

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

***Actuarial Valuation as of  
July 1, 2016***

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September 2016

**VENUTI & ASSOCIATES**

ACTUARIES AND BENEFITS CONSULTANTS

September 15, 2016

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, 2016. 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, 2016 increased from 17.578% of pay to 19.950% of pay as follows:

• July 1, 2015 funding cost	17.578%
• Plan Experience	1.087%
• Assumption Change	<u>1.285%</u>
• July 1, 2016 funding cost	19.950%

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, 2016

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**SECTION 1: VALUATION RESULTS**

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**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, 2016</u>	<u>July 1, 2015</u>	<u>Change</u>
Number of Participants			
Actives			
Vested	421	427	(6)
Non-Vested	<u>158</u>	<u>152</u>	<u>6</u>
Total	579	579	0
Inactive Vested	19	18	1
In Pay Status			
Retirees	67	65	2
Disabled	24	24	0
Beneficiaries	<u>14</u>	<u>14</u>	<u>0</u>
Total	105	103	2
Total Participants	703	700	3

**SECTION 1: VALUATION RESULTS**

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**Summary Information (continued)**

	<u>July 1, 2016</u>	<u>July 1, 2015</u>	<u>Change</u>
Normal Cost for all benefits for fiscal year	\$4,887,216	\$3,586,718	\$1,300,498
Contribution for the fiscal year under the Company's Funding policy (assuming it is paid uniformly throughout the year)			
Annual amount	\$5,942,475	\$4,451,105	\$1,491,370
Percent of covered compensation	19.950%	17.578%	2.372%
Expected employer non-PEPRA employee contributions <sup>(1)</sup>	\$3,229,612	\$2,858,588	\$371,024
Expected employer PEPRA employee contributions <sup>(1)</sup>	\$456,067	N/A	N/A
Expected non-PEPRA employee contributions <sup>(1)</sup>	\$1,935,210	\$1,592,517	\$342,693
Expected PEPRA employee contributions <sup>(1)</sup>	\$321,586	N/A	N/A
Entry Age Normal Accrued Liability	\$73,595,760	\$63,233,552	\$10,362,208
Funded Percentage	63.93%	72.41%	(8.48%)
Market Value of Plan Assets	\$47,050,624	\$45,790,263	\$1,260,361
Frozen Initial Liability Remaining Unfunded <sup>(2)</sup>	\$10,866,003	\$8,558,592	\$2,307,411

<sup>(1)</sup> 8.250% of compensation for 2016 for employees subject to PEPRA and 7.475% of compensation for employees not subject to PEPRA. 2016 Employer contribution is 11.700% for PEPRA employees and 12.475% for Non-PEPRA employees. 6.289% of compensation for 2015 per arbitrator's June 2012 decision (for non-PEPRA employees). Total change in expected employer contributions from 2015 is an increase of \$827,091.

<sup>(2)</sup> \$3,194,510 of the Frozen Initial Liability Remaining Unfunded as of July 1, 2016 is due to the interest rate assumption changing from 7.5% to 7.0%.

## **SECTION 1: VALUATION RESULTS**

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### **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.

As of July 1, 2016 the interest rate assumption was lowered from 7.50% to 7.00% which lead to \$3,194,510 in additional liability. As a result, the annual contribution increased by \$382,607.

