



# Town of Cumberland, RI Police Retirement Plan

**July 1, 2017 ACTUARIAL VALUATION**

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At the request of the plan sponsor, this report summarizes the actuarial results of the Town of Cumberland, RI Police Retirement Plan as of July 1, 2017. The purpose of this report is to communicate the following results of the valuation:

- Funded Status; and
- Determine Minimum Recommended Contribution;

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census and asset information has been provided to us by the employer. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the employer. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. 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;
- increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart

*David D. Harris*

David D. Harris, ASA, EA, MAAA

*Sally Ray*

Sally Ray, ASA

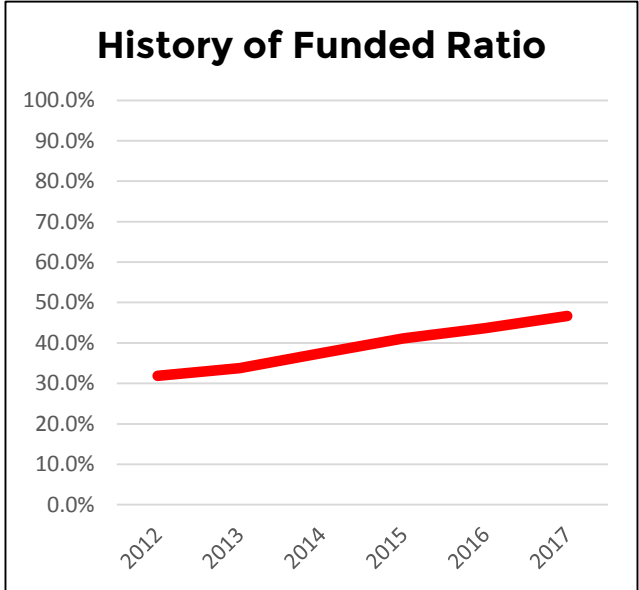
November 29, 2017

Date

**Summary Results**

The actuarial valuation’s primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	<b>July 1, 2016</b>	<b>July 1, 2017</b>	<b>July 1, 2018</b>
<b>Funded Status Measures</b>			
Accrued Liability	\$33,745,557	\$34,580,512	
Actuarial Value of Assets	<u>\$14,594,768</u>	<u>\$16,138,523</u>	
Unfunded Actuarial Accrued Liability (UAAL)	\$18,880,789	\$18,441,989	
Funded Percentage (AVA)	43.6%	46.7%	
Funded Percentage (MVA)	41.8%	45.8%	
<b>Cost Measures</b>			
Recommended Contribution for Following Year (2018)	\$2,138,355	\$2,168,246	\$2,245,444
Recommended Contribution (as a percentage of payroll)	77.7%	77.0%	77.0%
<b>Asset Performance</b>			
Market Value of Assets (MVA)	\$13,988,898	\$15,843,241	
Actuarial Value of Assets (AVA)	\$14,594,768	\$16,138,523	
Actuarial Value/Market Value	104.3%	101.9%	
Market Value Rate of Return	1.4%	9.6%	
Actuarial Value Rate of Return	6.5%	7.1%	
<b>Participant Information</b>			
Active Participants	42	42	
Terminated Vested Participants	1	1	
Retirees, Beneficiaries, and Disabled	<u>69</u>	<u>71</u>	
Total	112	114	
Expected Payroll	\$2,750,648	\$2,817,547	\$2,916,161



