b>	<b>\$209,220,128</b>	<b>\$186,551,108</b>
<b>Asset Activity</b>			
Market Value as of Beginning of Year	\$209,220,128	\$186,551,108	\$154,325,423
Contributions and Receipts	13,008,757	12,616,876	11,961,375
Benefit Payments and Expenses	(13,647,186)	(13,062,345)	(11,990,271)
Investment Return	38,821,712	23,114,489	32,254,581
<b>Total Market Value of Assets</b>	<b>\$247,403,411</b>	<b>\$209,220,128</b>	<b>\$186,551,108</b>
<b>Rate of Return</b>	<b>19.32%</b>	<b>12.77%</b>	<b>21.55%</b>

Below are the receipts and disbursements during the last 14 years. The green line reflects investment earnings, which vacillate as investment markets fluctuate. Blue bars indicate contributions, from employees and employers, and grey bars show benefit payments and administrative expenses.



## SECTION 2 - PRINCIPAL VALUATION RESULTS

### Actuarial Value of Assets

The Actuarial Value of Assets is the market value of assets as of the valuation date adjusted to phase in investment gains and losses over a 5-year period, further constrained to be within 20% of the market value of assets. Investment gains and losses are the excess or deficiency of the expected returns over the actual returns.

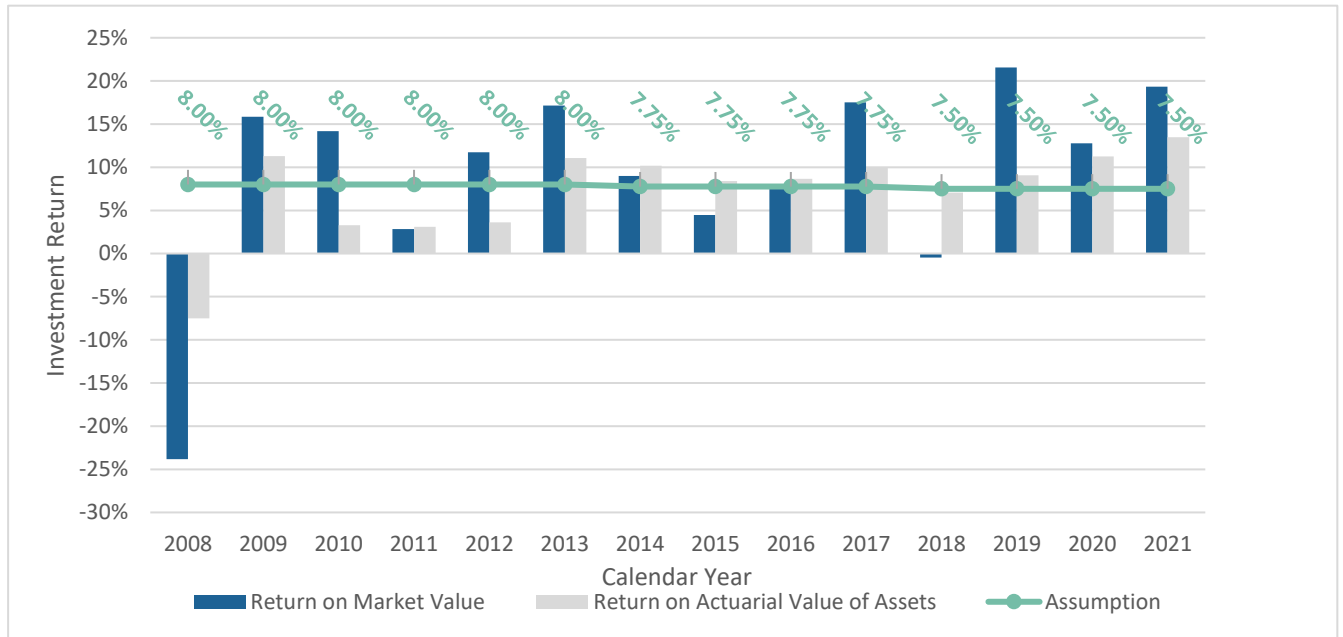
Valuation Date	January 1, 2022	January 1, 2021	January 1, 2020	
<b>1. Expected Market Value of Assets</b>				
a. Market Value of Assets as of prior January 1	\$209,220,128	\$186,551,108	\$154,325,423	
b. Prior Year Contributions and Receipts	13,008,757	12,616,876	11,961,375	
c. Prior Year Benefit Payments and Expenses	(13,647,186)	(13,062,345)	(11,990,271)	
d. Expected Investment Return Rate	7.50%	7.50%	7.50%	
e. Expected Investment Return	15,667,569	13,974,628	11,573,323	
f. Expected Market Value of Assets	\$224,249,268	\$200,080,267	\$165,869,850	
<b>2. Prior Year Gain/(Loss)</b>				
a. Market Value of Assets as of January 1	\$247,403,411	\$209,220,128	\$186,551,108	
b. Expected Market Value of Assets	224,249,268	200,080,267	165,869,850	
c. Prior Year Gain / (Loss)	\$23,154,143	\$9,139,861	\$20,681,258	
<b>3. Phase-In of Asset Gains and Losses</b>				
Calendar Year	Gain / (Loss)	Unrecognized Gain / (Loss)	Unrecognized Gain / (Loss)	Unrecognized Gain / (Loss)
a. 2021	\$23,154,143	\$18,523,314	\$0	\$0
b. 2020	9,139,861	5,483,917	7,311,889	0
c. 2019	20,681,258	8,272,503	12,408,755	16,545,006
d. 2018	(13,925,232)	(2,785,046)	(5,570,093)	(8,355,139)
e. 2017	12,192,738	0	2,438,548	4,877,095
f. 2016	(459,473)	0	0	(91,895)
g. Total Deferred Gains/(Losses)		\$29,494,688	\$16,589,099	\$12,975,067

## SECTION 2 - PRINCIPAL VALUATION RESULTS

### Actuarial Value of Assets

Valuation Date	January 1, 2022	January 1, 2021	January 1, 2020
<b>4. Actuarial Value of Assets</b>			
a. Market Value of Assets	\$247,403,411	\$209,220,128	\$186,551,108
b. Deferred Gains/(Losses)	29,494,688	16,589,099	12,975,067
c. Market Value of Assets Less Deferred Gains/(Losses)	\$217,908,723	\$192,631,029	\$173,576,041
d. 80% of Market Value of Assets	197,922,729	167,376,102	149,240,886
e. 120% of Market Value of Assets	296,884,093	251,064,154	223,861,330
f. Actuarial Value of Assets, a., but not less than b. and not greater than c.	\$217,908,723	\$192,631,029	\$173,576,041
g. Ratio of Actuarial Value of Assets to Market Value of Assets	88.1%	92.1%	93.0%
<b>5. Rate of Return on Actuarial Value of Assets for Prior Calendar Year</b>	<b>13.48%</b>	<b>11.25%</b>	<b>9.05%</b>

Below are the investment returns during the last 14 years. The green line reflects the investment return actuarial assumption. Blue bars indicate investment return rates on market value of assets, and grey bars show investment return rates on actuarial value of assets.



## SECTION 2 - PRINCIPAL VALUATION RESULTS

### Actuarial Liabilities

The **Actuarial Present Value of Future Benefits** is the present value of the cost to finance all benefits payable in the future, discounted to reflect the probability of payment and the time value of money. Below is the Actuarial Present Value of Future Benefits from the current valuation and the prior valuation:

Valuation Date	January 1, 2022	January 1, 2020
Actives	\$185,481,271	\$165,379,619
Retired Members and Beneficiaries	117,005,427	93,391,759
Disabled Members	16,858,409	16,110,072
Inactive Members	3,520,131	3,293,244
<b>Total Present Value of Future Benefits</b>	<b>\$322,865,238</b>	<b>\$278,174,694</b>

The **Actuarial Accrued Liability** is the portion of the Actuarial Present Value of Future Benefits which is allocated to all periods prior to a valuation year and therefore is not provided for by future Normal Costs. Below is the Actuarial Accrued Liability from the current valuation and the prior valuation:

Valuation Date	January 1, 2022	January 1, 2020
Actives	\$118,131,080	\$109,056,061
Retired Members and Beneficiaries	117,005,427	93,391,759
Disabled Members	16,858,409	16,110,072
Inactive Members	3,520,131	3,293,244
<b>Total Actuarial Accrued Liability</b>	<b>\$255,515,047</b>	<b>\$221,851,136</b>

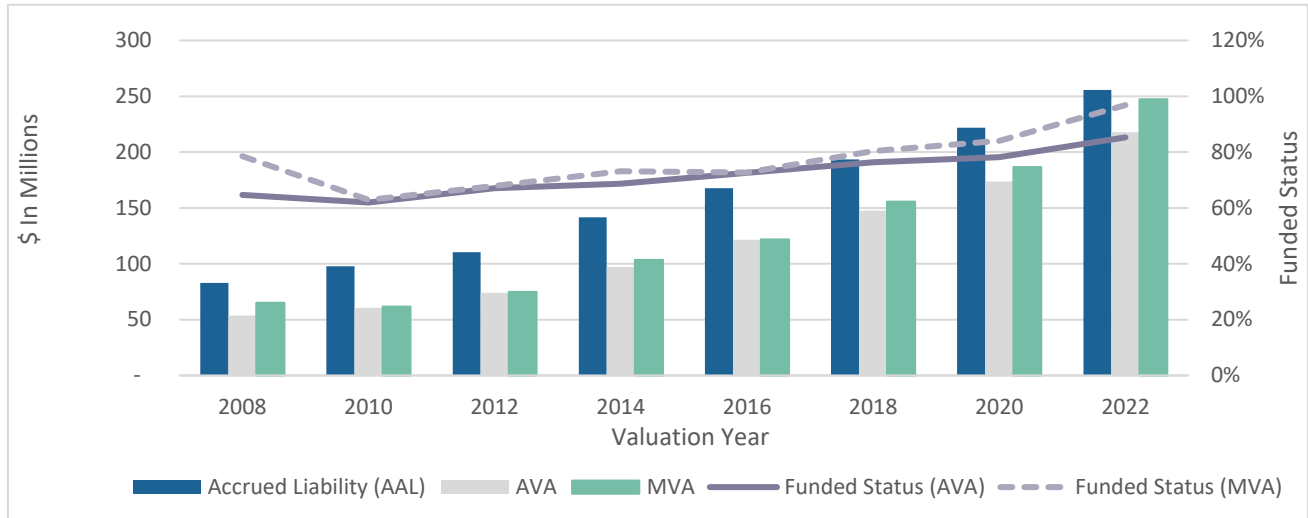
The **Unfunded Actuarial Accrued Liability** is the difference between the Actuarial Accrued Liability and the Actuarial Value of Assets as of the valuation date. The **Funded Status** is the Actuarial Value of Assets divided by the Actuarial Accrued Liability and is a point-in-time measurement of the amount of assets set aside to cover actuarial accrued liabilities. Below is the Unfunded Actuarial Accrued Liability and Funded Status from the current valuation and the prior valuation:

Valuation Date	January 1, 2022	January 1, 2020
<b>Unfunded Actuarial Accrued Liability</b>		
a. Actuarial Accrued Liability	\$255,515,047	\$221,851,136
b. Actuarial Value of Assets	217,908,723	173,576,041
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$37,606,324	\$48,275,095
d. Funded Status (b. divided by a.)	85.3%	78.2%

## SECTION 2 - PRINCIPAL VALUATION RESULTS

### Actuarial Liabilities

Below are the accrued liabilities, asset values (actuarial and market) and funded status for each of the last 8 valuations. The purple solid line reflects the funded status on an actuarial value of assets (AVA) basis and the purple dotted line reflects the funded status on a market value (MVA) basis. Blue bars indicate actuarial accrued liabilities, grey bars indicate actuarial value of assets and green bars indicate market value of assets.



