

Barnstable County Retirement System

**Governmental Accounting Standards Board (GASB)
Statements No. 67 and 68 Accounting Valuation Report
as of December 31, 2016**





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June 16, 2017

*Retirement Board
Barnstable County Retirement System
750 Attucks Lane
Hyannis, MA 02601*

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 Accounting Valuation as of December 31, 2016 for the Barnstable County Retirement System, a cost-sharing multiple-employer defined benefit pension plan. It contains the actuarial information that will need to be disclosed in order to comply with GASB 67 and 68.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist the Board and the member units in preparing their financial reports. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board and may only be provided to other parties in its entirety. The census and financial information on which our calculations were based was provided by the Barnstable County Retirement System. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

An actuarial valuation is a measurement at a specific date – it is not a prediction of a plan's future financial condition. We have not been retained to perform an analysis of the potential range of financial measurements, except where otherwise noted.

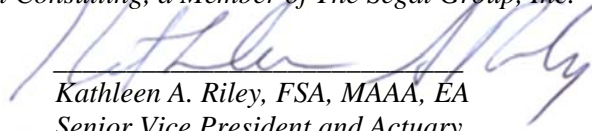
The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in my opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:


Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary

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SECTION 1: Valuation Summary for the Barnstable County Retirement System

Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the Barnstable County Retirement System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** The valuation is based on the market value of assets as of the valuation date, as provided by the Barnstable County Retirement System. The Barnstable County Retirement System uses an “actuarial value of assets” that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

SECTION 1: Valuation Summary for the Barnstable County Retirement System

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Barnstable County Retirement System. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- Sections of this report may include actuarial results that are not rounded, but that does not imply precision.
- If the Barnstable County Retirement System is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Barnstable County Retirement System should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the System.

SECTION 1: Valuation Summary for the Barnstable County Retirement System

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards Board Statements No. 67 and 68 as of December 31, 2016. This report is based on financial information as of December 31, 2016 provided by the Retirement System and the Barnstable County Retirement System Actuarial Valuation and Review as of January 1, 2016, dated June 22, 2016, which reflects:

- The benefit provisions of Massachusetts General Laws Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2016;
- The assets of the System as of December 31, 2015;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The Net Pension Liability (NPL) is equal to the difference between the Total Pension Liability (TPL) and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis. The NPL increased from \$629.6 million as of December 31, 2015 to \$702.6 million as of December 31, 2016 and the Plan's Fiduciary Net Position as a percent of the TPL decreased from 58.10% to 57.28%.
- The NPL was measured as of December 31, 2016 and 2015 and was determined based upon the results of the actuarial valuations as of January 1, 2016 and January 1, 2014, respectively.
- The discount rate used to determine the TPL and NPL was 7.625% as of December 31, 2016 and 7.75% as of December 31, 2015.

SECTION 2: Accounting Information for the Barnstable County Retirement System

EXHIBIT 1

Net Pension Liability

The components of the net pension liability of the Barnstable County Retirement System are as follows:

	December 31, 2016	December 31, 2015
Total pension liability	\$1,644,743,371	\$1,502,651,474
Plan fiduciary net position	942,162,721	873,002,091
System's net pension liability	702,580,650	629,649,383
Plan fiduciary net position as a percentage of the total pension liability*	57.28%	58.10%

* *These funded percentages are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.*

Actuarial assumptions. The total pension liability as of December 31, 2016 was based on an actuarial valuation as of December 31, 2015, using the following actuarial assumptions:

Inflation	3.50% (previously, 4.00%)
Salary increases	Varies by length of service with ultimate rates of 4.25% for Group 1, 4.50% for Group 2 and 4.75% for Group 4.
Investment rate of return	7.625% (previously, 7.75%), net of pension plan investment expense, including inflation
Cost of Living Adjustment	3% of first \$16,000 as of July 1, 2015, \$17,000 as of July 1, 2016, and \$18,000 as of July 1, 2017 (previously, 3% of first \$15,000)
Pre-retirement:	RP-2000 Employee Mortality Table projected generationally with Scale BB2D from 2009 (previously, RP-2000 Employee Mortality Table projected generationally with Scale AA from 2010)
Healthy Retiree:	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2009 (previously, RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale AA from 2010)
Disabled Retiree:	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2015 (previously, RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally with Scale AA from 2010)

SECTION 2: Accounting Information for the Barnstable County Retirement System

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2016 and the target allocation as of December 31, 2016 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	18.00%	6.44%
International developed markets equity	16.00%	7.40%
International emerging markets equity	6.00%	9.42%
Core fixed income	13.00%	2.02%
High-yield fixed income	10.00%	4.43%
Real estate	10.00%	5.00%
Commodities	4.00%	4.43%
Hedge fund, GTAA, Risk parity	13.00%	3.75%
Private equity	<u>10.00%</u>	10.47%
	100.00%	

Note: Some asset classes included in the pension plan's target asset allocation have been combined.

Discount rate: The discount rate used to measure the total pension liability was 7.625%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

SECTION 2: Accounting Information for the Barnstable County Retirement System

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.625%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.625%) or 1-percentage-point higher (8.625%) than the current rate:

	1% Decrease (6.625%)	Current Discount (7.625%)	1% Increase (8.625%)
Barnstable County Retirement System's net pension liability as of December 31, 2016	\$894,041,463	\$702,580,650	\$541,092,898

SECTION 2: Accounting Information for the Barnstable County Retirement System

EXHIBIT 2

Schedule of Changes in the Net Pension Liability – Last Ten Years

	Year End December 31,									
	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Total pension liability										
Service cost	\$39,648,941	\$38,066,881	\$35,328,892							
Interest	116,551,753	110,695,407	105,040,822							
Differences between expected and actual experience	-10,802,611	0	0							
Changes of assumptions	50,013,039	0	0							
Changes of benefit terms	23,494,437	0	0							
Benefit payments, including refunds of employee contributions	<u>-76,813,662</u>	<u>-72,743,526</u>	<u>-67,547,103</u>							
Net change in total pension liability	\$142,091,897	\$76,018,762	\$72,822,611							
Total pension liability - beginning	<u>1,502,651,474</u>	<u>1,426,632,712</u>	<u>1,353,810,101</u>							
Total pension liability - ending (a)	\$1,644,743,371	\$1,502,651,474	\$1,426,632,712							
Plan fiduciary net position										
Contributions - employer	\$56,269,528	\$53,626,351	\$51,562,171							
Contributions - employee	26,411,361	25,867,836	24,666,247							
Net investment income	64,678,207	5,470,561	60,614,682							
Benefit payments, including refunds of employee contributions	<u>-76,813,662</u>	<u>-72,743,526</u>	<u>-67,547,103</u>							
Administrative expenses	<u>-1,384,804</u>	<u>-1,288,422</u>	<u>-1,210,998</u>							
Net change in fiduciary net position	\$69,160,630	\$10,932,800	\$68,084,999							
Plan fiduciary net position - beginning	<u>873,002,091</u>	<u>862,069,291</u>	<u>793,984,292</u>							
Plan fiduciary net position - ending (b)	\$942,162,721	\$873,002,091	\$862,069,291							
Net pension liability – ending: (a)-(b)	\$702,580,650	\$629,649,383	\$564,563,421							
Plan's fiduciary net position as a percentage of the total pension liability	57.28%	58.10%	60.43%							
Covered-employee payroll	\$269,672,807	\$264,076,910	\$253,920,106							
Net pension liability as a percentage of covered-employee payroll	260.53%	238.43%	222.34%							

Notes: Covered-employee payroll for 2016 as estimated in the January 1, 2016 funding valuation report.
Covered-employee payroll for 2015 and 2014 as estimated in the January 1, 2014 funding valuation report.

