Segal Consulting

City of Los Angeles Fire and Police Pension Plan

Actuarial Valuation and Review Of Retirement and Other Postemployment Benefits (OPEB) as of June 30, 2016

Segal Consulting
100 Montgomery Street, Suite 500 San Francisco, CA 94104
T 415.263.8200 www.segalco.com

November 18, 2016

Board of Fire and Police Pension Commissioners
City of Los Angeles Fire and Police Pension Plan
701 East 3rd Street, Suite 200
Los Angeles, CA 90013

Re: June 30, 2016 Actuarial Valuations

Dear Board Members:

Enclosed please find the June 30, 2016 actuarial valuations for the retirement and the health programs.

As requested by LAFPP, we have attached the following supplemental schedules:

- Exhibit A - Summary of significant results for the two programs.
- Exhibit B - History of computed contribution rates for the two programs.

We look forward to discussing the reports and the enclosed schedules with the Board.

Sincerely,

Paul Angelo, FSA, MAAA, FCA, EA
Senior Vice President and Actuary

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

EK/bbf
Enclosures

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Exhibit A

City of Los Angeles Fire and Police Pension Plan
Summary of Significant Valuation Results

		June 30, 2016	June 30, 2015	Percent Change
I.	**Total Membership**			
	A. Current Active Members	13,050	13,068	-0.14%
	B. Current Vested Former Members[1]	128	112	14.29%
	C. Current Retirees, Beneficiaries, and Dependents	12,819	12,593	1.79%
II.	**Valuation Salary**			
	A. Total Annual Payroll	$1,400,808,351	$1,405,171,210	-0.31%
	B. Average Monthly Salary	8,945	8,961	-0.18%
III.	**Benefits to Current Retirees and Beneficiaries[2]**			
	A. Total Annual Benefits	$846,011,184	$802,218,609	5.46%
	B. Average Monthly Benefit Amount	5,500	5,309	3.60%
IV.	**Total System Assets[3]**			
	A. Actuarial Value	$19,126,148,372	$18,114,393,332	5.59%
	B. Market Value	18,539,679,980	18,737,100,702	-1.05%
V.	**Unfunded Actuarial Accrued Liability (UAAL)**			
	A. Retirement Benefits	$1,153,172,139	$1,567,447,049	-26.43%
	B. Health Subsidy Benefits	1,598,859,540	1,618,369,578	-1.21%

(1) *The June 30, 2016 valuation includes 77 terminated members due only a refund of member contributions. The June 30, 2015 valuation included 67 such members.*

(2) *Includes July COLA.*

(3) *Includes all assets for Retirement and Health Subsidy Benefits.*

Exhibit A (continued)

City of Los Angeles Fire and Police Pension Plan
Summary of Significant Valuation Results

VI. Budget Items	FY 2017-2018		FY 2016-2017		Change	
	Beginning of Year[1]	July 15	Beginning of Year	July 15	Beginning of Year	July 15
A. Retirement Benefits						
1. Normal Cost as a Percent of Pay	18.44%	18.50%	18.57%	18.63%	-0.13%	-0.13%
2. Amortization of UAAL	12.41%	12.44%	12.97%	13.01%	-0.56%	-0.57%
3. Allocated amount for administrative expenses	0.91%	0.91%	0.91%	0.91%	0.00%	0.00%
4. Total Retirement Contribution	31.76%	31.85%	32.45%	32.55%	-0.69%	-0.70%
B. Health Subsidy Contribution						
1. Normal Cost as a Percent of Pay	4.67%	4.69%	4.44%	4.45%	0.23%	0.24%
2. Amortization of UAAL	7.54%	7.56%	7.39%	7.41%	0.15%	0.15%
3. Allocated amount for administrative expenses	0.06%	0.06%	0.06%	0.06%	0.00%	0.00%
4. Total Health Contribution	12.27%	12.31%	11.89%	11.92%	0.38%	0.39%
C. Total Contribution (A+B)	44.03%	44.16%	44.34%	44.47%	-0.31%	-0.31%

[1] *Alternative contribution payment date for FY 2017-2018:*	*Retirement*	*Health*	*Total*
End of Pay Period	*32.92%*	*12.73%*	*45.65%*

Exhibit A (continued)

City of Los Angeles Fire and Police Pension Plan
Summary of Significant Valuation Results

		June 30, 2016	June 30, 2015	Change
VII	**Funded Ratio**			
	(Based on Valuation Value of Assets)			
	A. Retirement Benefits	93.9%	91.5%	2.4%
	B. Health Subsidy Benefits	48.1%	45.4%	2.7%
	C. Total	87.4%	85.0%	2.4%

		June 30, 2016	June 30, 2015	Change
VIII	**Funded Ratio**			
	(Based on Market Value of Assets)			
	A. Retirement Benefits	91.0%	94.6%	-3.6%
	B. Health Subsidy Benefits	46.6%	46.9%	-0.3%
	C. Total	84.7%	88.0%	-3.3%

Exhibit B

City of Los Angeles Fire and Police Pension Plan
Computed Contribution Rates[1] – Historical Comparison

Valuation Date	Retirement	Health	Total	Valuation Payroll (In Thousands)
06/30/2007	19.95%[3]	8.20%[2],[3]	28.15%[3]	$1,135,592
06/30/2008	20.58%	8.76%	29.34%	1,206,589
06/30/2009	22.26%	9.00%	31.26%	1,357,249
06/30/2010	28.20%[4]	12.27%[5]	40.47%	1,356,986
06/30/2011[2]	32.56%	11.34%	43.90%	1,343,963
06/30/2012[2]	35.93%	11.22%[6]	47.15%	1,341,914
06/30/2013	37.82%	11.69%	49.51%	1,367,237
06/30/2014	36.47%	11.50%	47.97%	1,402,715
06/30/2015	33.70%	12.23%	45.93%	1,405,171
06/30/2016	32.92%	12.73%	45.65%	1,400,808

(1) *Contributions are assumed to be made at the end of the pay period.*

(2) *Before reflecting phase-in policy.*

(3) *Revised to recognize payment of Harbor Port Police June 30, 2007 UAAL during 2007-2008 fiscal year. This reduced the UAAL rate by 0.02% and 0.00% for the retirement plan and health plan, respectively.*

(4) *Before reflecting the 2% additional employee contributions for unfrozen health subsidies.*

(5) *Before reflecting the freeze on the medical subsidy for certain employees retiring on or after July 15, 2011.*

(6) *After reflecting updated Tier 6 contribution rate as provided in Segal's letter dated February 27, 2013.*

Segal Consulting

City of Los Angeles Fire and Police Pension Plan

Actuarial Valuation and Review as of June 30, 2016

Segal Consulting
100 Montgomery Street, Suite 500 San Francisco, CA 94104
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November 18, 2016

Board of Fire and Police Pension Commissioners
City of Los Angeles Fire and Police Pension Plan
701 East 3rd Street, Suite 200
Los Angeles, CA 90013

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2016. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal year 2017-2018 and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Plan. The census information and financial information on which our calculations were based was prepared by Los Angeles Fire & Police Pensions (LAFPP). That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; 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 are Members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board of Commissioners are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

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

By:

Paul Angelo, FSA, MAAA, FCA, EA	*Andy Yeung, ASA, MAAA, FCA, EA*
Senior Vice President and Actuary	*Vice President and Actuary*

EK/hy

Purpose

This report has been prepared by Segal Consulting to present a valuation of the City of Los Angeles Fire and Police Pension Plan as of June 30, 2016. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board of Commissioners;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2016, provided by LAFPP;
- The assets of the Plan as of June 30, 2016, provided by LAFPP;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

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

Reference: Pg. 22 and Pg. 46

- The ratio of the valuation value of assets to actuarial accrued liabilities increased from 91.5% to 93.9%. On a market value of assets basis, the funded ratio decreased from 94.6% to 91.0%. The Unfunded Actuarial Accrued Liability (UAAL) has decreased from $1.567 billion to $1.153 billion. The increase in funded ratio (on a valuation value basis) and the reduction in the UAAL are primarily the results of (i) lower than expected salary increases for continuing active members, (ii) lower than expected COLAs granted to retirees, beneficiaries and DROP members, (iii) slightly higher than expected return on the valuation value of assets (after smoothing), (iv) gain due to actual contributions greater than expected, and (v) other actuarial gains. A complete reconciliation of the Plan's UAAL is provided in Section 3, Exhibit G.

Reference: Pg. 20 and Pgs. 47 - 54

- The aggregate beginning-of-year employer rate calculated in this valuation has decreased from 32.45% of payroll to 31.76% of payroll. Using a projected annual payroll of $1.401 billion as of June 30, 2016, there would be a decrease in contributions from $455 million to $445 million. The decrease was due to: (i) lower than expected salary increases for continuing active members, (ii) lower than expected COLAs granted to retirees, beneficiaries and DROP members, (iii) slightly higher than expected return on the valuation value of assets (after smoothing), (iv) gain due to actual contributions greater than expected, and (v) other actuarial gains, offset somewhat by (vi) amortizing the prior year's UAAL over a smaller than expected projected total payroll and (vii) gain layers from June 30, 2001 valuation being fully amortized. A complete reconciliation of the aggregate employer contribution is provided in Section 2, Chart 15.

- The employer contribution rates provided in this report have been developed assuming that they will be made by the City at either: (1) the beginning of the fiscal year, (2) on July 15, or (3) throughout the year (i.e., the City will pay contributions at the end of every pay period).

Reference: Pg. 5

- As indicated in Section 2, Subsection B of this report, the total net unrecognized investment loss as of June 30, 2016 is $586.5 million for the assets for Retirement and Health Subsidy Benefits. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years. For comparison purposes, the total net unrecognized investment gain as of June 30, 2015 was $622.7 million.
- The unrecognized investment losses represent about 3.2% of the market value of assets. Unless offset by future investment gains or other favorable experience, the recognition of the $586.5 million market losses is expected to have an impact on the Plan's future funded ratio and the aggregate employer contributions. This potential impact may be illustrated as follows:
  - If the deferred losses were recognized immediately in the valuation value of assets, the funded percentage would decrease from 93.9% to 91.0%.

    For comparison purposes, if all the deferred gains in the June 30, 2015 valuation had been recognized immediately in the June 30, 2015 valuation, the funded percentage would have increased from 91.5% to 94.6%.
  - If the deferred losses were recognized immediately in the valuation value of assets, the aggregate beginning-of-year employer contribution rate would increase from 31.76% of payroll to 34.58% of payroll.

    For comparison purposes, if all the deferred gains in the June 30, 2015 valuation had been recognized immediately in the June 30, 2015 valuation, the aggregate beginning-of-year employer contribution rate would have decreased from 32.51% of payroll to 29.8% of payroll.
- The actuarial valuation report as of June 30, 2016 is based on financial and demographic information[1] as of that date. Changes subsequent to that date are not reflected and will impact the actuarial cost of the Plan.

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[1] *Recently, we were informed by LAFPP that there were approximately 780 Tier 6 active members whose service (and member contributions with interest) were underreported by about half a year in the data provided for our June 30, 2015 valuation. After discussing with LAFPP, we have decided to make no adjustment to liabilities and contribution rates as previously provided in our June 30, 2015 funding valuation but to reflect those in the June 30, 2016 valuation.*

Summary of Key Valuation Results

	2016	2015
Contributions calculated as of June 30:		
Recommended as a percent of pay (note there is a 12-month delay until the rate is effective)		
At the beginning of year	31.76%	32.45%[1]
On July 15	31.85%	32.55%[1]
At the end of each biweekly pay period	32.92%	33.64%[1]
Funding elements for plan year beginning July 1:		
Normal cost	$394,881,645	$394,829,540[1]
Valuation value of retirement assets (VVA)	17,645,338,395	16,770,060,026
Market value of retirement assets	17,104,276,335	17,346,554,076
Actuarial accrued liability	18,798,510,534	18,337,507,075
Unfunded actuarial accrued liability on valuation value of retirement assets basis	1,153,172,139	1,567,447,049
Unfunded actuarial accrued liability on market value of retirement assets basis	1,694,234,199	990,952,999
Funded ratio on valuation value of retirement assets basis[2]	93.9%	91.5%
Funded ratio on market value of retirement assets basis	91.0%	94.6%
Demographic data for plan year beginning July 1:		
Number of retired members and beneficiaries	12,819	12,593
Number of vested former members[3]	128	112
Number of active members (includes DROP members)	13,050	13,068
Projected total payroll	$1,400,808,351	$1,405,171,210
Projected average payroll	107,342	107,528

(1) *Revised to reflect payroll as of June 30, 2016.*

(2) *The funded ratios on VVA basis excluding Harbor Port Police are 93.9% and 91.5% for 2016 and 2015, respectively.*

(3) *The June 30, 2016 valuation includes 77 terminated members due only a refund of member contributions. The June 30, 2015 valuation included 67 such members.*

Important Information about Actuarial Valuations

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

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

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

- The valuation is prepared at the request of LAFPP. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

- If LAFPP is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. LAFPP should look to their other advisors for expertise in these areas.

