



DUKES COUNTY RETIREMENT SYSTEM

ACTUARIAL VALUATION as of

January 1, 2016

Prepared by:

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November 22, 2016

Dukes County Retirement Board
9 Airport Road
Suite 1
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Dear Board Members:

We are pleased to present the enclosed report summarizing the results of our actuarial valuation of the Dukes County Retirement System as of January 1, 2016.

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, 2016. 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 methods and assumptions 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. The summary of information for PERAC is presented in Section 4.

We also provide a 30-year forecast of the required appropriations and cash flows in Section 3.

Our actuarial valuation is based on an investment return rate of 7.75%, compounded annually. Our calculations were based on participant census and asset data and other information provided by the Dukes County Retirement System and the benefit provisions of Chapter 32 of the M.G.L. as of January 1, 2016.

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

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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.

We appreciate this opportunity to be of service to the Dukes County Retirement Board. We are available to answer any questions with respect to our valuation.

Respectfully submitted,

A handwritten signature in black ink that reads "Linda Bournival". The signature is written in a cursive style with a large, looped "L" and "B".

Linda L. Bournival, FSA
Member, American Academy of Actuaries

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ACTUARIAL CERTIFICATION

This report presents the results of the Actuarial Valuation for the Dukes County Retirement System as of January 1, 2016. The report presents the funding schedule contribution amounts for the fiscal years beginning 2018.

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

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.

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.

This report is intended for the sole use of the Dukes County Retirement System 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 - SUMMARY

Background

We have completed the Actuarial Valuation of the Dukes County Retirement System as of January 1, 2016. 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 Retirement Board. Information for the prior valuation completed as of January 1, 2014 was obtained from the valuation report prepared by KMS Actuaries.

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 January 1, 2016, the assets as of December 31, 2015 and assumptions regarding investment returns, salary increases, death, 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 new pension standards reflect changes from those previously in place regarding how governments calculate total pension liability and pension expense. Further, the new 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 the new GASB Statements for the fiscal year ending December 31, 2015 are provided in a separate report.

SECTION 1 - SUMMARY

Actuarial Valuation

During the two years since the last valuation, the total unfunded actuarial accrued liability of the System was expected to decrease from \$44,396,784 as of January 1, 2014 to \$41,785,915 as of January 1, 2016, for a total decrease of \$2,610,869. The actual unfunded actuarial accrued liability, before any assumption or plan changes, was \$40,640,253, resulting in an actuarial gain of \$1,145,662. The actuarial gain was primarily due to an asset gain of \$3,328,328 and a demographic experience loss of \$2,182,666. The details of the gain and loss analysis are provided in Exhibit 2.6.

Appropriations

The funding appropriation for each year is computed as the sum of the normal cost and an amortization payment to pay off the Unfunded Actuarial Liability, adjusted for semi-annual payments of the appropriation made at the beginning of each fiscal year. The appropriation calculated as of the January 1, 2016 valuation is \$6,120,146, and is made up of a normal cost payment of \$1,950,249, an amortization payment of \$4,004,396 and net 3(8)(c) transfers of \$165,501. The amortization method is an increasing amortization of the unfunded actuarial accrued liability at 4.5% over 14 years and is expected to fully pay the unfunded actuarial accrued liability by the year 2030. The development of the appropriation as of January 1, 2016 is presented in Exhibit 3.1.

For fiscal year 2017, we show the actual appropriation developed under the previous funding schedule and reported on the PERAC "Required Fiscal Year Appropriation" letter dated November 30, 2015 of \$6,095,727. For fiscal year 2018, we developed an annual appropriation of \$6,400,513, which is made up of a normal cost of \$2,144,671 and payment toward the unfunded actuarial accrued liability of \$4,255,842. The unfunded actuarial accrued liability is expected to be fully paid by 2030. The Board adopted a schedule that limits the annual increase in appropriations to 5% for FY2018 and FY2019 and 5.32% for FY2020 and thereafter. The current funding schedule is shown in Exhibit 3.2.

SECTION 1 - SUMMARY

A summary of principal valuation results from the current valuation and the prior valuation follows. Changes in actuarial assumptions and methods and Plan provisions are discussed below, as well as changes in census data and asset information.

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>	<u>Increase/ (Decrease)</u>
Summary of Member Data			
Active Members	672	629	6.8%
Average Age	48.7	49.0	(0.6%)
Average Service	10.8	11.1	(2.7%)
Annual Compensation	\$37,993,450	\$34,859,969	9.0%
Average Annual Compensation	\$56,538	\$55,421	2.0%
Retired Members and Beneficiaries			
Retired Members and Beneficiaries	266	238	11.8%
Average Age	71.0	70.7	0.4%
Total Annual Pension	\$5,943,040	4,715,906	26.0%
Average Annual Pension	\$22,342	\$19,815	12.8%
State Reimbursed COLAs	\$22,923	29,220	(21.6%)
Total System-Funded Pension	\$5,920,117	\$4,686,686	26.3%
Disabled Members			
Disabled Members	26	23	13.0%
Average Age	63.0	61.0	3.3%
Total Annual Pension	\$982,480	852,623	15.2%
Average Annual Pension	\$37,788	\$37,071	1.9%
State Reimbursed COLAs	\$1,344	1,755	(23.4%)
Total System-Funded Pension	\$981,136	\$850,868	15.3%
Inactive Members			
Inactive Members	145	126	15.1%
Annuity Savings Fund	1,790,199	\$1,325,950	35.0%
Funded Status - Market Value of Assets			
Actuarial Accrued Liability (AAL)	\$167,672,546	\$141,568,416	18.4%
Market Value of Assets (MVA)	\$121,844,510	\$103,538,933	17.7%
Unfunded Accrued Liability	\$45,828,036	\$38,029,483	20.5%
Funded Status	72.7%	73.1%	(0.5%)
Funded Status - Actuarial Value of Assets			
Actuarial Accrued Liability (AAL)	\$167,672,546	\$141,568,416	18.4%
Actuarial Value of Assets (AVA)	121,642,995	97,171,632	25.2%
Unfunded Accrued Liability	\$46,029,551	\$44,396,784	3.7%
Funded Status	72.5%	68.6%	5.7%

SECTION 1 - SUMMARY

Normal Cost

Employer	\$1,600,249	\$1,363,116	17.4%
Employee	3,602,882	3,301,367	9.1%
Administrative Expenses	350,000	305,000	14.8%
Total Normal Cost	\$5,553,131	\$4,969,483	11.7%

Appropriations

Fiscal Year 2016	N/A	\$5,849,546	N/A
Fiscal Year 2017	\$6,095,727	\$6,095,727	0.0%
Fiscal Year 2018	\$6,400,513	\$6,352,623	0.8%
Fiscal Year 2019	\$6,720,539	\$6,620,695	1.5%

Actuarial Assumptions and Methods

All of the Actuarial Assumptions and Methods used in this valuation are the same as those used in the last valuation, except the mortality rates were updated to reflect a more recent mortality table and improvement scale and administrative expenses for FY2018 were increased from \$305,000 to \$350,000. Changing these assumptions resulted in a net increase in the unfunded actuarial accrued liability of \$5,389,298 and an increase in the employer normal cost of \$282,108. The Actuarial Assumptions and Methods utilized in this valuation are detailed in Section 6, Actuarial Assumptions and Methods.