**SECTION 1: VALUATION RESULTS**

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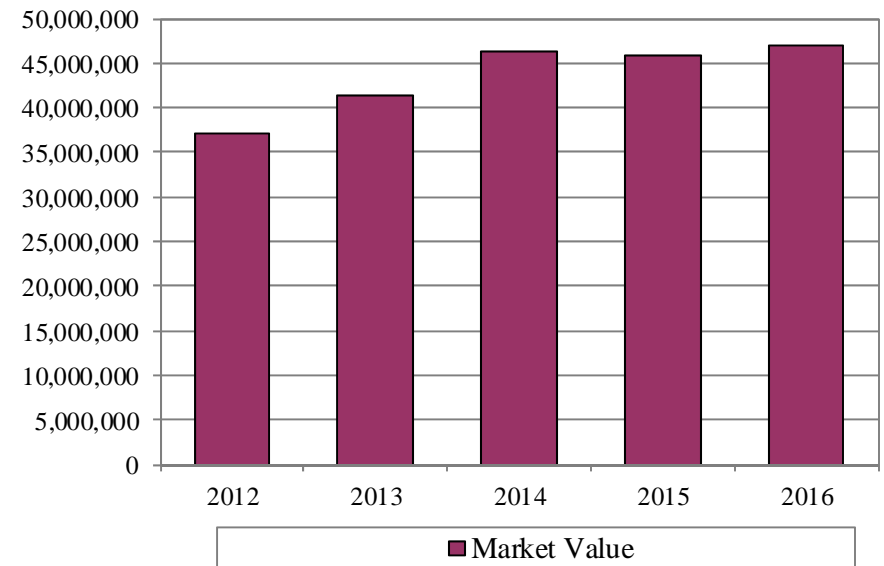
**Annual Funding (continued)**

**Assets**

**Assets at June 30, 2016**

Equity Mutual Funds	\$ 31,517,890
Bond Mutual Funds	3,779,977
Corporate Bonds	9,808,396
Alternative Investment Funds	1,015,401
Real Estate Equity Funds	39,480
Cash	481,433
Contributions Receivable	425,836
Net Asset Transfers	<u>(17,789)</u>
<b>Assets at Market Value</b>	<b>\$ 47,050,624</b>

**Asset Values (June 30)**



**SECTION 1: VALUATION RESULTS**

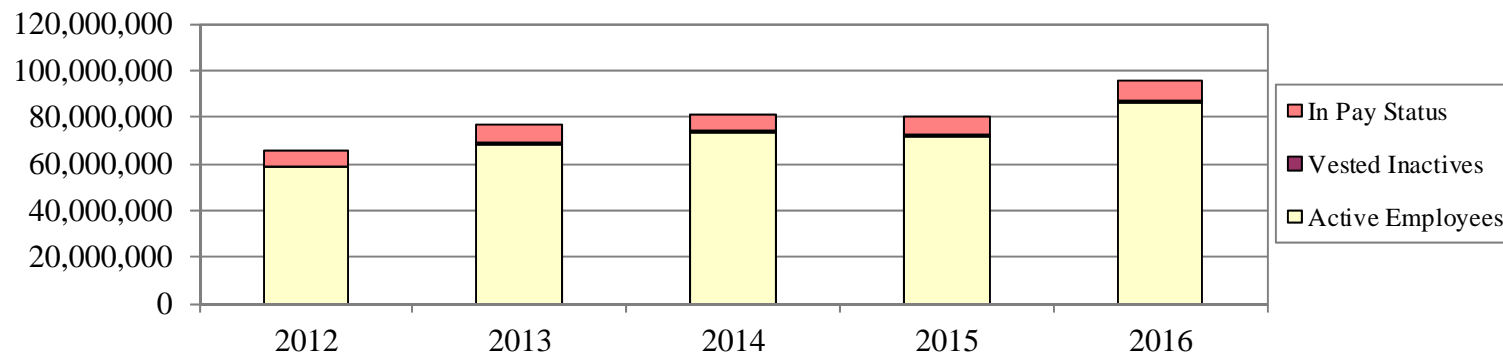
**Annual Funding (continued)**

**Present Value of Future Benefits**

In Pay Status <sup>(1)</sup>	\$8,475,433
Vested Inactives	1,304,180
Active Employees	<u>86,072,265</u>

**Present Value of Future Benefits<sup>(2)</sup>** **\$95,851,878**

**Historical Present Value of Future Benefits as of July 1**



<sup>(1)</sup>Retirees, disabled retirees and beneficiaries currently receiving payments.

<sup>(2)</sup>Increased \$9.8M from 2015 due to plan experience and \$5.6M as a result of the interest rate assumption change.