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

Actuarial Certification

November 18, 2016

This is to certify that Segal Consulting has conducted an actuarial valuation of the City of Los Angeles Fire and Police Pension Plan retirement program as of June 30, 2016, in accordance with generally accepted actuarial principles and practices. In particular, it is our understanding that the assumptions and methods used for funding purposes meet the parameters set by the Actuarial Standards of Practice (ASOPs). Actuarial valuations are performed annually for this retirement program with the last valuation completed on June 30, 2015. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of the historical funding methods used in determination of the liability for retirement benefits.

The actuarial valuation is based on the plan of benefits summarized in Exhibit IV and on participant and financial data provided by LAFPP. Segal did not audit LAFPP's financial statements, but we conducted an examination of the participant data for reasonableness and we concluded that it was reasonable and consistent with the prior year's data.

The actuarial computations made are for funding plan benefits. Accordingly, additional determinations may be needed for other purposes, such as satisfying financial accounting requirements under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, and judging benefit security at termination of the plan.

Segal prepared all of the supporting schedules in the actuarial section of the Comprehensive Annual Financial Report (CAFR). A listing of the supporting schedules Segal prepared for inclusion in the financial section as Supplementary Information required by GASB is provided below:

1) Schedule of Net Pension Liability
2) Schedule of Changes in Net Pension Liability and Related Ratios
3) Schedule of Contribution History

LAFPP's staff prepared other trend data schedules in the statistical section based on information supplied in Segal's valuation report.

To the best of our knowledge, this report is complete and accurate and in our opinion presents the Plan's current funding information. The undersigned is a Member of the American Academy of Actuaries and meets the qualifications to provide the actuarial opinion herein.

Andy Yeung

Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, non-vested members (entitled to a refund of member contributions) and vested terminated members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

CHART 1

Member Population: 2007 – 2016

Year Ended June 30	Active Members(1)	DROP Members	Vested Terminated Members(2)	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
2007	13,218	1,226	85	11,974	0.91
2008	13,495	1,144	81	12,182	0.91
2009	13,802	1,024	61	12,327	0.90
2010	13,654	1,089	58	12,348	0.91
2011	13,432	1,314(3)	59	12,392(4)	0.93
2012	13,396	1,193	62	12,380	0.93
2013	13,224	1,191	133	12,432	0.95
2014	13,097	1,277	131	12,502	0.96
2015	13,068	1,359	112	12,593	0.97
2016	13,050	1,243	128	12,819	0.99

(1) *Includes DROP members provided in the next column.*

(2) *Includes terminated members due only a refund of contributions (beginning with the June 30, 2013 valuation).*

(3) *Includes 113 members who made an election to participate in the DROP during the period July 1, 2011 to July 14, 2011.*

(4) *Includes 13 new retirees during the period July 1, 2011 to July 14, 2011.*

Active Members (Including DROP Members)
Plan costs are affected by the age, years of service and salaries of active members. In this year's valuation, there were 13,050 active members with an average age of 42.3, average years of service of 15.3 years and average salary of $107,342. The 13,068 active members in the prior valuation had an average age of 42.5, average service of 15.5 years and average salary of $107,528.

Inactive Members
In this year's valuation, there were 128 members with a vested right to a deferred or immediate vested benefit or a return of member contributions versus 112 members in the prior valuation.

These graphs show a distribution of active members by age and by years of service.

CHART 2

Distribution of Active Members (Including DROP Members) by Age as of June 30, 2016

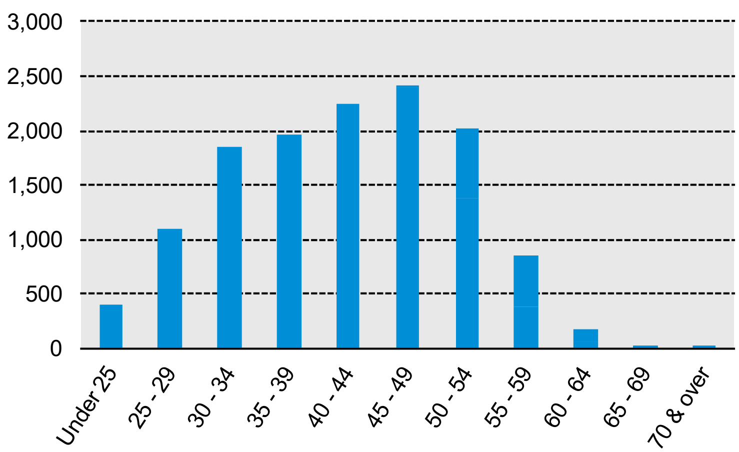
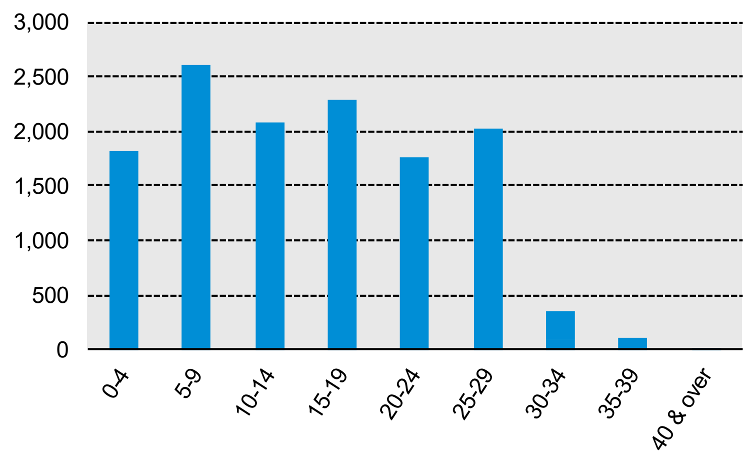


CHART 3

Distribution of Active Members (Including DROP Members) by Years of Service as of June 30, 2016



Retired Members and Beneficiaries
As of June 30, 2016, 10,397 retired members and 2,422 beneficiaries and survivors were receiving total monthly benefits of $70,500,932. For comparison, in the previous valuation there were 10,153 retired members and 2,440 beneficiaries and survivors receiving monthly benefits of $66,851,551.

Please note that the monthly benefits provided have been adjusted for the COLA granted effective for the month of July.

These graphs show a distribution of the current retired members based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Retired Members by Type and by Monthly Amount as of June 30, 2016 (Includes July 1 COLA)

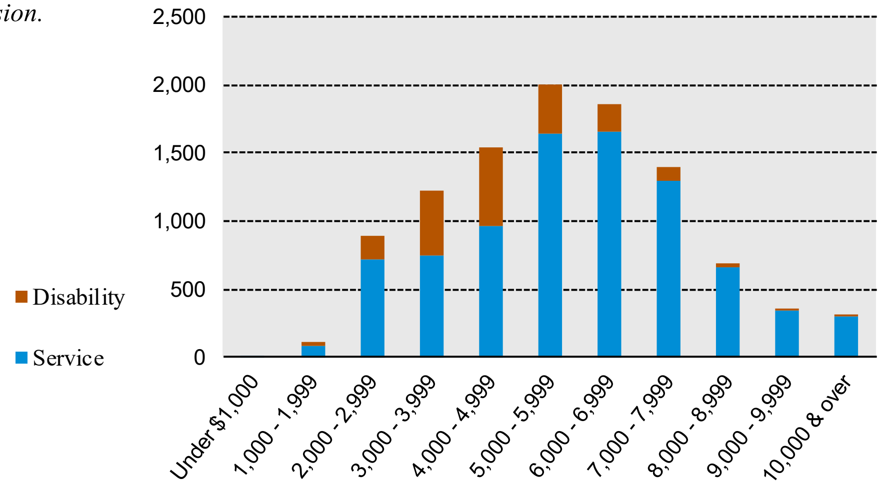
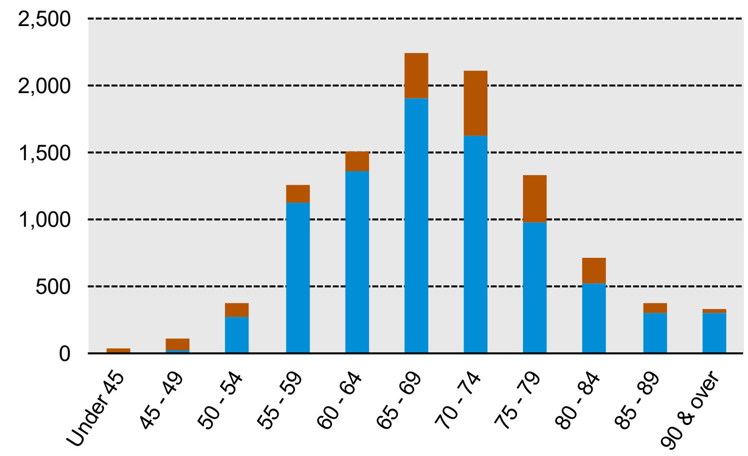


CHART 5

Distribution of Retired Members by Type and by Age as of June 30, 2016 (Includes July 1 COLA)



B. FINANCIAL INFORMATION

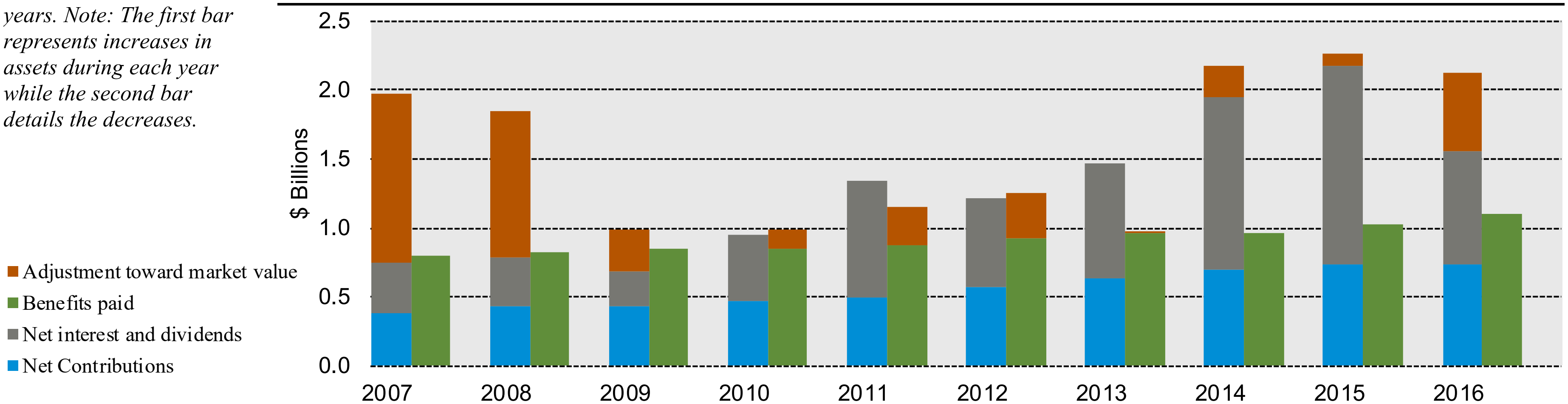
Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D, E and F.

The chart depicts the components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 2007 – 2016



Note: *Interest and dividends are shown net of investment fees and administrative expenses prior to 2015. Starting in 2015, contributions are shown net of administrative expenses.*

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Commissioners has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

Determination of Actuarial Value of Assets for Year Ended June 30, 2016

	Original Amount	Portion Not Recognized	Amount Not Recognized	
1. Market value of assets (for Retirement and Health Subsidy Benefits)				$18,539,679,980
2. Calculation of unrecognized return[1]				
(a) Year ended June 30, 2016	$(1,240,953,883)	6/7	$(1,063,674,757)	
(b) Year ended June 30, 2015	(643,447,599)	5/7	(459,605,428)	
(c) Year ended June 30, 2014	1,571,818,656	4/7	898,182,089	
(d) Combined Net Deferred Gain as of June 30, 2013[2]	77,259,408	3/6	38,629,704	
(e) Total unrecognized return				(586,468,392)
3. Preliminary actuarial value: (1) - (2e)				19,126,148,372
4. Adjustment to be within 40% corridor				0
5. Final actuarial value of assets: (3) + (4)				$19,126,148,372
6. Actuarial value as a percentage of market value: (5) ÷ (1)				103.2%
7. Market value of retirement assets				$17,104,276,335
8. Valuation value of retirement assets: (5) ÷ (1) x (7)				$17,645,338,395
9. Deferred return recognized in each of the next 6 years (for Retirement and Health Subsidy Benefits):				
(a) Amount recognized on June 30, 2017				$(31,778,122)
(b) Amount recognized on June 30, 2018				(31,778,122)
(c) Amount recognized on June 30, 2019				(31,778,122)
(d) Amount recognized on June 30, 2020				(44,654,689)
(e) Amount recognized on June 30, 2021				(269,200,210)
(f) Amount recognized on June 30, 2022				(177,279,127)
(g) Subtotal (may not total exactly due to rounding)				$(586,468,392)

(1) *Total return minus expected return on a market value basis. Effective with the calculation for period ended June 30, 2015, both actual and expected returns on market value have been adjusted to exclude administrative expense paid during the plan year.*