The **Normal Cost** is the portion of the Actuarial Present Value of Future Benefits which is allocated to a valuation year. Only active employees who have not reached Normal Retirement Age incur a Normal Cost. Below is the Normal Cost from the current valuation and the prior valuation:

Valuation Date	January 1, 2022	January 1, 2020
<b>Total Normal Cost</b>	\$7,510,835	\$6,524,252
As of Percentage of Salary	16.2%	14.7%
<b>Employee Normal Cost</b>	\$4,569,485	\$4,320,312
As of Percentage of Salary	9.9%	9.7%
<b>Administrative Expenses</b>	\$522,862	\$378,944
As a Percentage of Salary	1.1%	0.9%
<b>Net Employer Normal Cost</b>	\$3,464,212	\$2,582,884
As a Percentage of Salary	7.5%	5.8%

## SECTION 2 - PRINCIPAL VALUATION RESULTS

### Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding mortality, retirement, disability and withdrawal rates as well as salary increases and investment returns. A comparison of the results of the current valuation and the prior valuation is made to determine how closely actual experience relates to expected. During the two years since the last valuation, the total unfunded actuarial accrued liability of the System was expected to decrease by \$5,749,943. Below is the development of the Actuarial Gain for the current 2-year period:

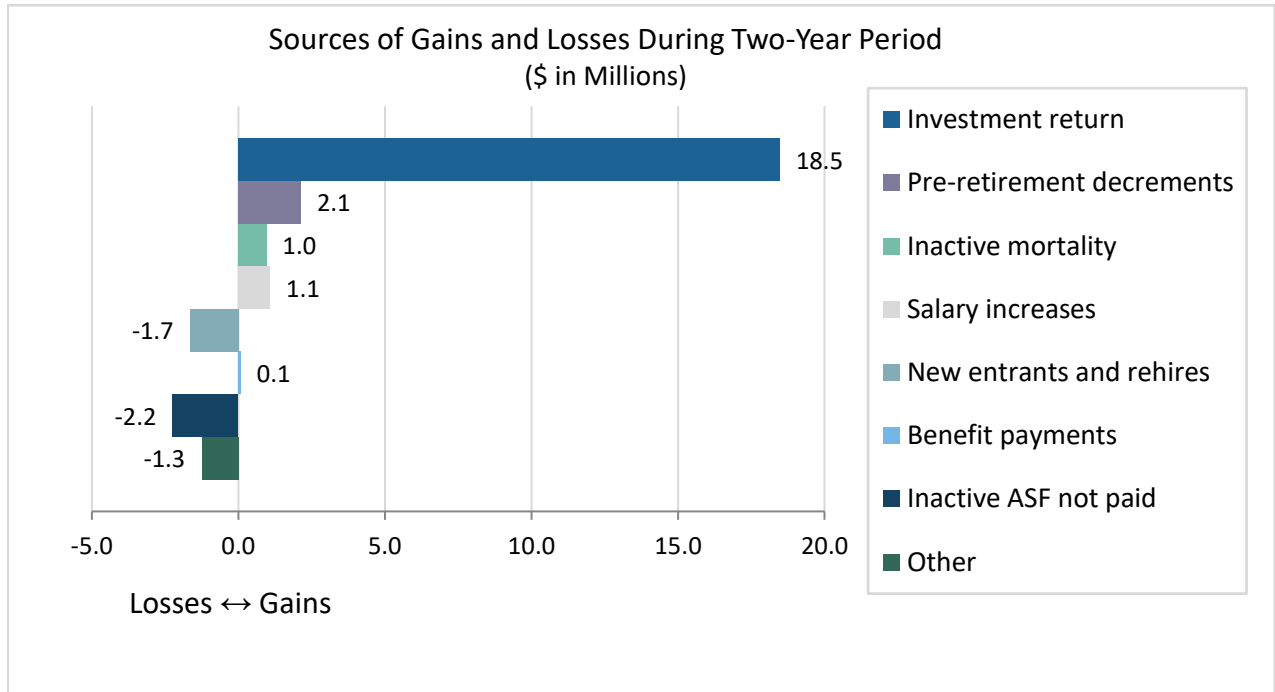
Calendar Year Ending	December 31, 2021	December 31, 2020
<b>Expected Unfunded Actuarial Accrued Liability</b>		
1. Unfunded Actuarial Accrued Liability, Beginning of Year	\$45,819,289	\$48,275,095
2. Normal Cost, Beginning of Year	6,293,955	6,524,252
3. Total Contributions	13,008,757	12,616,876
4. Interest (full year on 1. and 2., one-half year on 3.)	3,420,665	3,636,818
5. Expected Unfunded Actuarial Accrued Liability	\$42,525,152	\$45,819,289
6. Unfunded Actuarial Accrued Liability (before changes)	24,935,448	
7. (Gain)/Loss (6. - 5.)	(\$17,589,704)	
<b>Asset Gain/(Loss)</b>		
1. Actuarial Value of Assets, Beginning of Year	\$192,631,029	\$173,576,041
2. Contributions and Receipts	13,008,757	12,616,876
3. Benefit Payments and Expenses	(13,647,186)	(13,062,345)
4. Assumed Rate of Return (prior valuation)	7.50%	7.50%
5. Expected Return	14,423,386	13,001,498
6. Actuarial Value of Assets, End of Year	\$217,908,723	\$192,631,029
7. Actual Return	25,916,123	19,500,457
8. Actual Rate of Return	13.48%	11.25%
9. Asset Gain/(Loss) (7. - 5.)	11,492,737	6,498,959
10. Total Asset Gain/(Loss), 2-Year Period	\$18,479,118	



## SECTION 2 - PRINCIPAL VALUATION RESULTS

### Actuarial Experience

Below are the various sources of gains and losses over the 2-year period. The asset gain during the period was \$18,479,118, and the total demographic loss during the period was \$889,414, which totals to an overall gain of \$17,589,704.



#### Unfunded Actuarial Accrued Liability

<b>1. Changes due to:</b>	
a. Asset Gain	(\$18,479,118)
b. Demographic Experience Loss	889,414
c. Total Gain Prior to Changes	(17,589,704)
d. Plan Change - Assumed COLA Base Increase	1,089,344
e. Assumption and Method Changes	
Mortality and Mortality Improvement Rates	(1,549,236)
Investment Return Rate	13,130,768
Total	11,581,532
f. Total Decrease (including changes)	(4,918,828)
<b>2. Unfunded Actuarial Accrued Liability, End of Year</b>	<b>\$37,606,324</b>

## SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

### Annual Appropriations

The Annual Appropriation is determined in accordance with the requirements set forth in Sections 22D and 22F of Chapter 32 of the Massachusetts General Laws ("M.G.L."). The appropriation is comprised of the annual employer normal cost and amortization payments to pay the unfunded actuarial accrued liability. Below are the details of the annual appropriations for the current and prior valuations, adjusted for semi-annual payments made July 1 and January 1. The appropriations shown are based on the results of the valuation and do not account for any adjustments made to appropriations in the selected funding schedule.

Valuation Date	January 1, 2022	January 1, 2020
<b>1. Early Retirement Incentive Plan (2002)</b>		
Fully Funded Year	2028	2028
Investment Return Rate	7.00%	7.50%
Balance as of Valuation Date	\$1,035,301	\$1,229,947
Amortization Amount	\$182,907	\$169,397
Increasing Rate	4.50%	4.50%
Remaining Payment Period from Valuation Date	6	8
<b>2. Early Retirement Incentive Plan (2003)</b>		
Fully Funded Year	2028	2028
Investment Return Rate	7.00%	7.50%
Balance as of Valuation Date	\$357,417	\$424,615
Amortization Amount	\$63,145	\$58,481
Increasing Rate	4.50%	4.50%
Remaining Payment Period from Valuation Date	6	8
<b>3. Unfunded Actuarial Accrued Liability</b>		
Fully Funded Year	2031	2031
Investment Return Rate	7.00%	7.50%
Balance as of Valuation Date	\$36,213,606	\$46,620,533
Amortization Amount	\$4,496,358	\$4,973,748
Increasing Rate	4.00%	4.00%
Remaining Payment Period from Valuation Date	9	11
<b>4. Total Amortization Payments</b>	<b>\$4,742,410</b>	<b>\$5,201,626</b>
<b>5. Normal Cost</b>	<b>\$3,464,212</b>	<b>\$2,582,884</b>
<b>6. Net 3(8)(c) Transfers</b>	<b>\$380,263</b>	<b>\$378,944</b>
<b>7. Total Appropriation as of January 1</b>	<b>\$8,586,885</b>	<b>\$8,163,454</b>
<b>8. Adjusted for Semi-Annual Payments as of July 1 and January 1</b>	<b>\$9,032,570</b>	<b>\$8,617,064</b>

## SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

### Exhibit 3.1 - 30-Year Forecast of Annual Appropriations

Fiscal Year Ending	Employer Normal Cost	Amortization Payment of UAL	Amortization Payment of ERI 2002	Amortization Payment of ERI 2003	Net 3(8)(c) Transfers	Total Employer Cost	Increase over Prior Year	Unfunded Actuarial Accrued Liability
2023	\$3,492,627	\$4,365,140	\$192,400	\$66,422	\$400,000	\$8,516,589		\$37,606,324
2024	3,668,462	4,561,756	201,059	69,411	400,000	8,900,688	4.51%	35,535,254
2025	3,785,737	4,833,731	210,106	72,535	400,000	9,302,109	4.51%	33,107,363
2026	3,878,743	5,147,532	219,561	75,799	400,000	9,721,635	4.51%	30,220,485
2027	4,019,735	5,431,693	229,442	79,210	400,000	10,160,080	4.51%	26,799,388
2028	4,111,628	5,784,131	239,767	82,774	400,000	10,618,300	4.51%	22,836,243
2029	4,233,536	6,463,649	-	-	400,000	11,097,185	4.51%	18,223,049
2030	4,351,943	6,845,725	-	-	400,000	11,597,668	4.51%	12,923,813
2031	4,480,129	7,221,294	-	-	400,000	12,101,423	4.34%	6,864,981
2032	4,605,257	-	-	-	400,000	5,005,257	-58.64%	-
2033	4,739,708	-	-	-	400,000	5,139,708	2.69%	-
2034	4,850,539	-	-	-	400,000	5,250,539	2.16%	-
2035	4,996,901	-	-	-	400,000	5,396,901	2.79%	-
2036	5,142,622	-	-	-	400,000	5,542,622	2.70%	-
2037	5,293,628	-	-	-	400,000	5,693,628	2.72%	-
2038	5,452,358	-	-	-	400,000	5,852,358	2.79%	-
2039	5,620,489	-	-	-	400,000	6,020,489	2.87%	-
2040	5,777,804	-	-	-	400,000	6,177,804	2.61%	-
2041	5,940,155	-	-	-	400,000	6,340,155	2.63%	-
2042	6,125,483	-	-	-	400,000	6,525,483	2.92%	-
2043	6,304,170	-	-	-	400,000	6,704,170	2.74%	-
2044	6,504,695	-	-	-	400,000	6,904,695	2.99%	-
2045	6,713,711	-	-	-	400,000	7,113,711	3.03%	-
2046	6,940,747	-	-	-	400,000	7,340,747	3.19%	-
2047	7,156,187	-	-	-	400,000	7,556,187	2.93%	-
2048	7,394,525	-	-	-	400,000	7,794,525	3.15%	-
2049	7,636,230	-	-	-	400,000	8,036,230	3.10%	-
2050	7,879,955	-	-	-	400,000	8,279,955	3.03%	-
2051	8,161,298	-	-	-	400,000	8,561,298	3.40%	-
2052	8,400,554	-	-	-	400,000	8,800,554	2.79%	-

## SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

### Exhibit 3.2 - 30-Year Forecast of Cash Flow

Calendar Year	Market Value of Assets, BOY	Benefit Payments	Employee Contributions	Employer Contributions	Investment Return	Market Value of Assets, EOY
2022	\$247,403,411	\$17,324,861	\$4,569,485	\$8,095,044	\$17,598,386	\$260,341,465
2023	260,341,465	14,740,409	4,807,339	8,460,191	18,636,715	277,505,301
2024	277,505,301	15,703,536	4,965,432	8,843,124	19,842,346	295,452,667
2025	295,452,667	16,552,149	5,155,357	9,241,949	21,110,173	314,407,997
2026	314,407,997	17,542,880	5,308,710	9,658,761	22,442,282	334,274,870
2027	334,274,870	18,409,940	5,518,079	10,094,371	23,847,765	355,325,146
2028	355,325,146	19,290,960	5,708,558	10,549,627	25,335,650	377,628,021
2029	377,628,021	20,198,237	5,912,323	11,025,415	26,912,665	401,280,187
2030	401,280,187	21,104,015	6,117,072	11,504,314	28,584,470	426,382,028
2031	426,382,028	21,989,329	6,335,343	4,758,287	29,853,670	445,339,999
2032	445,339,999	22,832,946	6,555,710	4,886,104	31,175,574	465,124,441
2033	465,124,441	23,860,429	6,809,847	4,991,467	32,549,688	485,615,015
2034	485,615,015	24,934,148	7,041,891	5,130,607	33,972,431	506,825,796
2035	506,825,796	26,056,185	7,286,608	5,269,138	35,444,741	528,770,098
2036	528,770,098	27,228,713	7,538,756	5,412,693	36,967,503	551,460,337
2037	551,460,337	28,454,005	7,796,422	5,563,591	38,541,534	574,907,879
2038	574,907,879	29,734,435	8,058,429	5,723,426	40,167,576	599,122,876
2039	599,122,876	31,072,485	8,344,429	5,872,978	41,846,283	624,114,081
2040	624,114,081	32,470,747	8,639,795	6,027,319	43,578,208	649,888,656
2041	649,888,656	33,931,931	8,927,935	6,203,502	45,363,789	676,451,951
2042	676,451,951	35,458,868	9,237,478	6,373,372	47,203,336	703,807,269
2043	703,807,269	37,054,517	9,541,841	6,564,003	49,097,010	731,955,607
2044	731,955,607	38,721,970	9,854,219	6,762,706	51,044,808	760,895,370
2045	760,895,370	40,464,459	10,166,078	6,978,539	53,046,543	790,622,071
2046	790,622,071	42,285,360	10,506,110	7,183,349	55,101,820	821,127,990
2047	821,127,990	44,188,201	10,842,081	7,409,927	57,210,013	852,401,810
2048	852,401,810	46,176,670	11,193,134	7,639,706	59,370,242	884,428,222
2049	884,428,222	48,254,620	11,561,144	7,871,405	61,581,342	917,187,494
2050	917,187,494	50,426,078	11,912,882	8,138,866	63,841,834	950,654,998
2051	950,654,998	52,695,252	12,324,754	8,366,317	66,149,891	984,800,708

## SECTION 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

### Forecast Notes

#### Exhibit 3.1:

- ◆ The Employer Normal Cost is expected to increase 3.25% per year.
- ◆ The Unfunded Actuarial Accrued Liability ("UAL") is computed as of January 1 of each year assuming no future gains or losses.
- ◆ The Amortization Payment of UAL is an increasing payment at 4% paid over 9 years through 2031.
- ◆ The Amortization Payment of the Early Retirement Incentive Plan (2002) is an increasing payment at 4.5% paid over 6 year(s) through 2028.
- ◆ The Amortization Payment of the Early Retirement Incentive Plan (2003) is an increasing payment at 4.5% paid over 6 year(s) through 2028.
- ◆ Net 3(8)(c) transfers are a level dollar amount based on the net transfers expected to be paid by the Dukes County Contributory Retirement Board during the current year offset by the amount received during the same period.
- ◆ Total Employer Cost is the sum of the Employer Normal Cost, net 3(8)(c) transfers and the Amortization of the UAL, all computed as of January 1 of each year and adjusted for semi-annual payments made on July 1 and January 1.
- ◆ For fiscal year 2023, we show the actual appropriation developed under the previous funding schedule of \$8,516,589. For fiscal years 2024 and later, the Board has selected a funding schedule that fully amortizes the unfunded actuarial accrued liability by 2031, with annual employer costs limited to increases of 4.51% over the prior year. The funding schedule also assumes that the maximum amount of pension benefit subject to a COLA will be increased to \$15,000 effective July 1, 2023.

#### Exhibit 3.2:

- ◆ Expected benefit payments include payments expected to be made to retired members, beneficiaries, disabled members and active members expected to retire. In addition, expected benefit payments include distribution of the annuity savings fund attributed to inactive members.
- ◆ Benefit payments exclude cost-of-living increases granted to members in pay status between 1982 and 1997. In addition, benefit payments are as expected for the first ten years of the forecast, then increase by the greater of 4.5% per year thereafter or the expected future payments for the current population projected by our computer model.
- ◆ Calendar year cash flow entries are developed as of each January 1.

## SECTION 4 - DISCLOSURES

### 4.1 - GASB 67 and GASB 68 Disclosures

In June 2012, the GASB approved two related Statements that significantly changed the way pension plans and governments account and report pension liabilities. Effective for plans with fiscal years beginning after June 15, 2013, GASB Statement No. 67, *Financial Reporting for Pension Plans*, replaced the requirements of Statement No. 25 and effective for employers with fiscal years beginning after June 15, 2014, GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, replaced the requirements of Statement No. 27.

The pension standards reflect changes from those previously in place regarding how governments calculate total pension liability and pension expense. Further, the standards contain requirements for disclosing information in the notes to financial statements and presenting required supplementary information following the notes.

GASB 67 requires defined benefit pension plans, such as the Dukes County Contributory Retirement System, to present a statement of fiduciary net position (pension plan assets) and a statement of changes in fiduciary net position. Further, the statement requires that notes to financial statements include descriptive information such as the types of benefits provided, the classes of plan members covered and the composition of the pension plan's retirement board. Finally, GASB 67 requires pension plans to present in required supplementary information the sources of the changes in the net pension liability and information about the actuarially determined contributions compared with the actual contributions made to the plan and related ratios.

GASB 67 and GASB 68 require projected benefit payments be discounted to their actuarial present value using the single rate that reflects:

- (1) a long-term expected rate of return on pension plan investments *to the extent that the pension plan's assets are sufficient to pay benefits and pension plan assets are expected to be invested using a strategy to achieve that return* and
- (2) a tax-exempt, high-quality municipal bond rate *to the extent that the conditions for use of the long-term expected rate of return are not met.*

GASB 68 establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources and pension expense by state and local governments.

The effective date for GASB 67 is for plan years beginning after June 15, 2013, which is the fiscal year ending December 31, 2014 for the Dukes County Contributory Retirement System. The effective date for GASB 68 is for employers' fiscal years beginning after June 15, 2014. The GASB report, submitted under separate cover and prepared as of December 31, 2021 (the measurement date), presents information to assist the Dukes County Contributory Retirement Board in providing the required information under GASB 68 to participating employers.

## SECTION 4 - DISCLOSURES

### 4.2 - PERAC Disclosure Information

The most recent actuarial valuation of the System was prepared by KMS Actuaries, LLC as of January 1, 2022.

Normal Cost - Employees	\$4,569,485	9.9% of payroll
Normal Cost - Employers	\$3,464,212	7.5% of payroll
Actuarial Liability - Active Members	\$118,131,080	46% of total AAL
Actuarial Liability - Retired and Inactive Members	137,383,967	54% of total AAL
Total Actuarial Liability (AAL)	<u>\$255,515,047</u>	
System Assets	\$217,908,723	
Unfunded Actuarial Accrued Liability	\$37,606,324	
Funded Status	85.3%	

Principal actuarial assumptions used in the valuation:

Investment Return	7.00%
Rate of Salary Increase	Based on service, 6% graded down to 4.25% for Group 1 Based on service, 7% graded down to 4.75% for Group 4

## SECTION 4 - DISCLOSURES

### 4.3 - Risk Measures

The Dukes County Contributory Retirement System is subject to certain risks that could affect the plan's future financial condition. Here we identify the primary risks to the System, provide some background information about those risks, and provide an assessment of those risks in accordance with Actuarial Standards of Practice (ASOP) 51.

Risk is the potential of actual future measurements deviating from expected future measurements resulting from actual future experience deviating from actuarially assumed experience. Examples of potential risks that may be reasonably anticipated to significantly affect the future financial condition of the plan include the following:

- ◆ **Investment Risk** - the potential that investment returns will be different than expected.
- ◆ **Asset/Liability Mismatch Risk** - the potential that changes in asset values are not matched by changes in the value of liabilities.
- ◆ **Interest Rate Risk** - the potential that interest rates will be different than expected.
- ◆ **Longevity and Other Demographic Risks** - the potential that mortality or other demographic experience will be different than expected.
- ◆ **Contribution Risk** - the potential of actual future contributions deviating from expected future contributions. For example, that actual contributions are not made in accordance with the plan's funding policy, that other anticipated payments to the plan are not made, or that material changes occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base.

We have provided several risk measures in this section that we believe are most significant for the plan. However, we believe that a more rigorous assessment of risk would be beneficial to the Board to understand the risks identified above, such as:

- ◆ **Scenario Test** - a process for assessing the impact of one possible event, or several simultaneous or sequentially occurring possible events, on a plan's financial condition.
- ◆ **Sensitivity Test** - a process for assessing the impact of a change in an actuarial assumption on an actuarial measurement.
- ◆ **Stochastic Modeling** - a process for generating numerous potential outcomes by allowing for random variations in one or more inputs over time for the purpose of assessing the distribution of those outcomes.
- ◆ **Stress Test** - a process for assessing the impact of adverse changes in one or relatively few factors affecting a plan's financial condition.