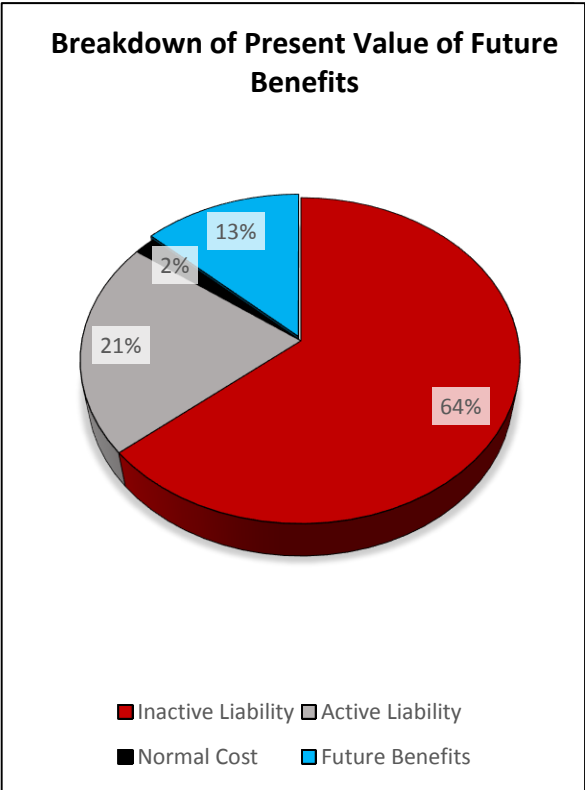
**Changes since Prior Valuation and Key Notes**

The mortality table has been updated from using a fully generational improvement scale based on assumptions from the 2015 Social Security Trustees Report to the improvement scale based on assumptions from the 2016 Social Security Trustees Report. The mortality table (RP-2014 Total) and the year in which improvements begin (2006) remain the same. This change results in a decrease in liability and normal cost.

**Present Value of Future Benefits**

The Present Value of Future Benefits represents the future benefits payable to the existing participants.

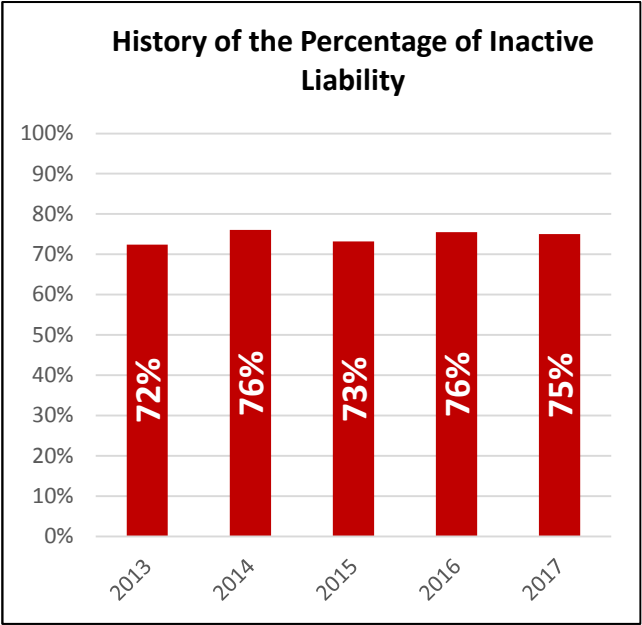
	<b>July 1, 2017</b>
<b>Present Value of Future Benefits</b>	
Active participants	
Retirement	\$13,284,484
Disability	\$1,285,000
Death	\$101,145
Termination	\$0
Total active	\$14,670,629
Inactive participants	
Retired participants	\$22,941,168
Beneficiaries	\$908,019
Disabled participants	\$2,080,744
Terminated vested participants	\$11,950
Total inactive	\$25,941,881
Total	\$40,612,510
 Present value of future payrolls	 \$27,436,769



**Accrued Liability**

The Accrued Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions.

	<b>July 1, 2017</b>
Active participants	
Retirement	\$8,112,903
Disability	\$473,635
Death	\$52,093
Termination	\$0
Refund Employee Contributions	\$0
Total Active	\$8,638,631
Inactive participants	
Retired participants	\$22,941,168
Beneficiaries	\$908,019
Disabled participants	\$2,080,744
Terminated vested participants	\$11,950
Total Inactive	\$25,941,881
 Total	 \$34,580,512
 Normal Cost	 \$654,232

