

***RETIREMENT PLAN FOR CONTRACT
EMPLOYEES OF LONG BEACH
PUBLIC TRANSPORTATION COMPANY***

***Actuarial Valuation as of
July 1, 2017***

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November 2017

VENUTI & ASSOCIATES

ACTUARIES AND BENEFITS CONSULTANTS

November 9, 2017

Pension Committee
Retirement Plan for Contract Employees of
Long Beach Public Transportation Company

Dear Pension Committee:

We are pleased to present our actuarial valuation report for the Retirement Plan for Contract Employees of Long Beach Public Transportation Company as of July 1, 2017. The information in this report provides the means by which we determine the funding requirements for the Plan. The actuarial report serves three main purposes:

- Determine the annual funding levels under the Plan's adopted funding policy and alternative funding levels.
- Determine how the required funding changed from the prior year using what is called an "experience analysis."
- Determine other information pertinent to understanding the Plan's funded status.

Compared to the prior year, the Plan's funding cost for the Plan Year commencing July 1, 2017 increased from 19.950% of pay to 21.074% of pay as follows:

• July 1, 2016 funding cost	19.950%
• Plan Experience	(0.294%)
• Assumption Change	<u>1.418%</u>
• July 1, 2017 funding cost	21.074%

We look forward to discussing our report with you.

Very truly yours,



David W. Venuti
President

VENUTI & ASSOCIATES

ACTUARIES AND BENEFITS CONSULTANTS

RETIREMENT PLAN FOR CONTRACT EMPLOYEES OF
LONG BEACH PUBLIC TRANSPORTATION COMPANY

JULY 1, 2017

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SECTION 1: VALUATION RESULTS

Summary Information

The following presents some of the important results of the actuarial valuation and compares this information with the prior year.

	<u>July 1, 2017</u>	<u>July 1, 2016</u>	<u>Change</u>
Number of Participants			
Actives			
Vested	410	421	(11)
Non-Vested	<u>172</u>	<u>158</u>	<u>14</u>
Total	582	579	3
Inactive Vested	19	19	0
In Pay Status			
Retirees	48	67	(19)
Disabled	27	24	3
Beneficiaries	<u>16</u>	<u>14</u>	<u>2</u>
Total	91	105	(14)
Total Participants	692	703	(11)

SECTION 1: VALUATION RESULTS

Summary Information (continued)

	<u>July 1, 2017</u>	<u>July 1, 2016</u>	<u>Change</u>
Normal Cost for all benefits for fiscal year	\$5,138,184	\$4,887,216	\$250,968
Contribution for the fiscal year under the Company's Funding policy (assuming it is paid uniformly throughout the year)			
Annual amount	\$6,416,647	\$5,942,475	\$474,172
Percent of covered compensation	21.074%	19.950%	1.124%
Expected employer non-PEPRA employee contributions ⁽¹⁾	\$3,249,575	\$3,229,612	\$19,963
Expected employer PEPRA employee contributions ⁽¹⁾	\$694,407	\$456,067	\$238,340
Expected non-PEPRA employee contributions ⁽¹⁾	\$2,003,247	\$1,935,210	\$68,037
Expected PEPRA employee contributions ⁽¹⁾	\$469,418	\$321,586	\$147,832
Entry Age Normal Accrued Liability	\$81,803,970	\$73,595,760	\$8,208,210
Funded Percentage	64.47%	63.93%	0.54%
Market Value of Plan Assets	\$52,742,303	\$47,050,624	\$5,691,679
Frozen Initial Liability Remaining Unfunded ⁽²⁾	\$14,281,166	\$10,866,003	\$3,415,163

⁽¹⁾ 8.50% of compensation for 2017 for employees subject to PEPRA and 8.037% of compensation for employees not subject to PEPRA. 2017 Employer contribution is 12.574% for PEPRA employees and 13.037% for Non-PEPRA employees. The PEPRA employee contribution rate is half of the total normal cost accrual rate rounded to the nearest 0.25% and is equal to the Non-PEPRA employee contribution rate if higher. The Non-PEPRA employee contribution rate is the greater of: (1) minimum of 5% and total contribution rate minus 10%, and (2) (maximum of 0 and total contribution rate minus 15%) x .50 plus 5%. Total change in expected employer contributions from 2016 is an increase of \$258,303

⁽²⁾ \$3,415,163 of the Frozen Initial Liability Remaining Unfunded as of July 1, 2017 is due to the interest rate assumption changing from 7.0% to 6.50%.

SECTION 1: VALUATION RESULTS

Annual Funding

The Plan sponsor has adopted the frozen initial liability method as its actuarial cost method, with costs allocated as a level percentage of future compensation. This funding method is described below.

Each year the present value of future benefits is determined by projecting the expected benefit payments in all future years for current employees and participants in pay status as of the valuation date. This projection is done by applying the actuarial assumptions to the current plan population. The current value of those future expected benefit payments is calculated using the assumed discount rate to arrive at the present value of future benefits (PVFB).

A portion of the PVFB has already been funded through previous contributions and investment return, reduced by previous benefit payments and expenses. This represents the current value of assets held by the Plan.

The portion of the PVFB not currently covered by Plan assets must come from future employer and employee contributions (offset by future plan investment and operational expenses). The total plan contributions are determined through the combination of an actuarial cost method and a funding policy. The funding policy is to contribute each year the normal cost, plus an amount sufficient to amortize the unfunded liability as of July 1, 2007 over a period of 30 years.