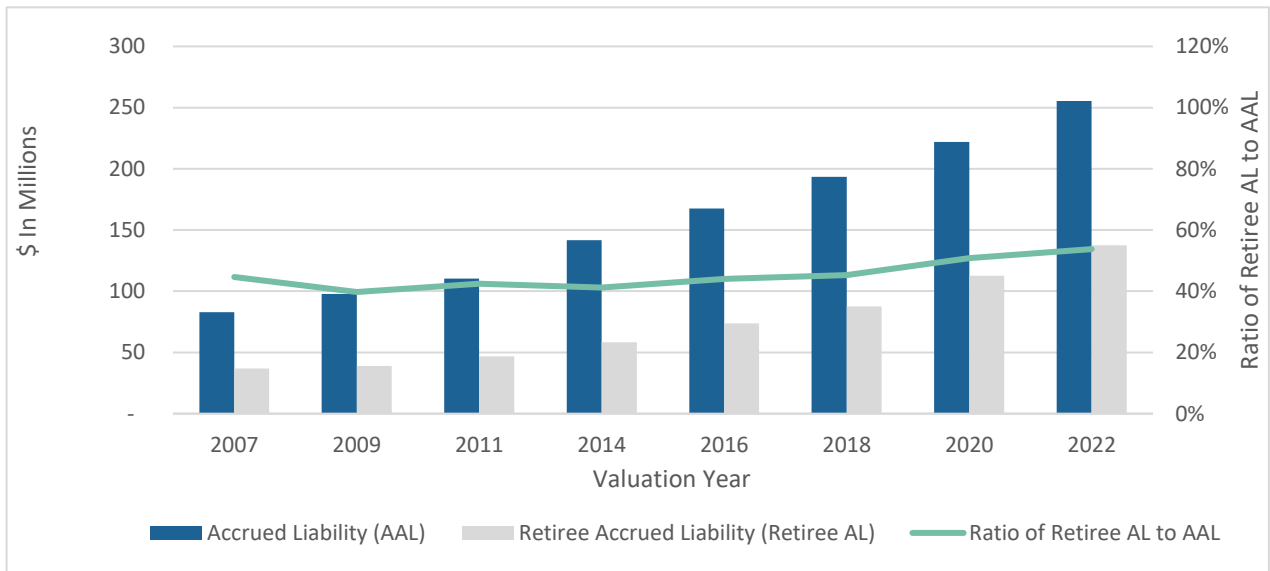


## SECTION 4 - DISCLOSURES

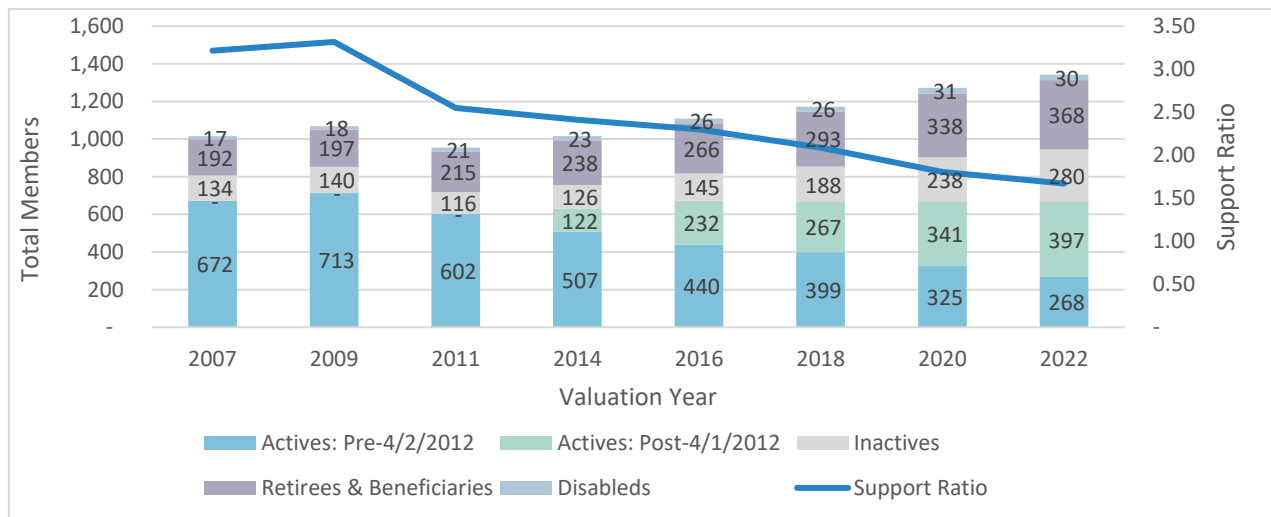
### 4.3 - Risk Measures

#### Maturity Measures

As retirement systems mature they become much more sensitive to risks. This is because a higher proportion of the actuarial liability is attributable to participants who are no longer active. Plan maturity measures are helpful in understanding the risks associated with a plan. One such maturity measure is the ratio of the system's retiree liability to its total liability. A retirement system in its infancy will have a very low ratio of retiree liability to total liability. As the system matures, the ratio starts increasing. A mature plan will often have a ratio above 60%. For the Dukes County Contributory Retirement System and other retirement systems in the United States these ratios have been steadily increasing in recent years.



Another maturity measure is the ratio of actives to retirees, or support ratio. A retirement system in its infancy will have a very high ratio of active to retired members. As the system matures, and members retire, the support ratio starts declining. A mature system will often have a support ratio near or below one.



## SECTION 4 - DISCLOSURES

### 4.3 - Risk Measures

#### Volatility Indices

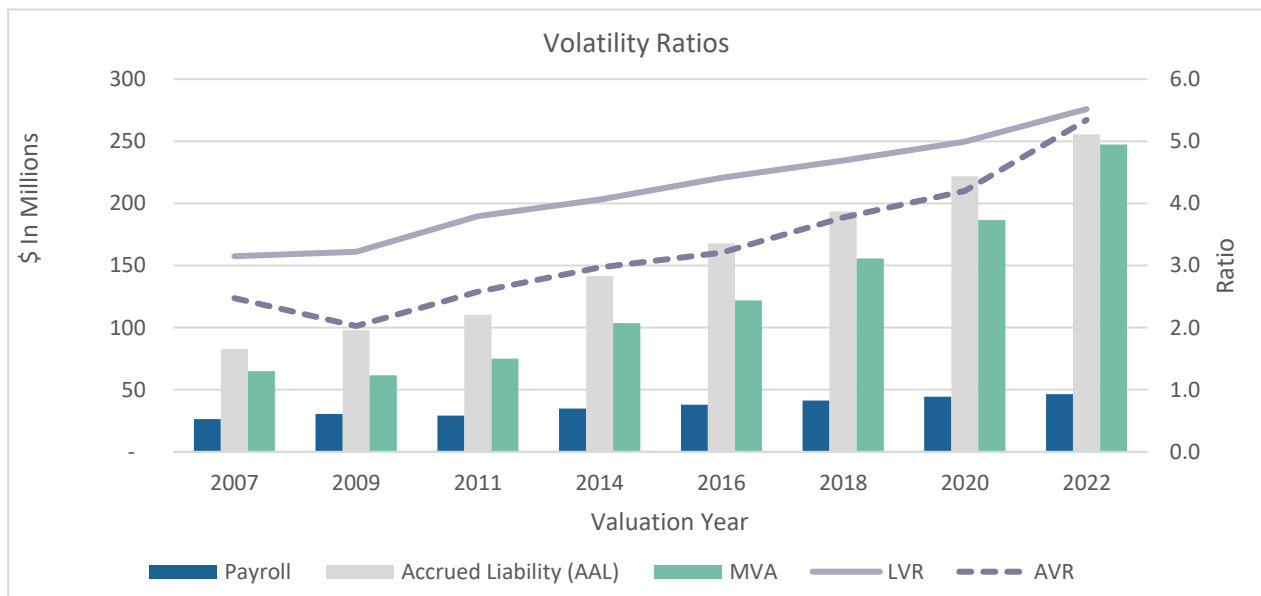
Volatility indices are measures of the relative sensitivity of employer contributions to changes in assets or liabilities. Below we present two such indices - the Asset Volatility Ratio (AVR) and the Liability Volatility Ratio (LVR):

#### Asset Volatility Ratio (AVR)

The Asset Volatility Ratio (AVR) is the ratio of the Market Value of Assets (MVA) to Payroll. Systems with a higher AVR experience more volatile employer contributions (as a percentage of payroll) due to investment return. This ratio indicates a measure of the system's current contribution volatility. The AVR increases over time but generally tends to stabilize as the system matures.

#### Liability Volatility Ratio (LVR)

The Liability Volatility Ratio (LVR) is the ratio of the Actuarial Accrued Liability (AAL) to Payroll. Systems with a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to the investment return assumption and changes in liability. This ratio indicates a longer-term potential for contribution volatility. The AVR, described above, will tend to move close to the LVR as the system matures.

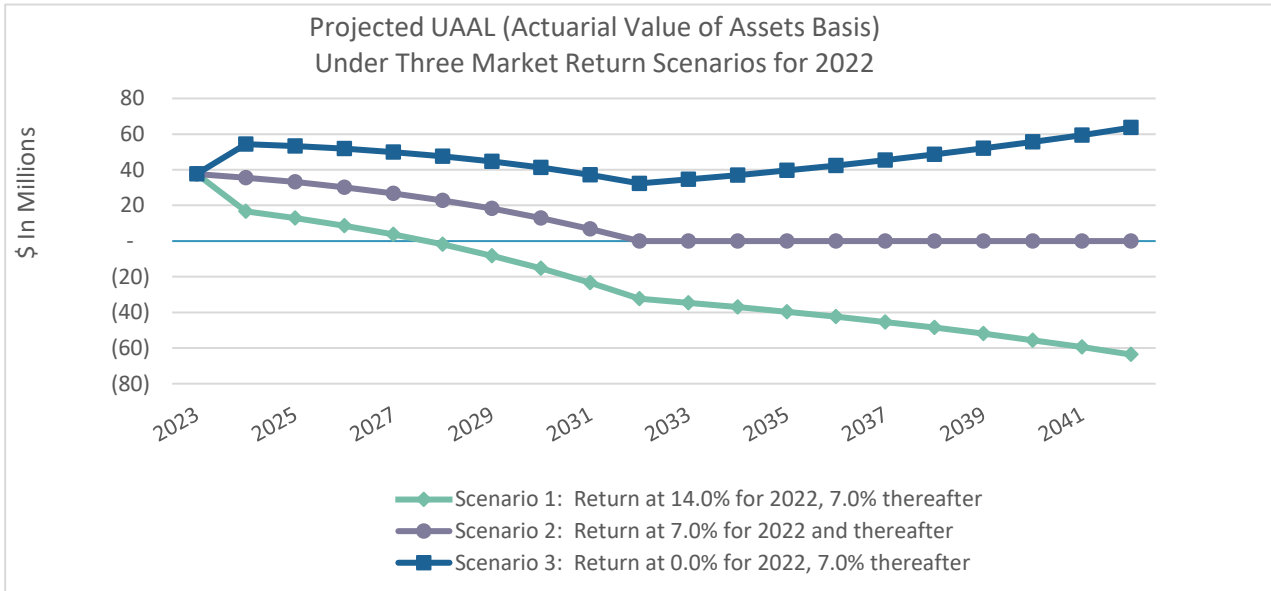


## SECTION 4 - DISCLOSURES

### 4.3 - Risk Measures

#### Market Return Scenarios

Below we illustrate the projected effect on funding levels of a single year of investment return above or below the assumed investment return. Scenario 1 assumes a one-year return of 2 times the assumed return and the expected return thereafter, Scenario 2 assumes assets earn the expected return every year and Scenario 3 assumes a one-year return of 0% and the expected return thereafter.



#### Sensitivity Analysis

The following presents the Actuarial Accrued Liability and Funded Status calculated using the investment return rate of 7%, as well as what the Actuarial Accrued Liability and Funded Status would be if it were calculated using an investment return rate 1-percentage point lower (6%) or 1-percentage point higher (8%) than the assumed investment return rate:

	1% Decrease (6.0%)	Current Investment Return Rate (7.0%)	1% Increase (8.0%)
Actuarial Accrued Liability	\$285,552,475	\$255,515,047	\$230,143,384
% Change	12%		-10%
Actuarial Value of Assets	\$217,908,723	\$217,908,723	\$217,908,723
Unfunded Actuarial Accrued Liability	67,643,752	37,606,324	12,234,661
% Change	80%	N/A	-67%
Funded Status	76.3%	85.3%	94.7%

## SECTION 4 - DISCLOSURES

### 4.3 - Risk Measures

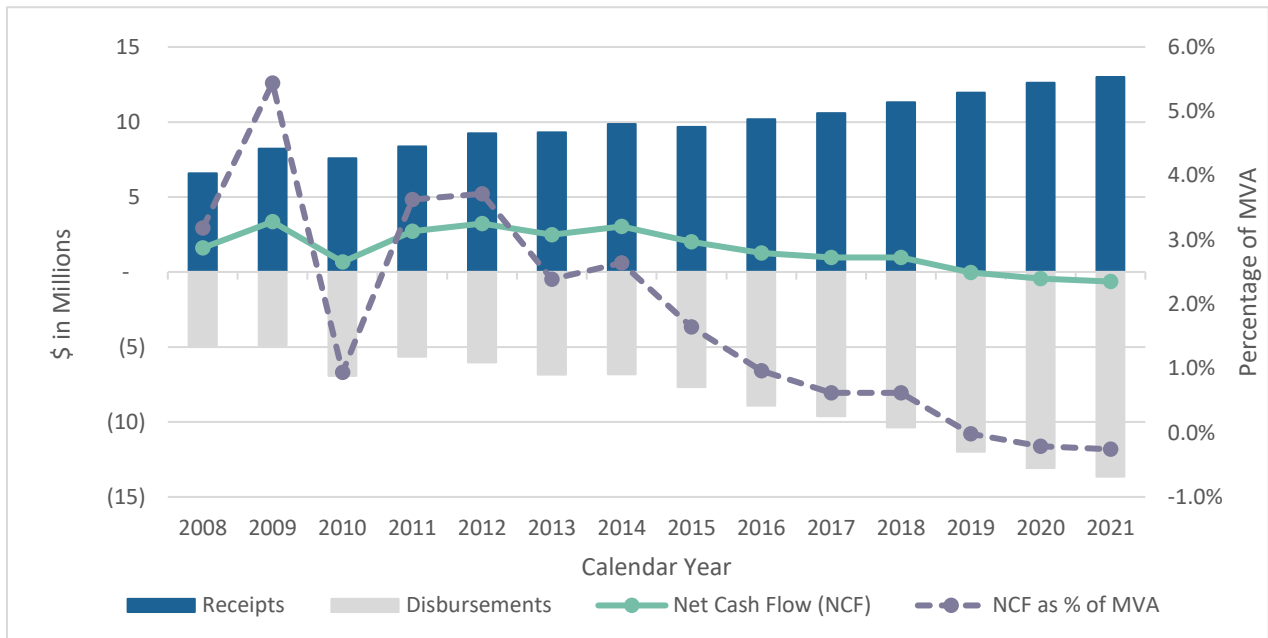
#### Duration

Duration is another measure that is used to describe how the present value of a cash flow series changes when small changes are made to the underlying interest rates. The duration of the Dukes County Contributory Retirement System is 11, and this represents an approximate percentage change in the Actuarial Accrued Liability for each 1% change to the investment return rate.