SECTION 2: Accounting Information for the Barnstable County Retirement System

Notes to Schedule:

Changes in Assumptions and Methods: The following changes were effective January 1, 2014:

- The actuarial cost method was changed to better reflect the impact of the plan changes effective for employees hired on or after April 2, 2012.
- The investment return assumption was lowered from 7.875% to 7.75%.
- The assumed rates of salary increases were revised to more accurately reflect recent experience and future expectations.
- The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected 12 years with Scale AA to the RP-2000 Employee Mortality Table projected generationally using Scale AA from 2010.
- The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table projected 12 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA from 2010.
- The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years projected 12 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally using Scale AA from 2010.
- The assumed retirement age for inactive vested participants was changed from age 65 to age 55 for Group 1 and 2 members hired prior to April 2, 2012.

The following changes were effective January 1, 2016:

- The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected generationally with Scale AA from 2010 to the RP-2000 Employee Mortality Table projected generationally with Scale BB2D from 2009.
- The mortality assumption for non-disabled retirees was changed from the RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale AA from 2010 to RP-2000 Employee Mortality Table projected generationally with Scale BB2D from 2009.
- The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally with Scale AA from 2010 to the RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2015.
- The investment return assumption was lowered from 7.75% to 7.625%.
- The inflation allowance in the salary increase assumption was lowered from 4.0% to 3.5%.

SECTION 2: Accounting Information for the Barnstable County Retirement System

Changes in Plan Provisions:

- The administrative expense assumption was increased from \$1,150,000 for calendar 2014, increasing 4.0% per year, to \$1,500,000 for calendar 2016, increasing 3.5% per year.

The following change was reflected in the January 1, 2014 actuarial valuation:

- As permitted by Section 19 of Chapter 188 of the Acts of 2010, the Cost of Living Adjustment base was increased from \$14,000 to \$15,000 as of July 1, 2013.
- Members hired on or after April 2, 2012 are covered by the provisions of Chapter 32 as amended by of Chapter 176 of the Acts of 2011 and Chapter 139 of the Acts of 2012.
- As permitted by Section 63 of Chapter 139 of the Acts of 2012, the Board has increased the Section 101 annual allowance from \$9,000 to \$12,000.
- As permitted by Section 29 of Chapter 176 of the Acts of 2011, the Board has increased the Section 12 monthly allowance from \$250 to \$500.

The following change was reflected in the January 1, 2016 actuarial valuation:

- As permitted by Section 19 of Chapter 188 of the Acts of 2010, the Cost of Living Adjustment Base was increased from \$15,000 to \$16,000 as of July 1, 2015, to \$17,000 as of July 1, 2016, and to \$18,000 as of July 1, 2017.

SECTION 2: Accounting Information for the Barnstable County Retirement System

EXHIBIT 3

Schedule of Contributions – Last Ten Years

	Year End December 31,									
	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Actuarially determined contribution	\$56,269,528	\$53,626,351	\$51,562,171							
Contributions in relation to the actuarially determined contribution	<u>56,269,528</u>	<u>53,626,351</u>	<u>51,562,171</u>							
Contribution deficiency (excess)	\$0	\$0	\$0							
Covered-employee payroll	\$269,672,807	\$264,076,910	\$253,920,106							
Contributions as a percentage of covered-employee payroll	20.87%	20.31%	20.31%							

(Historical information prior to implementation of GASB 67/68 is not required)

*Notes: Actuarially determined contributions for 2016 and 2015 are based on results from the January 1, 2014 actuarial valuation.
Actuarially determined contribution for 2014 is based on results from the January 1, 2012 actuarial valuation.*

SECTION 2: Accounting Information for the Barnstable County Retirement System

EXHIBIT 4

Pension Expense and Deferred Outflows/Inflows of Resources Related to Pensions

A. Pension expense for the year ended June 30, 2017

Service cost	\$39,648,941
Interest	116,551,753
Contributions – employee	-26,411,361
Projected earnings on pension plan investments	-67,831,356
Administrative expenses	1,384,804
Recognized portion of current-period difference between expected and actual experience	-1,800,435
Recognized portion of current-period difference between projected and actual earnings on pension plan investments	630,630
Recognized portion of current year period assumption change	8,335,507
Recognized portion of current year period plan change	23,494,437
Recognition of deferred outflows of resources	12,552,009
Recognition of deferred inflows of resources	0
Pension expense for fiscal year ended June 30, 2017	\$106,554,929

B. Deferred outflows/inflows of resources related to pensions

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$0	\$9,002,176
Changes of assumptions	41,677,532	0
Net difference between projected and actual earnings on pension plan investments	<u>39,936,832</u>	<u>0</u>
Total	\$81,614,364	\$9,002,176

C. Projected recognition of deferred outflows/(inflows)

	Year Ended June 30,	Recognition
	2018	\$19,717,711
	2019	19,717,711
	2020	19,475,997
	2021	7,165,701
	2022	6,535,068
	Thereafter	0

SECTION 2: Accounting Information for the Barnstable County Retirement System

EXHIBIT 5

Determination of Proportionate Share

Employer Name	2016				2017			
	FY 2016 Total Appropriation with Adjustment for Interest	Percent of FY 2016 Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL as of January 1, 2016	Percent of Total NPL as of January 1, 2016	FY 2017 Total Appropriation with Adjustment for Interest	Percent of FY 2017 Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL as of January 1, 2017	Percent of Total NPL as of January 1, 2017
Barnstable County	\$2,817,092	5.289160%	\$32,238,621	5.120091%	\$2,974,822	5.318403%	\$36,191,018	5.151155%
County Hospital	7,425	0.000000%	114,036	0.018111%	7,722	0.000000%	115,799	0.016482%
Retired Sheriffs	1,306,971	0.000000%	20,012,789	3.178402%	1,359,250	0.000000%	21,978,311	3.128226%
Town of Barnstable	8,175,614	15.349917%	93,561,201	14.859254%	8,538,452	15.265091%	103,876,898	14.785050%
Barnstable Fire	365,705	0.686620%	4,185,103	0.664672%	395,158	0.706466%	4,807,401	0.684249%
Barnstable Housing	160,935	0.302159%	1,841,731	0.292501%	196,554	0.351400%	2,391,233	0.340350%
Town of Bourne	3,409,876	6.402126%	39,022,401	6.197481%	3,465,846	6.196259%	42,164,703	6.001404%
Bourne Housing	73,354	0.137724%	839,461	0.133322%	71,558	0.127932%	870,561	0.123909%
Bourne Recreation	116,045	0.217877%	1,328,012	0.210913%	110,729	0.197962%	1,347,107	0.191737%
Bourne Water	135,771	0.254913%	1,553,754	0.246765%	120,566	0.215549%	1,466,778	0.208770%
Town of Brewster	1,981,220	3.719789%	22,672,956	3.600886%	2,004,142	3.583016%	24,381,944	3.470341%
Brewster Housing Authority	10,479	0.019675%	119,923	0.019046%	11,009	0.019682%	133,933	0.019063%
Buzzards Bay Water	62,875	0.118049%	719,538	0.114276%	60,549	0.108250%	736,628	0.104846%
Cape Code Mosquito	233,158	0.437760%	2,668,246	0.423767%	266,936	0.477230%	3,247,482	0.462222%
Cape Cod Regional Technical High School	434,886	0.816509%	4,976,805	0.790409%	423,844	0.757751%	5,156,394	0.733922%
C.O.M.M. Fire	1,236,082	2.320774%	14,145,646	2.246591%	1,276,502	2.282137%	15,529,639	2.210371%
Town of Chatham	1,762,448	3.309039%	20,169,345	3.203266%	1,868,433	3.340395%	22,730,936	3.235349%
Chatham Housing	31,438	0.059026%	359,775	0.057139%	33,027	0.059046%	401,799	0.057189%