Plan Provisions

The 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.

Census Data

As of January 1, 2016, there are 672 active members who may be eligible for benefits in the future, 266 retirees and beneficiaries, 145 inactives and 26 disabled retirees. Summaries of the active, retired and disabled employees are included in Section 7, Demographic Information.

Assets

This valuation is based upon asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Dukes County Retirement Board. The market value of assets increased from \$103,538,933 as of January 1, 2014 to \$121,844,510 as of January 1, 2016. During the plan years ended 2014 and 2015, the rates of return on the market value of assets were 8.19% and 4.00%, respectively.

The actuarial value of assets increased from \$97,171,632 as of January 1, 2014 to \$121,642,995 as of January 1, 2016. During the plan years ended 2014 and 2015, the rates of return on the actuarial value of assets were 10.19% and 8.41%, respectively.

SECTION 2 - PRINCIPAL VALUATION RESULTS

Exhibit 2.1 - Plan Assets

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

Calendar Year	2015	2014	2013
Trust Fund Composition at Year-End			
Cash	\$4,104,081	\$2,897,626	\$3,363,708
Short-Term Investments	0	700,000	700,000
Fixed Income Securities	12,925,671	12,841,418	850
Equities	28,430,271	24,228,249	20,825,444
Pooled Short Term Funds	0	0	0
Pooled Domestic Equity Funds	13,891,469	13,107,687	11,580,318
Pooled International Equity Funds	3,701,476	3,662,836	3,805,207
Pooled Global Equity Funds	0	0	0
Pooled Domestic Fixed Income Funds	0	0	12,068,297
Pooled International Fixed Income Funds	0	0	0
Pooled Global Fixed Income Funds	0	0	0
Pooled Alternative Investments	0	0	0
Pooled Real Estate Funds	10,473,908	8,672,325	6,110,325
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	47,534,126	47,224,655	43,848,250
Interest Due & Accrued	53,614	0	0
Prepaid Expenses	0	0	0
Accounts Receivable	840,739	2,148,944	1,586,905
Land	0	0	0
Buildings	0	0	0
Accumulated Depreciation - Buildings	0	0	0
Accounts Payable	(110,845)	(290,215)	(350,371)
Total Market Value of Assets	\$121,844,510	\$115,193,525	\$103,538,933

SECTION 2 - PRINCIPAL VALUATION RESULTS

Exhibit 2.1 - Plan Assets

Calendar Year	2015	2014	2013
Funds			
Annuity Savings Fund	\$32,849,635	\$31,243,662	\$29,167,729
Annuity Reserve Fund	8,125,332	7,186,443	6,616,301
Military Service Fund	13,413	13,399	13,386
Pension Fund	136,012	740,574	442,958
Expense Fund	0	0	0
Pension Reserve Fund	80,720,118	76,009,447	67,298,559
Total Market Value of Assets	<u>\$121,844,510</u>	<u>\$115,193,525</u>	<u>\$103,538,933</u>
Asset Activity			
Market value as of Beginning of Year	\$115,193,525	\$103,538,933	\$86,697,313
Contributions and Receipts	9,668,417	9,876,554	9,314,859
Benefit Payments and Expenses	(7,665,399)	(6,823,482)	(6,843,013)
Investment Return	4,647,967	8,601,520	14,369,774
Market Value as of End of Year	\$121,844,510	\$115,193,525	\$103,538,933
Computed Rate of Return	4.00%	8.19%	16.34%

Returns and annualized past returns developed by PERAC are shown below. Information is obtained from the Annual Investment Reports published by PERAC for the years shown.

Year	1-Year Return	5-Year Return	10-Year Return	Return (Since 1985)
2015	4.45%	8.91%	7.02%	7.76%
2014	8.97%	10.87%	7.32%	7.87%
2013	17.14%	12.23%	7.41%	7.84%
2012	11.75%	2.97%	7.36%	7.52%
2011	2.83%	2.91%	5.52%	7.36%
2010	14.19%	5.17%	4.58%	7.54%
2009	15.84%	3.90%	3.06%	7.29%
2008	-23.83%	2.80%		6.94%
2007	11.43%	11.94%		8.53%
2006	14.59%	8.19%		8.40%
2005	7.45%	4.00%		8.12%
2004	9.83%	2.23%		8.15%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Exhibit 2.1 - Plan Assets

Valuation Date	1/1/2016	1/1/2015	1/1/2014
1. Market Value of Assets as of prior January 1	\$115,193,525	\$103,538,933	\$86,697,313
a. Prior Year Contributions and Receipts	9,668,417	9,876,554	9,314,859
b. Prior Year Benefit Payments and Expenses	(7,665,399)	(6,823,482)	(6,843,013)
c. Expected Investment Return Rate	7.750%	7.750%	8.000%
d. Expected Investment Return	9,005,115	8,142,574	7,034,659
e. Expected Market Value of Assets as of Valuation Date	\$126,201,658	\$114,734,579	\$96,203,818
2. Prior Year Gain / (Loss)			
a. Market Value of Assets as of January 1	\$121,844,510	\$115,193,525	\$103,538,933
b. Expected Market Value of Assets	126,201,658	114,734,579	96,203,818
c. Prior Year Gain / (Loss)	(4,357,148)	458,946	7,335,115
3. Phase-In of Asset Gains and Losses			
Plan Year	Gain / (Loss)	Unrecognized Gain / (Loss)	Unrecognized Gain / (Loss)
a. 2015	(\$4,357,148)	(\$3,485,718)	\$0
b. 2014	458,946	275,368	367,157
c. 2013	7,335,115	2,934,046	4,401,069
d. 2012	2,389,094	477,819	955,638
e. 2011	(4,038,745)	-	(807,749)
f. 2010	3,406,255	-	681,251
g. Total deferred gains/(losses)		201,515	4,916,115
4. Actuarial Value of Assets			
a. Market Value of Assets Less Unrecognized Gain / (Loss)		\$121,642,995	\$110,277,410
b. 80% of Market Value of Assets		97,475,608	92,154,820
c. 120% of Market Value of Assets		146,213,412	138,232,230
d. Actuarial Value of Assets, a., but not less than b. and not greater than c.		\$121,642,995	\$110,277,410
e. Ratio of Actuarial Value of Assets to Market Value of Assets		99.83%	95.73%
5. Rate of Return on Actuarial Value of Assets for Prior Calendar Year		8.41%	10.19%
			11.05%

SECTION 2 - PRINCIPAL VALUATION RESULTS

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:

Exhibit 2.2 - Actuarial Present Value of Future Benefits

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>
Actives		
Superannuation	\$117,122,145	\$104,578,563
Termination	4,251,302	3,883,742
Death	4,966,142	3,894,315
Disability	10,177,317	9,664,102
Total Actives	\$136,516,906	\$122,020,722
Retired Members and Inactives		
Retired Members and Beneficiaries	\$60,535,933	\$47,179,510
Disabled Members	11,456,586	9,828,568
Inactive Members	1,790,199	1,325,950
Total Retired Members and Inactives	\$73,782,718	\$58,334,028
Total Present Value of Future Benefits	\$210,299,624	\$180,354,750

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:

Exhibit 2.3 - Actuarial Accrued Liability

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>
Actives		
Superannuation	\$85,058,944	\$75,295,436
Termination	3,087,471	2,796,252
Death	2,123,356	1,742,021
Disability	3,620,057	3,400,679
Total Actives	\$93,889,828	\$83,234,388
Retired Members and Inactives		
Retired Members and Beneficiaries	\$60,535,933	\$47,179,510
Disabled Members	11,456,586	9,828,568
Inactive Members	1,790,199	1,325,950
Total Retired Members and Inactives	\$73,782,718	\$58,334,028
Total Actuarial Accrued Liability	\$167,672,546	\$141,568,416

SECTION 2 - PRINCIPAL VALUATION RESULTS

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:

Exhibit 2.4 - Normal Cost

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>
Actives		
Superannuation	\$3,431,542	\$3,104,515
Termination	713,031	640,700
Death	368,470	270,852
Disability	690,088	648,416
Total Actives	\$5,203,131	\$4,664,483
As a Percentage of Salary	13.7%	13.4%
Administrative Expenses		
As a Percentage of Salary	\$350,000	\$305,000
	0.9%	0.9%
Total Normal Cost		
Normal Cost	\$5,553,131	\$4,969,483
As a Percentage of Salary	14.6%	14.3%
Employee Normal Cost		
Employee Contributions	\$3,602,882	\$3,301,367
As a Percentage of Salary	9.5%	9.5%
Employer Normal Cost		
Employer Normal Cost	\$1,950,249	\$1,668,116
As a Percentage of Salary	5.1%	4.8%

Exhibit 2.5 - Unfunded Actuarial Accrued Liability

Valuation Date	<u>1/1/2016</u>	<u>1/1/2014</u>
Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$167,672,546	\$141,568,416
b. Actuarial Value of Assets	121,642,995	97,171,632
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$46,029,551	\$44,396,784
d. Funded Ratio (b. divided by a.)	72.5%	68.6%

SECTION 2 - PRINCIPAL VALUATION RESULTS

Exhibit 2.6 - 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 \$2,610,869. Below is the development of the Actuarial Gain or Loss for the current 2-year period:

Calendar Year Ending	<u>12/31/2015</u>	<u>12/31/2014</u>
Expected Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability, beginning of year	\$42,932,882	\$44,396,784
b. Normal cost, beginning of year	5,168,262	4,969,483
c. Total contributions	9,668,417	9,876,554
d. Interest (full year on a. and b., one-half year on c.)	3,353,188	3,443,169
e. Expected Unfunded Actuarial Accrued Liability	\$41,785,915	\$42,932,882
f. Unfunded Actuarial Accrued Liability (before changes)	\$40,640,253	
g. (Gain)/Loss	(\$1,145,662)	
Asset (gain)/loss		
a. Actuarial value of assets, beginning of year	110,277,410	\$97,171,632
b. Contributions and Receipts	9,668,417	9,876,554
c. Benefit Payments and Expenses	(7,665,399)	(6,823,482)
d. Assumed rate of return	7.75%	7.75%
e. Expected return	8,624,116	7,649,108
f. Actuarial value of assets, end of year	121,642,995	110,277,410
g. Actual return	9,362,567	10,052,706
h. Actual rate of return	8.41%	10.19%
i. Asset (gain)/loss	(\$738,451)	(\$2,403,598)
j. Total asset (gain)/loss, 2-year period	(\$3,328,328)	
Actual Unfunded Actuarial Accrued Liability		
a. Changes due to:		
i) Asset (gain)/loss	(\$3,328,328)	
ii) (Gain)/loss from demographic experience	2,182,666	
iii) (Gain)/loss prior to changes	(1,145,662)	
iv) Assumption changes	5,389,298	
v) Total changes	4,243,636	
b. Unfunded Actuarial Accrued Liability, end of year	\$46,029,551	

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

Exhibit 3.1 - Annual Appropriations

The **Annual Appropriation** is determined in accordance with the requirements set forth in Section 22D 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 appropriation for the current and prior valuations.

Amortization Payments	<u>1/1/2016</u>	<u>1/1/2014</u>
a. Early Retirement Incentive (2002)		
Fully Funded Year	2028	2028
Balance as of valuation date	\$1,462,804	\$1,518,727
Amortization Amount	\$143,462	\$131,372
Remaining Payment Period	12	14
b. Early Retirement Incentive (2003)		
Fully Funded Year	2028	2028
Balance as of valuation date	\$505,004	\$524,311
Amortization Amount	\$49,527	\$45,354
Remaining Payment Period	12	14
c. Remaining Unfunded Actuarial Liability		
Fully Funded Year	2030	2030
Balance as of valuation date	\$44,061,743	\$42,353,746
Amortization Amount	\$3,811,407	\$3,297,689
Remaining Payment Period	14	16
d. Total Amortization Payments	\$4,004,396	\$3,474,415
Normal Cost	\$1,950,249	\$1,668,116
Net 3(8)(c) Transfers	\$165,501	\$165,501
Total Appropriation as of January 1, 2016	\$6,120,146	\$5,308,032

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

Exhibits 3.2 and 3.3, are based on the assumptions below:

Exhibit 3.2:

- Payroll and Total Normal Cost are both expected to increase 4% 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 to be paid over 14 years through 2030.
- The Amortization Payments of the Early Retirement Incentive Programs ('ERI') are increasing amortizations at 4.5% of the UAL attributable to the ERI programs for 2002 and 2003 over 14 years.
- Net 3(8)(c) transfers are a level dollar amount based on the net transfers expected to be paid by the Dukes County 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, the Amortization Payments of the UAL and the ERI programs and the Net 3(8)(c) Transfers, all computed as of January 1 of each year and adjusted for semi-annual payments made on July 1 and January 1. The increase in appropriations is further limited to 5% for FY2018 and FY2019 and 5.32% thereafter.
- For fiscal year 2017, we show the actual appropriation developed under the previous funding schedule of \$6,095,727.