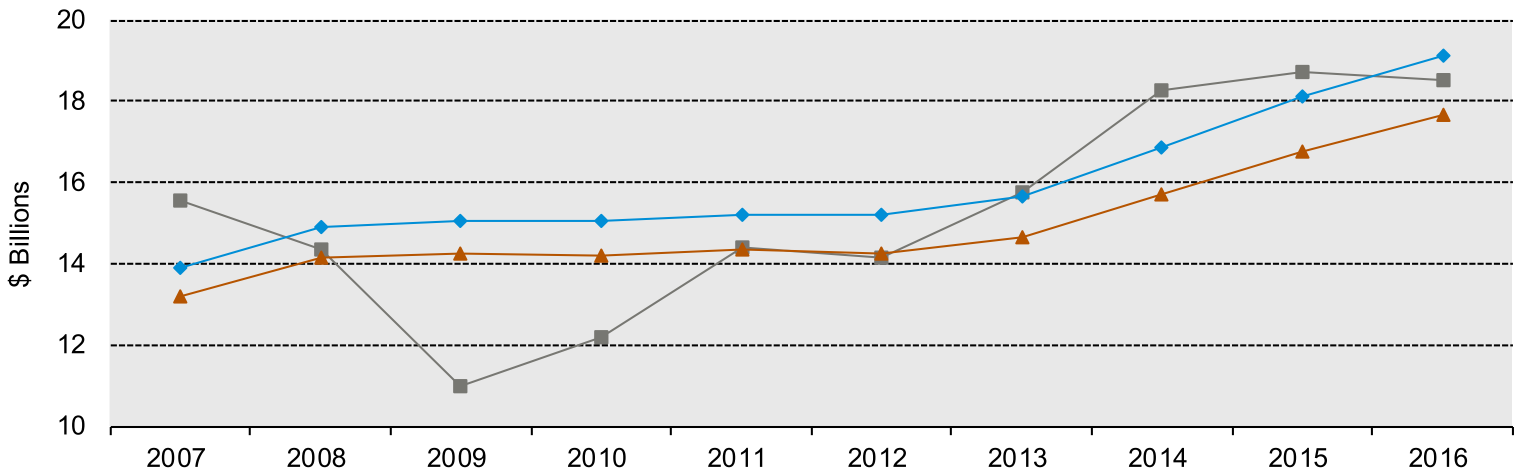
(2) *Net deferred unrecognized investment gains as of June 30, 2013 have been combined into a single layer to be recognized over the six-year period effective July 1, 2013*

The actuarial value, market value and valuation value of assets are representations of LAFPP's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The portion of the total actuarial value of assets allocated for retirement benefits, based on multiplying the total actuarial value of assets by the ratio of market value of retirement assets to the market value of both retirement and health assets, is shown as the valuation value of assets. The valuation value of assets is significant because LAFPP's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past ten years.

CHART 8

Market Value of Assets(1), Actuarial Value of Assets(1) and Valuation Value of Assets(2) as of June 30, 2007 – 2016



(1) *Retirement and Health assets*

(2) *Retirement only assets*

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total net gain of $336,675,876 was due mainly to lower than expected salary increases for continuing active members, less than expected COLA increases for retirees, beneficiaries, and DROP members, and an investment gain of $17,729,644 (after smoothing). A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9

Actuarial Experience for Year Ended June 30, 2016

1.	Net gain from investments[1]	$17,729,644
2.	Net gain from other experience[2]	318,946,232
3.	Net experience gain: (1) + (2)	$336,675,876

[1] *Details in Chart 10.*

[2] *Details in Chart 13. The net gain is attributed to actual liability experience from June 30, 2015 to June 30, 2016, compared to the projected experience as predicted by the actuarial assumptions as of June 30, 2015.*

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on LAFPP's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets was 7.50% for the 2015-2016 plan year (based on the June 30, 2015 valuation). The actual rate of return on the actuarial value of assets basis for the 2015-2016 plan year was 7.58%.

Since the actual return for the year was greater than the assumed return, LAFPP experienced an actuarial gain during the year ended June 30, 2016 with regard to its investments.

This chart shows the gain due to investment experience.

CHART 10

Actuarial Value Investment Experience for Year Ended June 30, 2016

	All Assets[1]	Assets for Retirement Only
1. Actual return	$1,381,259,601	$1,276,868,997
2. Average value of assets	18,217,795,590	16,788,524,703
3. Actual rate of return: (1) ÷ (2)	7.58%	7.61%
4. Assumed rate of return	7.50%	7.50%
5. Expected return: (2) x (4)	$1,366,334,669	$1,259,139,353
6. Actuarial gain: (1) – (5)	$14,924,932	$17,729,644

[1] *Includes all assets for Retirement and Health Subsidy Benefits.*

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for all Retirement and Health Subsidy Benefits assets for the last ten years, including five-year and ten-year averages.

CHART 11

Investment Return[1] – Actuarial Value vs. Market Value: 2007 – 2016

Year Ended June 30	Actuarial Value Investment Return Amount	Actuarial Value Investment Return Percent	Market Value Investment Return Amount	Market Value Investment Return Percent
2007	$1,590,968,304	12.57%	$2,450,077,668	18.25%
2008	1,414,391,128	10.20%	-776,503,003	-5.01%
2009	557,346,783	3.75%	-2,968,762,917	-20.74%
2010	360,741,904	2.40%	1,612,772,227	14.74%
2011	568,411,044	3.78%	2,585,948,784	21.22%
2012	320,400,668	2.10%	93,546,777	0.65%
2013	827,790,619	5.43%	1,952,254,466	13.75%
2014	1,468,399,449	9.29%	2,802,796,015	17.65%
2015	1,527,957,644	8.98%	739,009,040	4.01%
2016	1,381,259,601	7.58%	172,083,839	0.91%
Five-Year Average Return		6.64%		7.17%
Ten-Year Average Return		6.55%		5.76%

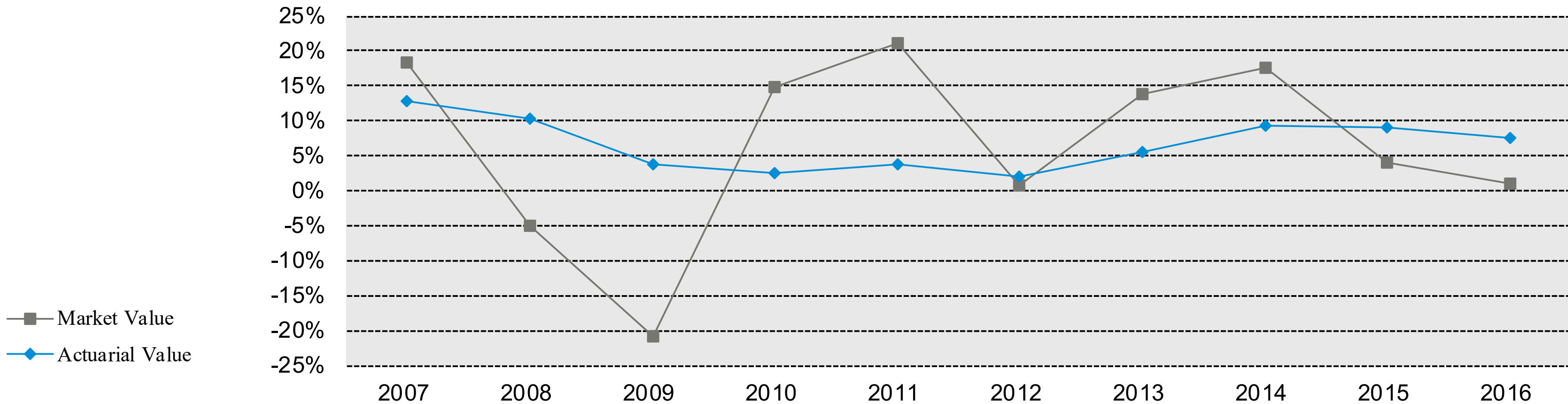
[1] *Includes all assets for Retirement and Health Subsidy Benefits*

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the last ten years.

CHART 12

Market and Actuarial Rates of Return for Years Ended June 30, 2007 - 2016



Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net gain from this other experience for the year ended June 30, 2016 amounted to $318,946,232, which is 1.7% of the actuarial accrued liability and within the range of reasonable expectations.

A brief summary of the demographic gain/(loss) experience of the LAFPP for the year ended June 30, 2016 is shown in the chart below.

The chart shows elements of the experience gain for the most recent year.

CHART 13

Experience Due to Sources Other Than Investment Return for Year Ended June 30, 2016

1. Gain due to lower than expected salary increases for continuing actives	$185,965,837
2. Gain due to lower than expected COLA increases for retirees, beneficiaries, and DROP members	87,187,331
3. Miscellaneous gain	45,793,064
4. Net gain	$318,946,232

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability, separately for each Tier. The total amount is then divided by the projected payroll for active members to determine the contribution rate of 31.76% of payroll if paid at the beginning of the year.

CHART 14
Recommended Contribution

Tier 1 Members	June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount	June 30, 2015 % of Payroll
1. Total normal cost	$0	N/A	$0	N/A
2. Expected employee contributions, discounted to beginning of year	0	N/A	0	N/A
3. Employer normal cost: (1) + (2)	0	N/A	0	N/A
4. Actuarial accrued liability	93,835,393		101,740,530	
5. Valuation value of assets	-71,856,186		-69,166,589	
6. Unfunded actuarial accrued liability	165,691,579		170,907,119	
7. Amortization of unfunded accrued liability	14,801,171	N/A	14,974,146	N/A
8. Allocated amount for admin expenses, calculated with payroll in (12)	0	N/A	0	N/A
9. Total recommended contribution, payable July 1	14,801,171	N/A	14,974,146	N/A
10. Total recommended contribution, payable July 15	14,845,840	N/A	15,019,337	N/A
11. Total recommended contribution, payable biweekly	15,346,181	N/A	15,525,525	N/A
12. Projected payroll used for developing normal cost rate	0		N/A	

Tier 2 Members	June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[2]	June 30, 2015 % of Payroll
1. Total normal cost	$425,662	25.51%	$426,662	25.57%
2. Expected employee contributions, discounted to beginning of year	-20,557	-1.23%	-10,846	-0.65%
3. Employer normal cost: (1) + (2)	405,105	24.28%	415,816	24.92%
4. Actuarial accrued liability	5,043,917,731		5,188,268,336	
5. Valuation value of assets	5,331,372,281		5,367,842,237	
6. Unfunded actuarial accrued liability	-287,454,550[3]		-179,573,901[3]	
7. Amortization of unfunded accrued liability[1]	5,685,390[3]	0.41%	10,831,371[3]	0.78%
8. Allocated amount for admin expenses, calculated with payroll in (12)	15,128	0.91%	15,184	0.91%
9. Total recommended contribution, payable July 1	6,105,623	N/A	11,262,371	N/A
10. Total recommended contribution, payable July 15	6,124,049	N/A	11,296,360	N/A
11. Total recommended contribution, payable biweekly	6,330,445	N/A	11,677,075	N/A
12. Projected payroll used for developing normal cost rate	1,668,603		N/A	

(1) *UAAL rate is calculated using the City's total payroll of $1,388,637,346.*

(2) *Amounts are revised to reflect payroll as of June 30, 2016.*

(3) *Even though the total UAAL for Tier 2 is negative, we have not applied the surplus amortization provisions of the LAFPP funding policy because the Plan as a whole does not have an actuarial surplus.*

CHART 14
Recommended Contribution (Continued)

Tier 3 Members	June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[2]	June 30, 2015 % of Payroll
1. Total normal cost	$23,070,643	25.42%	$23,122,672	25.48%
2. Expected employee contributions, discounted to beginning of year	-8,076,032	-8.90%	-8,094,750	-8.92%
3. Employer normal cost: (1) + (2)	14,994,611	16.52%	15,027,922	16.56%
4. Actuarial accrued liability	1,016,373,682		970,719,394	
5. Valuation value of assets	959,964,927		868,963,588	
6. Unfunded actuarial accrued liability	56,408,755		101,755,806	
7. Amortization of unfunded accrued liability[1]	38,979,316	2.81%	32,077,523	2.31%
8. Allocated amount for admin expenses, calculated with payroll in (12)	822,739	0.91%	825,810	0.91%
9. Total recommended contribution, payable July 1	54,796,666	N/A	47,931,255	N/A
10. Total recommended contribution, payable July 15	54,962,037	N/A	48,075,907	N/A
11. Total recommended contribution, payable biweekly	56,814,393	N/A	49,696,183	N/A
12. Projected payroll used for developing normal cost rate	90,748,319		N/A	

Tier 4 Members	June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[2]	June 30, 2015 % of Payroll
1. Total normal cost	$8,816,121	25.36%	$8,807,222	25.33%
2. Expected employee contributions, discounted to beginning of year	-2,840,304	-8.17%	-2,781,594	-8.00%
3. Employer normal cost: (1) + (2)	5,975,817	17.19%	6,025,628	17.33%
4. Actuarial accrued liability	515,837,253		498,048,177	
5. Valuation value of assets	428,305,587		396,900,701	
6. Unfunded actuarial accrued liability	87,531,666		101,147,476	
7. Amortization of unfunded accrued liability[1]	18,230,795	1.31%	16,247,057	1.17%
8. Allocated amount for admin expenses, calculated with payroll in (12)	315,230	0.91%	316,406	0.91%
9. Total recommended contribution, payable July 1	24,521,842	N/A	22,589,091	N/A
10. Total recommended contribution, payable July 15	24,595,847	N/A	22,657,263	N/A
11. Total recommended contribution, payable biweekly	25,424,787	N/A	23,420,868	N/A
12. Projected payroll used for developing normal cost rate	34,769,925		N/A	