**SECTION 1: VALUATION RESULTS**

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**Frozen Initial Accrued Liability Remaining Unfunded at July 1, 2016**

1. Frozen Initial Liability remaining unfunded July 1, 2015	\$8,558,592
2. Normal Cost as of July 1, 2015	3,586,718
3. Interest on (1) and (2) to June 30, 2016 at 7.5%	910,898
4. Employer contributions for the 2015/2016 Plan year	3,439,288
5. Interest on (4) to June 30, 2016 at 7.5%	126,642
6. Employee contributions for the 2015/2016 Plan year	1,754,192
7. Interest on (6) to June 30, 2016 at 7.5%	64,593
8. Increase due to assumption changes	3,194,510
9. Total FIL remaining unfunded as of July 1, 2016, = (1) + (2) + (3) – (4) – (5) – (6) – (7), not less than \$0 + (8)	\$10,866,003

**SECTION 1: VALUATION RESULTS**

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**Determination of Total Normal Cost**

1. Present Value of Future Benefits	
A. Active Participants	\$86,072,265
B. Terminated participants with Deferred Vested Benefits	1,304,180
C. In Pay Status	<u>8,475,433</u>
D. Total	\$95,851,878
2. Plan Assets	47,050,624
3. Frozen initial accrued liability remaining unfunded	10,866,003
4. Present value of future normal costs = (1) - (2) - (3)	37,935,251
5. Present value of future salaries	246,373,267
6. Normal cost accrual rate = (4) / (5)	15.40%
7. Valuation compensation	29,787,114
8. Preliminary normal cost = (6) x (7)	4,587,216
9. Administrative Expenses	300,000
10. Total normal cost = (8) + (9)	\$4,887,216
11. Total normal cost accrual rate = (10) / (7)	16.41%

**SECTION 1: VALUATION RESULTS**

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**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	\$4,887,216	\$4,887,216	\$4,887,216
2 Amortization of unfunded accrued liability:			
A. Initial unfunded remaining	2,277,811	2,277,811	2,277,811
B. Amortization period remaining (in years)	21	11	1
C. Amortization amount	196,464	283,890	2,277,811
D. Additional unfunded from assumption change	5,393,682	5,393,682	5,393,682
E. Amortization period	27	27	27
F. Amortization amount	420,534	420,534	420,534
G. Additional unfunded from interest rate change	3,194,510	3,194,510	3,194,510
H. Amortization period	30	30	30
I. Amortization amount	240,593	240,593	240,593
3 Interest required for monthly contributions	197,668	200,676	269,283
4 Total annual contribution payable monthly = (1) + (2C) + (2F) + (2I) + (3)	5,942,475	6,032,909	8,095,437
5 Contribution as a percentage of compensation	19.950%	20.253%	27.178%

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

## **SECTION 1: VALUATION RESULTS**

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### **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."

This information will be provided in a separate report.

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.

## **SECTION 2: COMMENTS AND CERTIFICATION**

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### **Certification**

This is to certify that our valuation of the Plan as of July 1, 2016 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. Our prior report stated that, in our opinion, the investment return assumption of 7.50% per annum was optimistic. Given the economic environment and return expectation guidance from the Plan's Investment Consultant, we stated that the 7.50% per annum investment return assumption should be revised. Effective July 1, 2016 the investment return assumption was lowered to 7.00% per annum.

During the last ten plan years, historical rates of return have averaged 4.65% while rates of return averaged 3.55% during the last five plan years. While the change to 7.00% is a good first step, we continue to believe and recommend that the assumption be further revised downward 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.