As of July 1, 2007, the Plan's actuary determined what the Plan's assets would have been if (1) the Plan benefits had always been the same as they were then, (2) the Plan's actuarial assumptions had always been met, and (3) contributions had

always been an amount sufficient to fund the Plan benefits as a level percent of compensation from each employee's Plan entry date. This amount is known as the entry age normal accrued liability, and it was established as the frozen initial liability. The difference between the frozen initial liability as of July 1, 2007 and the Plan assets as of July 1, 2007 was established as the unfunded liability as of July 1, 2007. The funding policy adopted was to amortize this unfunded liability over a period of 30 years. Changes in assumptions or the terms of the Plan are amortized over a period of 30 years beginning at the effective date of the change.

To reflect expected future asset returns the interest rate assumption was lowered from 8.00% to 7.50% effective July 1, 2007.

Based on a reassessment of future returns, effective July 1, 2016 the interest rate assumption was again lowered from 7.50% to 7.00% which lead to \$3,194,510 in additional liability

Effective July 1, 2017 the interest rate assumption was further lowered from 7.00% to 6.50% which lead to \$3,651,179 in additional liability. As a result, the annual contribution increased by \$431,928 The administrative expense assumption was also changed from \$300,000 per year to the actual administrative expenses for the prior year. For 2017 the assumed administrative expense amount is \$376,137. As a result, the annual contribution increased \$78,572

SECTION 1: VALUATION RESULTS

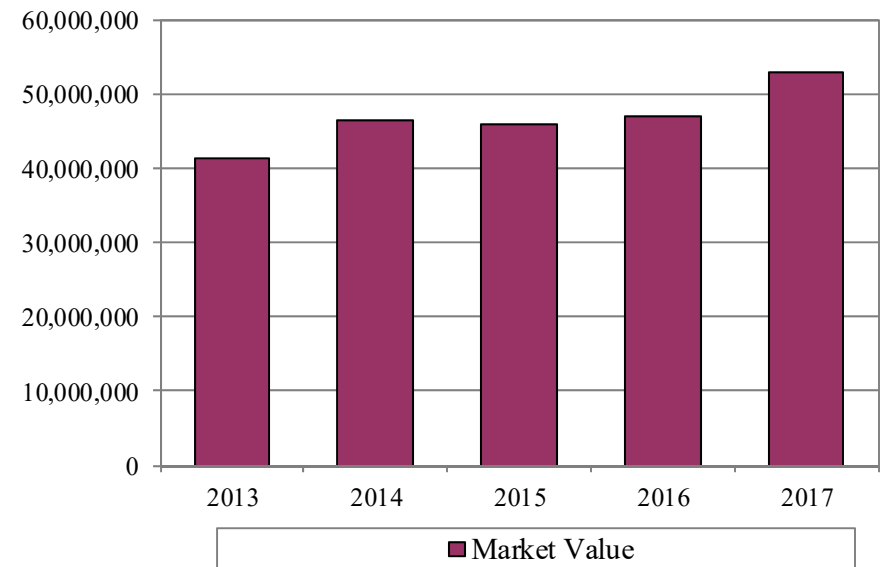
Annual Funding (continued)

Assets

Assets at June 30, 2017

Equity Mutual Funds	\$ 37,561,628
Bond Mutual Funds	4,082,052
Corporate Bonds	8,809,948
Government Bonds	1,302,952
Real Estate Equity Funds	39,480
Cash	720,926
Contributions Receivable	225,317
Net Asset Transfers	<u>0</u>
Assets at Market Value	\$ 52,742,303

Asset Values (June 30)



SECTION 1: VALUATION RESULTS

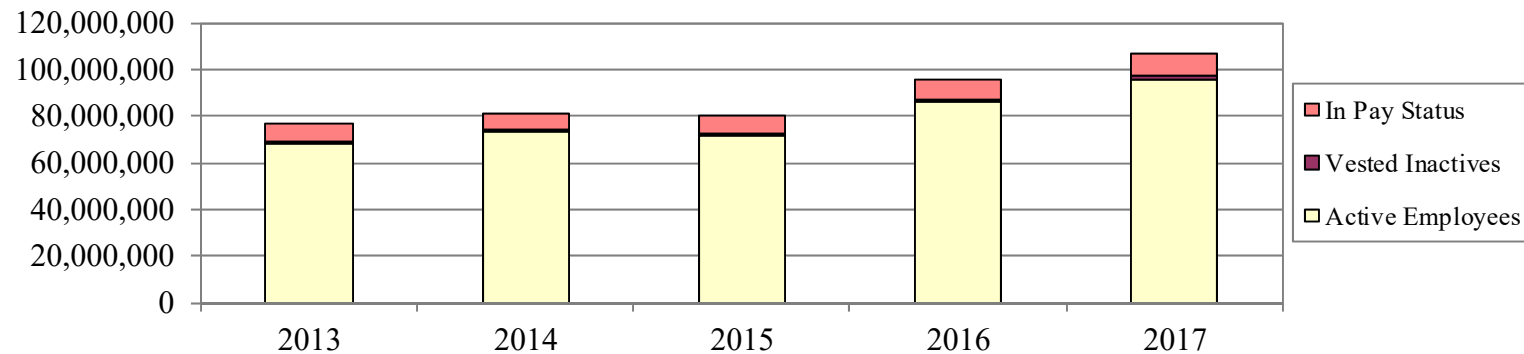
Annual Funding (continued)

Present Value of Future Benefits

In Pay Status ⁽¹⁾	\$9,465,201
Vested Inactives	1,796,217
Active Employees	<u>95,649,467</u>

Present Value of Future Benefits⁽²⁾ **\$106,910,885**

Historical Present Value of Future Benefits as of July 1



⁽¹⁾Retirees, disabled retirees and beneficiaries currently receiving payments.