(1) *UAAL rate is calculated using the City's total payroll of $1,388,637,346.*
(2) *Amounts are revised to reflect payroll as of June 30, 2016.*

CHART 14
Recommended Contribution (Continued)

Tier 5 Members (without Harbor Port Police)	June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[1]	June 30, 2015 % of Payroll
1. Total normal cost	$324,538,890	28.72%	$324,418,022	28.71%
2. Expected employee contributions, discounted to beginning of year	-110,464,000	-9.78%	-108,591,334	-9.61%
3. Employer normal cost: (1) + (2)	214,074,890	18.94%	215,826,688	19.10%
4. Actuarial accrued liability	*Tiers 5 and 6 are combined. See table on the next page.*		*Tiers 5 and 6 are combined. See table on the next page.*	
5. Valuation value of assets				
6. Unfunded actuarial accrued liability				
7. Amortization of unfunded accrued liability	85,517,444	7.57%	95,596,533	8.46%
8. Allocated amount for admin expenses, calculated with payroll in (12)	10,244,609	0.91%	10,282,842	0.91%
9. Total recommended contribution, payable July 1	309,836,943	27.42%	321,706,063	28.47%
10. Total recommended contribution, payable July 15	310,772,002	27.50%	322,676,942	28.55%
11. Total recommended contribution, payable biweekly	321,245,780	28.43%	333,551,945	29.52%
12. Projected payroll used for developing normal cost rate	1,129,982,660		N/A	

Tier 6 Members (without Harbor Port Police)	June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[1]	June 30, 2015 % of Payroll
1. Total normal cost	$34,455,522	26.20%	$34,484,014	26.23%
2. Expected employee contributions, discounted to beginning of year	-13,947,872	-10.61%	-13,948,738	-10.61%
3. Employer normal cost: (1) + (2)	20,507,650	15.59%	20,535,276	15.62%
4. Actuarial accrued liability	*Tiers 5 and 6 are combined. See table on the next page.*		*Tiers 5 and 6 are combined. See table on the next page.*	
5. Valuation value of assets				
6. Unfunded actuarial accrued liability				
7. Amortization of unfunded accrued liability	9,949,527	7.57%	11,122,179	8.46%
8. Allocated amount for admin expenses, calculated with payroll in (12)	1,191,909	0.91%	1,196,357	0.91%
9. Total recommended contribution, payable July 1	31,649,086	24.07%	32,853,812	24.99%
10. Total recommended contribution, payable July 15	31,744,600	24.15%	32,952,962	25.07%
11. Total recommended contribution, payable biweekly	32,814,471	24.96%	34,063,557	25.91%
12. Projected payroll used for developing normal cost rate	131,467,839		N/A	

(1) *Amounts are revised to reflect payroll as of June 30, 2016.*

CHART 14
Recommended Contribution (Continued)

Combined Tiers 5 and 6 UAAL Contribution Rate Calculations for the City

	June 30, 2016				June 30, 2015	
	Tier 5	Tier 6	Combined Tiers 5 and 6		Combined Tiers 5 and 6	
			Amount	% of Payroll	Amount[1]	% of Payroll
4. Actuarial accrued liability	$12,016,322,398	$57,563,611	$12,073,886,009		$11,528,664,415	
5. Valuation value of assets			10,946,866,177		10,161,568,166	
6. Unfunded actuarial accrued liability			1,127,019,832		1,367,096,249	
7. Amortization of unfunded accrued liability			95,466,971	7.57%	106,718,712	8.46%
12. Projected payroll used for developing normal cost rate	1,129,982,660	131,467,839	1,261,450,499		N/A	

All Tiers Combined (without Harbor Port Police)

	June 30, 2016		June 30, 2015	
	Amount	% of Payroll	Amount[1]	% of Payroll
1. Total normal cost	$391,306,838	28.18%	$391,258,592	28.18%
2. Expected employee contributions, discounted to beginning of year	-135,348,765	-9.75%	-133,427,262	-9.61%
3. Employer normal cost: (1) + (2)	255,958,073	18.43%	257,831,330	18.57%
4. Actuarial accrued liability	18,743,850,068		18,287,440,852	
5. Valuation value of assets	17,594,652,786		16,726,108,103	
6. Unfunded actuarial accrued liability	1,149,197,282		1,561,332,749	
7. Amortization of unfunded accrued liability	173,163,643	12.47%	180,848,809	13.02%
8. Allocated amount for admin expenses, calculated with payroll in (12)	12,589,615	0.91%	12,636,599	0.91%
9. Total recommended contribution, payable July 1	441,711,331	31.81%	451,316,738	32.50%
10. Total recommended contribution, payable July 15	443,044,375	31.90%	452,678,770	32.60%
11. Total recommended contribution, payable biweekly	457,976,057	32.98%	467,935,153	33.70%
12. Projected payroll used for developing normal cost rate	1,388,637,346		N/A	

(1) *Amounts are revised to reflect payroll as of June 30, 2016.*

CHART 14
Recommended Contribution (Continued)

Harbor Port Police Tier 5	June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[1]	June 30, 2015 % of Payroll
1. Total normal cost	$3,207,884	29.85%	$3,206,930	29.85%
2. Expected employee contributions, discounted to beginning of year	-1,110,854	-10.34%	-1,107,653	-10.31%
3. Employer normal cost: (1) + (2)	2,097,030	19.51%	2,099,277	19.54%
4. Actuarial accrued liability	*Tiers 5 and 6 are combined. See table on the next page.*		*Tiers 5 and 6 are combined. See table on the next page.*	
5. Valuation value of assets				
6. Unfunded actuarial accrued liability				
7. Amortization of unfunded accrued liability	617,369	5.75%	709,070	6.60%
8. Allocated amount for admin expenses, calculated with payroll in (12)	97,402	0.91%	97,766	0.91%
9. Total recommended contribution, payable July 1	2,811,801	26.17%	2,906,113	27.05%
10. Total recommended contribution, payable July 15	2,820,287	26.25%	2,914,883	27.14%
11. Total recommended contribution, payable biweekly	2,915,337	27.14%	3,013,122	28.05%
12. Projected payroll used for developing normal cost rate	10,743,485		N/A	

Harbor Port Police Tier 6	June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[1]	June 30, 2015 % of Payroll
1. Total normal cost	$366,923	25.70%	$364,018	25.50%
2. Expected employee contributions, discounted to beginning of year	-151,450	-10.61%	-151,460	-10.61%
3. Employer normal cost: (1) + (2)	215,473	15.09%	212,558	14.89%
4. Actuarial accrued liability	*Tiers 5 and 6 are combined. See table on the next page.*		*Tiers 5 and 6 are combined. See table on the next page.*	
5. Valuation value of assets				
6. Unfunded actuarial accrued liability				
7. Amortization of unfunded accrued liability	82,032	5.75%	94,216	6.60%
8. Allocated amount for admin expenses, calculated with payroll in (12)	12,942	0.91%	12,990	0.91%
9. Total recommended contribution, payable July 1	310,447	21.75%	319,764	22.40%
10. Total recommended contribution, payable July 15	311,384	21.81%	320,729	22.46%
11. Total recommended contribution, payable biweekly	321,878	22.55%	331,538	23.22%
12. Projected payroll used for developing normal cost rate	1,427,520		N/A	

[1] *Amounts are revised to reflect payroll as of June 30, 2016.*

CHART 14
Recommended Contribution (Continued)

Combined Tiers 5 and 6 UAAL Contribution Rate Calculations for the Harbor Port Police	June 30, 2016				June 30, 2015	
	Tier 5	Tier 6	Combined Tiers 5 and 6		Combined Tiers 5 and 6	
			Amount	% of Payroll	Amount[1]	% of Payroll
4. Actuarial accrued liability	$54,327,492	$332,974	$54,660,466		$50,066,223	
5. Valuation value of assets			50,685,609		43,951,923	
6. Unfunded actuarial accrued liability			3,974,857		6,114,300	
7. Amortization of unfunded accrued liability			699,401	5.75%	803,286	6.60%
12. Projected payroll used for developing normal cost rate	10,743,485	1,427,520	12,171,005		N/A	

Harbor Port Police Combined (Tiers 5 and 6)	June 30, 2016		June 30, 2015	
	Amount	% of Payroll	Amount[1]	% of Payroll
1. Total normal cost	$3,574,807	29.37%	$3,570,948	29.34%
2. Expected employee contributions, discounted to beginning of year	-1,262,304	-10.37%	-1,259,113	-10.35%
3. Employer normal cost: (1) + (2)	2,312,503	19.00%	2,311,835	18.99%
4. Actuarial accrued liability	54,660,466		50,066,223	
5. Valuation value of assets	50,685,609		43,951,923	
6. Unfunded actuarial accrued liability	3,974,857		6,114,300	
7. Amortization of unfunded accrued liability	699,401	5.75%	803,286	6.60%
8. Allocated amount for admin expenses, calculated with payroll in (12)	110,344	0.91%	110,756	0.91%
9. Total recommended contribution, payable July 1	3,122,248	25.65%	3,225,877	26.50%
10. Total recommended contribution, payable July 15	3,131,671	25.73%	3,235,612	26.58%
11. Total recommended contribution, payable biweekly	3,237,215	26.60%	3,344,660	27.48%
12. Projected payroll used for developing normal cost rate	12,171,005		N/A	

(1) *Amounts are revised to reflect payroll as of June 30, 2016.*

CHART 14
Recommended Contribution (Continued)

	June 30, 2016		June 30, 2015	
All Tiers Combined	Amount	% of Payroll	Amount[1]	% of Payroll
1. Total normal cost	$394,881,645	28.19%	$394,829,540	28.18%
2. Expected employee contributions, discounted to beginning of year	-136,611,069	-9.75%	-134,686,375	-9.61%
3. Employer normal cost: (1) + (2)	258,270,576	18.44%	260,143,165	18.57%
4. Actuarial accrued liability	18,798,510,534		18,337,507,075	
5. Valuation value of assets	17,645,338,395		16,770,060,026	
6. Unfunded actuarial accrued liability	1,153,172,139		1,567,447,049	
7. Amortization of unfunded accrued liability	173,863,044	12.41%	181,652,095	12.97%
8. Allocated amount for admin expenses, calculated with payroll in (12)	12,699,959	0.91%	12,747,355	0.91%
9. Total recommended contribution, payable July 1	444,833,579	31.76%	454,542,615	32.45%
10. Total recommended contribution, payable July 15	446,176,046	31.85%	455,914,382	32.55%
11. Total recommended contribution, payable biweekly	461,213,272	32.92%	471,279,814	33.64%
12. Projected payroll used for developing normal cost rate	1,400,808,351		N/A	

[1] *Amounts are revised to reflect payroll as of June 30, 2016.*

If paid by the City at the beginning of the year, the calculated normal cost is 18.44% payroll, and the explicit contribution rate for administrative expense is 0.91% of payroll. The remaining contribution of 12.41% of payroll will amortize the unfunded actuarial accrued liability over an equivalent single amortization period of about 7.3 years.

The contribution rates as of June 30, 2016 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the actuarial valuation.

Reconciliation of Recommended Contribution

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15

Reconciliation of Recommended Contribution Rate from June 30, 2015 to June 30, 2016

Recommended Contribution as of June 30, 2015 (Assuming Payment at the Beginning of the Year)	32.45%[1]
Effect of actual contributions more than expected[2]	-0.06%
Effect of investment gain	-0.08%
Effect of difference in actual versus expected salary increases	-0.89%
Effect of amortizing prior year's UAAL over a smaller than expected projected total payroll	0.56%
Effect of lower than expected COLA increases for retirees, beneficiaries, and DROP members	-0.42%
Effect of gain layers from June 30, 2001 valuation being fully amortized	0.55%
Effect of other actuarial gains	-0.35%
Total change	-0.69%
Recommended Contribution as of June 30, 2016 (Assuming Payment at the Beginning of the Year)	31.76%

(1) *Revised using payroll as of June 30, 2016.*

(2) *One-year delay in contribution rate reduction recommended in the June 30, 2015 valuation, offset to some degree by payroll increases less than expected by the payroll growth assumption.*

E. FUNDED RATIO

A commonly reported piece of information regarding the Plan's financial status is the funded ratio. The ratios compare the valuation value of assets and the market value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors. The chart below depicts a history of the funded ratios for this plan.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. As the chart below shows, the measures are different depending on whether the valuation or market value of assets is used.