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**

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**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. 14-07500



\_\_\_\_ F.C.A., M.A.A.A

David W. Venuti  
President and Actuary  
Enrolled Actuary No. 14-03959

**SECTION 3**

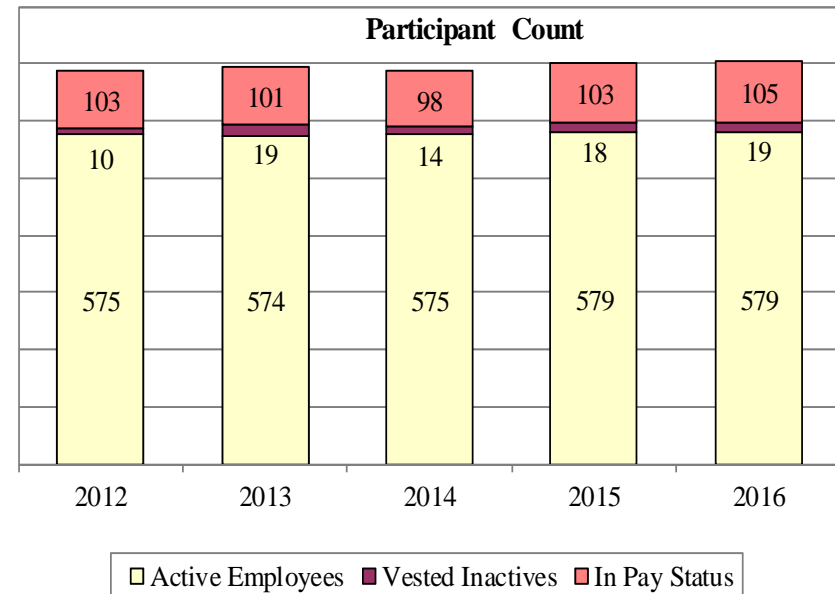
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**Supplemental Information**

**SECTION 3: SUPPLEMENTAL INFORMATION**

**Participant Reconciliation**

Active at June 30, 2015	579
Non-Vested Termination	(4)
Vested Termination	(8)
Retired Monthly	(2)
New Active	34
Lump Sum Distribution	(6)
Return of Employee Contributions	(11)
Transferred to Salaried Plan	(2)
Transferred from Salaried Plan	0
Disabled Retirement	(1)
Died	<u>0</u>
Active at June 30, 2016	579
Vested Inactive at June 30, 2015	18
Vested Terminations <sup>(1)</sup>	9
Re-Entered Covered Employment	0
Retired Monthly	0
Died	0
Lump Sum Distribution	<u>(8)</u>
Vested Inactive at June 30, 2016	19
In Pay Status at June 30, 2015	103
New Retiree	2
New Beneficiary	0
New Disabled	1
Died / Expired	<u>(1)</u>
In Pay Status at June 30, 2016	105



<sup>(1)</sup> Includes one participant who previously received a lump sum and has since accrued an additional benefit.



RETIREMENT PLAN FOR CONTRACT EMPLOYEES OF  
LONG BEACH PUBLIC TRANSPORTATION COMPANY  
JULY 1, 2016

**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	3	16,199	10	31,552	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	28,009
25 to 29	12	18,594	26	42,991	5	52,301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	37,265
30 to 34	5	11,934	13	41,720	17	50,950	7	42,668	0	0	0	0	0	0	0	0	0	0	0	0	42	42,068
35 to 39	6	11,324	17	40,765	14	51,263	20	52,764	3	62,892	0	0	0	0	0	0	0	0	0	0	60	45,376
40 to 44	4	25,670	10	40,079	24	56,291	12	55,827	21	59,537	2	57,722	1	40,795	0	0	0	0	0	0	74	53,120
45 to 49	5	22,467	15	35,573	20	57,433	13	54,940	30	55,446	3	57,266	7	43,695	0	0	0	0	0	0	93	49,998
50 to 54	3	23,268	11	41,171	15	58,448	17	55,710	22	57,622	10	49,163	17	63,265	5	55,187	0	0	0	0	100	54,572
55 to 59	1	24,817	11	42,711	15	57,591	16	57,417	13	54,312	8	52,617	9	50,220	5	58,199	7	60,787	0	0	85	53,796
60 to 64	2	9,207	4	29,891	7	59,856	13	41,230	9	56,624	8	59,015	5	48,302	2	56,611	5	51,098	2	63,505	57	49,332
65 to 69	0	0	0	0	3	60,152	2	59,151	1	30,345	2	50,033	3	49,610	0	0	0	0	0	0	11	52,545
70 & up <sup>(1)</sup>	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	41	17,741	117	39,703	120	55,708	100	52,581	100	56,160	33	53,697	42	53,916	12	56,680	12	56,750	2	63,505	579	49,148