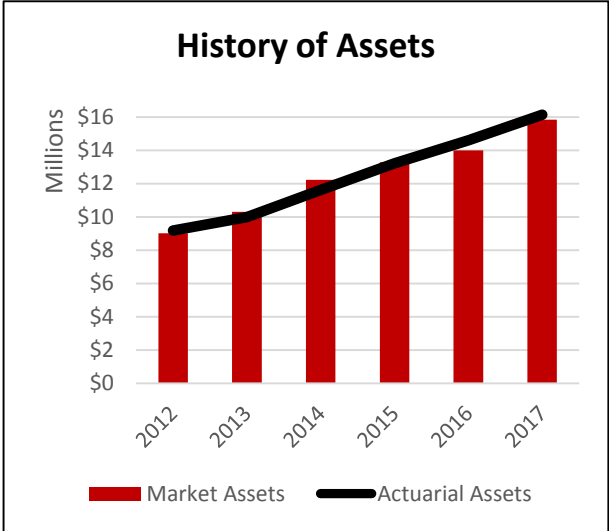




**Asset Information**

The amount of assets backing the pension promise is the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	<b>July 1, 2017</b>
<b>Market Value Reconciliation</b>	
Market value of assets, beginning of prior year	\$13,988,898
Contributions	
Employer contributions	2,182,000
Employee contributions	245,844
Total	\$2,427,844
Investment income	1,451,019
Benefit payments	(1,939,634)
Investment expenses	(67,736)
Administrative expenses	(17,150)
Market value of asset, beginning of current year	\$15,843,241
Return on Market Value, net of all expenses	9.61%
Market value of assets available for pension benefits	\$15,843,241
 <b>Actuarial Value of Assets</b>	
Value at beginning of current year	\$16,138,523



**Asset Information (continued) – 20% Phase in**

Plan Assets are used to develop funded percentages and contribution requirements.

	<b>July 1, 2017</b>
<b>Investment Gain or (Loss)</b>	
1. Prior year's market value of assets	\$13,988,898
2. Employer contributions for the prior plan year	2,182,000
3. Employee contributions for the prior plan year	245,844
4. Benefit payments during the prior plan year	(1,939,634)
5. Expected earnings at 7.50% to the end of the plan year on	
(a) Market value of assets	\$1,049,167
(b) Contributions	89,398
(c) Benefit payments	(71,421)
(d) Total expected earnings, (a) + (b) + (c)	<u>\$1,067,144</u>
6. Expected market value of assets, (1) + (2) + (3) + (4) + (5) + (6d)	\$15,544,252
7. Actual market value of assets	\$15,843,241
8. Investment Gain or (Loss), (8) – (7)	\$298,989
<b>Actuarial Value of Assets</b>	
9. Market value of assets	\$15,843,241
10. Deferred Investment gains or (losses)	
(a) Current year: 80% x \$298,989	\$239,190
(b) First prior year: 60% x (\$820,911)	(492,547)
(c) Second prior year: 40% x (\$367,669)	(147,068)
(d) Third prior year: 20% x \$525,716	105,143
(e) Total	<u>(\$295,282)</u>
11. Preliminary actuarial value of assets, (9 – (10e))	\$16,138,523
12. 80% Market value of assets	\$12,674,593
13. 120% Market value of assets	\$19,011,889
14. Final actuarial value of assets	\$16,138,523
15. Return on actuarial value of assets	7.1%

## Reconciliation of Gain/Loss

July 1, 2017

## Liability (Gain)/Loss

1. Actuarial liability, beginning of prior year	\$33,475,557
2. Normal cost for prior year	651,363
3. Benefit payments	(1,939,634)
4. Expected Interest	2,488,098
5. Change in Assumptions	(90,621)
6. Change in Plan Provisions	0
7. Expected actuarial liability, beginning of current year	<u>\$34,584,763</u>
8. Actual actuarial liability	\$34,580,512
9. Liability (Gain)/Loss, (8) – (7)	<u>(\$4,251)</u>

## Asset (Gain)/Loss

10. Actuarial value of assets, beginning of prior year	\$14,594,768
11. Employer Contributions	2,182,000
12. Employee Contributions	245,844
13. Benefit payments	(1,939,634)
14. Expected Investment return	1,112,585
15. Expected actuarial value of assets, beginning of current year	<u>\$16,195,563</u>
16. Actual actuarial value of assets, beginning of current year	\$16,138,523
17. Asset (Gain)/Loss, (15) – (16)	<u>\$57,040</u>