CHART 16

Funded Ratio

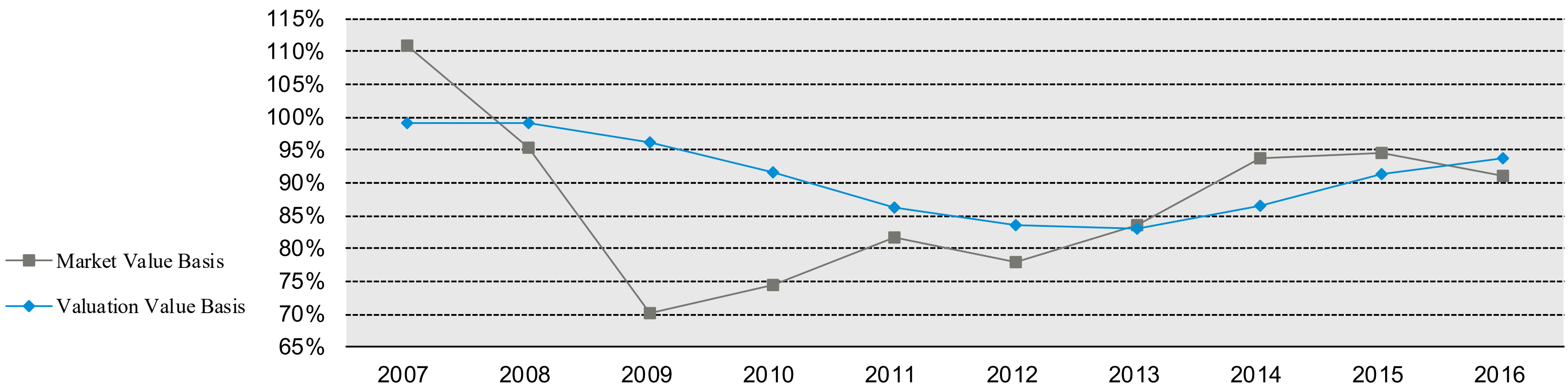


CHART 17

Schedule of Funding Progress

Retirement Benefits (Dollar Amounts in Thousands)

Actuarial Valuation Date	Valuation Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/2008	$14,153,296	$14,279,116	$125,820	99.1%	$1,206,589	10.4%
06/30/2009	14,256,611	14,817,146	560,535	96.2%	1,357,249	41.3%
06/30/2010	14,219,581	15,520,625	1,301,044	91.6%	1,356,986	95.9%
06/30/2011	14,337,669	16,616,476	2,278,807	86.3%	1,343,963	169.6%
06/30/2012	14,251,913	17,030,833	2,778,920	83.7%	1,341,914	207.1%
06/30/2013	14,657,713	17,632,425	2,974,712	83.1%	1,367,237	217.6%
06/30/2014	15,678,480	18,114,229	2,435,749	86.6%	1,402,715	173.6%
06/30/2015	16,770,060	18,337,507	1,567,447	91.5%	1,405,171	111.5%
06/30/2016	17,645,338	18,798,510	1,153,172	93.9%	1,400,808	82.3%

F. VOLATILITY RATIOS

Retirement plans are subject to volatility in the level of required contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of retirement assets divided by total payroll, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measure since it is based on the current level of assets.

For LAFPP, the current AVR is about 12.2. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 12.2% of one-year's payroll. Since LAFPP amortizes actuarial gains and losses over a period of 20 years, there would be a 0.8% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the Actuarial Accrued Liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions.

For LAFPP, the current LVR is about 13.4. This is about 10% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long-term.

This chart shows how the asset and liability volatility ratios have varied over time.

CHART 18

Volatility Ratios for Years Ended June 30, 2009 – 2016

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2009	7.6	10.9
2010	8.5	11.4
2011	10.1	12.4
2012	9.9	12.7
2013	10.8	12.9
2014	12.1	12.9
2015	12.3	13.1
2016	12.2	13.4

EXHIBIT A

Table of Plan Coverage

Total

Category	Year Ended June 30 2016	Year Ended June 30 2015	Change From Prior Year
Active members in valuation:			
Number	13,050	13,068	-0.1%
Average age	42.3	42.5	N/A
Average service	15.3	15.5	N/A
Projected total payroll	$1,400,808,351	$1,405,171,210	-0.3%
Projected average payroll	$107,342	$107,528	-0.2%
Account balances	$1,822,646,982	$1,798,403,054	1.3%
Total active vested members	4,503	4,462	0.9%
Vested terminated members:			
Number[1]	128	112	14.3%
Average age[2]	46.5	46.0	N/A
Average monthly benefit at age 50[2]	$2,600	$2,275	14.3%
Retired members:			
Number in pay status	8,414	8,122	3.6%
Average age at retirement	51.8	51.7	N/A
Average age	69.5	69.6	N/A
Average monthly benefit (includes July COLA)	$6,056	$5,822	4.0%
Disabled members:			
Number in pay status	1,983	2,031	-2.4%
Average age at retirement	44.0	44.0	N/A
Average age	70.1	69.7	N/A
Average monthly benefit (includes July COLA)	$4,740	$4,628	2.4%
Beneficiaries:			
Number in pay status	2,422	2,440	-0.7%
Average age	76.6	76.6	N/A
Average monthly benefit (includes July COLA)	$4,190	$4,166	0.6%

(1) *Includes terminated members due only a refund of member contributions.*

(2) *Excludes terminated members due only a refund of member contributions.*

EXHIBIT A

Table of Plan Coverage

i. Tier 1

Category	Year Ended June 30 2016	Year Ended June 30 2015	Change From Prior Year
Active members in valuation:			
Number	0	0	N/A
Average age	N/A	N/A	N/A
Average service	N/A	N/A	N/A
Projected total payroll	N/A	N/A	N/A
Projected average payroll	N/A	N/A	N/A
Account balances	N/A	N/A	N/A
Total active vested members	N/A	N/A	N/A
Vested terminated members:			
Number	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit at age 50	N/A	N/A	N/A
Retired members:			
Number in pay status	66	77	-14.3%
Average age at retirement	46.3	46.3	N/A
Average age	86.0	86.1	N/A
Average monthly benefit (includes July COLA)	$2,427	$2,349	3.3%
Disabled members:			
Number in pay status	61	75	-18.7%
Average age at retirement	35.9	36.5	N/A
Average age	82.1	82.3	N/A
Average monthly benefit (includes July COLA)	$3,209	$3,108	3.2%
Beneficiaries:			
Number in pay status	276	292	-5.5%
Average age	85.0	84.6	N/A
Average monthly benefit (includes July COLA)	$2,654	$2,584	2.7%

EXHIBIT A

Table of Plan Coverage

ii. Tier 2

Category	Year Ended June 30 2016	Year Ended June 30 2015	Change From Prior Year
Active members in valuation:			
Number	12	22	-45.5%
Average age	61.3	59.9	N/A
Average service	37.5	36.1	N/A
Projected total payroll	$1,668,603	$3,096,841	-46.1%
Projected average payroll	$139,050	$140,766	-1.2%
Account balances	$3,193,889	$5,709,181	-44.1%
Total active vested members	12	22	-45.5%
Vested terminated members:			
Number	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit at age 50	N/A	N/A	N/A
Retired members:			
Number in pay status	4,399	4,559	-3.5%
Average age at retirement	50.3	50.3	N/A
Average age	75.0	74.5	N/A
Average monthly benefit (includes July COLA)	$5,160	$5,025	2.7%
Disabled members:			
Number in pay status	1,487	1,540	-3.4%
Average age at retirement	45.0	45.1	N/A
Average age	74.0	73.2	N/A
Average monthly benefit (includes July COLA)	$4,987	$4,875	2.3%
Beneficiaries:			
Number in pay status	1,852	1,876	-1.3%
Average age	79.1	78.6	N/A
Average monthly benefit (includes July COLA)	$4,375	$4,288	2.0%

EXHIBIT A

Table of Plan Coverage

iii. Tier 3

Category	Year Ended June 30 2016	Year Ended June 30 2015	Change From Prior Year
Active members in valuation:			
Number	799	836	-4.4%
Average age	49.5	48.8	N/A
Average service	22.1	21.2	N/A
Projected total payroll	$90,748,319	$94,013,374	-3.5%
Projected average payroll	$113,577	$112,456	1.0%
Account balances	$148,669,661	$144,328,775	3.0%
Total active vested members	799	835	-4.3%
Vested terminated members:			
Number(1)	44	39	12.8%
Average age(2)	46.4	45.6	N/A
Average monthly benefit at age 50(2)	$2,172	$1,891	14.9%
Retired members:			
Number in pay status	253	227	11.5%
Average age at retirement	53.1	52.9	N/A
Average age	60.6	60.3	N/A
Average monthly benefit (includes July COLA)	$3,119	$2,888	8.0%
Disabled members:			
Number in pay status	252	249	1.2%
Average age at retirement	39.9	39.8	N/A
Average age	56.9	56.1	N/A
Average monthly benefit (includes July COLA)	$3,632	$3,522	3.1%
Beneficiaries:			
Number in pay status	89	83	7.2%
Average age	52.7	53.3	N/A
Average monthly benefit (includes July COLA)	$3,313	$3,880	-14.6%

(1) *Includes terminated members due only a refund of member contributions.*

(2) *Excludes terminated members due only a refund of member contributions.*

EXHIBIT A

Table of Plan Coverage

iv. Tier 4

Category	Year Ended June 30 2016	Year Ended June 30 2015	Change From Prior Year
Active members in valuation:			
Number	299	323	-7.4%
Average age	46.0	45.6	N/A
Average service	21.0	20.7	N/A
Projected total payroll	$34,769,925	$37,070,727	-6.2%
Projected average payroll	$116,287	$114,770	1.3%
Account balances	$54,036,159	$55,980,040	-3.5%
Total active vested members	121	140	-13.6%
Vested terminated members:			
Number	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit at age 50	N/A	N/A	N/A
Retired members:			
Number in pay status	223	202	10.4%
Average age at retirement	46.8	46.5	N/A
Average age	55.3	54.3	N/A
Average monthly benefit (includes July COLA)	$4,964	$4,745	4.6%
Disabled members:			
Number in pay status	47	45	4.4%
Average age at retirement	42.2	42.2	N/A
Average age	53.8	53.4	N/A
Average monthly benefit (includes July COLA)	$4,717	$4,525	4.2%
Beneficiaries:			
Number in pay status	5	4	25.0%
Average age	32.7	35.2	N/A
Average monthly benefit (includes July COLA)	$3,863	$6,803	-43.2%

EXHIBIT A
Table of Plan Coverage
v. Tier 5 (without Harbor Port Police)

Category	Year Ended June 30 2016	Year Ended June 30 2015	Change From Prior Year
Active members in valuation:			
Number	10,059	10,569	-4.8%
Average age	44.0	43.6	N/A
Average service	17.0	16.5	N/A
Projected total payroll	$1,129,982,660	$1,172,054,899	-3.6%
Projected average payroll	$112,335	$110,896	1.3%
Account balances	$1,584,370,874	$1,574,959,881	0.6%
Total active vested members	3,568	3,461	3.1%
Vested terminated members:			
Number[1]	46	47	-2.1%
Average age[2]	46.7	47.4	N/A
Average monthly benefit at age 50[2]	$3,991	$4,052	-1.5%
Retired members:			
Number in pay status	3,461	3,046	13.6%
Average age at retirement	54.1	54.2	N/A
Average age	63.9	63.7	N/A
Average monthly benefit (includes July COLA)	$7,546	$7,391	2.1%
Disabled members:			
Number in pay status	133	120	10.8%
Average age at retirement	44.0	43.6	N/A
Average age	51.5	50.9	N/A
Average monthly benefit (includes July COLA)	$4,795	$4,745	1.1%
Beneficiaries:			
Number in pay status	200	185	8.1%
Average age	54.5	54.5	N/A
Average monthly benefit (includes July COLA)	$5,000	$5,504	-9.2%

(1) *Includes terminated members due only a refund of member contributions.*

(2) *Excludes terminated members due only a refund of member contributions.*

EXHIBIT A

Table of Plan Coverage

vi. Tier 6 (without Harbor Port Police)

Category	Year Ended June 30 2016	Year Ended June 30 2015	Change From Prior Year
Active members in valuation:			
Number	1,764	1,203	46.6%
Average age	28.5	28.2	N/A
Average service	1.6	1.1	N/A
Projected total payroll	$131,467,839	$87,022,646	51.1%
Projected average payroll	$74,528	$72,338	3.0%
Account balances	$22,774,519	$8,715,512	161.3%
Total active vested members	0	0	N/A
Vested terminated members:			
Number[1]	36	26	38.5%
Average age[2]	N/A	N/A	N/A
Average monthly benefit at age 50[2]	N/A	N/A	N/A
Retired members:			
Number in pay status	0	0	N/A
Average age at retirement	N/A	N/A	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A
Disabled members:			
Number in pay status	0	0	N/A
Average age at retirement	N/A	N/A	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A
Beneficiaries:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A

(1) *Includes terminated members due only a refund of member contributions.*

(2) *Excludes terminated members due only a refund of member contributions.*

EXHIBIT A

Table of Plan Coverage

vii. Harbor Port Police (Tier 5)

Category	Year Ended June 30 2016	Year Ended June 30 2015	Change From Prior Year
Active members in valuation:			
Number	100	103	-2.9%
Average age	40.2	39.4	N/A
Average service	10.4	9.7	N/A
Projected total payroll	$10,743,485	$11,008,872	-2.4%
Projected average payroll	$107,435	$106,882	0.5%
Account balances	$9,431,058	$8,661,305	8.9%
Total active vested members	3	4	-25.0%
Vested terminated members:			
Number[(1)]	1	0	N/A
Average age[(2)]	N/A	N/A	N/A
Average monthly benefit at age 50[(2)]	N/A	N/A	N/A
Retired members:			
Number in pay status	12	11	9.1%
Average age at retirement	55.1	54.8	N/A
Average age	60.5	59.6	N/A
Average monthly benefit (includes July COLA)	$6,950	$6,397	8.6%
Disabled members:			
Number in pay status	3	2	50.0%
Average age at retirement	40.1	40.1	N/A
Average age	48.2	50.1	N/A
Average monthly benefit (includes July COLA)	$4,472	$4,914	-9.0%
Beneficiaries:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A