Average Age: 46.86 years

Average Credited Service: 12.24 years

<sup>(1)</sup> Reported as active with no salary.

**SECTION 3: SUPPLEMENTAL INFORMATION**

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**Vested Inactive Data**

Accrued Benefit	Number
Under \$100	1
100 to 199	1
200 to 299	4
300 to 399	1
400 to 499	3
500 to 599	0
600 to 699	0
700 to 799	1
800 to 899	1
900 to 999	1
1,000 to 1,099	1
1,100 to 1,199	1
1,200 to 1,299	0
1,300 to 1,399	0
1,400 to 1,499	0
1,500 to 1,599	0
1,600 to 1,699	0
1,700 or more	4
Total	19

Age	Number
Under 30	1
30 to 34	1
35 to 39	1
40 to 44	1
45 to 49	1
50 to 54	4
55 to 59	5
60 to 64	2
65 or over	3
Total	19

Average Age      53.30 years

Average Accrued Benefit      \$870.65

**SECTION 3: SUPPLEMENTAL INFORMATION**

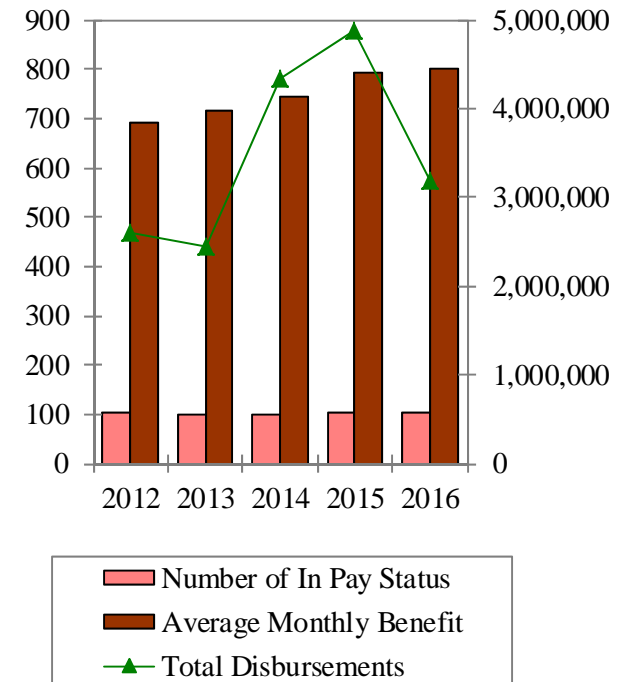
**Retiree Data**

Monthly Benefit <sup>(1)</sup>	Number
Under \$100	1
100 to 199	3
200 to 299	12
300 to 399	12
400 to 499	5
500 to 599	5
600 to 699	15
700 to 799	3
800 to 899	7
900 to 999	2
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	2
1,500 to 1,599	1
1,600 to 1,699	1
1,700 or over	9
<b>Total</b>	<b>91</b>

Age <sup>(1)</sup>	Number
Under 55	4
55 to 59	11
60 to 64	10
65 to 69	16
70 to 74	12
75 to 79	5
80 to 84	7
85 to 89	6
90 or over	20
<b>Total</b>	<b>91</b>

Average Age: 74.82 years  
New Retirees: 62.89 years

Average Benefit \$799.24  
New Retirees: \$1,358.04



<sup>(1)</sup> Data excludes 14 beneficiaries who are included in the plan's liabilities.