#### Net Cash Flow (NCF)

Net cash flow (NCF) during a year is the difference between contributions, both employer and employee, paid into the System and benefit payments and expenses paid from the System. If the level of benefit payments plus expenses is greater than contributions, then the System has negative NCF. Mature plans generally have a negative NCF as the number of retirees grows. When a System has negative NCF, then additional cash from existing assets are needed to pay the pension benefits.

Historical NCF since 2008 is shown in the next graph. Blue bars indicate contributions, from employees and employers, and grey bars show benefit payments and administrative expenses. The NCF is represented by the green line. The dashed purple line (which corresponds to the right-hand axis) provides the NCF as a percentage of the Market Value of Assets. As of December 31, 2021, the NCF was negative \$0.638 million, which represents -0.258% of the Market Value of Assets. The NCF falls within the range of -0.258% to 5.4% of total assets over the 14-year period.



## SECTION 5 - SUMMARY OF PLAN PROVISIONS

### Administration

There are 104 contributory retirement systems for public employees in Massachusetts. Each system is governed by a retirement board and all boards, although operating independently, are governed by Chapter 32 of the Massachusetts General Laws, Chapter 34B, Section 19 and other applicable statutes. This law in general provides uniform benefits, uniform contribution requirements and a uniform accounting and funds structure for all systems.

### Participation

Participation is mandatory for all full-time employees. Eligibility with respect to part-time, provisional, temporary, seasonal or intermittent employment is governed by regulations promulgated by the local retirement board, and approved by PERAC. Membership is optional for certain elected officials.

### Membership Groups

There are four membership groups in the Retirement System:

Group 1	General employees, including clerical, administrative, technical and all other employees not otherwise classified.
Group 2	Certain specified hazardous duty positions.
Group 3	State police officers and inspectors.
Group 4	Local police officers, firefighters and other specified hazardous positions.

For members in more than one group, participation will be proportional.

### Member Contributions

Member contributions vary depending on the most recent date of membership:

Prior to 1975	5% of Salary
1975 - 1983	7% of Salary
1984 - June 30, 1996	8% of Salary
July 1, 1996 - present	9% of Salary
1979 - present	An additional 2% of Salary in excess of \$30,000.
Group 1 members hired on or after April 2, 2012	6% of Salary with 30 or more years of creditable service.

### Rate of Interest

Interest on regular deductions made after January 1, 1984 is a rate established by PERAC in consultation with the Commissioner of Banks. The rate is obtained from the average rates paid on individual savings accounts by a representative sample of at least ten financial institutions.

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

**Retirement Age** The mandatory retirement age for some Group 2 and Group 4 members is age 65. Most Group 2 and Group 4 members may remain in service after reaching age 65. Group 4 members who are employed in certain public safety positions are required to retire at age 65. There is no mandatory retirement age for members in Group 1.

**Salary** Gross regular compensation. This does not include bonuses, overtime, severance pay, unused sick leave credit or other similar compensation. For employees who became members after January 1, 2011, regular compensation is limited to 64% of the federal limit found in 26 U.S.C. §401(a)(17). For 2022, the limit is 64% of \$305,000, or \$195,200.

**Average Salary**

**Membership before April 2, 2012** ♦ Average annual rate of regular compensation received during the three consecutive years that produce the highest average, or, if greater, during the last three years (whether or not consecutive) preceding retirement.

**Membership on or after April 2, 2012** ♦ Average annual rate of regular compensation received during the five consecutive years that produce the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement.

**Creditable Service** The period during which a member contributes to the retirement system plus certain periods of military service and “purchased” service.

**Benefit Rate** The benefit rate varies with the member's retirement age, Group, membership date and years of creditable service at retirement. Each year a member retires prior to the age at which the 2.5% maximum benefit rate applies, a reduction is applied to each year of age under the maximum age. The maximum age and reduction for each Group and membership date is as follows:

	Group 1	Group 2	Group 4
2.5% for Membership before April 2, 2012:			
Maximum age:	65	60	55
Reduction:	0.1%	0.1%	0.1%
2.5% for Membership on or after April 2, 2012 (less than 30 years of service):			
Maximum age:	67	62	57
Reduction:	0.15%	0.15%	0.15%
2.5% for Membership on or after April 2, 2012 (30+ years of service):			
Maximum age:	67	62	57
Reduction:	0.125%	0.125%	0.125%

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

### Superannuation Retirement

Eligibility if membership before April 2, 2012	<ul style="list-style-type: none"><li>♦ completion of 20 years of Creditable Service, or</li><li>♦ attainment of age 55 if hired prior to 1978, or</li><li>♦ attainment of age 55 with 10 years of Creditable Service, if hired after 1978.</li></ul>
Eligibility if membership on or after April 2, 2012	<ul style="list-style-type: none"><li>♦ attainment of age 60 with 10 years of Creditable Service if classified in Group 1</li><li>♦ attainment of age 55 with 10 years of Creditable Service if classified in Group 2</li><li>♦ attainment of age 55 if classified in Group 4</li></ul>
Benefit Amount	Product of the member's Benefit Rate, Average Salary and Creditable Service.
Maximum Benefit	80% of the member's Average Salary.
Veteran's Benefit	Additional benefit of \$15 per year of Creditable Service, up to a maximum of \$300.

### Deferred Vested

Eligibility	<ul style="list-style-type: none"><li>♦ completion of ten or more years of Creditable Service.</li><li>♦ elected officials hired prior to 1978, completion of six years of Creditable Service.</li></ul>
Benefit Amount	Accrued benefit payable commencing at age 55, or the completion of 20 years of Creditable Service, or may be deferred until later at the participant's option.

### Withdrawal of Contributions

- Contributions may be withdrawn upon termination of employment.
- ♦ Members hired on or after January 1, 1984 who terminate with less than ten years of Creditable Service receive contributions plus interest on the Annuity Savings Account at an annual rate of 3%.
  - ♦ All other withdrawals receive contributions plus 100% of the regular interest that has accrued to the Annuity Savings Account.

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

<b>Ordinary Disability Retirement</b>	Eligibility	Non-job related disability after completion of ten years of Creditable Service.
	Benefit Amount for Group 1 membership before April 2, 2012 or Group 2 or Group 4	Superannuation benefit determined if the member is age 55, up to a maximum of 80% of Average Salary over three years. If the member is a veteran, 50% of final rate of salary (final year) plus an annuity based on the accumulated member contributions plus credited interest, up to a maximum of 80% of Average Salary over five years.
	Benefit Amount for Group 1 membership on or after April 2, 2012	Superannuation benefit determined if the member is age 60, up to a maximum of 80% of Average Salary over three years. If the member is a veteran, 50% of final rate of salary (final year) plus an annuity based on the accumulated member contributions plus credited interest, up to a maximum of 80% of Average Salary over five years.
<b>Accidental Disability Retirement</b>	Eligibility	Disabled as a result of an accident in the performance of duties. There is no minimum age or service requirement.
	Benefit Amount	72% of Salary plus an annuity based on accumulated member contributions plus credited interest.
	Maximum Benefit	100% of Salary if hired before January 1, 1988, otherwise 75% of Salary.
	Veteran's Benefit	Additional allowance of \$15 per year of Creditable Service, up to a maximum of \$300.
	Supplemental Dependent Allowance	Additional allowance of \$1010.28 per year for each child until age 18 (or age 22 if a full-time student).
<b>Non-Occupational Death</b>	Eligibility	For members with at least two years of creditable service who die while in active service, but not due to occupational injury.
	Benefit Amount	Benefit as if Option C had been elected. Minimum benefit of \$250 per month for surviving spouse, \$120 per month for first child and \$90 per month for each additional child.



## SECTION 5 - SUMMARY OF PLAN PROVISIONS

<b>Accidental Death</b>	<b>Eligibility</b>	For members who die as a result of an occupational injury.
	<b>Benefit Amount</b>	72% of Salary plus an annuity based on accumulated member contributions plus credited interest.
	<b>Maximum Benefit</b>	100% of Salary if hired before January 1, 1988, otherwise 75% of Salary.
	<b>Veteran's Benefit</b>	Additional allowance of \$15 per year of creditable service, up to a maximum of \$300.
	<b>Supplemental Dependent Allowance</b>	Additional allowance of \$1010.28 per year for each child until age 18 (or age 22 if a full-time student).

**Cost-of-Living Adjustment (COLA)** In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a Cost-of-Living Adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees and beneficiaries who have been receiving benefit payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$14,000, although the funding schedule elected by the Board assumes that this amount will be increased to \$15,000 effective July 1, 2023. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the Commonwealth of Massachusetts and are not the liability of the Retirement System.

**Optional Forms of Payment** A member may elect to receive his or her retirement allowance, payable in monthly installments, in one of three forms of payment:

- ◆ Option A – Total annual allowance commencing at retirement and terminating at member's death.
- ◆ Option B – A reduced annual allowance commencing at retirement with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member.
- ◆ Option C – A reduced annual allowance commencing at retirement with 66⅔% of benefit continued to designated beneficiary upon death of member. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases based on the factor used to determine the Option C benefit at retirement. For members who retired prior to January 12, 1988, if the System has accepted Section 288 of Chapter 194 of the Acts of 1998 and the beneficiary pre-deceases the retiree, the benefit payable increases based on the factor used to determine the Option C benefit at retirement.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

**Valuation Date** January 1, 2022

**Investment Return** 7.00% per year. Previously, 7.50% per year.  
 The investment return assumption is a long-term assumption based on capital market expectations by asset class, historical returns and professional judgment. We considered analysis prepared by PRIM's investment advisor using a building block approach and using the target asset allocation, expected returns by asset class and risk analysis to determine a long-term expected average annual rate of return.

**Annuity Savings Fund Interest Rate** 2.00% per year

**Amortization Method** *Unfunded Actuarial Accrued Liability (UAL):*  
 Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2031.

*Early Retirement Incentive Program (ERI) for 2002:*  
 Increasing dollar amount at 4.5% to reduce the Unfunded Actuarial Accrued Liability attributable to the 2002 ERI to zero on or before June 30, 2028.

*Early Retirement Incentive Programs (ERI) for 2003:*  
 Increasing dollar amount at 4.5% to reduce the Unfunded Actuarial Accrued Liability attributable to the 2003 ERI to zero on or before June 30, 2028.

The appropriation is limited to an annual increase of 4.51%.

**Salary Scale** The assumed annual rates for salary increases including longevity are illustrated by the following rates:

Years of Service	Groups 1 and 2	Group 4
0	6.00%	7.00%
1	5.50%	6.50%
2	5.50%	6.00%
3	5.25%	5.75%
4	5.25%	5.25%
5	4.75%	5.25%
6	4.75%	4.75%
7	4.50%	4.75%
8	4.50%	4.75%
9+	4.25%	4.75%

The salary scale assumption is a long-term estimate derived from historical data, current and recent market expectations and professional judgment.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

**Cost-of-Living Allowance** Cost-of-Living Allowances (COLA) are assumed to be 3% of the pension amount, capped at \$420 per year and effective July 1, 2023, capped at \$450 per year.

**Inflation** 2.4% per year, based on current economic data, analyses from economists and other experts, and professional judgment.

**Payroll Growth** 3.25% per year, based on historical data, current and recent market expectations and professional judgment.

**Mortality Rates** RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2020. For disabled members, RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2020.

*General Employees:* 55% of deaths are job-related.

*Police and Fire:* 90% of deaths are job-related.

PERAC completed a local system retiree mortality study in 2019 and selected the RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2018 and subsequently updated the mortality improvement scale to MP-2020 in 2022. The underlying tables with generational mortality improvement selected reasonably reflect the mortality experience of the System as of the valuation date based on historical and current demographic data as well as professional judgement.

**Turnover Rates** Illustrative turnover rates are shown below:

Creditable Service	Groups 1 and 2	Group 4
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### Disability Rates

Illustrative disability rates are shown below:

Attained Age	Groups 1 and 2	Group 4
20	0.0001	0.0010
30	0.0003	0.0030
40	0.0010	0.0030
50	0.0019	0.0125
60	0.0028	0.0085

*General Employees:* 55% of disabilities are accidental and 45% are ordinary.