(1) *Includes terminated members due only a refund of member contributions.*

(2) *Excludes terminated members due only a refund of member contributions.*

EXHIBIT A

Table of Plan Coverage

viii. Harbor Port Police (Tier 6)

Category	Year Ended June 30		Change From Prior Year
	2016	2015	
Active members in valuation:			
Number	17	12	41.7%
Average age	30.6	32.4	N/A
Average service	1.1	0.5	N/A
Projected total payroll	$1,427,520	$903,852	57.9%
Projected average payroll	$83,972	$75,321	11.5%
Account balances	$170,822	$48,359	253.2%
Total active vested members	0	0	N/A
Vested terminated members:			
Number[(1)]	1	0	N/A
Average age[(2)]	N/A	N/A	N/A
Average monthly benefit at age 50[(2)]	N/A	N/A	N/A
Retired members:			
Number in pay status	0	0	N/A
Average age at retirement	N/A	N/A	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A
Disabled members:			
Number in pay status	0	0	N/A
Average age at retirement	N/A	N/A	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A
Beneficiaries:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A

(1) *Includes terminated members due only a refund of member contributions.*

(2) *Excludes terminated members due only a refund of member contributions.*

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016
By Age and Years of Service
Total

		Years of Service								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	405	405	- -	- -	- -	- -	- -	- -	- -	- -
	$64,619	$64,619	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	1,095	879	216	- -	- -	- -	- -	- -	- -	- -
	80,283	76,021	$97,625	- -	- -	- -	- -	- -	- -	- -
30 - 34	1,845	380	1,249	216	- -	- -	- -	- -	- -	- -
	96,267	80,333	99,663	$104,663	- -	- -	- -	- -	- -	- -
35 - 39	1,960	104	708	941	207	- -	- -	- -	- -	- -
	103,988	80,446	100,523	106,938	$114,257	- -	- -	- -	- -	- -
40 - 44	2,243	33	294	571	1,027	318	- -	- -	- -	- -
	110,118	81,516	99,528	107,289	112,862	$119,093	- -	- -	- -	- -
45 - 49	2,424	12	104	276	741	884	407	- -	- -	- -
	115,963	84,257	98,306	106,697	113,055	119,792	$124,670	- -	- -	- -
50 - 54	2,023	4	28	71	226	426	1,105	154	9	- -
	121,451	83,971	102,464	106,160	112,290	118,018	124,871	$131,041	$126,431	- -
55 - 59	852	2	3	11	65	101	431	160	79	- -
	125,098	159,242	95,499	111,083	110,366	115,866	124,142	131,324	143,839	- -
60 - 64	183	1	1	1	18	26	79	37	18	2
	123,091	192,511	109,681	100,391	109,103	111,247	120,981	122,714	156,555	$175,455
65 - 69	17	- -	- -	- -	1	3	8	1	3	1
	120,575	- -	- -	- -	118,459	121,627	120,457	112,189	119,519	132,027
70 & over	3	- -	- -	- -	1	- -	1	- -	- -	1
	118,459	- -	- -	- -	118,459	- -	118,459	- -	- -	118,459
Total	13,050	1,820	2,603	2,087	2,286	1,758	2,031	352	109	4
	$107,342	$74,964	$99,688	$106,759	$112,898	$118,887	$124,504	$130,241	$143,832	$150,349

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016

By Age and Years of Service

i. Tier 1

	Years of Service									
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
30 - 34	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
35 - 39	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
40 - 44	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
45 - 49	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
50 - 54	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
55 - 59	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
60 - 64	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
65 - 69	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016
By Age and Years of Service
ii. Tier 2

		Years of Service								
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--	--	--
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30 - 34	--	--	--	--	--	--	--	--	--	--
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35 - 39	--	--	--	--	--	--	--	--	--	--
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40 - 44	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
55 - 59	8	--	--	--	--	--	--	--	8	--
	$149,191	--	--	--	--	--	--	--	$149,191	--
60 - 64	2	--	--	--	--	--	--	--	2	--
	117,686	--	--	--	--	--	--	--	117,686	--
65 - 69	1	--	--	--	--	--	--	--	1	--
	121,245	--	--	--	--	--	--	--	121,245	--
70 & over	1	--	--	--	--	--	--	--	--	1
	118,459	--	--	--	--	--	--	--	--	$118,459
Total	12	--	--	--	--	--	--	--	11	1
	$139,050	--	--	--	--	--	--	--	$140,922	$118,459

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016

By Age and Years of Service

iii. Tier 3

		Years of Service								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
30 - 34	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
35 - 39	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
40 - 44	168	- -	- -	- -	103	65	- -	- -	- -	- -
	$112,531	- -	- -	- -	$111,143	$114,730	- -	- -	- -	- -
45 - 49	306	- -	- -	- -	96	167	43	- -	- -	- -
	113,791	- -	- -	- -	109,805	114,606	$119,524	- -	- -	- -
50 - 54	223	- -	- -	2	28	78	106	9	- -	- -
	114,435	- -	- -	$94,235	109,910	114,654	115,704	$116,150	- -	- -
55 - 59	69	- -	- -	- -	11	22	34	2	- -	- -
	113,835	- -	- -	- -	109,321	114,171	114,529	123,162	- -	- -
60 - 64	29	- -	- -	- -	8	12	9	- -	- -	- -
	109,296	- -	- -	- -	104,878	107,509	115,605	- -	- -	- -
65 - 69	3	- -	- -	- -	- -	2	1	- -	- -	- -
	120,506	- -	- -	- -	- -	119,901	121,717	- -	- -	- -
70 & over	1	- -	- -	- -	1	- -	- -	- -	- -	- -
	118,459	- -	- -	- -	118,459	- -	- -	- -	- -	- -
Total	799	- -	- -	2	247	346	193	11	- -	- -
	$113,577	- -	- -	$94,235	$110,229	$114,397	$116,375	$117,425	- -	- -

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016

By Age and Years of Service

iv. Tier 4

		Years of Service								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
30 - 34	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
35 - 39	44	--	--	13	31	--	--	--	--	--
	$109,496	--	--	$107,529	$110,321	--	--	--	--	--
40 - 44	103	--	--	12	87	4	--	--	--	--
	109,805	--	--	109,891	109,333	$119,819	--	--	--	--
45 - 49	65	--	--	4	19	7	35	--	--	--
	119,055	--	--	98,348	105,643	121,461	$128,221	--	--	--
50 - 54	73	--	--	1	8	1	50	13	--	--
	124,027	--	--	116,056	112,379	105,438	124,735	$130,514	--	--
55 - 59	14	--	--	1	2	--	1	10	--	--
	132,117	--	--	119,371	105,539	--	142,464	137,672	--	--
60 - 64	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
65 - 69	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
Total	299	--	--	31	147	12	86	23	--	--
	$116,287	--	--	$107,916	$109,179	$119,578	$126,360	$133,626	--	--

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016
By Age and Years of Service
v. Tier 5 (without Harbor Port Police)

		Years of Service								
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	228	17	211	- -	- -	- -	- -	- -	- -	- -
	$97,314	$92,922	$97,668	- -	- -	- -	- -	- -	- -	- -
30 - 34	1,473	29	1,228	216	- -	- -	- -	- -	- -	- -
	100,262	94,141	99,632	$104,663	- -	- -	- -	- -	- -	- -
35 - 39	1,777	6	674	921	176	- -	- -	- -	- -	- -
	105,242	93,700	100,586	106,870	$114,950	- -	- -	- -	- -	- -
40 - 44	1,919	2	279	553	836	249	- -	- -	- -	- -
	110,493	99,291	99,489	107,231	113,453	$120,220	- -	- -	- -	- -
45 - 49	2,026	2	100	263	622	710	329	- -	- -	- -
	116,398	99,790	98,161	106,570	113,758	120,996	$124,965	- -	- -	- -
50 - 54	1,713	1	25	65	187	346	948	132	9	- -
	122,265	96,059	96,664	105,782	112,615	118,757	125,871	$132,108	$126,431	- -
55 - 59	758	1	3	10	51	78	396	148	71	- -
	125,571	83,325	95,499	110,254	110,321	116,114	124,921	131,005	143,236	- -
60 - 64	151	- -	1	1	10	14	70	37	16	2
	125,352	- -	109,681	100,391	112,484	114,452	121,672	122,714	161,414	$175,455
65 - 69	13	- -	- -	- -	1	1	7	1	2	1
	120,539	- -	- -	- -	118,459	125,079	120,277	112,189	118,656	132,027
70 & over	1	- -	- -	- -	- -	- -	1	- -	- -	- -
	118,459	- -	- -	- -	- -	- -	118,459	- -	- -	- -
Total	10,059	58	2,521	2,029	1,883	1,398	1,751	318	98	3
	$112,335	$93,957	$99,618	$106,673	$113,523	$119,969	$125,292	$130,439	$144,158	$160,979

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016
By Age and Years of Service
vi. Tier 6 (without Harbor Port Police)

		Years of Service								
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	401	401	- -	- -	- -	- -	- -	- -	- -	- -
	$64,676	$64,676	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	856	853	3	- -	- -	- -	- -	- -	- -	- -
	75,872	75,801	$95,864	- -	- -	- -	- -	- -	- -	- -
30 - 34	352	350	2	- -	- -	- -	- -	- -	- -	- -
	79,280	79,188	95,384	- -	- -	- -	- -	- -	- -	- -
35 - 39	98	97	1	- -	- -	- -	- -	- -	- -	- -
	79,669	79,436	102,205	- -	- -	- -	- -	- -	- -	- -
40 - 44	37	31	4	2	- -	- -	- -	- -	- -	- -
	82,922	80,369	95,950	$96,447	- -	- -	- -	- -	- -	- -
45 - 49	17	10	1	5	1	- -	- -	- -	- -	- -
	92,040	81,151	96,894	111,104	$100,762	- -	- -	- -	- -	- -
50 - 54	3	3	- -	- -	- -	- -	- -	- -	- -	- -
	79,942	79,942	- -	- -	- -	- -	- -	- -	- -	- -
55 - 59	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
60 - 64	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
65 - 69	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	1,764	1,745	11	7	1	- -	- -	- -	- -	- -
	$74,528	$74,245	$96,478	$106,917	$100,762	- -	- -	- -	- -	- -

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016

By Age and Years of Service

vii. Harbor Port Police (Tier 5)

		Years of Service								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
25 - 29	2	--	2	--	--	--	--	--	--	--
	$95,782	--	$95,782	--	--	--	--	--	--	--
30 - 34	19	--	19	--	--	--	--	--	--	--
	102,097	--	102,097	--	--	--	--	--	--	--
35 - 39	40	--	33	7	--	--	--	--	--	--
	101,922	--	99,185	$114,823	--	--	--	--	--	--
40 - 44	16	--	11	4	1	--	--	--	--	--
	104,684	--	101,829	113,022	$102,738	--	--	--	--	--
45 - 49	10	--	3	4	3	--	--	--	--	--
	114,927	--	103,597	117,899	122,294	--	--	--	--	--
50 - 54	11	--	3	3	3	1	1	--	--	--
	131,219	--	150,797	119,006	113,996	$137,369	$154,640	--	--	--
55 - 59	2	--	--	--	1	1	--	--	--	--
	133,796	--	--	--	133,796	133,796	--	--	--	--
60 - 64	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
65 - 69	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
Total	100	--	71	18	8	2	1	--	--	--
	$107,435	--	$102,645	$115,803	$118,176	$135,582	$154,640	--	--	--

EXHIBIT B

Members in Active Service and Projected Average Payroll as of June 30, 2016

By Age and Years of Service

viii. Harbor Port Police (Tier 6)

		Years of Service								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	4	4	--	--	--	--	--	--	--	--
	$58,921	$58,921	--	--	--	--	--	--	--	--
25 - 29	9	9	--	--	--	--	--	--	--	--
	64,954	64,954	--	--	--	--	--	--	--	--
30 - 34	1	1	--	--	--	--	--	--	--	--
	80,681	80,681	--	--	--	--	--	--	--	--
35 - 39	1	1	--	--	--	--	--	--	--	--
	98,895	98,895	--	--	--	--	--	--	--	--
40 - 44	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
55 - 59	1	1	--	--	--	--	--	--	--	--
	235,159	235,159	--	--	--	--	--	--	--	--
60 - 64	1	1	--	--	--	--	--	--	--	--
	192,511	192,511	--	--	--	--	--	--	--	--
65 - 69	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
Total	17	17	--	--	--	--	--	--	--	--
	$83,972	$83,972	--	--	--	--	--	--	--	--

EXHIBIT C
Reconciliation of Member Data

	Active Members[1]	Vested Former Members[2]	Disableds	Retired Members	Beneficiaries	Total
Number as of June 30, 2015	13,068	112	2,031	8,122	2,440	25,773
New members	654	N/A	N/A	N/A	170	824
Terminations – with vested rights	-78	78	0	0	0	0
Refund of member contributions	-80	-60	0	0	0	-140
Retirements	-487	-8	N/A	495	N/A	0
New disabilities	-19	-1	20	0	N/A	0
Died with or without beneficiary	-11	0	-68	-205	-147	-431
Rehired	3	-3	0	0	N/A	0
Certain period expired	N/A	N/A	0	0	-41	-41
Data adjustments	0	10[3]	0	2	0	12
Number as of June 30, 2016	13,050	128	1,983	8,414	2,422	25,997