Exhibit 3.3:

- 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 4.50% 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 3 - CHAPTER 32 OF M.G.L. APPROPRIATIONS

Exhibit 3.2 - 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	Unfunded Actuarial Accrued Liability
2017	\$2,062,184	\$3,654,477	\$151,696	\$52,370	\$175,000	\$6,095,727	\$46,029,551
2018	2,144,671	3,867,593	158,522	54,727	175,000	6,400,513	45,664,933
2019	2,230,458	4,092,236	165,656	57,189	175,000	6,720,539	45,045,533
2020	2,319,676	4,350,703	173,110	59,763	175,000	7,078,252	44,139,436
2021	2,412,464	4,624,191	180,900	62,452	175,000	7,455,007	42,889,515
2022	2,508,963	4,913,550	189,040	65,262	175,000	7,851,815	41,253,360
2023	2,609,322	5,219,677	197,547	68,199	175,000	8,269,745	39,184,384
2024	2,713,694	5,543,518	206,436	71,268	175,000	8,709,916	36,631,454
2025	2,822,242	5,886,076	215,727	74,476	175,000	9,173,521	33,538,487
2026	2,935,132	6,248,406	225,435	77,826	175,000	9,661,799	29,844,009
2027	3,052,536	6,631,625	235,578	81,327	175,000	10,176,066	25,480,682
2028	3,174,638	7,036,903	246,181	84,988	175,000	10,717,710	20,374,788
2029	3,301,623	7,811,557	-	-	175,000	11,288,180	14,445,670
2030	3,433,689	8,041,626	-	-	175,000	11,650,315	7,605,128
2031	3,571,037	-	-	-	175,000	3,746,037	-
2032	3,713,878	-	-	-	175,000	3,888,878	-
2033	3,862,434	-	-	-	175,000	4,037,434	-
2034	4,016,930	-	-	-	175,000	4,191,930	-
2035	4,177,608	-	-	-	175,000	4,352,608	-
2036	4,344,712	-	-	-	175,000	4,519,712	-
2037	4,518,501	-	-	-	175,000	4,693,501	-
2038	4,699,241	-	-	-	175,000	4,874,241	-
2039	4,887,211	-	-	-	175,000	5,062,211	-
2040	5,082,700	-	-	-	175,000	5,257,700	-
2041	5,286,009	-	-	-	175,000	5,461,009	-
2042	5,497,450	-	-	-	175,000	5,672,450	-
2043	5,717,348	-	-	-	175,000	5,892,348	-
2044	5,946,042	-	-	-	175,000	6,121,042	-
2045	6,183,885	-	-	-	175,000	6,358,885	-
2046	6,431,240	-	-	-	175,000	6,606,240	-

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

Exhibit 3.3 - 30-Year Forecast of Cash Flow

Calendar Year	Assets, BOY	Benefit Payments	Employee Contributions	Employer Contributions	Investment Return	Assets, EOY
2016	\$121,844,510	\$10,057,961	\$3,602,882	\$5,764,852	\$9,779,203	\$130,933,486
2017	130,933,486	9,078,189	3,746,997	6,053,094	10,555,072	142,210,460
2018	142,210,460	9,905,975	3,896,877	6,355,749	11,432,033	153,989,144
2019	153,989,144	10,713,140	4,052,752	6,694,047	12,351,901	166,374,704
2020	166,374,704	11,553,314	4,214,862	7,050,351	13,319,403	179,406,006
2021	179,406,006	12,362,895	4,383,456	7,425,620	14,340,107	193,192,294
2022	193,192,294	13,179,242	4,558,794	7,820,864	15,421,131	207,813,841
2023	207,813,841	14,013,602	4,741,146	8,237,144	16,568,363	223,346,892
2024	223,346,892	14,868,225	4,930,792	8,675,583	17,787,734	239,872,776
2025	239,872,776	15,676,702	5,128,024	9,137,358	19,088,235	257,549,691
2026	257,549,691	16,499,783	5,333,145	9,623,712	20,479,891	276,486,656
2027	276,486,656	17,302,818	5,546,471	10,135,954	21,972,620	296,838,883
2028	296,838,883	18,119,942	5,768,330	10,675,460	23,577,259	318,739,990
2029	318,739,990	18,935,339	5,999,063	11,017,938	25,287,422	342,109,074
2030	342,109,074	19,787,429	6,239,026	3,542,702	26,504,774	358,608,147
2031	358,608,147	20,677,863	6,488,587	3,677,790	27,778,758	375,875,419
2032	375,875,419	21,608,367	6,748,130	3,818,282	29,111,918	393,945,382
2033	393,945,382	22,580,744	7,018,055	3,964,393	30,506,903	412,853,989
2034	412,853,989	23,596,877	7,298,777	4,116,349	31,966,477	432,638,715
2035	432,638,715	24,658,736	7,590,728	4,274,383	33,493,520	453,338,610
2036	453,338,610	25,768,379	7,894,357	4,438,738	35,091,032	474,994,358
2037	474,994,358	26,927,956	8,210,131	4,609,668	36,762,139	497,648,340
2038	497,648,340	28,139,714	8,538,536	4,787,435	38,510,095	521,344,692
2039	521,344,692	29,406,001	8,880,077	4,972,313	40,338,291	546,129,372
2040	546,129,372	30,729,271	9,235,280	5,164,586	42,250,257	572,050,224
2041	572,050,224	32,112,088	9,604,691	5,364,550	44,249,665	599,157,042
2042	599,157,042	33,557,132	9,988,879	5,572,512	46,340,340	627,501,641
2043	627,501,641	35,067,203	10,388,434	5,788,793	48,526,258	657,137,923
2044	657,137,923	36,645,227	10,803,971	6,013,725	50,811,558	688,121,950
2045	688,121,950	38,294,262	11,236,130	6,247,654	53,200,542	720,512,014

Dukes County Retirement System
Actuarial Valuation as of January 1, 2016

SECTION 4 - REQUIRED DISCLOSURES

Exhibit 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 new pension standards reflect changes from those currently in place regarding how governments calculate total pension liability and pension expense. Further, the new 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 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 fiscal year ending December 31, 2014 for the Dukes County 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, 2015 (the measurement date), presents information to assist the Dukes County Retirement System in providing the required information under GASB 68 to participating employers.

SECTION 4 - REQUIRED DISCLOSURES

Exhibit 4.2 - PERAC Disclosures

The most recent actuarial valuation of the System was prepared by KMS Actuaries, LLC as of January 1, 2016.

The normal cost for employees on that date was:	\$3,602,882	9.5% of payroll
The normal cost for the employer was:	\$1,950,249	5.1% of payroll

The actuarial liability for active members was:	\$93,889,828
The actuarial liability for retired and inactive members was:	73,782,718
Total actuarial liability:	\$167,672,546
System assets as of that date:	\$121,642,995
Unfunded actuarial accrued liability:	\$46,029,551

The ratio of System assets to total actuarial accrued liability was: 72.5%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	7.75%
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 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 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.