## Total (Gain)/Loss, (9) + (17)

\$52,789

## Reconciliation of Unfunded Actuarial Accrued Liability (UAAL)

	<b>July 1, 2017</b>
1. UAAL beginning of prior year	\$18,880,789
2. Normal Cost	651,363
3. Employer Contributions	(2,182,000)
4. Employee Contributions	(245,844)
5. Interest	1,375,513
6. Expected UAAL, beginning of current year	\$18,479,821
7. Changes due to:	
(a) Amendments	\$0
(b) Assumptions	
(1) Mortality Update	(90,621)
(c) Funding Methods	0
(d) (Gain)/Loss	52,789
(e) Total	(\$37,832)
8. UAAL beginning of current year	\$18,441,989

**Development of Minimum Recommended Contribution**

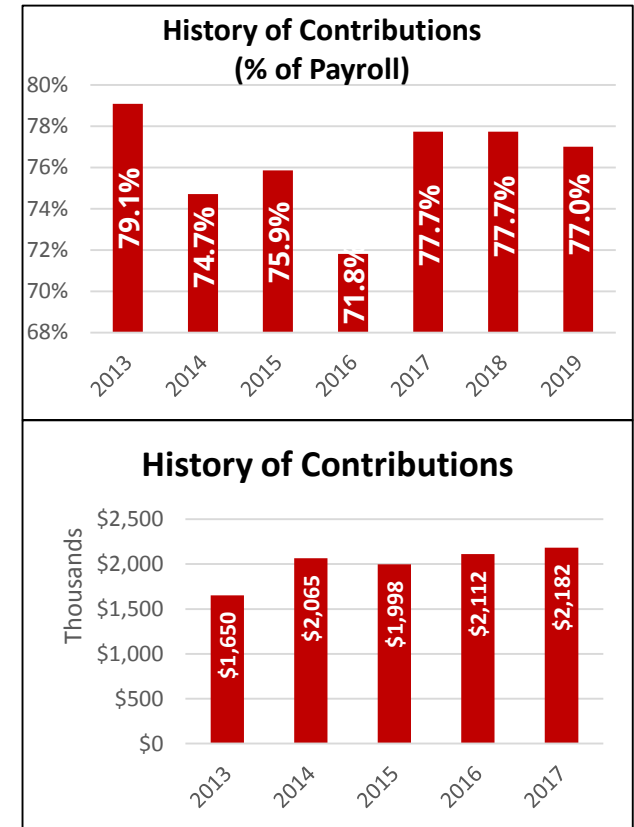
The minimum recommended contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws.

**Funded Position**

1. Entry age accrued liability	\$34,580,512
2. Actuarial value of assets	\$16,138,523
3. Unfunded actuarial accrued liability (UAAL)	\$18,441,989

**Employer Contributions**

1. Normal Cost	
a. Total normal cost	\$654,232
b. Expected participant contributions	\$225,289
c. Net normal cost	\$428,943
2. Amortization of UAAL	\$1,588,030
3. Interest	\$151,273
4. Calculated contribution at valuation date	\$2,168,246
5. Valuation payroll	\$2,817,547
6. Calculated contribution as a percentage of payroll	77.0%
7. Projected payroll	\$2,916,161
8. Actuarial recommended funding contribution (6) x (7)	\$2,245,444



**Demographic Information**

The foundation of a reliable actuarial report is the participant information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