*Police and Fire:* 90% of disabilities are accidental and 10% are ordinary.

### Retirement Rates

Illustrative retirement rates are shown below:

Attained Age	Groups 1 and 2		Group 4
	Male	Female	Male & Female
50	0.0100	0.0150	0.0200
51	0.0100	0.0150	0.0200
52	0.0100	0.0200	0.0200
53	0.0100	0.0250	0.0500
54	0.0200	0.0250	0.0750
55	0.0200	0.0550	0.1500
56	0.0250	0.0650	0.1000
57	0.0250	0.0650	0.1000
58	0.0500	0.0650	0.1000
59	0.0650	0.0650	0.1500
60	0.1200	0.0500	0.2000
61	0.2000	0.1300	0.2000
62	0.3000	0.1500	0.2500
63	0.2500	0.1250	0.2500
64	0.2200	0.1800	0.3000
65	0.4000	0.1500	1.0000
66	0.2500	0.2000	1.0000
67	0.2500	0.2000	1.0000
68	0.3000	0.2500	1.0000
69	0.3000	0.2000	1.0000
70	1.0000	1.0000	1.0000

The turnover, disability and retirement rates are based on PERAC's most recent experience analysis of local retirement systems which reviewed age, gender and job group. The assumptions reflect this analysis as well as professional judgment.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

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<b>Actuarial Cost Method</b>	Individual Entry Age Normal.
<b>Actuarial Asset Method</b>	<p>The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of:</p> <ul style="list-style-type: none"><li>a) 80% of gains and losses of the prior year,</li><li>b) 60% of gains and losses of the second prior year,</li><li>c) 40% of gains and losses of the third prior year, and</li><li>d) 20% of gains and losses of the fourth prior year.</li></ul> <p>Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 80% or more than 120% of market value.</p>
<b>Census Data</b>	Census data as of the valuation date were submitted by the Retirement Board.
<b>Asset Data</b>	Asset information is reported annually to the Public Employee Retirement Administration Commission by the Dukes County Contributory Retirement Board.
<b>Dependents</b>	80% of all members will be survived by a spouse. Age assumption for spouses is that males are assumed to be three years older than females.
<b>Net Section 3(8)(c) Transfers</b>	Reimbursements paid to and received from other retirement systems for that portion of a retiree's pension that is based on service earned in another retirement system. Net 3(8)(c) transfers are assumed to be \$400,000 per year.
<b>Administrative Expenses</b>	<p>The anticipated administrative expenses for the fiscal year. For Fiscal Year 2023, the administrative expenses were assumed to be \$550,000 and are anticipated to increase 3.25% per year.</p> <p>The administrative expense assumption is based on information relating to the System's administrative expenses provided by the Retirement System.</p>

## SECTION 7 - PLAN MEMBER INFORMATION

### Exhibit 7.1 - Summary of Census Data as of January 1, 2022

Census data as of December 31, 2021 was provided to us by the Retirement Board. We performed edits on the data to ensure that it is reasonable and complete and made certain assumptions regarding any missing or invalid data so that results are not materially affected. Presented on the following pages are summaries of the demographic profile of active members (Exhibit 7.2) and retired plan members and beneficiaries and disabled plan members (Exhibit 7.3). Below, we present a comparison of the census data from the current and prior valuations:

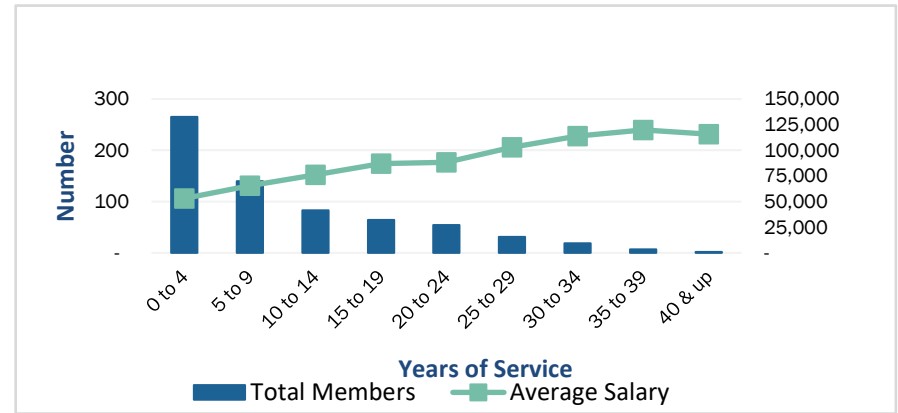
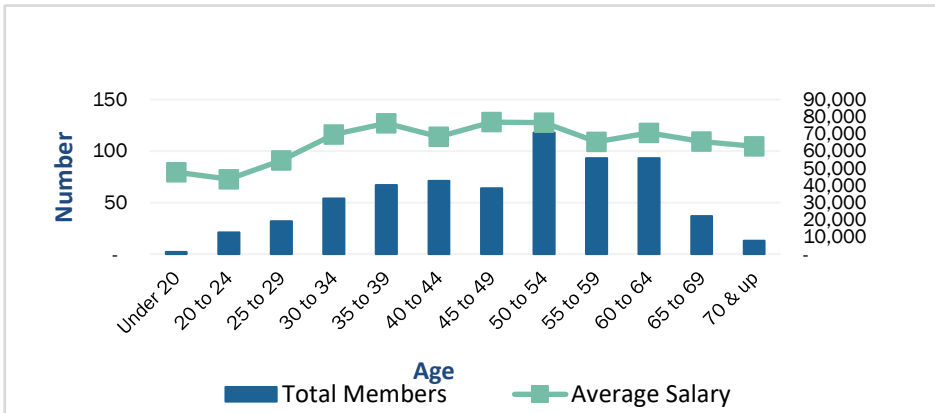
Valuation Date	January 1, 2022	January 1, 2020	% Change
<b>Census Data</b>			
<b>Active Members</b>	665	666	(0.2%)
Average Age	49.0	48.7	0.5%
Average Service	10.1	10.3	(2.1%)
Valuation Salary	\$46,309,045	\$44,437,598	4.2%
Average Salary	\$69,638	\$66,723	4.4%
<b>Retired Members and Beneficiaries</b>	368	338	8.9%
Average Age	71.9	71.7	0.3%
Total Annual Retirement Allowance	\$10,922,649	\$9,029,207	21.0%
Average Annual Retirement Allowance	\$29,681	\$26,714	11.1%
State Reimbursed COLAs	\$2,296	\$2,267	1.3%
Total System-Funded Retirement Allowance	\$10,920,353	\$9,026,940	21.0%
<b>Disabled Members</b>	30	31	(3.2%)
Average Age	63.6	63.1	0.8%
Total Annual Retirement Allowance	\$1,396,748	\$1,382,497	1.0%
Average Annual Retirement Allowance	\$46,558	\$44,597	4.4%
State Reimbursed COLAs	\$83	\$83	0.0%
Total System-Funded Retirement Allowance	\$1,396,665	\$1,382,414	1.0%
<b>Inactive Members</b>	280	238	17.6%
Annuity Savings Fund	\$3,520,131	\$3,293,244	6.9%

## SECTION 7 - PLAN MEMBER INFORMATION

**Exhibit 7.2 - Active Members by Age and Years of Service as of January 1, 2022**

Attained Age	Years of Service										Total	Total Salary	Average Salary
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up				
Under 20	2	-	-	-	-	-	-	-	-	-	2	95,170	47,585
20 to 24	21	-	-	-	-	-	-	-	-	-	21	916,361	43,636
25 to 29	29	3	-	-	-	-	-	-	-	-	32	1,744,778	54,524
30 to 34	30	24	-	-	-	-	-	-	-	-	54	3,763,434	69,693
35 to 39	25	24	17	1	-	-	-	-	-	-	67	5,099,481	76,112
40 to 44	37	13	5	13	3	-	-	-	-	-	71	4,848,744	68,292
45 to 49	21	14	14	4	8	3	-	-	-	-	64	4,915,291	76,801
50 to 54	36	22	17	16	13	9	5	-	-	-	118	9,034,906	76,567
55 to 59	27	18	16	8	10	6	6	2	-	-	93	6,085,191	65,432
60 to 64	22	17	9	15	11	8	7	3	1	-	93	6,568,609	70,630
65 to 69	10	4	4	7	7	1	1	2	1	-	37	2,422,116	65,463
70 & up	5	1	1	-	2	4	-	-	-	-	13	814,964	62,690
<b>Total</b>	<b>265</b>	<b>140</b>	<b>83</b>	<b>64</b>	<b>54</b>	<b>31</b>	<b>19</b>	<b>7</b>	<b>2</b>		<b>665</b>	<b>46,309,045</b>	<b>69,638</b>
<b>Average Salary</b>	<b>53,060</b>	<b>65,469</b>	<b>76,012</b>	<b>87,139</b>	<b>88,318</b>	<b>103,098</b>	<b>113,737</b>	<b>119,867</b>	<b>115,619</b>				

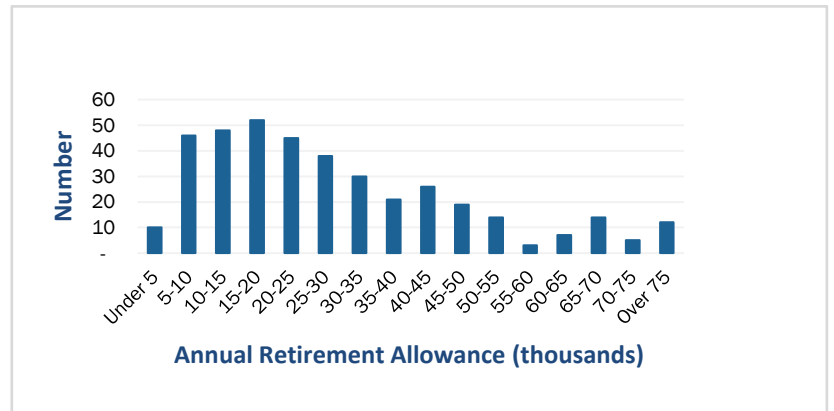
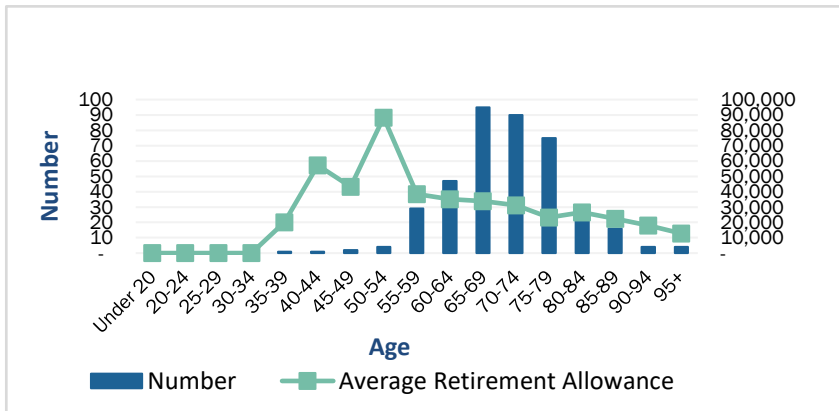
Average Age: **49.0**      Average Service: **10.1**



## SECTION 7 - PLAN MEMBER INFORMATION

### Exhibit 7.3 - Annual Retirement Allowances as of January 1, 2022

Attained Age	Service Retirements		Disability Retirements		Beneficiaries	
	Number	Annual Retirement Allowance	Number	Annual Retirement Allowance	Number	Annual Retirement Allowance
Under 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	1	20,120	0	0
40-44	0	0	1	57,212	0	0
45-49	0	0	2	86,674	0	0
50-54	4	353,510	0	0	0	0
55-59	23	890,125	2	92,571	4	133,460
60-64	37	1,191,147	9	438,607	1	16,794
65-69	81	2,686,044	8	442,419	6	94,674
70-74	80	2,537,346	4	176,620	6	89,914
75-79	65	1,553,681	3	82,525	7	99,850
80-84	29	770,519	0	0	1	25,626
85-89	12	279,897	0	0	4	76,931
90-94	4	71,755	0	0	0	0
95+	3	31,380	0	0	1	19,996
<b>Total</b>	<b>338</b>	<b>10,365,404</b>	<b>30</b>	<b>1,396,748</b>	<b>30</b>	<b>557,245</b>
<b>Average Age</b>	<b>71.8</b>		<b>63.6</b>		<b>73.8</b>	
<b>Average Retirement Allowance</b>		<b>30,667</b>		<b>46,558</b>		<b>18,575</b>





## SECTION 8 - GLOSSARY OF TERMS

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**Actuarial Accrued Liability** – That portion of the Actuarial Present Value of pension plan benefits which is not provided by future Normal Costs or employee contributions. It is the portion of the Actuarial Present Value attributable to service rendered as of the Valuation Date.