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	2016				2017			
	FY 2016 Total Appropriation with Adjustment for Interest	Percent of FY 2016 Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL as of January 1, 2016	Percent of Total NPL as of January 1, 2016	FY 2017 Total Appropriation with Adjustment for Interest	Percent of FY 2017 Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL as of January 1, 2017	Percent of Total NPL as of January 1, 2017
Cotuit Fire	225,303	0.423012%	2,578,351	0.409490%	247,701	0.442841%	3,013,474	0.428915%
Town of Dennis	2,892,256	5.430282%	33,098,792	5.256702%	2,944,894	5.264898%	35,826,920	5.099332%
Dennis Housing	60,133	0.112901%	688,156	0.109292%	63,147	0.112895%	768,230	0.109344%
Dennis Water	251,501	0.472199%	2,878,159	0.457105%	242,197	0.433001%	2,946,518	0.419385%
Dennis-Yarmouth Regional School	1,116,033	2.095379%	12,771,808	2.028400%	1,205,480	2.155164%	14,665,598	2.087390%
Town of Eastham	1,348,592	2.532015%	15,433,198	2.451078%	1,466,066	2.621041%	17,835,832	2.538617%
Town of Harwich	2,326,380	4.367836%	26,622,942	4.228217%	2,576,094	4.605555%	31,340,184	4.460724%
Hyannis Fire	976,214	1.832866%	11,171,730	1.774278%	1,058,575	1.892526%	12,878,388	1.833012%
Town of Mashpee	2,614,553	4.908888%	29,920,775	4.751974%	2,806,891	5.018175%	34,148,005	4.860368%
Mashpee Housing	41,917	0.078700%	479,698	0.076185%	49,540	0.088568%	602,695	0.085783%
Mashpee Water	156,105	0.293091%	1,786,454	0.283722%	163,953	0.293116%	1,994,612	0.283898%
Town of Nantucket	5,239,801	9.837855%	59,963,950	9.523387%	5,718,147	10.222935%	69,565,693	9.901453%
Nantucket Housing	20,958	0.039349%	239,840	0.038091%	22,018	0.039364%	267,866	0.038126%
County of Nantucket	172,907	0.324637%	1,978,736	0.314260%	165,134	0.295227%	2,008,980	0.285943%
Nantucket Regional Transportation Authority	31,438	0.059026%	359,775	0.057139%	33,027	0.059046%	401,799	0.057189%
Nauset Regional School	822,616	1.544482%	9,413,963	1.495112%	825,671	1.476139%	10,044,929	1.429719%
North Sagamore Water	52,396	0.098375%	599,615	0.095230%	49,540	0.088568%	602,695	0.085783%
Town of Orleans	1,760,504	3.305390%	20,147,093	3.199732%	1,816,477	3.247508%	22,098,852	3.145383%
Orleans Housing	41,917	0.078700%	479,698	0.076185%	44,036	0.078728%	535,732	0.076252%
Ground Water Protection District	78,594	0.147562%	899,423	0.142845%	77,063	0.137774%	937,531	0.133441%
Town of Provincetown	1,419,930	2.665954%	16,249,588	2.580736%	1,557,766	2.784983%	18,951,432	2.697403%
Town of Sandwich	3,206,631	6.020529%	36,696,482	5.828082%	3,418,279	6.111218%	41,586,016	5.919038%
Sandwich Housing	26,198	0.049187%	299,808	0.047615%	27,522	0.049204%	334,829	0.047657%

SECTION 2: Accounting Information for the Barnstable County Retirement System

Employer Name	2016				2017			
	FY 2016 Total Appropriation with Adjustment for Interest	Percent of FY 2016 Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL as of January 1, 2016	Percent of Total NPL as of January 1, 2016	FY 2017 Total Appropriation with Adjustment for Interest	Percent of FY 2017 Total Appropriation excluding County Hospital and Retired Sheriffs	Share of NPL as of January 1, 2017	Percent of Total NPL as of January 1, 2017
Sandwich Water	199,105	0.373825%	2,278,544	0.361875%	176,143	0.314909%	2,142,913	0.305006%
Town of Truro	966,993	1.815553%	11,066,208	1.757519%	1,010,232	1.806098%	12,290,257	1.749302%
Veterans District	56,404	0.105900%	645,485	0.102515%	53,708	0.096019%	653,400	0.093000%
Town of Wellfleet	1,004,305	1.885607%	11,493,204	1.825334%	1,071,442	1.915530%	13,034,923	1.855292%
Town of Yarmouth	3,967,266	7.448640%	45,401,140	7.210543%	4,043,485	7.228965%	49,192,133	7.001635%
Yarmouth Housing	40,699	0.076413%	465,758	0.073971%	42,714	0.076364%	519,650	0.073963%
West Barnstable Fire	115,271	0.216424%	1,319,153	0.209506%	121,098	0.216500%	1,473,248	0.209691%
Cape Cod Regional Transit Authority	157,188	0.295124%	1,798,852	0.285691%	137,612	0.246023%	1,674,158	0.238287%
Monomoy Regional School District	864,533	1.623182%	9,893,662	1.571297%	869,707	1.554867%	10,580,661	1.505971%
Provincetown Housing	0	0.000000%	0	0.000000%	11,009	0.019682%	133,933	0.019063%
Grand Totals:	\$54,576,015	100.000000%	\$629,649,383	100.000000%	\$57,301,467	100.000000%	\$702,580,650	100.000000%

Note: NPL for County Hospital and Retired Sheriffs estimated based on January 1, 2016 actuarial valuation. NPL for all other employers is allocated based on fiscal 2016 and fiscal 2017 appropriations, excluding County Hospital and Retired Sheriffs, with adjustment for payments on July 1 and December 31.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

EXHIBIT 6

Determination of Pension Amounts by Employer as of June 30, 2017

Employer Name	Employer's Proportionate Share Allocation (1)	Net Pension Liability (2)	Covered Employee Payroll (3)	Discount Rate Sensitivity		
				1% Decrease (6.625%) (4)	Current Discount (7.625%) (5)	1% Increase (8.625%) (6)
Barnstable County	5.151155%	\$36,191,018	\$13,996,018	\$46,053,462	\$36,191,018	\$27,872,534
County Hospital	0.016482%	115,799	0	147,356	115,799	89,183
Retired Sheriffs	3.128226%	21,978,311	0	27,967,638	21,978,311	16,926,609
Town of Barnstable	14.785050%	103,876,898	40,801,496	132,184,478	103,876,898	80,000,851
Barnstable Fire	0.684249%	4,807,401	1,914,677	6,117,470	4,807,401	3,702,423
Barnstable Housing	0.340350%	2,391,233	943,855	3,042,870	2,391,233	1,841,610
Town of Bourne	6.001404%	42,164,703	16,584,878	53,655,040	42,164,703	32,473,171
Bourne Housing	0.123909%	870,561	350,575	1,107,798	870,561	670,463
Bourne Recreation	0.191737%	1,347,107	458,444	1,714,208	1,347,107	1,037,475
Bourne Water	0.208770%	1,466,778	566,313	1,866,490	1,466,778	1,129,640
Town of Brewster	3.470341%	24,381,944	9,735,188	31,026,287	24,381,944	18,777,769
Brewster Housing Authority	0.019063%	133,933	53,935	170,431	133,933	103,149
Buzzards Bay Water	0.104846%	736,628	296,640	937,367	736,628	567,314
Cape Code Mosquito	0.462222%	3,247,482	1,294,429	4,132,456	3,247,482	2,501,050
Cape Cod Regional Technical High School	0.733922%	5,156,394	2,076,481	6,561,567	5,156,394	3,971,200
C.O.M.M. Fire	2.210371%	15,529,639	6,229,442	19,761,633	15,529,639	11,960,161
Town of Chatham	3.235349%	22,730,936	8,656,497	28,925,362	22,730,936	17,506,244
Chatham Housing	0.057189%	401,799	161,804	511,293	401,799	309,446