⁽²⁾Increased \$4.6M from 2016 due to plan experience and \$6.5M as a result of the interest rate assumption change.

SECTION 1: VALUATION RESULTS

Frozen Initial Accrued Liability Remaining Unfunded at July 1, 2017

1. Frozen Initial Liability remaining unfunded July 1, 2016	\$10,866,003
2. Normal Cost as of July 1, 2016	4,887,216
3. Interest on (1) and (2) to June 30, 2017 at 7.0%	1,102,725
4. Employer contributions for the 2016/2017 Plan year	3,877,435
5. Interest on (4) to June 30, 2017 at 7.0%	133,415
6. Employee contributions for the 2016/2017 Plan year	2,141,425
7. Interest on (6) to June 30, 2017 at 7.0%	73,682
8. Increase due to assumption changes	3,651,179
9. Total FIL remaining unfunded as of July 1, 2017, = (1) + (2) + (3) – (4) – (5) – (6) – (7), not less than \$0 + (8)	\$14,281,166

SECTION 1: VALUATION RESULTS

Determination of Total Normal Cost

1. Present Value of Future Benefits	
A. Active Participants	\$95,649,467
B. Terminated participants with Deferred Vested Benefits	1,796,217
C. In Pay Status	<u>9,465,201</u>
D. Total	\$106,910,885
2. Plan Assets	52,742,303
3. Frozen initial accrued liability remaining unfunded	14,281,166
4. Present value of future normal costs = (1) - (2) - (3)	39,887,416
5. Present value of future salaries	255,070,870
6. Normal cost accrual rate = (4) / (5)	15.64%
7. Valuation compensation	30,447,872
8. Preliminary normal cost = (6) x (7)	4,762,047
9. Administrative Expenses	376,137
10. Total normal cost = (8) + (9)	\$5,138,184
11. Total normal cost accrual rate = (10) / (7)	16.88%

SECTION 1: VALUATION RESULTS

Determination of Contribution

Funding Policy

We understand that it is the Company's policy to fund the normal cost plus an amount sufficient to amortize the unfunded accrued liability over 30 years from July 1, 2007. Contributions under the alternative 20-year and 10-year amortization periods are shown as well. The contribution is made uniformly throughout the year.

	<u>Funding Policy</u>	<u>20 Year Eff. July 1, 2007</u>	<u>10 Year Eff. July 1, 2007</u>
1 Total normal cost for Plan year	\$5,138,184	\$5,138,184	\$5,138,184
2 Amortization of unfunded accrued liability:			
A. Initial unfunded remaining	2,228,336	2,228,336	2,228,336
B. Amortization period remaining (in years)	20	10	0
C. Amortization amount	189,893	291,054	0
D. Additional unfunded from assumption change	5,276,528	5,276,528	5,276,528
E. Amortization period	26	26	26
F. Amortization amount	399,801	399,801	399,801
G. Additional unfunded from interest rate change	3,125,123	3,125,123	3,125,123
H. Amortization period	29	29	29
I. Amortization amount	227,340	227,340	227,340
J. Additional unfunded from interest rate change	3,651,179	3,651,179	3,651,179
K. Amortization period	30	30	30
L. Amortization amount	262,533	262,533	262,533
3 Interest required for monthly contributions	198,896	202,132	192,821
4 Total annual contribution payable monthly = (1) + (2C) + (2F) + (2I) + (2L) + (3)	6,416,647	6,521,044	6,220,679
5 Contribution as a percentage of compensation	21.074%	21.417%	20.431%

The contributions shown are the total required to meet the Company's Funding Policy.

SECTION 1: VALUATION RESULTS

Actuarial Experience

A plan's actuarial liability is simply an estimate of the amount of funds required to pay benefits as they come due in the future. This estimate is based on assumptions about future events that impact the plan's funded status; events such as investment earnings on plan assets, how long retirees live, and the probability of an active member remaining in covered employment, among others. Each year the plan's funded status changes due to actual experience different from that anticipated by the actuarial assumptions. This difference is referred to as "actuarial experience."

There are two types of actuarial experience. "Actuarial gains" are generated when experience is more favorable than expected. Actuarial gains serve to improve the funded status of the plan. "Actuarial losses" occur when experience is less favorable than expected. Actuarial losses serve to lessen the funded status of the plan.

Actuarial experience is measured by performing an experience analysis. This analysis is important for two reasons. First, it tells the Plan Sponsor how and why the funded status changed from the prior year. Second, it allows the actuary to monitor whether the assumptions continue to be appropriate for valuing plan liabilities. Differences in actual experience compared to assumed are expected. However, a recurring trend of gains or losses from a particular assumption could indicate that the assumption should be modified.

We have noted that actual administrative expenses have exceeded the assumption. Effective July 1, 2017, the administrative expense assumption was changed from \$300,000 per year to the actual administrative expenses from the prior year.

SECTION 2: COMMENTS AND CERTIFICATION

Certification

This is to certify that our valuation of the Plan as of July 1, 2017 has been performed in accordance with generally accepted actuarial principles and practices. In preparing this report, we have relied on financial information contained in unaudited financial statements and on participant census information supplied by the Plan sponsor. We did not audit the participant census information. However, we reviewed the data for reasonableness and internal consistency and found no reason to doubt its substantial accuracy.