**Actuarial Assumptions** – Assumptions, based upon past experience or standard tables, used to predict the occurrence of future events affecting the commencement, amount and duration of pension benefits, such as: changes in compensation, mortality, withdrawal, disablement and retirement; rates of investment earnings and asset appreciation or depreciation; and any other relevant items.

**Actuarial Cost Method (or Funding Method)** – A procedure for allocating the Actuarial Present Value of all past and future pension plan benefits to the current year (Normal Cost) and the past (Actuarial Accrued Liability).

**Actuarial Gain or Loss (or Experience Gain or Loss)** – A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions, during the period between the valuation date and the most recent immediately preceding valuation date.

**Actuarial Present Value** – The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

**Amortization Payment** – That portion of the pension plan appropriation which represents payments made to pay interest on and the reduction of the Unfunded Accrued Liability.

**Annual Statement** – The statement submitted by the local retirement board to PERAC each year that describes the asset holdings and Fund balances as of December 31 and the transactions during the calendar year that affected the financial condition of the retirement system.

**Annuity Reserve Fund** – The fund into which total accumulated Member Contributions, including interest, is transferred at the time a member retires, and from which annuity payments are made.

**Annuity Savings Fund** – The fund in which Member Contributions plus interest credited are held for active members and for former members who have not withdrawn their contributions and are not yet receiving a benefit (inactive members).

**Assets** – The total value of the investments held by the Plan trust that are for the payment of promised benefits. Employer appropriations and Member Contributions, as well as investment earnings, are added to the Plan trust. Benefit payments and other disbursements are withdrawn from the Plan trust. For valuation purposes, assets are usually measured at market value.

**Cost of Benefits** – The estimated payment from the pension system for benefits for the fiscal year.

**Expense Fund** – The fund into which the appropriation for administrative expenses is paid and from which all such expenses are paid.

## SECTION 8 - GLOSSARY OF TERMS

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**Funded Ratio** – The Actuarial Value of Assets expressed as a percentage of the Actuarial Accrued Liability.

**Funding Schedule** – The schedule based upon the most recently approved actuarial valuation which sets forth the amount which would be appropriated to the pension system in accordance with Section 22D and Section 22F of M.G.L. Chapter 32.

**GASB** – Governmental Accounting Standards Board.

**Normal Cost** – Total Normal Cost is that portion of the Actuarial Present Value of pension plan benefits which is expected to accrue in the current fiscal year. The Employee Normal Cost is the amount of the expected Member Contributions for the current fiscal year. The Employer Normal Cost is the difference between the Total Normal Cost and the Employee Normal Cost.

**Pension Fund** – The fund into which appropriation amounts as determined by PERAC are paid and from which pension benefits are paid.

**Pension Reserve Fund** – The fund which shall be credited with all amounts set aside by a system for the purpose of establishing a reserve to meet future pension liabilities. These amounts would include excess interest earnings.

**Present Value of Future Benefits** – The actuarial present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value of money and the probabilities of payment.

**Special Fund for Military Service Credit** – The fund which is credited with amounts paid by the retirement board equal to the amount which would have been contributed by a member during a military leave of absence as if the member had remained in active service of the retirement board. In the event of retirement or a non-job related death, such amount is transferred to the Annuity Reserve Fund. In the event of termination prior to retirement or death, such amount shall be transferred to the Pension Fund.

**Total Pension Liability** – The portion of the Actuarial Present Value attributable to past service in accordance with the Entry Age cost method as stipulated by GASB Statement Number 67 (GASB 67).

**Unfunded Actuarial Accrued Liability** – The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

## SECTION 9 - MEMBER UNIT APPROPRIATION

Unit Name	FY2024 Appropriation						FY2023 Appropriation	Increase over 2023	Payment on 7/1/2023
	Actuarial Allocation Method					Total FY2024 Appropriation			
	Normal Cost	Amortization of UAL	2002 ERI	2003 ERI	Net 3(8)(c) Transfers				
Up-Island School	108,684	157,537	3,374	-	16,103	285,698	267,369	280,946	
Dukes County	255,716	272,987	29,461	5,321	32,133	595,618	624,927	585,712	
Tisbury	647,416	859,912	51,634	-	84,185	1,643,147	1,514,479	1,615,819	
Edgartown	756,602	1,155,750	37,445	24,395	100,870	2,075,062	2,057,797	2,040,552	
Oak Bluffs	596,540	734,668	24,956	10,589	65,106	1,431,859	1,398,760	1,408,045	
West Tisbury	305,839	318,762	13,686	6,632	26,253	671,172	604,064	660,009	
Chilmark	295,440	249,961	17,294	9,157	13,652	585,504	539,204	575,766	
Aquinnah	118,330	97,681	-	-	4,822	220,833	217,151	217,160	
Gosnold	30,960	25,674	-	-	1,611	58,245	52,034	57,276	
MV Transit Authority	14,169	40,314	-	-	1,179	55,662	52,842	54,736	
MV Regional School	374,316	345,909	23,209	-	33,741	777,175	745,404	764,249	
MV Landbank	27,762	78,314	-	6,709	2,153	114,938	101,580	113,026	
MV Refuse	41,656	66,886	-	-	1,905	110,447	105,497	108,610	
MV Commission	62,947	103,845	-	6,608	7,979	181,379	151,460	178,362	
OB Water Dept	26,783	61,202	-	-	5,964	93,949	84,021	92,386	
Retirement System	5,302	(7,646)	-	-	2,344	-	-	-	
<b>Total</b>	<b>3,668,462</b>	<b>4,561,756</b>	<b>201,059</b>	<b>69,411</b>	<b>400,000</b>	<b>8,900,688</b>	<b>8,516,589</b>	<b>4.51%</b>	<b>8,752,654</b>

## SECTION 9 - MEMBER UNIT APPROPRIATION

Unit Name	FY2025 Appropriation						FY2024 Appropriation	Increase over 2024	Payment on 7/1/2024
	Actuarial Allocation Method				Net 3(8)(c) Transfers	Total FY2025 Appropriation			
	Normal Cost	Amortization of UAL	2002 ERI	2003 ERI					
Up-Island School	112,159	166,902	3,526	-	13,477	296,064	285,698	291,140	
Dukes County	263,890	289,192	30,787	5,560	24,361	613,790	595,618	603,582	
Tisbury	668,113	911,038	53,958	-	73,668	1,706,777	1,643,147	1,678,390	
Edgartown	780,790	1,224,539	39,131	25,495	100,587	2,170,542	2,075,062	2,134,442	
Oak Bluffs	615,610	778,377	26,078	11,065	64,148	1,495,278	1,431,859	1,470,409	
West Tisbury	315,617	337,729	14,301	6,930	27,891	702,468	671,172	690,785	
Chilmark	304,885	264,860	18,072	9,569	22,381	619,767	585,504	609,459	
Aquinnah	122,113	103,505	-	-	8,637	234,255	220,833	230,359	
Gosnold	31,949	27,204	-	-	2,242	61,395	58,245	60,374	
MV Transit Authority	14,622	42,723	-	-	3,373	60,718	55,662	59,708	
MV Regional School	386,282	366,466	24,253	-	30,335	807,336	777,175	793,909	
MV Landbank	28,649	82,997	-	7,011	6,887	125,544	114,938	123,456	
MV Refuse	42,988	70,883	-	-	5,689	119,560	110,447	117,572	
MV Commission	64,959	110,031	-	6,905	9,099	190,994	181,379	187,817	
OB Water Dept	27,639	64,843	-	-	5,139	97,621	93,949	95,997	
Retirement System	5,472	(7,558)	-	-	2,086	-	-	-	
<b>Total</b>	<b>3,785,737</b>	<b>4,833,731</b>	<b>210,106</b>	<b>72,535</b>	<b>400,000</b>	<b>9,302,109</b>	<b>8,900,688</b>	<b>4.51%</b>	<b>9,147,399</b>

## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Up-Island					
	School	Dukes County	Tisbury	Edgartown	Oak Bluffs	West Tisbury
<b>Summary of Member Data</b>						
Active Members	40	26	91	105	79	27
Average Age	45.0	47.8	51.3	50.8	50.3	52.4
Groups 1 & 2 Average Service	5.3	7.9	10.5	11.7	8.9	10.3
Salary	1,798,726	1,963,108	5,793,395	6,964,770	4,455,343	2,005,556
Average Salary	44,968	75,504	63,664	66,331	56,397	74,280
Group 4 Active Members	0	10	21	26	25	10
Average Age	0.0	47.7	39.3	41.5	40.4	44.6
Average Service	0.0	11.3	8.9	13.6	12.2	15.2
Salary	0	783,725	1,955,201	3,102,123	2,542,921	1,182,192
Average Salary	0	78,373	93,105	119,312	101,717	118,219
Retired Members and Beneficiaries	21	25	78	77	58	22
Annual Pensions	394,514	791,839	2,448,894	2,687,561	1,544,009	808,558
Average Age	69.8	72.0	72.0	71.4	72.3	70.8
Average Pension	18,786	31,674	31,396	34,903	26,621	36,753
Disabled Members	2	5	4	7	10	0
Annual Pensions	101,448	197,811	143,883	419,079	461,144	0
Average Age	62.5	62.1	60.5	66.0	62.3	0.0
Average Pension	50,724	39,562	35,971	59,868	46,114	0
Inactive Members	46	12	38	40	65	7
Annuity Savings Fund	328,003	108,077	469,852	471,476	981,394	105,686

## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Up-Island School	Dukes County	Tisbury	Edgartown	Oak Bluffs	West Tisbury
<b>Actuarial Accrued Liability - January 1, 2022</b>						
Active Employees	2,539,171	5,480,821	19,198,357	29,348,069	17,602,699	8,897,178
Retired Members and Beneficiaries	4,373,857	8,147,692	26,190,202	28,912,715	16,459,044	8,802,033
Disabled Members	1,249,117	2,426,359	1,710,725	5,063,670	5,678,732	0
Inactive Members	328,003	108,077	469,852	471,476	981,394	105,686
<b>Total</b>	<b>8,490,148</b>	<b>16,162,949</b>	<b>47,569,136</b>	<b>63,795,930</b>	<b>40,721,869</b>	<b>17,804,897</b>
<b>Actuarial Value of Plan Assets - January 1, 2022</b>						
Actuarial Value of Assets	7,240,581	13,784,110	40,567,981	54,406,542	34,728,485	15,184,399
<b>Unfunded Actuarial Accrued Liability</b>						
Unfunded Actuarial Accrued Liability	1,232,192	2,199,736	6,735,279	9,070,951	5,810,355	2,515,879
ERI 2002	17,375	151,704	265,876	192,817	128,503	70,470
ERI 2003	0	27,399	0	125,620	54,526	34,149
<b>Total</b>	<b>1,249,567</b>	<b>2,378,839</b>	<b>7,001,155</b>	<b>9,389,388</b>	<b>5,993,384</b>	<b>2,620,498</b>
<b>Normal Cost - January 1, 2022</b>						
Total Normal Cost	259,027	488,508	1,281,270	1,588,356	1,174,328	568,799
Administrative Expenses	18,032	34,007	89,195	110,572	81,750	39,597
Total Normal Cost	277,059	522,515	1,370,465	1,698,928	1,256,078	608,396
Employee Normal Cost	(174,426)	(281,037)	(759,095)	(984,452)	(692,752)	(319,585)
Employer Normal Cost	102,633	241,478	611,370	714,476	563,326	288,811
Employer Normal Cost as % of Salary	5.71%	8.79%	7.89%	7.10%	8.05%	9.06%

## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Up-Island					
	School	Dukes County	Tisbury	Edgartown	Oak Bluffs	West Tisbury
<b>2023 Appropriation</b>						
Non-ERI Appropriation	264,140	591,642	1,465,069	1,998,619	1,364,746	584,622
ERI 2002	3,229	28,193	49,410	35,833	23,881	13,096
ERI 2003	0	5,092	0	23,345	10,133	6,346
Total Appropriation	267,369	624,927	1,514,479	2,057,797	1,398,760	604,064
<b>2024 Appropriation</b>						
Employer Normal Cost	108,684	255,716	647,416	756,602	596,540	305,839
Amortization Payment of UAL	156,420	270,659	853,490	1,147,642	729,072	316,139
ERI 2002	3,374	29,461	51,634	37,445	24,956	13,686
ERI 2003	0	5,321	0	24,395	10,589	6,632
Net 3(8)(c) Transfers	16,103	32,133	84,185	100,870	65,106	26,253
Total Appropriation (before adjustment)	284,581	593,290	1,636,725	2,066,954	1,426,263	668,549
Adjusted Appropriation	1,117	2,328	6,422	8,108	5,596	2,623
Total Appropriation	285,698	595,618	1,643,147	2,075,062	1,431,859	671,172
2024 Appropriation Increase over 2023	6.86%	-4.69%	8.50%	0.84%	2.37%	11.11%
<b>2025 Appropriation</b>						
Actuarial Allocation Method:						
Employer Normal Cost	112,159	263,890	668,113	780,790	615,610	315,617
Amortization Payment of UAL	165,746	286,796	904,375	1,216,066	772,540	334,987
ERI 2002	3,526	30,787	53,958	39,131	26,078	14,301
ERI 2003	0	5,560	0	25,495	11,065	6,930
Net 3(8)(c) Transfers	13,477	24,361	73,668	100,587	64,148	27,891
Total Appropriation (before adjustment)	294,908	611,394	1,700,114	2,162,069	1,489,441	699,726
Adjusted Appropriation	1,156	2,396	6,663	8,473	5,837	2,742
Total Appropriation	296,064	613,790	1,706,777	2,170,542	1,495,278	702,468
2025 Appropriation Increase over 2024	4.04%	3.46%	4.28%	5.01%	4.84%	5.07%

## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Chilmark	Aquinnah	Gosnold	MV Transit Authority	MV Regional School
<b>Summary of Member Data</b>					
Active Members	27	11	5	6	95
Average Age	54.2	50.1	61.0	47.3	50.1
Groups 1 & 2 Average Service	12.1	8.6	16.0	13.9	6.4
Salary	1,855,999	665,820	280,504	542,005	5,022,383
Average Salary	68,741	60,529	56,101	90,334	52,867
Active Members	12	4	0	0	0
Average Age	44.4	51.8	0.0	0.0	0.0
Group 4 Average Service	11.0	23.3	0.0	0.0	0.0
Salary	1,283,659	494,690	0	0	0
Average Salary	106,972	123,673	0	0	0
Retired Members and Beneficiaries	18	6	5	1	39
Annual Pensions	420,456	148,515	49,620	36,313	965,786
Average Age	73.3	73.1	78.2	72.9	71.6
Average Pension	23,359	24,753	9,924	36,313	24,764
Disabled Members	0	0	0	0	2
Annual Pensions	0	0	0	0	73,383
Average Age	0.0	0.0	0.0	0.0	73.1
Average Pension	0	0	0	0	36,691
Inactive Members	6	4	0	5	53
Annuity Savings Fund	229,057	87,841	0	131,664	569,367



## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Chilmark	Aquinnah	Gosnold	MV Transit Authority	MV Regional School
<b>Actuarial Accrued Liability - January 1, 2022</b>					
Active Employees	9,847,121	3,734,417	942,647	1,602,369	7,730,835
Retired Members and Beneficiaries	4,432,066	1,542,945	450,264	361,251	10,625,873
Disabled Members	0	0	0	0	729,806
Inactive Members	229,057	87,841	0	131,664	569,367
Total	14,508,244	5,365,203	1,392,911	2,095,284	19,655,881
<b>Actuarial Value of Plan Assets - January 1, 2022</b>					
Actuarial Value of Assets	12,372,942	4,575,560	1,187,904	1,786,903	16,762,958
<b>Unfunded Actuarial Accrued Liability</b>					
Unfunded Actuarial Accrued Liability	1,999,101	789,643	205,007	308,381	2,773,416
ERI 2002	89,049	0	0	0	119,507
ERI 2003	47,152	0	0	0	0
Total	2,135,302	789,643	205,007	308,381	2,892,923
<b>Normal Cost - January 1, 2022</b>					
Total Normal Cost	549,910	213,007	53,375	64,884	783,919
Administrative Expenses	38,282	14,828	3,716	4,517	54,572
Total Normal Cost	588,192	227,835	57,091	69,401	838,491
Employee Normal Cost	(309,201)	(116,093)	(27,855)	(56,021)	(485,016)
Employer Normal Cost	278,991	111,742	29,236	13,380	353,475
Employer Normal Cost as % of Salary	8.89%	9.63%	10.42%	2.47%	7.04%

## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Chilmark	Aquinnah	Gosnold	MV Transit Authority	MV Regional School
<b>2023 Appropriation</b>					
Non-ERI Appropriation	513,892	217,151	52,034	52,842	723,195
ERI 2002	16,549	0	0	0	22,209
ERI 2003	8,763	0	0	0	0
Total Appropriation	539,204	217,151	52,034	52,842	745,404
<b>2024 Appropriation</b>					
Employer Normal Cost	295,440	118,330	30,960	14,169	374,316
Amortization Payment of UAL	247,673	96,818	25,446	40,096	342,872
ERI 2002	17,294	0	0	0	23,209
ERI 2003	9,157	0	0	0	0
Net 3(8)(c) Transfers	13,652	4,822	1,611	1,179	33,741
Total Appropriation (before adjustment)	583,216	219,970	58,017	55,444	774,138
Adjusted Appropriation	2,288	863	228	218	3,037
Total Appropriation	585,504	220,833	58,245	55,662	777,175
2024 Appropriation Increase over 2023	8.59%	1.70%	11.94%	5.34%	4.26%
<b>2025 Appropriation</b>					
Actuarial Allocation Method:					
Employer Normal Cost	304,885	122,113	31,949	14,622	386,282
Amortization Payment of UAL	262,440	102,590	26,964	42,486	363,314
ERI 2002	18,072	0	0	0	24,253
ERI 2003	9,569	0	0	0	0
Net 3(8)(c) Transfers	22,381	8,637	2,242	3,373	30,335
Total Appropriation (before adjustment)	617,347	233,340	61,155	60,481	804,184
Adjusted Appropriation	2,420	915	240	237	3,152
Total Appropriation	619,767	234,255	61,395	60,718	807,336
2025 Appropriation Increase over 2024	6.27%	6.49%	5.82%	9.51%	4.29%

## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	MV Landbank	MV Refuse	MV Commission	OB Water Dept	Retirement System	Total
<b>Summary of Member Data</b>						
Active Members	11	10	12	10	2	557
Average Age	45.7	50.9	51.2	46.1	47.9	50.2
Groups 1 & 2 Average Service	13.8	16.1	12.7	9.4	18.5	9.6
Salary	973,541	761,397	1,060,167	615,796	206,024	34,964,534
Average Salary	88,504	76,140	88,347	61,580	103,012	62,773
Group 4 Active Members	0	0	0	0	0	108
Average Age	0.0	0.0	0.0	0.0	0.0	42.4
Average Service	0.0	0.0	0.0	0.0	0.0	12.4
Salary	0	0	0	0	0	11,344,511
Average Salary	0	0	0	0	0	105,042
Retired Members and Beneficiaries	2	3	7	4	2	368
Annual Pensions	66,311	58,659	245,751	183,686	72,178	10,922,649
Average Age	69.7	73.4	73.9	71.5	77.7	71.9
Average Pension	33,155	19,553	35,107	45,921	36,089	29,681
Disabled Members	0	0	0	0	0	30
Annual Pensions	0	0	0	0	0	1,396,748
Average Age	0.0	0.0	0.0	0.0	0.0	63.6
Average Pension	0	0	0	0	0	46,558
Inactive Members	1	1	0	2	0	280
Annuity Savings Fund	31,229	1,299	0	5,186	0	3,520,131

## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	MV Landbank	MV Refuse	MV Commission	OB Water Dept	Retirement System	Total
<b>Actuarial Accrued Liability - January 1, 2022</b>						
Active Employees	3,470,930	2,952,413	2,903,997	1,107,194	772,862	118,131,080
Retired Members and Beneficiaries	776,081	580,165	2,748,227	2,079,804	523,208	117,005,427
Disabled Members	0	0	0	0	0	16,858,409
Inactive Members	31,229	1,299	0	5,186	0	3,520,131
Total	4,278,240	3,533,877	5,652,224	3,192,184	1,296,070	255,515,047
<b>Actuarial Value of Plan Assets - January 1, 2022</b>						
Actuarial Value of Assets	3,648,575	3,013,766	4,820,338	2,722,363	1,105,316	217,908,723
<b>Unfunded Actuarial Accrued Liability</b>						
Unfunded Actuarial Accrued Liability	595,119	520,111	797,861	469,821	190,754	36,213,606
ERI 2002	0	0	0	0	0	1,035,301
ERI 2003	34,546	0	34,025	0	0	357,417
Total	629,665	520,111	831,886	469,821	190,754	37,606,324
<b>Normal Cost - January 1, 2022</b>						
Total Normal Cost	115,778	106,879	157,126	80,922	24,747	7,510,835
Administrative Expenses	8,060	7,440	10,938	5,633	1,723	522,862
Total Normal Cost	123,838	114,319	168,064	86,555	26,470	8,033,697
Employee Normal Cost	(97,622)	(74,982)	(108,622)	(61,263)	(21,463)	(4,569,485)
Employer Normal Cost	26,216	39,337	59,442	25,292	5,007	3,464,212
Employer Normal Cost as % of Salary	2.69%	5.17%	5.61%	4.11%	2.43%	7.48%

## SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	MV Landbank	MV Refuse	MV Commission	OB Water Dept	Retirement System	Total
<b>2023 Appropriation</b>						
Non-ERI Appropriation	95,160	105,497	145,137	84,021	0	8,257,767
ERI 2002	0	0	0	0	0	192,400
ERI 2003	6,420	0	6,323	0	0	66,422
Total Appropriation	101,580	105,497	151,460	84,021	0	8,516,589
<b>2024 Appropriation</b>						
Employer Normal Cost	27,762	41,656	62,947	26,783	5,302	3,668,462
Amortization Payment of UAL	77,865	66,454	103,136	60,835	27,139	4,561,756
ERI 2002	0	0	0	0	0	201,059
ERI 2003	6,709	0	6,608	0	0	69,411
Net 3(8)(c) Transfers	2,153	1,905	7,979	5,964	2,344	400,000
Total Appropriation (before adjustment)	114,489	110,015	180,670	93,582	34,785	8,900,688
Adjusted Appropriation	449	432	709	367	(34,785)	0
Total Appropriation	114,938	110,447	181,379	93,949	0	8,900,688
2024 Appropriation Increase over 2023	13.15%	4.69%	19.75%	11.82%	0.00%	4.51%
<b>2025 Appropriation</b>						
Actuarial Allocation Method:						
Employer Normal Cost	28,649	42,988	64,959	27,639	5,472	3,785,737
Amortization Payment of UAL	82,507	70,416	109,285	64,462	28,757	4,833,731
ERI 2002	0	0	0	0	0	210,106
ERI 2003	7,011	0	6,905	0	0	72,535
Net 3(8)(c) Transfers	6,887	5,689	9,099	5,139	2,086	400,000
Total Appropriation (before adjustment)	125,054	119,093	190,248	97,240	36,315	9,302,109
Adjusted Appropriation	490	467	746	381	(36,315)	0
Total Appropriation	125,544	119,560	190,994	97,621	0	9,302,109
2025 Appropriation Increase over 2024	9.66%	8.68%	5.71%	4.32%	0.00%	4.51%