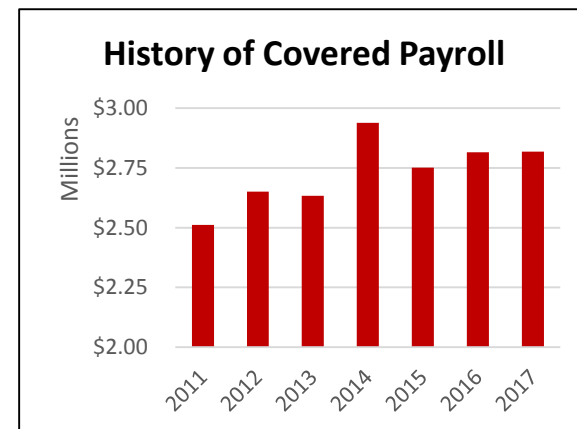
**July 1, 2017**

**Participant Counts**

Active Participants	42
Retired Participants	56
Beneficiaries	9
Disabled Participants	6
Terminated Vested Participants	1
<b>Total Participants</b>	<b>114</b>

**Active Participant Demographics**

Average Age	38.3
Average Service	9.7
Average Compensation	\$64,253
Total Payroll	\$2,817,547
Covered Payroll	\$2,817,547



**Demographic Information (continued)****July 1, 2017****Retiree Statistics**

Average Age	60.9
Average Monthly Benefit	\$2,441

**Beneficiary Statistics**

Average Age	74.9
Average Monthly Benefit	\$954

**Disabled Participant Statistics**

Average Age	61.6
Average Monthly Benefit	\$2,427

**Terminated Participants Statistics**

Average Age	33.4
Average Employee Contribution Balance Owed	\$11,950

Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
<b>Prior Year</b>	42	1	6	54	9	112
<b>Active</b>						
To Retired	(1)	0	0	1	0	0
To Lump Sum Cash-Out	(2)	0	0	0	0	(2)
<b>Retired</b>						
To Death	0	0	0	0	0	0
<b>Survivor</b>						
To Death	0	0	0	0	0	0
<b>Additions</b>	3	0	0	1	0	3
<b>Departures</b>	0	0	0	0	0	0
<b>Current Year</b>	42	1	6	56	9	114



## Active Participant Schedule

Active participant information grouped based on age and service.

Age Group	Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	2	1									3
25 to 29		2									2
30 to 34		3	6								9
35 to 39			8	4							12
40 to 44				1	5						6
45 to 49		1	3		3						7
50 to 54					2	1					3
55 to 59											0
60 to 64											0
65 to 69											0
70 & up											0
Total	2	7	17	5	10	1	0	0	0	0	42

**Plan Effective Date**

The plan was originally effective July 1, 1958. It was amended and restated October 20, 2004.

**Eligibility for Participation**

All full-time Police Officers are eligible to participate in this Plan.

**Normal Retirement Benefit:**

*Police (hired on or before July 1, 2013)*

- Eligibility: Completion of 20 years of service regardless of age
- Benefit: For credited service prior to 7/1/2013, 2.75% of average annual earnings for the first 20 years plus 1.00% for the next 5 years. For credited service after 7/1/2013, 2.50% of average annual earnings for the first 20 years plus 1.00% for the next 10 years. The maximum retirement benefit is 60% of average annual earnings.

*Police (hired after July 1, 2013)*

- Eligibility: Attainment of age 55 and completion of 25 years of service
- Benefit: 2.00% of average annual earnings for each year of credited service up to 30 total years

**Average Annual Earnings:**

*Police (hired on or before July 1, 2013)*

Average of final 36 months of base salary, overtime pay, holiday pay, shift differential pay, longevity pay, and accreditation pay

*Police (hired after July 1, 2013)*

Average over working career of base salary, holiday pay, and longevity pay

**Credited Service:**

Full years and completed months from date of participation.

**Pre-Retirement Death Benefit:**

If an inactive officer dies after 15 years of service and while married, the spouse will receive a monthly pension equal to the amount which would be payable if the Officer had retired with a 67.5% Joint & Survivor Annuity.

For those with less than 15 years of service, the beneficiary will receive a refund of the member's contributions with 5% interest.

**Post-Retirement Death Benefit:**

A spouse's pension equal to 67.5% of the participant's pension is payable until the earlier of the spouse's death or remarriage, or to surviving dependent children under age 18.