To the best of our knowledge, the information supplied in this report is complete and accurate. Each prescribed assumption was applied in accordance with applicable law and regulations. In our opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer our best estimate of anticipated experience under the plan.

We understand that the actuarial assumptions are selected by the Plan sponsor, Long Beach Public Transportation Company. During the last ten plan years, historical rates of return have averaged 4.29% while rates of return averaged 6.01% during the last five plan years. Effective July 1, 2017 the investment return assumption was lowered from 7.00% per annum to 6.50% per annum to better reflect past experience as well as future expected returns. Funding under alternative interest rate assumptions is shown starting on page 24 of this report.

To better reflect actual and expected administrative expenses, the assumption for administrative expenses was changed from \$300,000 per year to the actual administrative expenses for the prior year.

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 or additional cost or contribution requirements based on the Plan's funded status); and changes in Plan provisions or applicable law. Due to the nature of this assignment, we did not perform an analysis of the potential range of such measurements.

SECTION 2: COMMENTS AND CERTIFICATION

Certification (continued)

This report has been prepared exclusively for the Retirement Plan for Contract Employees of Long Beach Public Transportation Company for the purposes stated herein.

To the best of our knowledge, the information supplied in this report is complete and accurate.

We, Nancy Teague Lee and David W. Venuti, are members of the American Academy of Actuaries and meet the Qualifications of the American Academy of Actuaries to render the actuarial opinions contained herein.



A.C.A., M.A.A.A

Nancy Teague Lee
Consulting Actuary
Enrolled Actuary No. 17-07500



F.C.A., M.A.A.A

David W. Venuti
President and Actuary
Enrolled Actuary No. 17-03959

SECTION 3

Supplemental Information

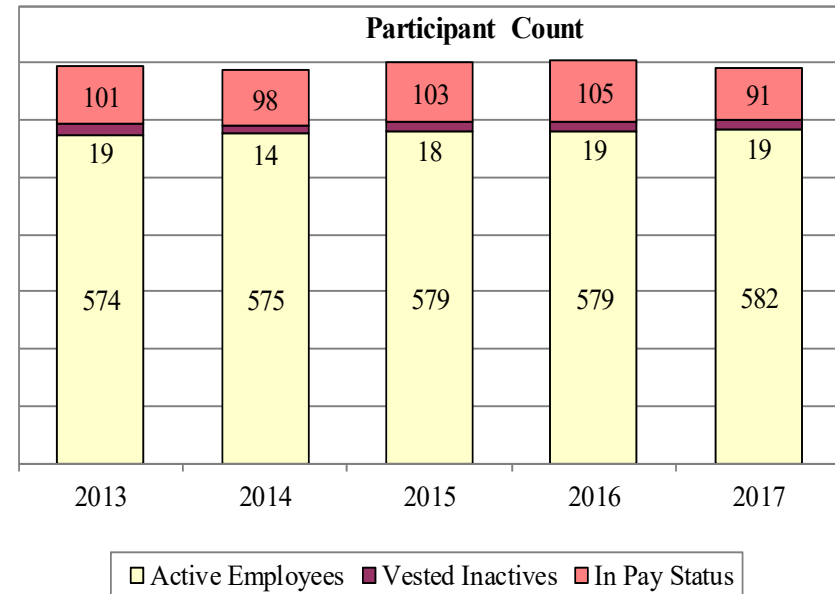
SECTION 3: SUPPLEMENTAL INFORMATION

Participant Reconciliation

Active at June 30, 2016	579
Non-Vested Termination	(4)
Vested Termination	(8)
Retired Monthly	(5)
New Active	50
Lump Sum Distribution	(16)
Return of Employee Contributions	(13)
Transferred to Salaried Plan	(1)
Transferred from Salaried Plan	0
Disabled Retirement	0
Died	<u>0</u>
Active at June 30, 2017	582

Vested Inactive at June 30, 2016	19
Vested Terminations	8
Re-Entered Covered Employment	0
Retired Monthly	(3)
Disabled Retirement	0
Died	0
Lump Sum Distribution	<u>(5)</u>
Vested Inactive at June 30, 2017	19

In Pay Status at June 30, 2016	105
New Retiree	8
New Beneficiary	3
Data Correction	(22)
Died / Expired	(3)
New Occupational Disabled	<u>0</u>
In Pay Status at June 30, 2017	91



SECTION 3: SUPPLEMENTAL INFORMATION

Active Participant Data

Years of Credited Service																						
	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		Over 40		Total	
Attained		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.		Avg.
Age	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.
Under 25	13	13,959	7	35,601	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	21,534
25 to 29	7	20,181	26	42,327	7	52,122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	40,165
30 to 34	6	17,549	16	40,664	11	48,233	10	48,198	0	0	0	0	0	0	0	0	0	0	0	0	43	41,127
35 to 39	5	17,543	20	39,062	13	55,697	24	48,908	3	44,543	0	0	0	0	0	0	0	0	0	0	65	44,622
40 to 44	5	14,844	9	37,551	14	59,152	11	53,876	25	58,630	4	65,793	0	0	0	0	0	0	0	0	68	52,380
45 to 49	5	17,191	16	38,870	14	61,545	21	59,868	27	62,204	7	64,860	5	58,343	0	0	0	0	0	0	95	55,284
50 to 54	6	14,529	12	36,303	11	61,169	18	59,937	23	58,473	13	55,860	16	69,059	5	68,923	0	0	0	0	104	55,723
55 to 59	1	4,081	8	42,307	12	64,696	13	60,141	15	61,768	14	57,337	7	57,263	6	59,177	5	63,751	0	0	81	58,082
60 to 64	2	20,896	8	42,583	4	68,583	14	55,044	9	60,440	5	70,592	8	51,297	2	64,620	5	51,636	2	83,307	59	55,741
65 to 69	0	0	0	0	1	58,226	3	61,768	1	32,141	1	65,721	1	42,153	0	0	0	0	0	0	7	54,792
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	50	16,179	122	39,805	87	58,517	114	55,458	103	59,479	44	60,563	37	60,812	13	63,763	10	57,694	2	83,307	582	51,017