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Employer's Proportionate Share Allocation (1)	Net Pension Liability (2)	Covered Employee Payroll (3)	Discount Rate Sensitivity		
				1% Decrease (6.625%) (4)	Current Discount (7.625%) (5)	1% Increase (8.625%) (6)
Cotuit Fire	0.428915%	3,013,474	1,213,528	3,834,678	3,013,474	2,320,829
Town of Dennis	5.099332%	35,826,920	14,427,495	45,590,142	35,826,920	27,592,123
Dennis Housing	0.109344%	768,230	296,640	977,581	768,230	591,653
Dennis Water	0.419385%	2,946,518	1,186,560	3,749,476	2,946,518	2,269,262
Dennis-Yarmouth Regional School	2.087390%	14,665,598	5,905,834	18,662,132	14,665,598	11,294,719
Town of Eastham	2.538617%	17,835,832	7,065,428	22,696,289	17,835,832	13,736,276
Town of Harwich	4.460724%	31,340,184	12,620,687	39,880,722	31,340,184	24,136,661
Hyannis Fire	1.833012%	12,878,388	5,177,718	16,387,887	12,878,388	9,918,298
Town of Mashpee	4.860368%	34,148,005	13,564,542	43,453,705	34,148,005	26,299,106
Mashpee Housing	0.085783%	602,695	242,706	766,936	602,695	464,166
Mashpee Water	0.283898%	1,994,612	782,051	2,538,166	1,994,612	1,536,152
Town of Nantucket	9.901453%	69,565,693	27,425,724	88,523,095	69,565,693	53,576,059
Nantucket Housing	0.038126%	267,866	107,869	340,862	267,866	206,297
County of Nantucket	0.285943%	2,008,980	809,018	2,556,449	2,008,980	1,547,217
Nantucket Regional Transportation Authority	0.057189%	401,799	161,804	511,293	401,799	309,446
Nauset Regional School	1.429719%	10,044,929	4,045,092	12,782,281	10,044,929	7,736,108
North Sagamore Water	0.085783%	602,695	242,706	766,936	602,695	464,166
Town of Orleans	3.145383%	22,098,852	8,899,203	28,121,028	22,098,852	17,019,444
Orleans Housing	0.076252%	535,732	215,738	681,724	535,732	412,594
Ground Water Protection District	0.133441%	937,531	377,542	1,193,018	937,531	722,040
Town of Provincetown	2.697403%	18,951,432	7,631,740	24,115,901	18,951,432	14,595,456
Town of Sandwich	5.919038%	41,586,016	16,746,681	52,918,654	41,586,016	32,027,494
Sandwich Housing	0.047657%	334,829	134,836	426,073	334,829	257,869

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Employer's Proportionate Share Allocation (1)	Net Pension Liability (2)	Covered Employee Payroll (3)	Discount Rate Sensitivity		
				1% Decrease (6.625%) (4)	Current Discount (7.625%) (5)	1% Increase (8.625%) (6)
Sandwich Water	0.305006%	2,142,913	862,953	2,726,880	2,142,913	1,650,366
Town of Truro	1.749302%	12,290,257	4,881,078	15,639,485	12,290,257	9,465,349
Veterans District	0.093000%	653,400	242,706	831,459	653,400	503,216
Town of Wellfleet	1.855292%	13,034,923	5,177,718	16,587,080	13,034,923	10,038,853
Town of Yarmouth	7.001635%	49,192,133	19,335,540	62,597,520	49,192,133	37,885,350
Yarmouth Housing	0.073963%	519,650	188,771	661,260	519,650	400,209
West Barnstable Fire	0.209691%	1,473,248	593,280	1,874,724	1,473,248	1,134,623
Cape Cod Regional Transit Authority	0.238287%	1,674,158	674,182	2,130,385	1,674,158	1,289,354
Monomoy Regional School District	1.505971%	10,580,661	4,260,830	13,464,005	10,580,661	8,148,702
Provincetown Housing	0.019063%	133,933	53,935	170,431	133,933	103,149
Grand Totals:	100.000000%	\$702,580,650	\$269,672,807	\$894,041,463	\$702,580,650	\$541,092,898

Note: Covered employee payroll for 2016 is based on each unit's proportionate share of the fiscal 2017 appropriation with adjustments to exclude the County Hospital and Retired Sheriffs.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Schedule of Contributions				Pension Expense		
	Statutory Required Contribution (7)	Contributions In Relation to the Statutory Required Contribution (8)	Contribution Deficiency/ (Excess) (9)	Contributions as a Percentage of Covered Employee Payroll (10)	Proportionate Share of Plan Pension Expense (11)	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (12)	Total Employer Pension Expense (13)
Barnstable County	\$2,926,285	-\$2,926,285	\$0	20.91%	\$5,488,810	\$259,512	\$5,748,322
County Hospital	7,579	-7,579	0	N/A	17,562	-2,345	15,217
Retired Sheriffs	1,334,120	-1,334,120	0	N/A	3,333,279	-187,243	3,146,036
Town of Barnstable	8,398,711	-8,398,711	0	20.58%	15,754,198	-257,572	15,496,626
Barnstable Fire	387,852	-387,852	0	20.26%	729,101	55,710	784,811
Barnstable Housing	196,554	-196,554	0	20.82%	362,660	39,004	401,664
Town of Bourne	3,395,528	-3,395,528	0	20.47%	6,394,792	-69,963	6,324,829
Bourne Housing	71,558	-71,558	0	20.41%	132,031	-8,522	123,509
Bourne Recreation	110,729	-110,729	0	24.15%	204,305	-7,371	196,934
Bourne Water	118,337	-118,337	0	20.90%	222,455	-18,215	204,240
Town of Brewster	1,967,090	-1,967,090	0	20.21%	3,697,819	-139,013	3,558,806
Brewster Housing Authority	11,009	-11,009	0	20.41%	20,313	-17,795	2,518
Buzzards Bay Water	60,549	-60,549	0	20.41%	111,719	-8,625	103,094
Cape Code Mosquito	262,001	-262,001	0	20.24%	492,520	37,806	530,326
Cape Cod Regional Technical High School	416,008	-416,008	0	20.03%	782,030	-26,988	755,042
C.O.M.M. Fire	1,252,902	-1,252,902	0	20.11%	2,355,259	-37,559	2,317,700
Town of Chatham	1,833,890	-1,833,890	0	21.19%	3,447,424	-62,392	3,385,032
Chatham Housing	33,027	-33,027	0	20.41%	60,938	304	61,242