(1) *Includes DROP members.*

(2) *Includes 67 and 77 terminated members due only a refund of member contributions as of June 30, 2015 and June 30, 2016, respectively.*

(3) *Includes 7 terminated members due only a refund of member contributions as of June 30, 2016.*

EXHIBIT D

Summary Statement of Income and Expenses on an Actuarial Value Basis for All Retirement and Health Subsidy Benefits Assets

	Year Ended June 30, 2016		Year Ended June 30, 2015	
Contribution income:				
Employer contributions	$628,700,812		$628,808,763	
Employee contributions	129,733,559		126,770,882	
Contribution income		$758,434,371		$755,579,645
Investment income:				
Interest, dividends and other income	$898,786,837		$1,524,766,970	
Recognition of capital appreciation	563,251,453		87,669,422	
Less investment fees	-80,778,689		-84,478,748	
Net investment income		1,381,259,601		1,527,957,644
Total income available for benefits		$2,139,693,972		$2,283,537,289
Less benefit payments		-$1,107,041,622		-$1,029,319,785
Less administrative expenses		-20,897,310		-19,178,885
Change in reserve for future benefits		$1,011,755,040		$1,235,038,619

EXHIBIT E

Summary Statement of Assets for Retirement and Health Subsidy Benefits

	Year Ended June 30, 2016		Year Ended June 30, 2015	
Cash equivalents		$2,192,456		$1,030,837
Accounts receivable:				
Accrued interest and dividends	$65,462,527		$53,667,875	
Contributions	7,499,627		6,686,968	
Due from brokers	68,578,711		204,331,276	
Total accounts receivable		141,540,865		264,686,119
Investments:				
Equities	$11,405,646,262		$13,533,110,602	
Fixed income investments	5,940,532,422		3,843,514,633	
Real estate	1,531,754,098		1,581,094,151	
Total investments at market value		18,877,932,782		18,957,719,386
Total assets		$19,021,666,103		$19,223,436,342
Less accounts payable:				
Accounts payable and benefits in process	-$45,770,044		-$34,359,392	
Due to brokers	-253,277,481		-245,774,104	
Mortgage payable	-182,938,598		-206,202,144	
Total accounts payable		-$481,986,123		-$486,335,640
Net assets at market value		$18,539,679,980		$18,737,100,702
Net assets at actuarial value		$19,126,148,372		$18,114,393,332
Net assets at valuation value (retirement benefits)		$17,645,338,395		$16,770,060,026

EXHIBIT F

Development of the Fund Through June 30, 2016 for All Retirement and Health Subsidy Benefits Assets

Year Ended June 30	Employer Contributions	Employee Contributions	Net Investment Return[1]	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2007	$286,167,278[2]	$91,263,474	$1,590,968,304	-	$800,819,286	$13,902,764,838
2008	333,672,743	98,074,219	1,414,391,128	-	827,959,245	14,920,943,683
2009	326,876,839	103,685,447	557,346,783	-	842,565,358	15,066,287,394
2010	357,165,140	106,411,630	360,741,904	-	853,749,429	15,036,856,639
2011	388,773,459	105,471,264	568,411,044	-	878,952,809	15,220,559,597
2012	444,565,284	120,099,124	320,400,668	-	926,349,506	15,179,275,167
2013	508,387,283	121,777,655	827,790,619	-	966,118,502	15,671,112,222
2014	578,805,107	124,394,889	1,468,399,449	-	963,356,954	16,879,354,713
2015	628,808,763	126,770,882	1,527,957,644	$19,178,885	1,029,319,785	18,114,393,332
2016	628,700,812	129,733,559	1,381,259,601	20,897,310	1,107,041,622	19,126,148,372

(1) *Net of investment fees and administrative expenses prior to 2015. Starting in 2015, administrative expenses are shown separately.*

(2) *Includes $6,220,076 (discounted to $6,058,515) of Harbor Port Police assets transferred in October, 2007.*

EXHIBIT G

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2016

1.	Unfunded actuarial accrued liability at beginning of year		$1,567,447,049
2.	Total normal cost at beginning of year[1]		409,683,095
3.	Expected contributions at beginning of year[1]		-591,225,013
4.	Interest		103,942,884
5.	Expected unfunded actuarial accrued liability: (1) + (2) + (3) + (4)		$1,489,848,015
6	Actuarial experience (gain)/loss :		
	(a) Gain due to actual contributions more than expected[2]	-$11,801,070	
	(b) Investment gain	-17,729,644	
	(c) COLA increases less than expected for retirees, beneficiaries and DROP members	-87,187,331	
	(d) Salary increases less than expected	-185,965,837	
	(e) Other experience gain[3][4]	-33,991,994	
	(f) Total experience gain		-336,675,876
7.	Unfunded actuarial accrued liability at end of year: (5) + (6f)		$1,153,172,139

(1) *Includes $12,739,513 in assumed administrative expenses (0.91% of projected payroll at beginning of the year).*

(2) *One-year delay in contribution rate reduction recommended in the June 30, 2015 valuation, offset to some degree by payroll increases less than expected by the payroll growth assumption.*

(3) *Includes a gain of about $18 million from more than expected deaths among retirees.*

(4) *Includes a loss of about $9 million due to underreporting of service in the June 30, 2015 valuation data that had been corrected in the June 30, 2016 valuation data.*

EXHIBIT H

Table of Amortization Bases

Tier 1

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment(1)
Unfunded Actuarial Accrued Liability	06/30/2016	$165,691,579	21	$165,691,579	21	$14,801,171
Total				**$165,691,579**		**$14,801,171**

Tier 2

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment(2)
Unfunded Actuarial Accrued Liability	06/30/2008	-$632,245,519	29	-$713,695,924	21	-$46,382,784
Experience Loss	06/30/2009	53,442,825	15	42,345,974	8	5,926,343
Experience Loss	06/30/2010	210,742,926	15	177,212,946	9	22,395,902
Assumption Change	06/30/2010	1,450,331	27	1,570,796	21	102,085
Experience Loss	06/30/2011	203,104,597	15	179,203,687	10	20,704,944
Assumption Change	06/30/2011	344,553,091	26	366,509,424	21	23,819,286
Experience Loss	06/30/2012	238,453,071	20	238,011,048	16	18,847,200
Experience Loss	06/30/2013	73,947,281	20	74,104,788	17	5,606,652
Experience Gain	06/30/2014	-212,930,921	20	-213,513,903	18	-15,486,648
Assumption Change	06/30/2014	-65,152,628	25	-66,723,384	23	-4,076,232
Experience Gain	06/30/2015	-288,914,220	20	-289,698,031	19	-20,204,787
Experience Gain	06/30/2016	-82,781,971	20	-82,781,971	20	-5,566,571
Total				**-$287,454,550(3)**		**$5,685,390(3)**

(1) *Level dollar amortization.*

(2) *Level percentage of payroll amortization.*

(3) *Even though the total UAAL for Tier 2 is negative, we have not applied the surplus amortization provisions of the LAFPP funding policy because the Plan as a whole does not have an actuarial surplus.*

EXHIBIT H

Table of Amortization Bases (Continued)

Tier 3

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Assumption Change	06/30/1989[3]	-$15,977,993	14	-$6,476,269	3	-$2,230,592
Plan Amendment	06/30/1990[3]	279,608	15	140,887	4	36,989
Assumption Change	06/30/1990[3]	-6,281,127	15	-3,164,910	4	-830,934
Assumption Change	06/30/1992[3]	2,454,735	17	1,633,633	6	295,289
Assumption Change	06/30/1995[3]	-20,329,471	20	-17,196,117	9	-2,173,219
Plan Amendment	06/30/1996[3]	2,832,341	21	2,532,605	10	292,614
Asset Method Change	06/30/1996[3]	-18,309,076	21	-16,371,495	10	-1,891,540
Plan Amendment	06/30/1998[3]	5,510,715	23	5,387,707	12	535,124
Assumption Change	06/30/1998[3]	9,268,417	23	9,061,528	12	900,020
Plan Amendment	06/30/2000[3]	949,873	25	994,721	14	87,328
Experience Gain	06/30/2001[3]	-39,924,972	11	0	0	0
Assumption Change	06/30/2001[3]	-29,148,684	26	-31,415,090	15	-2,613,612
Experience Loss	06/30/2002[3]	110,014,634	12	17,377,556	1	17,377,556
Experience Loss	06/30/2003[3]	151,681,782	13	44,185,963	2	22,458,586
Experience Loss	06/30/2004[3]	10,104,562	14	4,095,624	3	1,410,637
Assumption Change	06/30/2004[3]	-8,698,728	29	-10,055,415	18	-729,342
Experience Loss	06/30/2005[3]	21,605,884	15	10,886,689	4	2,858,256
Assumption Change	06/30/2005[3]	27,253,819	30	32,113,516	19	2,239,735
Experience Loss	06/30/2006	16,400,257	15	9,681,030	5	2,066,456
Assumption Change	06/30/2006	29,340,123	30	34,152,022	20	2,296,511
Experience Gain	06/30/2007	-20,934,587	21	-19,876,488	12	-1,974,196
Assumption Change	06/30/2007	-5,027,630	30	-5,803,736	21	-377,182

EXHIBIT H

Table of Amortization Bases (Continued)

Tier 3 (Continued)

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Experience Gain	06/30/2008	-$18,292,189	17	-$15,230,411	9	-$1,924,796
Assumption Change	06/30/2008	8,034,472	30	9,178,030	22	577,739
Experience Loss	06/30/2009	10,158,177	15	8,048,938	8	1,126,453
Experience Loss	06/30/2010	2,144,522	15	1,803,321	9	227,901
Assumption Change	06/30/2010	25,997,606	30	28,915,692	24	1,717,497
Plan Amendment[2]	06/30/2011	-18,044	30	-19,769	25	-1,144
Experience Loss	06/30/2011	1,095,451	15	966,540	10	111,673
Assumption Change	06/30/2011	25,593,931	30	28,039,833	25	1,621,943
Experience Loss	06/30/2012	10,983,184	20	10,962,823	16	868,105
Experience Loss	06/30/2013	6,011,719	20	6,024,525	17	455,806
Experience Gain	06/30/2014	-15,610,972	20	-15,653,713	18	-1,135,399
Assumption Change	06/30/2014	-3,528,915	25	-3,613,993	23	-220,784
Experience Gain	06/30/2015	-46,361,062	20	-46,486,838	19	-3,242,192
Experience Gain	06/30/2016	-18,410,183	20	-18,410,183	20	-1,237,970
Total				**$56,408,755**		**$38,979,316**

(1) *Level percentage of payroll amortization.*

(2) *Gain due to new retirees from non-DROP status and new DROP members during 7/1/2011 – 7/14/2011.*

(3) *Initial amount and initial period were values as of 06/30/2005 (i.e., the year before Segal was appointed as the actuary starting with 6/30/2006).*

EXHIBIT H
Table of Amortization Bases (Continued)

Tier 4

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Assumption Change	06/30/1989[3]	-$6,262,457	14	-$2,538,327	3	-$874,264
Plan Amendment	06/30/1990[3]	109,592	15	55,221	4	14,498
Assumption Change	06/30/1990[3]	-2,461,841	15	-1,240,463	4	-325,679
Assumption Change	06/30/1992[3]	962,115	17	640,290	6	115,736
Assumption Change	06/30/1995[3]	-7,967,987	20	-6,739,891	9	-851,777
Plan Amendment	06/30/1996[3]	1,110,115	21	992,638	10	114,688
Asset Method Change	06/30/1996[3]	-7,176,108	21	-6,416,689	10	-741,375
Plan Amendment	06/30/1998[3]	2,159,884	23	2,111,673	12	209,738
Assumption Change	06/30/1998[3]	3,632,689	23	3,551,602	12	352,756
Plan Amendment	06/30/2000[3]	370,129	25	387,604	14	34,028
Experience Gain	06/30/2001[3]	-9,231,354	11	0	0	0
Assumption Change	06/30/2001[3]	-4,878,745	26	-5,258,083	15	-437,452
Experience Loss	06/30/2002[3]	18,536,288	12	2,927,932	1	2,927,932
Experience Loss	06/30/2003[3]	59,690,449	13	17,388,245	2	8,837,997
Experience Loss	06/30/2004[3]	10,147,466	14	4,113,015	3	1,416,627
Assumption Change	06/30/2004[3]	-5,220,974	29	-6,035,260	18	-437,751
Experience Loss	06/30/2005[3]	13,244,413	15	6,673,545	4	1,752,112
Assumption Change	06/30/2005[3]	14,033,320	30	16,535,635	19	1,153,266
Experience Loss	06/30/2006	6,063,600	15	3,579,328	5	764,022
Assumption Change	06/30/2006	14,561,746	30	16,949,930	20	1,139,777
Experience Gain	06/30/2007	-8,926,309	21	-8,475,147	12	-841,779
Assumption Change	06/30/2007	-3,015,790	30	-3,481,331	21	-226,250

EXHIBIT H
Table of Amortization Bases (Continued)

Tier 4 (Continued)