Average Age: 46.58 years

Average Credited Service: 12.16 years

SECTION 3: SUPPLEMENTAL INFORMATION

Vested Inactive Data

Accrued Benefit	Number
Under \$100	0
100 to 199	1
200 to 299	4
300 to 399	1
400 to 499	2
500 to 599	1
600 to 699	0
700 to 799	0
800 to 899	2
900 to 999	1
1,000 to 1,099	1
1,100 to 1,199	0
1,200 to 1,299	0
1,300 to 1,399	1
1,400 to 1,499	1
1,500 to 1,599	0
1,600 to 1,699	0
1,700 or more	4
Total	19

Average Accrued Benefit \$1,078.95

Age	Number
Under 30	0
30 to 34	1
35 to 39	1
40 to 44	1
45 to 49	2
50 to 54	4
55 to 59	4
60 to 64	4
65 or over	2
Total	19

Average Age 54.66 years

SECTION 3: SUPPLEMENTAL INFORMATION

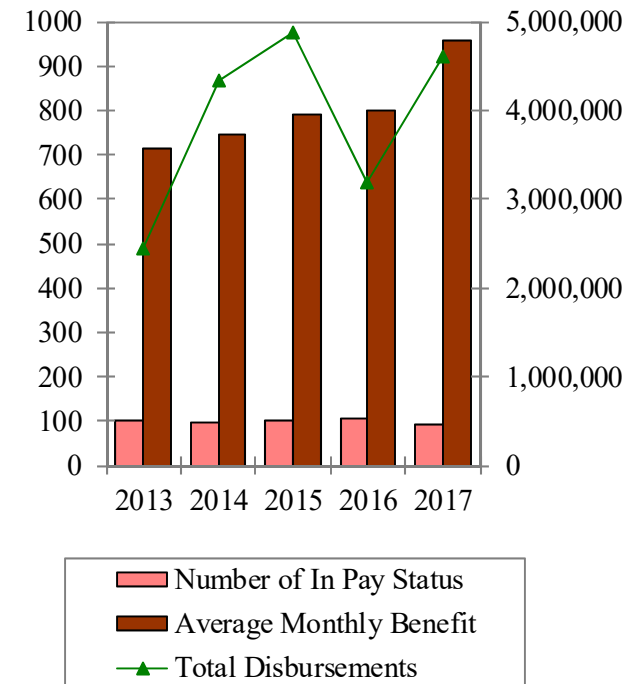
Retiree Data

Monthly Benefit ⁽¹⁾	Number
Under \$100	0
100 to 199	3
200 to 299	4
300 to 399	7
400 to 499	3
500 to 599	4
600 to 699	14
700 to 799	3
800 to 899	4
900 to 999	3
1,000 to 1,099	1
1,100 to 1,199	4
1,200 to 1,299	4
1,300 to 1,399	4
1,400 to 1,499	3
1,500 to 1,599	2
1,600 to 1,699	2
1,700 or over	10
Total	75

Age ⁽¹⁾	Number
Under 55	3
55 to 59	13
60 to 64	10
65 to 69	18
70 to 74	13
75 to 79	5
80 to 84	7
85 to 89	3
90 or over	3
Total	75

Average Age: 69.39 years
New Retirees: 64.88 years

Average Benefit \$957.24
New Retirees: \$1,325.56



⁽¹⁾ Data excludes 16 beneficiaries who are included in the plan's liabilities.

SECTION 3: SUPPLEMENTAL INFORMATION

Asset Information

Market Value of Assets at July 1, 2016		\$47,050,624
Employer Contributions		\$3,877,435
Employee Contributions		\$2,141,425
Net Investment Income		
Interest	\$408,870	
Dividends	1,338,513	
Unrealized Gain (Loss)	2,677,323	
Realized Gain (Loss)	495,193	
Other Revenue	<u>0</u>	
Net Investment Income		\$4,919,899
Benefit Payments		(\$4,615,902)
Direct Administrative Costs		(126,930)
Other Administrative Costs		(249,207)
Net Asset Transfers Between Salaried Plan		<u>(255,041)</u>
Market Value of Assets at June 30, 2017		\$52,742,303

SECTION 3: SUPPLEMENTAL INFORMATION

Present Value of Accumulated Plan Benefits⁽¹⁾

**Reconciliation of Actuarial Present Value
of Accumulated Plan Benefits**

Actuarial Present Value of Accumulated Plan Benefits at June 30, 2016	\$54,834,795
Benefits Accumulated and Actuarial Experience During the Year	\$3,156,802
Increase for interest	3,679,611
Benefits Paid	(4,615,902)
Change in assumptions	<u>2,684,332</u>
Net Increase/(Decrease)	<u>4,904,843</u>
Actuarial Present Value of Accumulated Plan Benefits at June 30, 2017	\$59,739,638

**Actuarial Present Value of Vested and
Non-Vested Accumulated Plan Benefits**

Vested Benefits	
Participants Currently Receiving Benefits	\$9,465,201
Other participants	<u>48,440,384</u>
Vested Benefits	\$57,905,585
Non-Vested Benefits	<u>1,834,053</u>
Actuarial Present Value of Accumulated Plan Benefits at June 30, 2017	\$59,739,638

⁽¹⁾ Value of benefits earned by current participants based on pay and service through the valuation date. Approximation of amount due to participants if the plan terminated as of July 1, 2017 and settled all obligations at 6.50%. The change in assumptions is due to a change in interest rate from 7.00% as of July 1, 2016 to 6.50% as of July 1, 2017.