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Schedule of Contributions				Pension Expense		
	Statutory Required Contribution (7)	Contributions In Relation to the Statutory Required Contribution (8)	Contribution Deficiency/ (Excess) (9)	Contributions as a Percentage of Covered Employee Payroll (10)	Proportionate Share of Plan Pension Expense (11)	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (12)	Total Employer Pension Expense (13)
Cotuit Fire	243,122	-243,122	0	20.03%	457,030	-25,556	431,474
Town of Dennis	2,890,449	-2,890,449	0	20.03%	5,433,590	-12,736	5,420,854
Dennis Housing	63,147	-63,147	0	21.29%	116,511	9,685	126,196
Dennis Water	237,719	-237,719	0	20.03%	446,875	-44,965	401,910
Dennis-Yarmouth Regional School	1,183,193	-1,183,193	0	20.03%	2,224,217	-75,191	2,149,026
Town of Eastham	1,438,962	-1,438,962	0	20.37%	2,705,022	17,296	2,722,318
Town of Harwich	2,528,468	-2,528,468	0	20.03%	4,753,121	202,122	4,955,243
Hyannis Fire	1,039,004	-1,039,004	0	20.07%	1,953,165	40,771	1,993,936
Town of Mashpee	2,754,998	-2,754,998	0	20.31%	5,178,962	103,460	5,282,422
Mashpee Housing	49,540	-49,540	0	20.41%	91,406	18,587	109,993
Mashpee Water	160,922	-160,922	0	20.58%	302,507	9,729	312,236
Town of Nantucket	5,613,325	-5,613,325	0	20.47%	10,550,486	393,215	10,943,701
Nantucket Housing	22,018	-22,018	0	20.41%	40,625	204	40,829
County of Nantucket	162,081	-162,081	0	20.03%	304,686	-62,861	241,825
Nantucket Regional Transportation Authority	33,027	-33,027	0	20.41%	60,938	304	61,242
Nauset Regional School	803,000	-803,000	0	19.85%	1,523,436	79,755	1,603,191
North Sagamore Water	48,624	-48,624	0	20.03%	91,406	-92	91,314
Town of Orleans	1,782,894	-1,782,894	0	20.03%	3,351,561	-4,646	3,346,915
Orleans Housing	44,036	-44,036	0	20.41%	81,250	406	81,656
Ground Water Protection District	75,638	-75,638	0	20.03%	142,188	-8,708	133,480
Town of Provincetown	1,528,966	-1,528,966	0	20.03%	2,874,216	25,862	2,900,078
Town of Sandwich	3,355,082	-3,355,082	0	20.03%	6,307,027	183,175	6,490,202
Sandwich Housing	27,522	-27,522	0	20.41%	50,781	255	51,036

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Schedule of Contributions				Pension Expense		
	Statutory Required Contribution (7)	Contributions In Relation to the Statutory Required Contribution (8)	Contribution Deficiency/ (Excess) (9)	Contributions as a Percentage of Covered Employee Payroll (10)	Proportionate Share of Plan Pension Expense (11)	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (12)	Total Employer Pension Expense (13)
Sandwich Water	172,886	-172,886	0	20.03%	324,999	-54,624	270,375
Town of Truro	991,555	-991,555	0	20.31%	1,863,968	-58,836	1,805,132
Veterans District	52,715	-52,715	0	21.72%	99,096	168	99,264
Town of Wellfleet	1,051,633	-1,051,633	0	20.31%	1,976,905	5,037	1,981,942
Town of Yarmouth	3,970,199	-3,970,199	0	20.53%	7,460,587	-113,854	7,346,733
Yarmouth Housing	42,714	-42,714	0	22.63%	78,811	643	79,454
West Barnstable Fire	118,859	-118,859	0	20.03%	223,436	27,232	250,668
Cape Cod Regional Transit Authority	135,068	-135,068	0	20.03%	253,907	-80,858	173,049
Monomoy Regional School District	853,628	-853,628	0	20.03%	1,604,686	-142,143	1,462,543
Provincetown Housing	10,805	-10,805	0	20.03%	20,313	18,431	38,744
Grand Totals:	\$56,269,528	-\$56,269,528	\$0	20.87%	\$106,554,929	\$0	\$106,554,929

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources				
	Differences Between Expected and Actual Experience (14)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (15)	Changes of Assumptions (16)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (17)	Total Deferred Outflows of Resources (18)	Differences Between Expected and Actual Experience (19)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (20)	Changes of Assumptions (21)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (22)	Total Deferred Inflows of Resources (23)
Barnstable County	\$0	\$2,057,208	\$2,146,874	\$1,072,687	\$5,276,769	\$463,716	\$0	\$0	\$0	\$463,716
County Hospital	0	6,582	6,869	0	13,451	1,484	0	0	11,231	12,715
Retired Sheriffs	0	1,249,314	1,303,767	10,152	2,563,233	281,608	0	0	878,581	1,160,189
Town of Barnstable	0	5,904,684	6,162,045	110,528	12,177,257	1,330,977	0	0	1,199,302	2,530,279
Barnstable Fire	0	273,267	285,178	242,224	800,669	61,597	0	0	0	61,597
Barnstable Housing	0	135,925	141,849	238,062	515,836	30,639	0	0	34,981	65,620
Town of Bourne	0	2,396,771	2,501,237	480,990	5,378,998	540,257	0	0	947,188	1,487,445
Bourne Housing	0	49,485	51,642	2,767	103,894	11,155	0	0	45,650	56,805
Bourne Recreation	0	76,574	79,911	45,096	201,581	17,261	0	0	92,633	109,894
Bourne Water	0	83,376	87,010	74,118	244,504	18,794	0	0	183,542	202,336
Town of Brewster	0	1,385,944	1,446,352	21,957	2,854,253	312,406	0	0	701,740	1,014,146
Brewster Housing Authority	0	7,613	7,945	494	16,052	1,716	0	0	71,610	73,326
Buzzards Bay Water	0	41,872	43,697	2,355	87,924	9,438	0	0	45,707	55,145
Cape Code Mosquito	0	184,597	192,643	188,691	565,931	41,610	0	0	0	41,610
Cape Cod Regional Technical High School	0	293,105	305,881	110,850	709,836	66,069	0	0	272,872	338,941
C.O.M.M. Fire	0	882,752	921,228	28,491	1,832,471	198,981	0	0	212,198	411,179
Town of Chatham	0	1,292,096	1,348,414	174,172	2,814,682	291,252	0	0	390,520	681,772
Chatham Housing	0	22,839	23,835	1,478	48,152	5,148	0	0	70	5,218

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources				
	Differences Between Expected and Actual Experience (14)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan (15)	Changes of Assumptions (16)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (17)	Total Deferred Outflows of Resources (18)	Differences Between Expected and Actual Experience (19)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan (20)	Changes of Assumptions (21)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (22)	Total Deferred Inflows of Resources (23)
Cotuit Fire	0	171,295	178,761	96,344	446,400	38,612	0	0	179,506	218,118
Town of Dennis	0	2,036,512	2,125,276	560,736	4,722,524	459,051	0	0	760,207	1,219,258
Dennis Housing	0	43,669	45,572	39,059	128,300	9,843	0	0	0	9,843
Dennis Water	0	167,489	174,789	2,592	344,870	37,754	0	0	218,602	256,356
Dennis-Yarmouth Regional School	0	833,637	869,973	297,247	2,000,857	187,911	0	0	539,584	727,495
Town of Eastham	0	1,013,843	1,058,033	437,775	2,509,651	228,531	0	0	282,267	510,798
Town of Harwich	0	1,781,472	1,859,120	1,149,159	4,789,751	401,562	0	0	112,959	514,521
Hyannis Fire	0	732,047	763,954	294,497	1,790,498	165,011	0	0	73,402	238,413
Town of Mashpee	0	1,941,077	2,025,681	552,299	4,519,057	437,539	0	0	30,390	467,929
Mashpee Housing	0	34,259	35,752	83,829	153,840	7,722	0	0	0	7,722
Mashpee Water	0	113,380	118,322	39,280	270,982	25,557	0	0	0	25,557
Town of Nantucket	0	3,954,327	4,126,681	1,945,093	10,026,101	891,346	0	0	0	891,346
Nantucket Housing	0	15,226	15,890	993	32,109	3,432	0	0	53	3,485
County of Nantucket	0	114,197	119,174	1,775	235,146	25,741	0	0	280,381	306,122
Nantucket Regional Transportation Authority	0	22,839	23,835	1,478	48,152	5,148	0	0	70	5,218
Nauset Regional School	0	570,984	595,872	572,732	1,739,588	128,706	0	0	317,140	445,846
North Sagamore Water	0	34,259	35,752	36,199	106,210	7,722	0	0	45,636	53,358
Town of Orleans	0	1,256,166	1,310,918	193,621	2,760,705	283,153	0	0	262,543	545,696
Orleans Housing	0	30,453	31,780	1,973	64,206	6,864	0	0	98	6,962
Ground Water Protection District	0	53,292	55,615	1,786	110,693	12,013	0	0	45,612	57,625
Town of Provincetown	0	1,077,257	1,124,211	579,356	2,780,824	242,825	0	0	361,337	604,162
Town of Sandwich	0	2,363,876	2,466,909	824,653	5,655,438	532,842	0	0	0	532,842
Sandwich Housing	0	19,033	19,862	1,232	40,127	4,290	0	0	59	4,349