**SECTION 3: SUPPLEMENTAL INFORMATION**

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**Asset Information**

Market Value of Assets at July 1, 2015		\$45,790,263
Employer Contributions		\$3,439,288
Employee Contributions		\$1,754,192
Net Investment Income		
Interest	\$346,589	
Dividends	1,244,721	
Unrealized Gain (Loss)	72,833	
Realized Gain (Loss)	(2,131,270)	
Other Revenue	59,329	
Direct Administrative Costs	(114,708)	
Other Administrative Costs	<u>(210,318)</u>	
Net Investment Income		(\$732,824)
Benefit Payments		(\$3,182,794)
Net Asset Transfers Between Salaried Plan		<u>(\$17,501)</u>
Market Value of Assets at June 30, 2016		<b>\$47,050,624</b>

**SECTION 3: SUPPLEMENTAL INFORMATION**

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**Present Value of Accumulated Plan Benefits<sup>(1)</sup>**

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

Actuarial Present Value of Accumulated Plan Benefits at June 30, 2015	\$48,486,224
Benefits Accumulated and Actuarial Experience During the Year	\$3,656,990
Increase for interest	3,519,270
Benefits Paid	(3,182,794)
Change in assumptions	<u>2,355,105</u>
Net Increase/(Decrease)	<u>6,348,571</u>
Actuarial Present Value of Accumulated Plan Benefits at June 30, 2016	\$54,834,795

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

Vested Benefits	
Participants Currently Receiving Benefits	\$8,475,433
Other participants	<u>44,432,098</u>
Vested Benefits	\$52,907,531
Non-Vested Benefits	<u>1,927,264</u>
Actuarial Present Value of Accumulated Plan Benefits at June 30, 2016	\$54,834,795

<sup>(1)</sup> 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, 2016 and settled all obligations at 7.00%.

**SECTION 3: SUPPLEMENTAL INFORMATION**

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**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**

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**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.

**SECTION 3: SUPPLEMENTAL INFORMATION**

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**Actuarial Method and Assumptions**

**Actuarial Cost Method:** Frozen Initial Liability.

**Actuarial Assumptions:**

**Interest Discount Rate:** For funding: 7.00% compounded annually.

**Investment Yield:** 7.00% compounded annually.

**Administrative Expenses:** \$300,000 per year added to normal cost as of the beginning of the year.

**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**

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**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**

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**Actuarial Method and Assumptions (continued)**

**Marital Status:** 80% of non-retired participants are married. Wife is assumed to be three years younger than the husband.

**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, 2016 the interest discount rate and investment yield assumptions were lowered from 7.50% to 7.00% to better reflect past experience and expected future returns.

**SECTION 3: SUPPLEMENTAL INFORMATION**

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**Six-Year Plan Overview**

	Plan Year Beginning July 1					
	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>
Funding Policy Contribution						
Percentage of Covered Compensation	19.950%	17.578%	15.950%	17.569%	13.742%	12.322%
Annual Amount Paid Monthly	\$5,942,475	\$4,451,105	\$4,349,099	\$4,338,432	\$3,290,837	\$2,841,824
Covered Compensation	29,787,114	25,321,405	27,266,377	24,693,232	23,947,941	23,062,414
Market Value of Assets	47,050,624	45,790,263	46,310,416	41,325,305	37,025,393	37,358,394
Present Value of Vested Benefits	52,907,531	46,801,598	46,917,684	42,198,031	33,644,376	30,861,325
Present Value of Accumulated Benefits	54,834,795	48,486,224	45,352,425	43,804,109	35,110,487	32,735,094
Number of Active Participants	579	579	575	574	575	562
Number of Vested Termines	19	18	14	19	10	9
Number of Retirees	105	103	98	101	103	103

Amounts are based on total employer plus employee contributions.