**Disability Retirement Benefit:**

<i>Duty Related</i>	66.67% of Average Compensation
<i>Non Duty Related</i>	Completed 12 - 18 years of service. Accrued benefit is subject to reduction as follow: At 12 years - 60%, increase by 5% for each year up to 17 years, 100% at 18 years.

**Vesting:**

<i>Police (hired on or before July 1, 2013)</i>	100% on completing 15 years of service
<i>Police (hired after July 1, 2013)</i>	100% on completing 25 years of service

**Employee Contributions:**

<i>Police (hired on or before July 1, 2013)</i>	8% of annual earnings effective 7/1/2013. No interest is accrued.
<i>Police (hired after July 1, 2013)</i>	11% of annual earnings effective 7/1/2013. No interest is accrued.

**Normal form of payment:**

The normal form of payment for a married participant is a monthly benefit payable for the participant's lifetime with 67.5% of such benefit continuing to a surviving spouse. The normal form of payment for an unmarried participant is a monthly benefit payable for the participant's lifetime with no further payments after the participant's death.

**Cost of Living Increases:**

3.00% non-compounded from age 57 for retirement on or after July 1, 1992  
No COLA for retirement before July 1, 1992

**Actuarial Equivalence**

Actuarial Equivalence will be computed using 7.0% interest and the mortality table is the UP-1984 Table.

**Plan Provisions Not Included**

We are not aware of any plan provisions not included in the report.

**Adjustments Made for Subsequent Events**

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact the results of this report.



<b>Salary Projection Scale (FE):</b>	<b>Age</b>	<b>Increase</b>
	<25	6.0%
	25-29	6.0%
	30-34	5.5%
	35-39	5.0%
	40-44	4.0%
	45-49	3.0%
	50-54	2.0%
	55-59	1.0%
	60+	1.0%

The annual pay increase reflects the employer’s average target increase for a career employee.

**Interest Rate (CO):** 7.5%

This assumption has been set by the plan sponsor in conjunction with their asset advisors. Detailed evaluation of this assumption was outside the scope of our engagement.

**Expense and/or Contingency Loading (FE):** None

**Marital Status and Ages (FE):** 100% of Participants assumed to be married with wives assumed to be 4 years younger than husbands.

**Funding method** Liabilities and contributions in the report are based on application of an Entry Age Normal cost method.

In determining the Actuarially Recommended Contribution, the excess of the entry age actuarial accrued liability over the actuarial value of plan assets is amortized over a closed 20-year period.

**Asset Valuation Method:** Market value of assets with a five year phase in of gains and losses.

**Amortization Method:** Closed 20-year level percent of pay amortization of Unfunded Actuarial Accrued Liability; for this purpose, pay is assumed to grow at 3.50% annually

**Other Procedures:** Benefits projected to assumed retirement age for active participants have been limited so as not to exceed maximum benefits imposed by Code Section 415(b) and/or maximum compensation limits of Code Section 401(a)(17).

**Changes Since Prior Report:**

The table for generational mortality improvement has been updated from a scale based upon assumptions disclosed in the 2015 Social Security Administration's Trustees Report to a scale based upon assumptions disclosed in the 2016 Social Security Administration's Trustees Report.

*FE indicates an assumption representing an estimate of future experience*

*MD indicates an assumption representing observations of estimates inherent in market data*

*CO indicates an assumption representing a combination of an estimate of future experience and observations of market data*

The actuarial report also shows the necessary items required for plan reporting and any state requirements.

- ✓ Schedule of amortizations



Schedule of Amortizations

<u>Date Established</u>	<u>Remaining Period (Years)</u>	<u>Outstanding Balance</u>	<u>Annual Payment</u>
07/01/2012	15	\$19,008,054	\$1,630,462
07/01/2013	16	(\$3,425)	(\$280)
07/01/2014	17	(\$129,742)	(\$10,160)
07/01/2015	18	(\$397,611)	(\$29,908)
07/01/2016	19	\$156,246	\$11,323
07/01/2017	20	(\$191,533)	(\$13,407)
		\$18,441,989	\$1,588,030