There are four classes of membership 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.
Average Salary	<p>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.</p> <p>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.</p>
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:

	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
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%

Dukes County Retirement System
Actuarial Valuation as of January 1, 2016

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Superannuation Retirement	Eligibility if membership before April 2, 2012:	<ul style="list-style-type: none">• completion of 20 years of Creditable Service, or• attainment of age 55 if hired prior to 1978, or• attainment of age 55 with 10 years of Creditable Service, if hired after 1978.
	Eligibility if membership on or after April 2, 2012:	<ul style="list-style-type: none">• attainment of age 60 with 10 years of Creditable Service if classified in Group 1• attainment of age 55 with 10 years of Creditable Service if classified in Group 2• attainment of age 55 if hired prior to 1978 or if classified in Group 4
	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">• completion of ten or more years of Creditable Service.• elected officials hired prior to 1978, completion of six years of Creditable Service.
	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		<p>Contributions may be withdrawn upon termination of employment.</p> <ul style="list-style-type: none">• Members who voluntarily terminate with at least ten years of creditable service will receive 100% of the regular interest that has accrued to the Annuity Savings Account.• Members who voluntarily terminate with fewer than ten years of creditable service will receive interest on the Annuity Savings Account at the annual rate of 3%.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Ordinary Disability Retirement	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.
Accidental Disability Retirement	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 \$415 per year for each child.
Non-Occupational Death	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

Accidental Death	Eligibility	For members who die as a result of an occupational injury.
	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 \$708.60 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 \$13,000, effective July 1, 2012, and \$14,000, effective July 1, 2013. 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 in one of three forms of payment:

- Option A – Life annuity.
- Option B – Life annuity 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, 2016
Investment Return	7.75% 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 Dahab Associates 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% per year.
Amortization Method	<p><i>Unfunded Actuarial Accrued Liability (UAL):</i> Increasing dollar amount at 4.5% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2030.</p> <p><i>Early Retirement Incentive Programs (ERI):</i> Increasing dollar amount at 4.5% to reduce the Unfunded Actuarial Accrued Liability attributable to the ERIs to zero on or before June 30, 2028.</p> <p><i>Total Appropriation:</i> The annual appropriation increase is limited to 5% per year for FY2018 and FY2019 and 5.32% for FY2020 and beyond.</p>
Payroll Growth	4%.
Salary Scale	The assumed annual rates for salary increases including longevity are illustrated by the following rates:

<u>Years of Service</u>	<u>Groups 1 and 2</u>	<u>Group 4</u>
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%

No change from the previous valuation.

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.

Mortality Table RP-2000 Mortality Table (base year 2009) with full generational mortality improvement using Scale BB. For disabled members, RP-2000 Mortality Table (base year 2012) with full generational mortality improvement using Scale BB. Previously, RP-2000 Mortality Table Projected to 2015 (2020 pre-retirement) with Scale AA and RP-2000 Mortality Table set forward two years for disabled members.

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

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

The underlying tables with generational mortality improvement reasonably reflect the mortality experience of the System as of the valuation date based on historical and current demographic data. Further, PERAC reviewed a sampling of a few larger local retirement systems and compared the results with the results found in performing the analysis of the State Retirement System for years 2012 - 2014. For the State Retirement System analysis, the mortality assumptions reflect the recent experience study published in 2014.

Turnover Rates Illustrative turnover rates are shown below:

<u>Creditable Service</u>	<u>Groups 1 and 2</u>	<u>Group 4</u>
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:

<u>Attained Age</u>	<u>Groups 1 and 2</u>	<u>Group 4</u>
25	0.02%	0.20%
30	0.03%	0.30%
35	0.06%	0.30%
40	0.10%	0.30%
45	0.15%	1.00%
50	0.19%	1.25%
55	0.24%	1.20%
60	0.28%	0.85%
62	0.30%	0.75%
65	0.30%	0.00%

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:

<u>Age</u>	<u>Groups 1 and 2</u>		<u>Group 4</u>
	<u>Male</u>	<u>Female</u>	<u>Male & Female</u>
45	0.0%	0.0%	1.0%
50	1.0%	1.5%	2.0%
55	2.0%	5.5%	15.0%
60	12.0%	5.0%	20.0%
62	30.0%	15.0%	25.0%
65	40.0%	15.0%	100.0%
69	30.0%	20.0%	
70	100.0%	100.0%	

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

Actuarial Cost Method	Individual Entry Age Normal.
Actuarial Asset Method	<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">a) 80% of gains and losses of the prior year,b) 60% of gains and losses of the second prior year,c) 40% of gains and losses of the third prior year andd) 20% of gains and losses of the fourth prior year. <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>
Census Data	Census data as of the valuation date were submitted by the Retirement Board.
Asset Data	Asset information is reported annually to the Public Employee Retirement Administration Commission by the Dukes County Retirement System.
Dependents	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.
Administrative Expenses	<p>The anticipated administrative expenses for the fiscal year. For Fiscal Year 2017, the administrative expenses were assumed to be \$350,000 and are anticipated to increase at 4% per year. Previously, \$305,000 and increasing at 4% 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 - Active Members by Age and Years of Service as of January 1, 2016

Age	Years of Service									Total
	<u>0 to 4</u>	<u>5 to 9</u>	<u>10 to 14</u>	<u>15 to 19</u>	<u>20 to 24</u>	<u>25 to 29</u>	<u>30 to 34</u>	<u>35 to 39</u>	<u>40 & up</u>	
Under 20	1 31,680	- -	- -	- -	- -	- -	- -	- -	- -	1 31,680
20-24	16 35,706	- -	- -	- -	- -	- -	- -	- -	- -	16 35,706
25 to 29	47 38,409	1 104,556	- -	- -	- -	- -	- -	- -	- -	48 39,787
30 to 34	43 46,461	14 61,739	3 88,380	- -	- -	- -	- -	- -	- -	60 52,122
35 to 39	16 41,343	12 61,744	11 66,933	3 98,794	- -	- -	- -	- -	- -	42 57,978
40 to 44	23 40,952	18 57,362	6 55,335	14 82,879	6 103,523	- -	- -	- -	- -	67 61,013
45 to 49	39 40,651	18 54,005	14 63,489	13 77,970	6 81,620	8 100,439	1 106,811	- -	- -	99 59,192
50 to 54	24 42,280	20 56,516	19 49,328	13 66,778	9 65,208	12 88,053	2 67,029	- -	- -	99 57,858
55 to 59	20 44,603	18 49,914	22 61,054	17 58,123	13 79,777	12 93,861	2 87,055	- -	1 102,082	105 62,490
60 to 64	11 39,139	10 48,796	15 57,817	17 55,137	10 60,858	12 75,721	4 88,201	1 71,033	- -	80 58,302
65 to 69	3 38,097	3 59,046	9 43,355	7 57,967	6 63,664	6 60,365	2 58,519	2 61,105	1 63,096	39 54,716
70 & up	2 27,755	2 56,687	2 43,434	3 44,259	2 66,572	1 65,524	3 96,370	- -	1 6,738	16 55,191
Total	245	116	101	87	52	51	14	3	3	672
Average Salary	41,232	56,221	57,891	66,694	74,203	84,762	83,852	64,415	57,306	56,538
					Average Age:		48.7	Average Service:		10.8