**SECTION 3: SUPPLEMENTAL INFORMATION**

**Determination of 2016 Total Normal Cost  
Estimated Impact of Interest Rate Assumption Change<sup>(1)</sup>**

	<b><u>Current</u></b>		
	<b><u>7.00% Interest</u></b>	<b><u>6.50% Interest</u></b>	<b><u>6.00% Interest</u></b>
1 Present Value of Future Benefits			
A. Active Participants	86,072,265	91,883,688	98,359,488
B. Terminated participants with Deferred Vested Benefits	1,304,180	1,388,124	1,480,186
C. In Pay Status	<u>8,475,433</u>	<u>8,802,846</u>	<u>9,155,008</u>
D. Total	95,851,878	102,074,658	108,994,682
2 Plan Assets	47,050,624	47,050,624	47,050,624
3 Frozen initial accrued liability remaining unfunded	10,866,003	14,288,362	17,957,862
4 Present value of future normal costs = (1) - (2) - (3)	37,935,251	40,735,672	43,986,196
5 Present value of future salaries	246,373,267	253,820,426	261,742,865
6 Normal cost accrual rate = (4) / (5)	15.40%	16.05%	16.81%
7 Valuation compensation	29,787,114	29,787,114	29,787,114
8 Preliminary normal cost = (6) x (7)	4,587,216	4,780,832	5,007,214
9 Administrative Expenses	300,000	300,000	300,000
10 Total normal cost = (8) + (9)	4,887,216	5,080,832	5,307,214
11 Total normal cost accrual rate = (10) / (7)	16.41%	17.06%	17.82%

<sup>(1)</sup> 2016 cost determined based on 7/1/2016 assumption changes

**SECTION 3: SUPPLEMENTAL INFORMATION**

**Determination of 2016 Contribution Under Funding Policy  
Estimated Impact of Interest Rate Assumption Change With 30 Year Amortization<sup>(1)</sup>**

	<b><u>Current 7.00% Interest</u></b>	<b><u>6.50% Interest</u></b>	<b><u>6.00% Interest</u></b>
1 Total normal cost for Plan year	4,887,216	5,080,832	5,307,214
2 Amortization of unfunded accrued liability:			
A. Initial unfunded remaining	2,277,811	2,277,811	2,277,811
B. Amortization period remaining (in years)	21	21	21
C. Amortization amount	196,464	189,525	182,664
D. Assumption changes at July 1, 2013	5,393,682	5,393,682	5,393,682
E. Amortization period	27	27	27
F. Amortization amount	420,534	402,743	385,176
G. Assumption change at July 1, 2016	3,194,510	6,616,869	10,286,369
H. Amortization period	30	30	30
I. Amortization amount	240,593	475,777	704,994
3 Interest required for monthly contributions	197,668	196,693	194,526
4 Total annual contribution payable monthly = (1) + (2C) + (2F) + (2I) + (3)	5,942,475	6,345,570	6,774,574
A. Employer Non-PEPRA Employee Contribution	3,229,612	3,404,815	3,591,246
B. Employer PEPRA Employee Contribution	456,067	499,065	535,716
C. Non-PEPRA Employee Contribution	1,935,210	2,110,359	2,296,791
D. PEPRA Employee Contribution	321,586	331,331	350,821
Contribution as a percentage of payroll	19.950%	21.303%	22.743%
A. Employer Non-PEPRA Employee Contribution	12.475%	13.151%	13.871%
B. Employer PEPRA Employee Contribution	11.700%	12.803%	13.743%
C. Non-PEPRA Employee Contribution	7.475%	8.152%	8.872%
D. PEPRA Employee Contribution	8.250%	8.500%	9.000%

<sup>(1)</sup> 2016 cost determined based on 7/1/2016 assumption changes. PEPRA contribution rate equals Non-PEPRA contribution rate if higher.