SECTION 3: SUPPLEMENTAL INFORMATION

Summary of Plan Provisions

Plan Type: Public Pension Plan.

Plan Effective Date: June 30, 1979.

Plan Year: July 1 – June 30.

Participation: All full-time employees are eligible on their date of employment.

Average Monthly Final Earnings: 60 month average of compensation out of the last 10 calendar years of employment.

Adjusted Monthly Final Earnings (AMFE): Average Monthly Final Earnings less \$500 if average is at least \$500. AMFE is \$0 if Average Monthly Final Earnings is less than \$500.

Normal Retirement Age: Age 64 with 10 Years of Service.

Monthly Normal Retirement Benefit: Years of Service (not to exceed 40 years) times the sum of 1.23% of the first \$500 of Average Monthly Final Earnings plus 1.70% of AMFE. Participants retiring on or after age 54 with 10 Years of Service are entitled to a 15% increase in their benefit.

Years of Service: One year of service is granted for each 12 months of consecutive service in which an employee works at least one hour in each month.

Normal Form of Benefit: Lifetime payments to retiree.

Early Retirement Age: Age 54 with 10 Years of Service.

Early Retirement Benefit: Accrued benefit reduced 5.0% for each year preceding age 64 (prorated for partial years). The benefit is increased 15% for employees eligible for retirement at termination.

Late Retirement Benefit: A participant retiring after Normal Retirement Age is entitled to a benefit based on years of service as of retirement and final average pay based on salary as of the Normal Retirement Age.

Vesting: 5 Years of Service.

Break-in-Service: 12 consecutive month period during which an employee does not work at least one hour.

Permanent Break-in-Service: 5 consecutive 1-year breaks-in-service.

Disability Retirement Eligibility: Disabled while an active employee with 10 Years of Service.

Monthly Occupational Disability Benefit: Years of Service (at least 5 years) at time of disability times the sum of 1.16% of the first \$500 of Average Monthly Final Earnings plus 1.60% of AMFE. Benefit is payable immediately.

SECTION 3: SUPPLEMENTAL INFORMATION

Summary of Plan Provisions (continued)

Monthly Total and Permanent Disability Benefit: Monthly Normal Retirement Benefit based on AMFE and Years of Service as of date of disability. Benefit is payable immediately without reduction for early commencement.

Monthly Pre-Retirement Death Eligibility: Vested or eligible for Early or Normal Retirement and married.

Pre-Retirement Death Benefit: Surviving spouse will receive an annuity equal to 50% of the amount the participant would have received under the 50% joint and survivor form of payment if he/she had terminated on the day before death and survived to early retirement age.

Post-Retirement Death Benefit: Survivor benefit, if any, based on the form of payment in effect at time of death. In addition, the beneficiary is entitled to receive the excess of total employee contributions over the total amount of payments received by the retiree.

Optional Forms of Benefit Payment: 50%, 75%, or 100% joint and survivor annuity, period certain installment payments, annuity purchase or lump sum. The lump sum option is not available for participants who were hired on or after July 1, 2012.

Return of Employee Contributions: Non-vested participants are entitled to a return of their contributions upon termination from the plan.

Plan Provisions Excluded from Measurement: None.

Changes Since Prior Valuation: None.

SECTION 3: SUPPLEMENTAL INFORMATION

Actuarial Method and Assumptions

Actuarial Cost Method: Frozen Initial Liability.

Actuarial Assumptions:

Interest Discount Rate: For funding: 6.50% compounded annually.

Investment Yield: 6.50% compounded annually.

Administrative Expenses: Actual administrative expenses for the prior year are added to normal cost as of the beginning of the year. For 2017, the administrative expense assumption is \$376,137.

**Employee Contribution
Interest Credit:** 5.00% compounded annually.

Salary Increases: 3.00% per year.

Mortality: For funding:

Healthy: IRS 2007 Current Liability Combined table.

Disabled: IRS 2007 Current Liability Combined table.

SECTION 3: SUPPLEMENTAL INFORMATION

Actuarial Method and Assumptions (continued)

Termination Before Retirement: Sample rates are shown below:

<u>Age</u>	<u>Turnover Rate</u>
20	7.94%
25	7.72
30	7.22
35	6.28
40	5.15
45	3.98
50	2.56
55	0.94

Disability: Sample rates are shown below:

<u>Age</u>	<u>Disability Rate</u>
20	0.05%
25	0.09
30	0.13
35	0.17
40	0.21
45	0.84
50	1.47
55	2.63
60	3.79

Retirement: All active participants, inactive vested participants and future inactive vested participants are assumed to retire at age 64 after completion of 10 years of service.