Dukes County Retirement System
Actuarial Valuation as of January 1, 2016

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Retired Plan Members and Beneficiaries Annual Pensions as of January 1, 2016

Attained Age	Male		Female		Total	
	Count	Total Payments	Count	Total Payments	Count	Total Payments
<20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	1	3,628	0	0	1	3,628
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	0	0	1	26,039	1	26,039
50-54	3	171,445	1	22,373	4	193,818
55-59	15	532,705	4	38,160	19	570,865
60-64	18	533,009	21	392,950	39	925,959
65-69	26	678,036	48	1,055,398	74	1,733,434
70-74	26	513,792	32	730,020	58	1,243,812
75-79	11	336,401	19	326,259	30	662,660
80-84	7	118,710	9	193,032	16	311,741
85-89	1	17,025	12	135,549	13	152,575
90-94	2	23,862	7	73,319	9	97,182
95+	0	0	2	21,328	2	21,328
Total	110	2,928,612	156	3,014,428	266	5,943,040
Average Age	68.6		72.7		71	
Average Payment		26,624		19,323		22,342
	41.4%	49.3%	58.6%	50.7%	100.0%	100.0%

Included in above totals is \$22,923 in State reimbursed COLAs.

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.3 - Disabled Plan Members Annual Pensions as of January 1, 2016

Attained Age	Male		Female		Total	
	Count	Total Payments	Count	Total Payments	Count	Total Payments
<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	1	34,286	0	0	1	34,286
40-44	0	0	0	0	0	0
45-49	0	0	0	0	0	0
50-54	1	41,655	0	0	1	41,655
55-59	7	326,061	1	19,814	8	345,875
60-64	7	300,989	1	39,849	8	340,838
65-69	2	90,810	0	0	2	90,810
70-74	2	48,759	1	26,205	3	74,965
75-79	1	16,974	0	0	1	16,974
80-84	2	37,076	0	0	2	37,076
85-89	0	0	0	0	0	0
90-94	0	0	0	0	0	0
95+	0	0	0	0	0	0
Total	23	896,611	3	85,869	26	982,480
Average Age	63.0		63.3		63.0	
Average Payment		38,983		28,623		37,788
	88.5%	91.3%	11.5%	8.7%	100.0%	100.0%

Included in above totals is \$1,344 in State reimbursed COLAs.

SECTION 8 - GLOSSARY OF TERMS

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.

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

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 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 FY2018 APPROPRIATION

		FY2018 Appropriation								
		Actuarial Allocation Method								
Unit	Unit Name	Normal Cost	Amortization of UAL	2002 ERI	2003 ERI	Net 3(8)(c) Transfers	Total FY2018 Appropriation	FY2017 Appropriation	Increase over 2017	Payment on 7/1/2017
1	Up-Island School	81,427	118,894	2,660	-	4,323	207,304	199,764		203,507
2	Dukes County	153,971	283,593	23,228	4,195	19,782	484,769	445,138		475,890
3	Tisbury	384,907	687,570	40,711	-	30,961	1,144,149	1,092,884		1,123,192
4	Edgartown	439,358	965,008	29,524	19,234	44,783	1,497,907	1,417,456		1,470,470
5	Oak Bluffs	325,404	672,801	19,676	8,349	35,060	1,061,290	1,063,482		1,041,850
6	West Tisbury	186,610	274,409	10,790	5,229	9,304	486,342	429,453		477,434
7	Chilmark	130,969	190,167	13,635	7,220	6,442	348,433	344,717		342,051
8	Aquinnah	83,931	89,159	-	-	3,981	177,071	148,063		173,828
9	Gosnold	12,286	17,448	-	-	839	30,573	26,939		30,013
10	MV Transit Authority	10,614	26,997	-	-	-	37,611	53,355		36,922
11	MV Regional School	234,168	305,867	18,298	-	13,797	572,130	542,733		561,650
12	MV Landbank	7,083	57,886	-	5,290	511	70,770	78,532		69,474
13	MV Refuse	27,696	51,052	-	-	967	79,715	77,109		78,255
14	MV Commission	44,817	78,629	-	5,210	3,060	131,716	127,168		129,303
15	OB Water Dept	21,430	48,113	-	-	1,190	70,733	48,934		69,437
Total		2,144,671	3,867,593	158,522	54,727	175,000	6,400,513	6,095,727	5.00%	6,283,276

Dukes County Retirement System
Actuarial Valuation as of January 1, 2016

SECTION 9 - MEMBER UNIT FY2019 APPROPRIATION

		FY2019 Appropriation									
		Actuarial Allocation Method									
Unit	Unit Name	Normal Cost	Amortization of UAL	2002 ERI	2003 ERI	Net 3(8)(c) Transfers	Total FY2019 Appropriation	FY2018 Appropriation	Increase over 2018	Payment on 7/1/2018	
1	Up-Island School	84,684	125,800	2,780	-	5,356	218,620	207,304		213,682	
2	Dukes County	160,130	300,064	24,274	4,384	12,808	501,660	484,769		499,684	
3	Tisbury	400,304	727,507	42,542	-	30,774	1,201,127	1,144,149		1,179,352	
4	Edgartown	456,933	1,021,057	30,853	20,101	43,638	1,572,582	1,497,907		1,543,994	
5	Oak Bluffs	338,420	711,880	20,561	8,725	30,427	1,110,013	1,061,290		1,093,943	
6	West Tisbury	194,074	290,348	11,276	5,464	12,456	513,618	486,342		501,305	
7	Chilmark	136,208	201,213	14,248	7,544	8,850	368,063	348,433		359,153	
8	Aquinnah	87,288	94,338	-	-	4,017	185,643	177,071		182,519	
9	Gosnold	12,777	18,462	-	-	781	32,020	30,573		31,514	
10	MV Transit Authority	11,039	28,566	-	-	1,236	40,841	37,611		38,768	
11	MV Regional School	243,535	323,632	19,122	-	13,820	600,109	572,130		589,733	
12	MV Landbank	7,366	61,248	-	5,527	2,747	76,888	70,770		72,947	
13	MV Refuse	28,804	54,017	-	-	2,282	85,103	79,715		82,168	
14	MV Commission	46,609	83,196	-	5,444	3,712	138,961	131,716		135,769	
15	OB Water Dept	22,287	50,908	-	-	2,096	75,291	70,733		72,909	
Total		2,230,458	4,092,236	165,656	57,189	175,000	6,720,539	6,400,513	5.00%	6,597,440	