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources				
	Differences Between Expected and Actual Experience (14)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan (15)	Changes of Assumptions (16)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (17)	Total Deferred Outflows of Resources (18)	Differences Between Expected and Actual Experience (19)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan (20)	Changes of Assumptions (21)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (22)	Total Deferred Inflows of Resources (23)
Sandwich Water	0	121,810	127,119	1,961	250,890	27,457	0	0	275,191	302,648
Town of Truro	0	698,616	729,066	10,440	1,438,122	157,475	0	0	252,515	409,990
Veterans District	0	37,141	38,760	37,508	113,409	8,372	0	0	45,964	54,336
Town of Wellfleet	0	740,945	773,240	155,695	1,669,880	167,017	0	0	105,325	272,342
Town of Yarmouth	0	2,796,231	2,918,109	356,989	6,071,329	630,300	0	0	1,009,170	1,639,470
Yarmouth Housing	0	29,538	30,826	2,782	63,146	6,658	0	0	38	6,696
West Barnstable Fire	0	83,744	87,394	109,242	280,380	18,877	0	0	0	18,877
Cape Cod Regional Transit Authority	0	95,164	99,312	3,475	197,951	21,451	0	0	372,541	393,992
Monomoy Regional School District	0	601,437	627,652	9,134	1,238,223	135,570	0	0	639,783	775,353
Provincetown Housing	0	7,613	7,945	92,152	107,710	1,716	0	0	0	1,716
Grand Totals:	\$0	\$39,936,832	\$41,677,532	\$11,298,198	\$92,912,562	\$9,002,176	\$0	\$0	\$11,298,198	\$20,300,374

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30):						
Employer Name	2018 (24)	2019 (25)	2020 (26)	2021 (27)	2022 (28)	Thereafter (29)
Barnstable County	\$1,275,202	\$1,275,202	\$1,262,751	\$628,630	\$371,268	\$0
County Hospital	905	905	865	-1,162	-777	0
Retired Sheriffs	429,572	429,572	422,010	36,936	84,954	0
Town of Barnstable	2,657,701	2,657,701	2,621,963	801,885	907,728	0
Barnstable Fire	190,628	190,628	188,974	104,737	64,105	0
Barnstable Housing	106,113	106,113	105,291	63,388	69,311	0
Town of Bourne	1,113,376	1,113,376	1,098,870	360,074	205,857	0
Bourne Housing	15,910	15,910	15,611	353	-695	0
Bourne Recreation	30,435	30,435	29,972	6,366	-5,521	0
Bourne Water	22,950	22,950	22,445	-3,256	-22,921	0
Town of Brewster	545,259	545,259	536,871	109,662	103,056	0
Brewster Housing Authority	-14,036	-14,036	-14,082	-16,426	1,306	0
Buzzards Bay Water	12,048	12,048	11,795	-1,113	-1,999	0
Cape Code Mosquito	128,946	128,946	127,828	70,925	67,676	0
Cape Cod Regional Technical High School	117,725	117,725	115,951	25,605	-6,111	0
C.O.M.M. Fire	398,276	398,276	392,933	120,828	110,979	0
Town of Chatham	575,545	575,545	567,724	169,440	244,656	0
Chatham Housing	11,580	11,580	11,442	4,402	3,930	0

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30):					
	2018 (24)	2019 (25)	2020 (26)	2021 (27)	2022 (28)	Thereafter (29)
Cotuit Fire	59,016	59,016	57,979	5,178	47,093	0
Town of Dennis	992,736	992,736	980,410	352,669	184,715	0
Dennis Housing	31,245	31,245	30,981	17,517	7,469	0
Dennis Water	37,728	37,728	36,714	-14,910	-8,746	0
Dennis-Yarmouth Regional School	336,395	336,395	331,349	74,384	194,839	0
Town of Eastham	517,853	517,853	511,717	199,208	252,222	0
Town of Harwich	1,081,675	1,081,675	1,070,892	521,767	519,221	0
Hyannis Fire	402,199	402,199	397,768	172,122	177,797	0
Town of Mashpee	1,061,813	1,061,813	1,050,065	451,739	425,698	0
Mashpee Housing	35,501	35,501	35,294	24,732	15,090	0
Mashpee Water	65,707	65,707	65,021	30,072	18,918	0
Town of Nantucket	2,345,555	2,345,555	2,321,622	1,102,723	1,019,300	0
Nantucket Housing	7,722	7,722	7,629	2,932	2,619	0
County of Nantucket	-6,480	-6,480	-7,171	-42,371	-8,474	0
Nantucket Regional Transportation Authority	11,580	11,580	11,442	4,402	3,930	0
Nauset Regional School	361,663	361,663	358,207	182,204	30,005	0
North Sagamore Water	16,822	16,822	16,615	6,055	-3,462	0
Town of Orleans	615,552	615,552	607,949	220,745	155,211	0
Orleans Housing	15,441	15,441	15,257	5,868	5,237	0
Ground Water Protection District	17,604	17,604	17,281	854	-275	0
Town of Provincetown	557,728	557,728	551,208	219,147	290,851	0
Town of Sandwich	1,350,274	1,350,274	1,335,967	607,316	478,765	0
Sandwich Housing	9,652	9,652	9,537	3,669	3,268	0

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Employer Name	Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30):					
	2018 (24)	2019 (25)	2020 (26)	2021 (27)	2022 (28)	Thereafter (29)
Sandwich Water	5,516	5,516	4,779	-32,768	-34,801	0
Town of Truro	286,086	286,086	281,858	66,515	107,587	0
Veterans District	18,505	18,505	18,281	6,832	-3,050	0
Town of Wellfleet	370,858	370,858	366,374	137,983	151,465	0
Town of Yarmouth	1,266,708	1,266,708	1,249,784	387,864	260,795	0
Yarmouth Housing	15,227	15,227	15,048	5,941	5,007	0
West Barnstable Fire	68,578	68,578	68,071	42,253	14,023	0
Cape Cod Regional Transit Authority	-33,873	-33,873	-34,449	-63,784	-30,062	0
Monomoy Regional School District	154,800	154,800	151,160	-34,228	36,338	0
Provincetown Housing	22,190	22,190	22,144	19,797	19,673	0
Grand Totals:	\$19,717,711	\$19,717,711	\$19,475,997	\$7,165,701	\$6,535,068	\$0

SECTION 3: Supplemental Information for the Barnstable County Retirement System

EXHIBIT 7

Notes to Required Supplementary Information

Valuation date	Actuarial determined contributions for fiscal 2016 and 2017 and determined with the January 1, 2014 actuarial valuation.
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Payments increase at 4.0%, except for 2010 Early Retirement Incentive, which is a level payment.
Remaining amortization period	As of July 1, 2014, 8 years for 2010 Early Retirement Incentive and 22 years for 2002 and 2003 Early Retirement Incentives, retiree sheriffs liability and remaining unfunded liability.
Asset valuation method	Sum of actuarial value at beginning of the year, contributions and investment earnings based on the actuarial interest assumption less benefit payments and operating expenses plus 20% of the market value at the end of the year in excess of that sum, plus additional adjustment toward market value as necessary so that final actuarial value is within 20% of market value.
Actuarial assumptions:	
Investment rate of return	7.75%
Discount rate	7.75%
Inflation rate	4.0%
Projected salary increases	Varies by length of service with ultimate rates of 4.25% for Group 1, 4.5% for Group 2 and 4.75% for Group 4.
Cost of living adjustments	3% of first \$15,000
Plan membership:	
Retired participants and beneficiaries receiving benefits	2,729
Inactive participants entitled to a return of their employee contributions	513
Inactive participants with a vested right to a deferred or immediate benefit	138
Active participants	<u>4,696</u>
Total	8,076