SECTION 3: SUPPLEMENTAL INFORMATION

Actuarial Method and Assumptions (continued)

Marital Status:	80% of non-retired participants are married. Female spouse is assumed to be three years younger than male spouse.
Form of Payment:	80% of active participants hired prior to July 1, 2012 are assumed to elect the lump sum option. The remaining 20% of active participants hired prior to July 1, 2012 and all actives hired on or after July 1, 2012 are assumed to elect the single life annuity. Vested Terminated participants are assumed to elect the single life annuity.
Unknown Data:	Participants with unreported data, such as missing birthdates, are assumed to have the same characteristics as similar participants. If not specified, participants are assumed to be male.
Asset Valuation Method:	Market value.
Changes Since Prior Valuation:	Effective July 1, 2017 the interest discount rate and investment yield assumptions were lowered from 7.00% to 6.50% and the administrative expenses assumption was changed from \$300,000 per year to the actual administrative expenses for the prior year. These changes were made to better reflect past experience and expected future returns and administrative expenses.

SECTION 3: SUPPLEMENTAL INFORMATION

Six-Year Plan Overview

	Plan Year Beginning July 1					
	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
Funding Policy Contribution						
Percentage of Covered Compensation	21.074%	19.950%	17.578%	15.950%	17.569%	13.742%
Annual Amount Paid Monthly	\$6,416,647	\$5,942,475	\$4,451,105	\$4,349,099	\$4,338,432	\$3,290,837
Covered Compensation	30,447,872	29,787,114	25,321,405	27,266,377	24,693,232	23,947,941
Market Value of Assets	52,742,303	47,050,624	45,790,263	46,310,416	41,325,305	37,025,393
Present Value of Vested Benefits	57,905,585	52,907,531	46,801,598	46,917,684	42,198,031	33,644,376
Present Value of Accumulated Benefits	59,739,638	54,834,795	48,486,224	45,352,425	43,804,109	35,110,487
Number of Active Participants	582	579	579	575	574	575
Number of Vested Terminees	19	19	18	14	19	10
Number of Retirees	91	105	103	98	101	103

Amounts are based on total employer plus employee contributions.

SECTION 3: SUPPLEMENTAL INFORMATION

**Determination of 2017 Total Normal Cost
Estimated Impact of Interest Rate Assumption Change⁽¹⁾**

	Current			
	<u>6.50% Interest</u>	<u>6.00% Interest</u>	<u>5.50% Interest</u>	<u>5.00% Interest</u>
1 Present Value of Future Benefits				
A. Active Participants	95,649,467	102,328,410	109,790,521	118,159,048
B. Terminated participants with Deferred Vested Benefits	1,796,217	1,912,785	2,040,641	2,181,192
C. In Pay Status	<u>9,465,201</u>	<u>9,852,192</u>	<u>10,269,152</u>	<u>10,719,256</u>
D. Total	106,910,885	114,093,387	122,100,314	131,059,496
2 Plan Assets	52,742,303	52,742,303	52,742,303	52,742,303
3 Frozen initial accrued liability remaining unfunded	14,281,166	18,195,449	22,395,386	26,905,645
4 Present value of future normal costs = (1) - (2) - (3)	39,887,416	43,155,635	46,962,625	51,411,548
5 Present value of future salaries	255,070,870	262,900,508	271,237,130	280,126,989
6 Normal cost accrual rate = (4) / (5)	15.64%	16.42%	17.31%	18.35%
7 Valuation compensation	30,447,872	30,447,872	30,447,872	30,447,872
8 Preliminary normal cost = (6) x (7)	4,762,047	4,999,541	5,270,527	5,587,185
9 Administrative Expenses	376,137	376,137	376,137	376,137
10 Total normal cost = (8) + (9)	5,138,184	5,375,678	5,646,664	5,963,322
11 Total normal cost accrual rate = (10) / (7)	16.88%	17.66%	18.55%	19.59%

⁽¹⁾ 2017 cost determined based on 7/1/2017 assumption changes

SECTION 3: SUPPLEMENTAL INFORMATION

**Determination of 2017 Contribution Under Funding Policy
Estimated Impact of Interest Rate Assumption Change With 30 Year Amortization⁽¹⁾**

	Current 6.50% Interest	6.00% Interest	5.50% Interest	5.00% Interest
1 Total normal cost for Plan year	5,138,184	5,375,678	5,646,664	5,963,322
2 Amortization of unfunded accrued liability:				
A. Initial unfunded remaining	2,228,336	2,228,336	2,228,336	2,228,336
B. Amortization period remaining (in years)	20	20	20	20
C. Amortization amount	189,893	183,280	176,745	170,293
D. Assumption changes at July 1, 2013	5,276,528	5,276,528	5,276,528	5,276,528
E. Amortization period	26	26	26	26
F. Amortization amount	399,801	382,819	366,071	349,579
G. Assumption change at July 1, 2016	3,125,123	3,125,123	3,125,123	3,125,123
H. Amortization period	29	29	29	29
I. Amortization amount	227,340	216,930	206,669	196,572
J. Assumption change at July 1, 2017	3,651,179	7,565,462	11,765,399	16,275,658
K. Amortization period	30	30	30	30
L. Amortization amount	262,533	518,512	767,320	1,008,338
3 Interest required for monthly contributions	198,896	197,399	194,359	189,858
4 Total annual contribution payable monthly = (1) + (2C) + (2F) + (2I) + (2L) + (3)	6,416,647	6,874,618	7,357,828	7,877,962
A. Employer Non-PEPRA Employee Contribution	3,249,575	3,437,049	3,634,709	3,847,599
B. Employer PEPRA Employee Contribution	694,407	761,506	805,300	852,518
C. Non-PEPRA Employee Contribution	2,003,247	2,190,685	2,388,592	2,601,455
D. PEPRA Employee Contribution	469,418	485,378	529,227	576,390
5 Contribution as a percentage of payroll	21.074%	22.578%	24.165%	25.874%
A. Employer Non-PEPRA Employee Contribution	13.037%	13.789%	14.582%	15.437%
B. Employer PEPRA Employee Contribution	12.574%	13.789%	14.582%	15.437%
C. Non-PEPRA Employee Contribution	8.037%	8.789%	9.583%	10.437%
D. PEPRA Employee Contribution	8.500%	8.789%	9.583%	10.437%

⁽¹⁾ 2017 cost determined based on 7/1/2017 assumption changes. PEPRA contribution rate equals Non-PEPRA contribution rate if higher.