**SECTION 3: SUPPLEMENTAL INFORMATION**

**Determination of 2016 Contribution Under Funding Policy  
Estimated Impact of Interest Rate Assumption Change With 20 Year Amortization<sup>(1)</sup>**

	<b>Current 7.00% Interest</b>	<b>6.50% Interest</b>	<b>6.00% Interest</b>
1 Total normal cost for Plan year	4,887,216	5,080,832	5,307,214
2 Amortization of unfunded accrued liability:			
A. Initial unfunded remaining	2,277,811	2,277,811	2,277,811
B. Amortization period remaining (in years)	11	11	11
C. Amortization amount	283,890	278,161	272,463
D. Assumption changes at July 1, 2013	5,393,682	5,393,682	5,393,682
E. Amortization period	17	17	17
F. Amortization amount	516,307	500,910	485,659
G. Assumption change at July 1, 2016	3,194,510	6,616,869	10,286,369
H. Amortization period	20	20	20
I. Amortization amount	281,812	563,872	846,050
3 Interest required for monthly contributions	205,389	205,486	204,321
4 Total annual contribution payable monthly = (1) + (2C) + (2F) + (2I) + (3)	6,174,614	6,629,261	7,115,707
A. Employer Non-PEPRA Employee Contribution	3,330,522	3,528,137	3,739,454
B. Employer PEPRA Employee Contribution	486,439	531,172	563,078
C. Non-PEPRA Employee Contribution	2,036,067	2,233,642	2,445,036
D. PEPRA Employee Contribution	321,586	336,310	368,139
Contribution as a percentage of payroll	20.729%	22.255%	23.889%
A. Employer Non-PEPRA Employee Contribution	12.864%	13.627%	14.445%
B. Employer PEPRA Employee Contribution	12.479%	13.627%	14.445%
C. Non-PEPRA Employee Contribution	7.865%	8.628%	9.444%
D. PEPRA Employee Contribution	8.250%	8.628%	9.444%

<sup>(1)</sup> 2016 cost determined based on 7/1/2016 assumption changes. PEPRA contribution rate equals Non-PEPRA contribution rate if higher.

**SECTION 3: SUPPLEMENTAL INFORMATION**

**Determination of 2016 Contribution Under Funding Policy  
Estimated Impact of Interest Rate Assumption Change With 10 Year Amortization<sup>(1)</sup>**

	<b>Current 7.00% Interest</b>	<b>6.50% Interest</b>	<b>6.00% Interest</b>
1 Total normal cost for Plan year	4,887,216	5,080,832	5,307,214
2 Amortization of unfunded accrued liability:			
A. Initial unfunded remaining	2,277,811	2,277,811	2,277,811
B. Amortization period remaining (in years)	1	1	1
C. Amortization amount	2,277,811	2,277,811	2,277,811
D. Assumption changes at July 1, 2013	5,393,682	5,393,682	5,393,682
E. Amortization period	7	7	7
F. Amortization amount	935,341	923,415	911,507
G. Assumption change at July 1, 2016	3,194,510	6,616,869	10,286,369
H. Amortization period	10	10	10
I. Amortization amount	425,071	864,261	1,318,479
3 Interest required for monthly contributions	293,344	292,576	290,161
4 Total annual contribution payable monthly = (1) + (2C) + (2F) + (2I) + (3)	8,818,783	9,438,895	10,105,172
A. Employer Non-PEPRA Employee Contribution	4,479,596	4,749,074	5,038,594
B. Employer PEPRA Employee Contribution	674,473	715,051	758,670
C. Non-PEPRA Employee Contribution	3,185,141	3,454,622	3,744,165
D. PEPRA Employee Contribution	479,573	520,148	563,743
Contribution as a percentage of payroll	29.606%	31.688%	33.925%
A. Employer Non-PEPRA Employee Contribution	17.303%	18.344%	19.463%
B. Employer PEPRA Employee Contribution	17.303%	18.344%	19.463%
C. Non-PEPRA Employee Contribution	12.303%	13.344%	14.462%
D. PEPRA Employee Contribution	12.303%	13.344%	14.462%

<sup>(1)</sup> 2016 cost determined based on 7/1/2016 assumption changes. PEPRA contribution rate equals Non-PEPRA contribution rate if higher.