SECTION 3: Supplemental Information for the Barnstable County Retirement System

EXHIBIT I

Actuarial Assumptions and Actuarial Cost Method*

Mortality Rates:

<i>Pre-Retirement:</i>	RP-2000 Employee Mortality Table projected generationally with Scale BB2D from 2009 (Previously, RP-2000 Employee Mortality Table projected generationally with Scale AA from 2010)
<i>Healthy Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2009 (Previously, RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale AA from 2010)
<i>Disabled Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2015 (Previously, RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally with Scale AA from 2010)

The underlying tables with generational projection to the ages of participants as of the measurement date reasonably reflect the mortality experience of the plan as of the measurement date based on historical and current demographic data. As part of the analysis, a comparison was made between the actual number of retiree deaths and the projected number based on the prior years' assumption over the most recent six years. The mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years.

* Same assumptions used in the January 1, 2016 Actuarial Valuation and Review.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Termination Rates before Retirement:

Age	Groups 1 and 2 - Rate (%)		Disability
	Mortality		
	Male	Female	
20	0.03	0.02	0.01
25	0.04	0.02	0.02
30	0.04	0.03	0.03
35	0.08	0.05	0.06
40	0.11	0.07	0.10
45	0.15	0.11	0.15
50	0.21	0.17	0.19
55	0.30	0.25	0.24
60	0.49	0.39	0.28

*Notes: Mortality rates do not reflect generational projection.
 55% of the disability rates shown represent accidental disability.
 20% of the accidental disabilities will die from the same cause as the disability.
 55% of the death rates shown represent accidental death.*

Age	Group 4 - Rate (%)		Disability
	Mortality		
	Male	Female	
20	0.03	0.02	0.10
25	0.04	0.02	0.20
30	0.04	0.03	0.30
35	0.08	0.05	0.30
40	0.11	0.07	0.30
45	0.15	0.11	1.00
50	0.21	0.17	1.25
55	0.30	0.25	1.20
60	0.49	0.39	0.85

*Notes: Mortality rates do not reflect generational projection.
 90% of the disability rates shown represent accidental disability.
 60% of the accidental disabilities will die from the same cause as the disability.
 90% of the death rates shown represent accidental death.*

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Withdrawal Rates:	Rate per year (%)			
	Years of Service	Groups 1 and 2	Years of Service	Group 4
	0	15.0	0 – 10	1.5
	1	12.0	11+	0.0
	2	10.0		
	3	9.0		
	4	8.0		
	5	7.6		
	6	7.5		
	7	6.7		
	8	6.3		
	9	5.9		
	10	5.4		
	11	5.0		
	12	4.6		
	13	4.1		
	14	3.7		
	15	3.3		
	16 – 20	2.0		
	21 – 29	1.0		
	30+	0.0		

The termination rates and disability rates were based on historical and current demographic data, adjusted to reflect economic conditions of the area and estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of terminations and disability retirements and the projected number based on the prior years' assumption over the most recent six years.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Retirement Rates:	Age	Rate per year (%)		Group 4
		Groups 1 and 2		
		Male	Female	
	45 – 49	--	--	1.0
	50 – 51	1.0	1.5	2.0
	52	1.0	2.0	2.0
	53	1.0	2.5	5.0
	54	2.0	2.5	7.5
	55	2.0	5.5	15.0
	56 – 57	2.5	6.5	10.0
	58	5.0	6.5	10.0
	59	6.5	6.5	15.0
	60	12.0	5.0	20.0
	61	20.0	13.0	20.0
	62	30.0	15.0	25.0
	63	25.0	12.5	25.0
	64	22.0	18.0	30.0
	65	40.0	15.0	100.0
	66 – 67	25.0	20.0	--
	68	30.0	25.0	--
	69	30.0	20.0	--
	70	100.0	100.0	--

The retirement rates were based on historical and current demographic data, adjusted to reflect economic conditions of the area and estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of retirements by age and the projected number based on the prior years' assumption over the most recent six years.

Retirement Age for Inactive Vested Participants:

55 for participants hired prior to April 2, 2012. For participants hired April 2, 2012 or later, 60 for Group 1, 55 for Group 2, and 50 for Group 4.

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The retirement age for inactive vested participants was based on historical and current demographic data, adjusted to reflect economic conditions of the area and estimated future experience and professional judgment.

Unknown Data for Participants:	Same as those exhibited by participants with similar known characteristics.
Family Composition:	75% of participants are assumed to be married. None are assumed to have dependent children. Females are assumed to be three years younger than their spouses.
Benefit Election:	All participants are assumed to elect Option A. The benefit election reflects the fact that all benefit options are actuarially equivalent.
Net Investment Return:	7.625% (previously, 7.75%)

The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio’s asset classes, as well as the Plan’s target asset allocation.

Salary Increases:

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

SECTION 3: Supplemental Information for the Barnstable County Retirement System

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

Interest on Employee Contributions: 3.5%

Administrative Expenses: \$1,500,000 for calendar 2016, increasing 3.5% per year (previously, \$1,150,000 for calendar 2014, increasing 4.0% per year).

The administrative expense assumption is based on information on expenses provided by the Retirement System.

Total Service: Total creditable service reported in the data.

2015 Salary: 2015 salaries are equal to salaries provided in the data, annualized for new hires, except for participants missing salary, where salaries were calculated from annualized contributions divided by the contribution rates provided.

Net 3(8)(c) Liability: No liability is valued for benefits paid to or received from other municipal retirement systems.

Actuarial Value of Assets: A preliminary actuarial value is first determined by taking the actuarial value of assets at the beginning of the year and adding assumed investment earnings (at the assumed actuarial rate of return) and the net new money during the year (contributions less benefit payments and administrative expenses). Twenty percent of the difference between the market value of assets as reported in the System's Annual Statement and the preliminary actuarial value of assets is added to the preliminary actuarial value. In order that the actuarial value not differ too significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is the attained age of the participant minus total creditable service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary. Normal Cost is determined using the plan of benefits applicable to each participant.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

Changes in Assumptions:

Based on past experience and future expectations, the following actuarial assumptions were changed:

The investment return assumption was decreased from 7.75% to 7.625%.

The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected generationally using Scale AA from 2010 to the RP-2000 Employee Mortality Table projected generationally using Scale BB2D from 2009.

The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA from 2010 to the RP-2000 Healthy Annuitant Mortality Tables projected generationally using Scale BB2D from 2009.

The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward three years for males only projected generationally using Scale AA from 2010 to the RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2015.

The administrative expense assumption was increased from \$1,150,000 to \$1,500,000.

SECTION 3: Supplemental Information for the Barnstable County Retirement System

**EXHIBIT II
Summary of Plan Provisions**

This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts.

Plan Year: January 1 through December 31

Retirement Benefits

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member’s final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the member at retirement:

Percent	Age Last Birthday at Date of Retirement		
	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

SECTION 3: Supplemental Information for the Barnstable County Retirement System

A member’s final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement.

For employees hired on April 2, 2012 or later, the annual amount of the retirement allowance is based on the member’s final five-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following tables based on the age and years of creditable service of the member at retirement:

For members with less than 30 years of creditable service:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
2.50	67 or over	62 or over	57 or over
2.35	66	61	56
2.20	65	60	55
2.05	64	59	54
1.90	63	58	53
1.75	62	57	52
1.60	61	56	51
1.45	60	55	50

For members with 30 years of creditable service or greater:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
2.500	67 or over	62 or over	57 or over
2.375	66	61	56
2.250	65	60	55
2.125	64	59	54
2.000	63	58	53
1.875	62	57	52
1.750	61	56	51
1.625	60	55	50

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A member’s final five-year average salary is defined as the greater of the highest consecutive five-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last five years of creditable service prior to retirement.