SECTION 3: SUPPLEMENTAL INFORMATION

**Determination of 2017 Contribution Under Funding Policy
Estimated Impact of Interest Rate Assumption Change With 20 Year Amortization⁽¹⁾**

	Current 6.50% Interest	6.00% Interest	5.50% Interest	5.00% Interest
1 Total normal cost for Plan year	5,138,184	5,375,678	5,646,664	5,963,322
2 Amortization of unfunded accrued liability:				
A. Initial unfunded remaining	2,228,336	2,228,336	2,228,336	2,228,336
B. Amortization period remaining (in years)	10	10	10	10
C. Amortization amount	291,054	285,622	280,216	274,838
D. Assumption changes at July 1, 2013	5,276,528	5,276,528	5,276,528	5,276,528
E. Amortization period	16	16	16	16
F. Amortization amount	507,228	492,570	478,051	463,681
G. Assumption change at July 1, 2016	3,125,123	3,125,123	3,125,123	3,125,123
H. Amortization period	19	19	19	19
I. Amortization amount	273,355	264,223	255,194	246,275
J. Assumption change at July 1, 2017	3,651,179	7,565,462	11,765,399	16,275,658
K. Amortization period	20	20	20	20
L. Amortization amount	311,144	622,256	933,195	1,243,810
3 Interest required for monthly contributions	208,595	208,134	206,021	202,300
4 Total annual contribution payable monthly = (1) + (2C) + (2F) + (2I) + (2L) + (3)	6,729,560	7,248,483	7,799,341	8,394,226
A. Employer Non-PEPRA Employee Contribution	3,377,601	3,590,054	3,815,435	4,058,890
B. Employer PEPRA Employee Contribution	748,362	795,415	845,339	899,294
C. Non-PEPRA Employee Contribution	2,131,363	2,343,727	2,569,301	2,812,821
D. PEPRA Employee Contribution	472,234	519,287	569,266	623,221
5 Contribution as a percentage of payroll	22.102%	23.806%	25.615%	27.569%
A. Employer Non-PEPRA Employee Contribution	13.551%	14.403%	15.307%	16.284%
B. Employer PEPRA Employee Contribution	13.551%	14.403%	15.307%	16.284%
C. Non-PEPRA Employee Contribution	8.551%	9.403%	10.308%	11.285%
D. PEPRA Employee Contribution	8.551%	9.403%	10.308%	11.285%

⁽¹⁾ 2017 cost determined based on 7/1/2017 assumption changes. PEPRA contribution rate equals Non-PEPRA contribution rate if higher.

SECTION 3: SUPPLEMENTAL INFORMATION

**Determination of 2017 Contribution Under Funding Policy
Estimated Impact of Interest Rate Assumption Change With 10 Year Amortization⁽¹⁾**

	Current 6.50% Interest	6.00% Interest	5.50% Interest	5.00% Interest
1 Total normal cost for Plan year	5,138,184	5,375,678	5,646,664	5,963,322
2 Amortization of unfunded accrued liability:				
A. Initial unfunded remaining	2,228,336	2,228,336	2,228,336	2,228,336
B. Amortization period remaining (in years)	0	0	0	0
C. Amortization amount	0	0	0	0
D. Assumption changes at July 1, 2013	5,276,528	5,276,528	5,276,528	5,276,528
E. Amortization period	6	6	6	6
F. Amortization amount	1,023,440	1,012,310	1,001,185	990,065
G. Assumption change at July 1, 2016	3,125,123	3,125,123	3,125,123	3,125,123
H. Amortization period	9	9	9	9
I. Amortization amount	440,857	433,455	426,082	418,737
J. Assumption change at July 1, 2017	3,651,179	7,565,462	11,765,399	16,275,658
K. Amortization period	10	10	10	10
L. Amortization amount	476,898	969,721	1,479,516	2,007,402
3 Interest required for monthly contributions	226,458	230,330	232,072	231,628
4 Total annual contribution payable monthly = (1) + (2C) + (2F) + (2I) + (3)	7,305,837	8,021,494	8,785,519	9,611,154
A. Employer Non-PEPRA Employee Contribution	3,613,292	3,906,297	4,219,197	4,557,073
B. Employer PEPRA Employee Contribution	800,606	865,496	934,804	1,009,690
C. Non-PEPRA Employee Contribution	2,367,406	2,660,278	2,972,842	3,310,829
D. PEPRA Employee Contribution	524,533	589,423	658,676	733,562
5 Contribution as a percentage of payroll	23.995%	26.345%	28.854%	31.566%
A. Employer Non-PEPRA Employee Contribution	14.497%	15.672%	16.927%	18.283%
B. Employer PEPRA Employee Contribution	14.497%	15.672%	16.927%	18.283%
C. Non-PEPRA Employee Contribution	9.498%	10.673%	11.927%	13.283%
D. PEPRA Employee Contribution	9.498%	10.673%	11.927%	13.283%

⁽¹⁾ 2017 cost determined based on 7/1/2017 assumption changes. PEPRA contribution rate equals Non-PEPRA contribution rate if higher.