Dukes County Retirement System
Actuarial Valuation as of January 1, 2016

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Up-Island School	Dukes County	Tisbury	Edgartown	Oak Bluffs	West Tisbury	
Summary of Member Data							
Groups 1 & 2	Active Members	48	24	100	112	95	27
	Average Age	45.7	49.0	51.3	51.0	46.9	55.3
	Average Service	8.2	10.7	11.4	12.3	8.6	14.1
	Salary	1,805,478	1,507,770	4,960,746	6,006,644	4,803,059	1,697,889
	Average Salary	37,614	62,824	49,607	53,631	50,559	62,885
Group 4	Active Members	0	8	14	19	17	9
	Average Age	0.0	45.3	45.4	43.1	40.0	45.7
	Average Service	0.0	10.4	14.8	16.5	13.3	18.5
	Salary	0	536,710	1,243,392	2,022,351	1,668,347	829,558
	Average Salary	0	67,089	88,814	106,440	98,138	92,173
Retired Members and Survivors	Active Members	12	26	50	55	48	15
	Annual Pensions	171,097	603,897	1,113,050	1,493,992	1,080,450	368,192
	Average Age	68.4	71.8	71.3	71.0	71.0	71.7
	Average Pension	14,258	23,227	22,261	27,163	22,509	24,546
Disabled Members	Active Members	0	6	3	6	8	0
	Annual Pensions	0	178,947	112,202	278,283	307,013	0
	Average Age	0.0	66.3	61.5	60.7	62.0	0.0
	Average Pension	0	29,824	37,401	46,380	38,377	0
Inactive Members	Active Members	17	9	27	24	33	5
	Annuity Savings Fund	74,958	196,137	361,372	365,702	298,741	122,879

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Up-Island School	Dukes County	Tisbury	Edgartown	Oak Bluffs	West Tisbury
Actuarial Accrued Liability - January 1, 2016						
Active Employees	3,130,918	4,632,732	17,045,416	22,616,036	13,813,255	8,214,120
Retired Members and Survivors	1,852,051	5,922,422	11,162,498	15,092,239	11,159,863	3,581,063
Disabled Members	0	1,911,544	1,347,128	3,400,536	3,616,419	0
Inactive Members	74,958	196,137	361,372	365,701	298,741	122,879
Total	5,057,927	12,662,835	29,916,414	41,474,512	28,888,278	11,918,062
Actuarial Value of Plan Assets - January 1, 2016						
Actuarial Value of Assets	3,669,422	9,186,627	21,703,745	30,088,908	20,957,854	8,646,310
Unfunded Actuarial Accrued Liability						
Unfunded Actuarial Accrued Liability	1,363,955	3,223,149	7,837,005	10,935,674	7,671,818	3,123,932
ERI 2002	24,550	214,347	375,664	272,436	181,565	99,569
ERI 2003	0	38,712	0	177,494	77,041	48,251
Total	1,388,505	3,476,208	8,212,669	11,385,604	7,930,424	3,271,752
Normal Cost - January 1, 2016						
Total Normal Cost	228,356	320,835	852,749	1,082,299	861,867	384,105
Administrative Expenses	15,361	21,582	57,362	72,804	57,975	25,838
Total Normal Cost	243,717	342,417	910,111	1,155,103	919,842	409,943
Employee Normal Cost	(169,672)	(202,404)	(560,097)	(755,573)	(623,937)	(240,250)
Employer Normal Cost	74,045	140,013	350,014	399,530	295,905	169,693
Employer Normal Cost as % of Salary	4.10%	6.85%	5.64%	4.98%	4.57%	6.71%

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Up-Island School	Dukes County	Tisbury	Edgartown	Oak Bluffs	West Tisbury
2017 Appropriation						
Non-ERI Appropriation	197,218	418,895	1,053,928	1,370,798	1,036,664	414,123
ERI 2002	2,546	22,228	38,956	28,252	18,829	10,326
ERI 2003	0	4,015	0	18,406	7,989	5,004
Total Appropriation	199,764	445,138	1,092,884	1,417,456	1,063,482	429,453
2018 Appropriation						
Actuarial Allocation Method:						
Employer Normal Cost	81,427	153,971	384,907	439,358	325,404	186,610
Amortization Payment of UAL	118,894	283,593	687,570	965,008	672,801	274,409
ERI 2002	2,660	23,228	40,711	29,524	19,676	10,790
ERI 2003	0	4,195	0	19,234	8,349	5,229
Net 3(8)(c) Transfers	4,323	19,782	30,961	44,783	35,060	9,304
Total Appropriation	207,304	484,769	1,144,149	1,497,907	1,061,290	486,342
2018 Appropriation Increase over 2017	3.77%	8.90%	4.69%	5.68%	-0.21%	13.25%
2019 Appropriation						
Actuarial Allocation Method:						
Employer Normal Cost	84,684	160,130	400,304	456,933	338,420	194,074
Amortization Payment of UAL	125,800	300,064	727,507	1,021,057	711,880	290,348
ERI 2002	2,780	24,274	42,542	30,853	20,561	11,276
ERI 2003	0	4,384	0	20,101	8,725	5,464
Net 3(8)(c) Transfers	5,356	12,808	30,774	43,638	30,427	12,456
Total Appropriation	218,620	501,660	1,201,127	1,572,582	1,110,013	513,618
2019 Appropriation Increase over 2018	5.46%	3.48%	4.98%	4.99%	4.59%	5.61%

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Chilmark	Aquinnah	Gosnold	MV Transit Authority	MV Regional School	
Summary of Member Data						
Groups 1 & 2	Active Members	31	13	5	8	95
	Average Age	52.7	46.9	57.5	43.1	46.9
	Average Service	10.8	5.7	14.6	9.9	7.3
	Salary	1,684,640	661,021	131,627	574,843	4,352,501
	Average Salary	54,343	50,848	26,325	71,855	45,816
Group 4	Active Members	6	4	0	0	0
	Average Age	41.5	45.8	0.0	0.0	0.0
	Average Service	12.5	16.8	0.0	0.0	0.0
	Salary	452,035	403,477	0	0	0
	Average Salary	75,339	100,869	0	0	0
Retired Members and Survivors	15	5	4	0	27	
Annual Pensions	254,951	107,805	33,221	0	489,689	
Average Age	68.9	70.8	73.1	0.0	71.3	
Average Pension	16,997	21,561	8,305	0	18,137	
Disabled Members	0	1	0	0	2	
Annual Pensions	0	49,724	0	0	56,312	
Average Age	0.0	62.9	0.0	0.0	67.1	
Average Pension	0	49,724	0	0	28,156	
Inactive Members	6	1	0	5	16	
Annuity Savings Fund	115,136	3,621	0	79,358	170,125	