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). In addition, regular compensation for members who retire after April 2, 2012 will be limited to prohibit “spiking” of a member’s salary to increase the retirement benefit.

For all employees, the maximum annual amount of the retirement allowance is 80 percent of the member’s final average salary. Any member who is a veteran also receives an additional yearly retirement allowance of \$15 per year of creditable service, not exceeding \$300. The veteran allowance is paid in addition to the 80 percent maximum.

Employee Contributions

<u>Date of Hire</u>	<u>Contribution Rate</u>
Prior to January 1, 1975	5%
January 1, 1975 – December 31, 1983	7%
January 1, 1984 – June 30, 1996	8%
July 1, 1996 onward	9%

In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who voluntarily withdraw their contributions with less than 10 ten years of credited service receive 3% interest on their contributions.

Employees in Group 1 hired on or after April 2, 2012 with 30 years of creditable service or greater will pay a base contribution rate of 6%.

Retirement Benefits (Superannuation)

Members of Group 1, 2 or 4 hired prior to April 2, 2012 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

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Members hired prior to April 2, 2012 who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System).

Members of Group 1 hired April 2, 2012 or later may retire upon the attainment of age 60. Members of Group 2 or 4 hired April 2, 2012 or later may retire upon the attainment of age 55. Members of Group 4 may retire upon attainment of age 50 with ten years of creditable service.

Members hired April 2, 2012 or later who terminate before age 55 (60 for members of Group 1) with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (60 for members of Group 1) provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System.

Ordinary Disability Benefits

A member who is unable to perform his or her job due to a non-occupational disability will receive a retirement allowance if he or she has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the member retired for superannuation at age 55 (age 60 for Group 1 members hired on or after April 2, 2012), based on the amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50 percent of the member's most recent year's pay plus an annuity based on his or her own contributions.

Accidental Disability Benefit

For a job-connected disability, the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his or her own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

Death Benefits

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were

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eligible to retire on the date of death, a spouse's benefit will be paid equal to the amount the employee would have received under Option C. The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$500 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay, in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children. However, in accordance with Section 100 of Chapter 32, the surviving spouse of a police officer, firefighter or corrections officer is killed in the line of duty will be eligible to receive an annual benefit equal to the maximum salary held by the member at the time of death.

Upon the death of a job-connected disability retiree who retired prior to November 7, 1996 and could not elect an Option C benefit, a surviving spouse will receive an allowance of \$12,000 per year if the member dies for a reason unrelated to cause of disability.

"Heart And Lung Law" And Cancer Presumption

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman, permanent member of a police department, or certain employees of a county correctional facility is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

Options

Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at the time of death any contributions not expended

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for annuity payments will be refunded to the beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing a survivor with two-thirds of the lesser amount. Option C pensioners will have benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

Post-Retirement Benefits

The Board has adopted the provisions of Section 51 of Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$16,000 (previously, \$15,000) of a retirement allowance. The Board has adopted an increase in the COLA base from \$16,000 to \$17,000 effective July 1, 2016 and to \$18,000 effective July 1, 2017. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.

Changes in Plan Provisions

As permitted by Section 19 of Chapter 188 of the Acts of 2010, the Cost of Living Adjustment base was increased from \$15,000 to \$16,000 as of July 1, 2015, to \$17,000 as of July 1, 2016, and to \$18,000 as of July 1, 2017.

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Appendix A

Glossary

Definitions of certain terms *as they are used in Statement 68*; the terms may have different meanings in other contexts.

Active employees:	Individuals employed at the end of the reporting or measurement period, as applicable.
Actual contributions:	Cash contributions recognized as additions to a pension plan’s fiduciary net position.
Actuarial present value of projected benefit payments:	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial valuation:	The determination, as of a point in time (the actuarial valuation date), of the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial valuation date:	The date as of which an actuarial valuation is performed.
Actuarially determined contribution:	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Ad hoc cost-of-living adjustments (ad hoc COLAs):	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
Ad hoc postemployment benefit changes:	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Agent employer:	An employer whose employees are provided with pensions through an agent multiple-employer defined benefit pension plan.

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Agent multiple-employer defined benefit pension plan (agent pension plan):

A multiple-employer defined benefit pension plan in which pension plan assets are pooled for investment purposes but separate accounts are maintained for each individual employer so that each employer's share of the pooled assets is legally available to pay the benefits of only its employees.

Allocated insurance contract:

A contract with an insurance company under which related payments to the insurance company are currently used to purchase immediate or deferred annuities for individual employees. Also may be referred to as an annuity contract.

Automatic cost-of-living adjustments (automatic COLAs):

Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Automatic postemployment benefit changes:

Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Closed period:

A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.

Collective deferred outflows of resources and deferred inflows of resources related to pensions:

Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective net pension liability.

Collective net pension liability:

The net pension liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.

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Collective pension expense:	Pension expense arising from certain changes in the collective net pension liability.
Contributions:	Additions to a pension plan's fiduciary net position for amounts from employers, nonemployer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.
Cost-of-living adjustments:	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-sharing employer:	An employer whose employees are provided with pensions through a cost-sharing multiple-employer defined benefit pension plan.
Cost-sharing multiple-employer defined benefit pension plan (cost-sharing pension plan):	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-employee payroll:	The payroll of employees that are provided with pensions through the pension plan.
Deferred retirement option program (DROP):	A program that permits an employee to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The employee continues to provide service to the employer and is paid for that service by the employer after the DROP entry date; however, the pensions that would have been paid to the employee (if the employee had retired and not entered the DROP) are credited to an individual employee account within the defined benefit pension plan until the end of the DROP period.
Defined benefit pension plans:	Pension plans that are used to provide defined benefit pensions.

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- Defined benefit pensions:** Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)
- Defined contribution pension plans:** Pension plans that are used to provide defined contribution pensions.
- Defined contribution pensions:** Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.
- Discount rate:** The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:
1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension plan's fiduciary net position is projected (under the requirements of Statement 68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments.
 2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.

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Entry age actuarial cost method:	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the <i>normal cost</i> . The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the <i>actuarial accrued liability</i> .
Inactive employees:	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Measurement period:	The period between the prior and the current measurement dates.
Multiple-employer defined benefit pension plan:	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Net pension liability:	The liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit pension plan.
Nonemployer contributing entities:	Entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of Statement 68, employees are not considered nonemployer contributing entities.
Other postemployment benefits:	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Pension plans:	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed, and benefits are paid as they come due.
Pensions:	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.

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Plan members:	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment:	The period after employment.
Postemployment benefit changes:	Adjustments to the pension of an inactive employee.
Postemployment healthcare benefits:	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
Projected benefit payments:	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public employee retirement system:	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real rate of return:	The rate of return on an investment after adjustment to eliminate inflation.
Service costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Single employer:	An employer whose employees are provided with pensions through a single-employer defined benefit pension plan.
Single-employer defined benefit pension plan (single-employer pension plan):	A defined benefit pension plan that is used to provide pensions to employees of only one employer.
Special funding situations:	<p>Circumstances in which a nonemployer entity is legally responsible for making contributions directly to a pension plan that is used to provide pensions to the employees of another entity or entities and either of the following conditions exists:</p> <p>The amount of contributions for which the nonemployer entity legally is responsible is <i>not</i> dependent upon one or more events or circumstances unrelated to the pensions.</p> <p>The nonemployer entity is the only entity with a legal obligation to make contributions directly to a pension plan.</p>

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Termination benefits:

Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.

Total pension liability:

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement.

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