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Chilmark	Aquinnah	Gosnold	MV Transit Authority	MV Regional School
Actuarial Accrued Liability - January 1, 2016					
Active Employees	5,657,330	2,118,584	415,484	1,067,160	7,600,765
Retired Members and Survivors	2,895,378	1,044,672	309,392	0	5,042,707
Disabled Members	0	559,381	0	0	621,578
Inactive Members	115,136	3,621	0	79,358	170,125
Total	8,667,844	3,726,258	724,876	1,146,518	13,435,175
Actuarial Value of Plan Assets - January 1, 2016					
Actuarial Value of Assets	6,288,343	2,703,324	525,883	831,775	9,746,944
Unfunded Actuarial Accrued Liability					
Unfunded Actuarial Accrued Liability	2,187,060	1,022,934	198,993	314,743	3,519,377
ERI 2002	125,819	0	0	0	168,854
ERI 2003	66,622	0	0	0	0
Total	2,379,501	1,022,934	198,993	314,743	3,688,231
Normal Cost - January 1, 2016					
Total Normal Cost	300,910	170,099	21,918	63,794	585,378
Administrative Expenses	20,241	11,442	1,474	4,291	39,377
Total Normal Cost	321,151	181,541	23,392	68,085	624,755
Employee Normal Cost	(202,055)	(105,219)	(12,220)	(58,433)	(411,815)
Employer Normal Cost	119,096	76,322	11,172	9,652	212,940
Employer Normal Cost as % of Salary	5.57%	7.17%	8.49%	1.68%	4.89%

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	Chilmark	Aquinnah	Gosnold	MV Transit Authority	MV Regional School
2017 Appropriation					
Non-ERI Appropriation	324,760	148,063	26,939	53,355	525,222
ERI 2002	13,048	0	0	0	17,511
ERI 2003	6,909	0	0	0	0
Total Appropriation	344,717	148,063	26,939	53,355	542,733
2018 Appropriation					
Actuarial Allocation Method:					
Employer Normal Cost	130,969	83,931	12,286	10,614	234,168
Amortization Payment of UAL	190,167	89,159	17,448	26,997	305,867
ERI 2002	13,635	0	0	0	18,298
ERI 2003	7,220	0	0	0	0
Net 3(8)(c) Transfers	6,442	3,981	839	0	13,797
Total Appropriation	348,433	177,071	30,573	37,611	572,130
2018 Appropriation Increase over 2017	1.08%	19.59%	13.49%	-29.51%	5.42%
2019 Appropriation					
Actuarial Allocation Method:					
Employer Normal Cost	136,208	87,288	12,777	11,039	243,535
Amortization Payment of UAL	201,213	94,338	18,462	28,566	323,632
ERI 2002	14,248	0	0	0	19,122
ERI 2003	7,544	0	0	0	0
Net 3(8)(c) Transfers	8,850	4,017	781	1,236	13,820
Total Appropriation	368,063	185,643	32,020	40,841	600,109
2019 Appropriation Increase over 2018	5.63%	4.84%	4.73%	8.59%	4.89%

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	MV Landbank	MV Refuse	MV Commission	OB Water Dept	Total	
Summary of Member Data						
Groups 1 & 2	Active Members	8	9	10	10	595
	Average Age	49.6	51.2	55.3	50.4	49.4
	Average Service	18.1	13.8	13.3	9.1	10.3
	Salary	683,842	590,392	797,322	579,801	30,837,575
	Average Salary	85,480	65,599	79,732	57,980	51,828
Group 4	Active Members	0	0	0	0	77
	Average Age	0.0	0.0	0.0	0.0	43.4
	Average Service	0.0	0.0	0.0	0.0	14.8
	Salary	0	0	0	0	7,155,870
	Average Salary	0	0	0	0	92,933
Retired Members and Survivors	1	2	4	2	266	
Annual Pensions	20,206	38,264	121,116	47,111	5,943,040	
Average Age	77.3	69.5	71.4	71.4	71.0	
Average Pension	20,206	19,132	30,279	23,556	22,342	
Disabled Members	0	0	0	0	26	
Annual Pensions	0	0	0	0	982,480	
Average Age	0.0	0.0	0.0	0.0	63.0	
Average Pension	0	0	0	0	37,788	
Inactive Members	0	1	0	1	145	
Annuity Savings Fund	0	1,291	0	880	1,790,199	

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	MV Landbank	MV Refuse	MV Commission	OB Water Dept	Total
Actuarial Accrued Liability - January 1, 2016					
Active Employees	2,379,615	1,736,994	2,020,500	1,440,919	93,889,828
Retired Members and Survivors	169,010	378,950	1,422,843	502,845	60,535,933
Disabled Members	0	0	0	0	11,456,586
Inactive Members	0	1,291	0	880	1,790,199
Total	2,548,625	2,117,235	3,443,343	1,944,644	167,672,546
Actuarial Value of Plan Assets - January 1, 2016					
Actuarial Value of Assets	1,848,975	1,536,011	2,498,075	1,410,799	121,642,995
Unfunded Actuarial Accrued Liability					
Unfunded Actuarial Accrued Liability	650,840	581,224	897,194	533,845	44,061,743
ERI 2002	0	0	0	0	1,462,804
ERI 2003	48,810	0	48,074	0	505,004
Total	699,650	581,224	945,268	533,845	46,029,551
Normal Cost - January 1, 2016					
Total Normal Cost	68,770	77,219	113,276	71,556	5,203,131
Administrative Expenses	4,626	5,194	7,620	4,813	350,000
Total Normal Cost	73,396	82,413	120,896	76,369	5,553,131
Employee Normal Cost	(66,955)	(57,228)	(80,142)	(56,882)	(3,602,882)
Employer Normal Cost	6,441	25,185	40,754	19,487	1,950,249
Employer Normal Cost as % of Salary	0.94%	4.27%	5.11%	3.36%	5.13%

SECTION 10 - RESULTS BY MEMBER UNIT

Member Unit	MV Landbank	MV Refuse	MV Commission	OB Water Dept	Total
2017 Appropriation					
Non-ERI Appropriation	73,470	77,109	122,183	48,934	5,891,661
ERI 2002	0	0	0	0	151,696
ERI 2003	5,062	0	4,985	0	52,370
Total Appropriation	78,532	77,109	127,168	48,934	6,095,727
2018 Appropriation					
Actuarial Allocation Method:					
Employer Normal Cost	7,083	27,696	44,817	21,430	2,144,671
Amortization Payment of UAL	57,886	51,052	78,629	48,113	3,867,593
ERI 2002	0	0	0	0	158,522
ERI 2003	5,290	0	5,210	0	54,727
Net 3(8)(c) Transfers	511	967	3,060	1,190	175,000
Total Appropriation	70,770	79,715	131,716	70,733	6,400,513
2018 Appropriation Increase over 2017	-9.88%	3.38%	3.58%	44.55%	5.00%
2019 Appropriation					
Actuarial Allocation Method:					
Employer Normal Cost	7,366	28,804	46,609	22,287	2,230,458
Amortization Payment of UAL	61,248	54,017	83,196	50,908	4,092,236
ERI 2002	0	0	0	0	165,656
ERI 2003	5,527	0	5,444	0	57,189
Net 3(8)(c) Transfers	2,747	2,282	3,712	2,096	175,000
Total Appropriation	76,888	85,103	138,961	75,291	6,720,539
2019 Appropriation Increase over 2018	8.64%	6.76%	5.50%	6.44%	5.00%