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Experience Gain	06/30/2008	-$4,429,445	17	-$3,688,038	9	-$466,089
Assumption Change	06/30/2008	10,599,393	30	12,108,018	22	762,176
Experience Loss	06/30/2009	11,924,683	15	9,448,646	8	1,322,343
Experience Loss	06/30/2010	4,794,050	15	4,031,299	9	509,469
Assumption Change	06/30/2010	12,948,180	30	14,401,539	24	855,404
Plan Amendment[2]	06/30/2011	1,483,135	30	1,624,871	25	93,989
Experience Loss	06/30/2011	5,867,945	15	5,177,419	10	598,192
Assumption Change	06/30/2011	12,753,767	30	13,972,590	25	808,234
Experience Loss	06/30/2012	9,377,426	20	9,360,043	16	741,187
Experience Loss	06/30/2013	6,625,380	20	6,639,492	17	502,334
Experience Gain	06/30/2014	-11,060,872	20	-11,091,155	18	-804,467
Assumption Change	06/30/2014	9,988,189	25	10,228,993	23	624,905
Experience Gain	06/30/2015	-16,640,244	20	-16,685,388	19	-1,163,711
Experience Gain	06/30/2016	-3,718,134	20	-3,718,134	20	-250,021
Total				**$87,531,666**		**$18,230,795**

(1) *Level percentage of payroll amortization.*

(2) *Gain due to new retirees from non-DROP status and new DROP members during 7/1/2011 – 7/14/2011.*

(3) *Initial amount and initial period were values as of 06/30/2005 (i.e., the year before Segal was appointed as the actuary starting with 6/30/2006).*

EXHIBIT H

Table of Amortization Bases (Continued)

Tiers 5 and 6 (without Harbor Port Police)

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Original Base	06/30/2002[3]	-$157,564,364	27	-$174,249,137	16	-$13,798,134
Experience Gain	06/30/2003[3]	-314,459,851	13	-91,604,351	2	-46,560,131
Experience Loss	06/30/2004[3]	106,500,938	14	43,167,419	3	14,867,959
Assumption Change	06/30/2004[3]	-242,147,820	29	-279,914,118	18	-20,302,806
Experience Loss	06/30/2005[3]	241,854,245	15	121,864,580	4	31,995,055
Assumption Change	06/30/2005[3]	421,011,169	30	496,082,720	19	34,598,943
Experience Loss	06/30/2006	64,026,458	15	37,794,660	5	8,067,426
Assumption Change	06/30/2006	291,388,037	30	339,176,843	20	22,807,527
Experience Gain	06/30/2007	-200,979,530	21	-190,821,407	12	-18,952,989
Assumption Change	06/30/2007	-71,262,522	30	-82,263,181	21	-5,346,248
Experience Gain	06/30/2008	-79,435,149	17	-66,139,156	9	-8,358,566
Assumption Change	06/30/2008	312,669,142	30	357,171,721	22	22,483,269
Experience Loss	06/30/2009	357,256,711	15	283,076,049	8	39,616,655
Experience Loss	06/30/2010	207,594,800	15	174,565,699	9	22,061,348
Assumption Change	06/30/2010	277,673,454	30	308,840,731	24	18,344,124
Plan Amendment[2]	06/30/2011	5,693,576	30	6,237,688	25	360,814
Experience Loss	06/30/2011	125,215,079	15	110,480,040	10	12,764,710
Assumption Change	06/30/2011	244,615,700	30	267,992,582	25	15,501,831
Experience Loss	06/30/2012	248,617,082	20	248,156,219	16	19,650,558
Experience Loss	06/30/2013	115,390,840	20	115,636,623	17	8,748,885
Experience Gain	06/30/2014	-246,417,577	20	-247,092,243	18	-17,922,161
Assumption Change	06/30/2014	35,896,722	25	36,762,151	23	2,245,855

EXHIBIT H
Table of Amortization Bases (Continued)

Tiers 5 and 6 (without Harbor Port Police) (Continued)

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Experience Gain	06/30/2015	-$458,582,182	20	-$459,826,294	19	-$32,070,264
Experience Gain	06/30/2016	-228,076,007	20	-228,076,007	20	-15,336,689
Total				**$1,127,019,832**		**$95,466,971**

(1) *Level percentage of payroll amortization.*
(2) *Gain due to new retirees from non-DROP status and new DROP members during 7/1/2011 – 7/14/2011.*
(3) *Initial amount and initial period were values as of 06/30/2005 (i.e., the year before Segal was appointed as the actuary starting with 6/30/2006).*

EXHIBIT H
Table of Amortization Bases (Continued)

Harbor Port Police (Tiers 5 and 6)

Type	Date Established	Initial Amount	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Experience Gain	06/30/2008	-$169,104	17	-$140,798	9	-$17,794
Assumption Change	06/30/2008	126,433	30	144,427	22	9,091
Experience Loss	06/30/2009	6,588,231	15	5,220,253	8	730,577
Experience Loss	06/30/2010	1,742,728	15	1,465,453	9	185,202
Assumption Change	06/30/2010	1,043,633	30	1,160,776	24	68,946
Plan Amendment[2]	06/30/2011	41,208	30	45,146	25	2,611
Experience Gain	06/30/2011	-447,574	15	-394,904	10	-45,627
Assumption Change	06/30/2011	734,993	30	805,234	25	46,578
Experience Loss	06/30/2012	1,311,840	20	1,309,407	16	103,687
Experience Loss	06/30/2013	1,253,385	20	1,256,055	17	95,031
Experience Gain	06/30/2014	-2,336,763	20	-2,343,160	18	-169,955
Assumption Change	06/30/2014	-476,026	25	-487,503	23	-29,782
Experience Gain	06/30/2015	-2,306,059	20	-2,312,315	19	-161,271
Experience Gain	06/30/2016	-1,753,214	20	-1,753,214	20	-117,893
Total				**$3,974,857**		**$699,401**

[1] *Level percentage of payroll amortization.*
[2] *Gain due to new retirees from non-DROP status and new DROP members during 7/1/2011 – 7/14/2011.*

EXHIBIT I

Section 415 Limitations

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of $160,000 indexed for inflation. That limit is $210,000 for 2016 and $215,000 for 2017. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions.

Benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

EXHIBIT J
Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Plan is calculated including:

(a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;

(b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;

(c) Retirement rates — the rate or probability of retirement at a given age; and

(d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost: The amount of contributions required to fund the cost of benefits allocated to the current year of service.

Actuarial Accrued Liability For Actives: The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability For Pensioners: The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued Liability: The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

Amortization of the Unfunded Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return: The rate of earnings of the Plan from its investments, including interest, dividends and market gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the market gains and losses to avoid significant swings in the value of assets from one year to the next.

EXHIBIT I
Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1.	Retired members as of the valuation date (including 2,422 beneficiaries in pay status)		12,819
2.	Members inactive during year ended June 30, 2016 with vested rights[1]		128
3.	Members active during the year ended June 30, 2016		13,050
	Fully vested	4,503	
	Not vested	8,547	

The actuarial factors as of the valuation date are as follows:

	Assets		
1.	Valuation value of retirement assets ($18,539,679,980 at market value[2] as reported by LAFPP and $19,126,148,372 at actuarial value[2])		$17,645,338,395
2.	Present value of future normal costs		
	Employee	$1,379,550,855	
	Employer	2,717,968,964	
	Total		$4,097,519,819
3.	Unfunded actuarial accrued liability		1,153,172,139
4.	Present value of current and future assets		$22,896,030,353
	Liabilities		
5.	Present value of future benefits		
	Retired members and beneficiaries	$10,661,982,871	
	Inactive members with vested rights	26,288,293	
	Active members	12,207,759,189	
	Total		$22,896,030,353

(1) *Includes 77 terminated members due only a refund of member contributions.*

(2) *Includes all assets for Retirement and Health Subsidy Benefits.*

EXHIBIT I (continued)
Summary of Actuarial Valuation Results

The determination of the recommended contribution is as follows:

1.	Total normal cost	$394,881,645
2.	Expected employee contributions	-136,611,069
3.	Employer normal cost: (1) + (2)	$258,270,576
4.	Payment on unfunded actuarial accrued liability	173,863,044
5.	Payment for administrative expenses	12,699,959
6.	Total recommended contribution: (3) + (4) + (5), payable beginning of year	$444,833,579
7.	Total recommended contribution: adjusted for July 15 payment	$446,176,046
8.	Total recommended contribution: adjusted for biweekly payment	$461,213,272
9.	Projected payroll	$1,400,808,351
10.	Item 6 as a percentage of projected payroll: (6) ÷ (9)	31.76%
11.	Item 7 as a percentage of projected payroll: (7) ÷ (9)	31.85%
12.	Item 8 as a percentage of projected payroll: (8) ÷ (9)	32.92%

EXHIBIT II
Schedule of Employer Contributions

Retirement Benefits

Plan Year Ended June 30	Actuarially Determined Contributions[1]	Actual Contributions	Percentage Contributed
2007	$224,946,082	$224,946,082	100.00%
2008[2]	261,635,491	261,635,491	100.00%
2009	238,697,929	238,697,929	100.00%
2010	250,516,858	250,516,858	100.00%
2011	277,092,251	277,092,251	100.00%
2012	321,593,433	321,593,433	100.00%
2013	375,448,092	375,448,092	100.00%
2014	440,698,260	440,698,260	100.00%
2015	480,332,251	480,332,251	100.00%
2016	478,385,438	478,385,438	100.00%

(1) *Prior to plan year ending June 30, 2015, this amount was the Annual Required Contribution.*

(2) *Figures include amounts transferred and contributed during the fiscal year that were related to the transfer of certain Harbor Port Police members from the Los Angeles City Employees' Retirement System into LAFPP.*

EXHIBIT III
Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions: The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2010 through June 30, 2013 Actuarial Experience Study dated July 3, 2014 and the Economic Actuarial Assumption Study for June 30, 2014 Actuarial Valuation dated July 3, 2014. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all members. These assumptions have been adopted by the Board.

Demographic Assumptions:

Mortality Rates

Healthy: RP-2000 Combined Healthy Mortality Table (separate for males and females), projected to 2022 with scale BB set back one year for members.

RP-2000 Combined Healthy Mortality Table (separate for males and females), projected to 2022 with scale BB set forward one year for beneficiaries.

Disabled: RP-2000 Combined Healthy Mortality Table (separate for males and females), projected to 2022 with scale BB set forward one year.

The above mortality tables contain about a 10% margin, based on actual to expected deaths, as a provision appropriate to reasonably anticipate future mortality improvement, based on a review of mortality experience as of the measurement date.

Termination Rates Before Retirement:

Pre-Retirement Mortality:

	Rate (%)	
	Mortality	
Age	Male	Female
20	0.03	0.02
25	0.04	0.02
30	0.04	0.02
35	0.07	0.04
40	0.10	0.06
45	0.13	0.10
50	0.19	0.15
55	0.30	0.22
60	0.52	0.36

All pre-retirement deaths are assumed to be service connected.

Termination Rates Before Retirement (continued):

	Rate (%)	
	Disability[1]	
Age	Fire	Police
20	0.02	0.02
25	0.02	0.03
30	0.03	0.05
35	0.06	0.08
40	0.15	0.22
45	0.23	0.36
50	0.28	0.46
55	1.02	0.80
60	3.00	1.18

(1) *90% of disabilities are assumed to be service connected. Disability rates are not applied to members eligible to enter the DROP.*

Termination Rates Before Retirement (continued):

Rate (%)		
Termination (< 5 Years of Service)		
Years of Service	**Fire**	**Police**
0 – 1	8.00	8.00
1 – 2	2.50	3.00
2 – 3	1.50	2.50
3 – 4	0.75	2.50
4 – 5	0.50	1.75

Rate (%)		
Termination (5+ Years of Service)[1]		
Age	**Fire**	**Police**
20	1.00	2.00
25	1.00	2.00
30	0.85	1.70
35	0.54	1.20
40	0.37	0.85
45	0.17	0.66
50	0.02	0.24
55	0.00	0.00
60	0.00	0.00

(1) *No termination is assumed after a member is eligible for retirement. This includes all active members currently in Tier 2. Members in Tiers 3, 5 and 6 who are not eligible to receive a deferred vested retirement benefit are assumed to receive refund of member contributions.*

Retirement Rates:

	Rate(%)					
	Fire			Police		
Age	Tiers 2&4	Tiers 3&5	Tier 6	Tiers 2&4	Tiers 3&5	Tier 6
41	1.00	0.00	0.00	10.00	0.00	0.00
42	1.00	0.00	0.00	10.00	0.00	0.00
43	1.00	0.00	0.00	10.00	0.00	0.00
44	1.00	0.00	0.00	10.00	0.00	0.00
45	1.00	0.00	0.00	10.00	0.00	0.00
46	1.00	0.00	0.00	7.00	0.00	0.00
47	1.00	0.00	0.00	7.00	0.00	0.00
48	2.00	0.00	0.00	7.00	0.00	0.00
49	2.00	0.00	0.00	7.00	0.00	0.00
50	3.00	3.00	3.00	12.00	7.00	8.00
51	4.00	3.00	3.00	12.00	6.00	10.00
52	5.00	3.00	4.00	12.00	6.00	10.00
53	10.00	3.00	5.00	15.00	6.00	15.00
54	15.00	7.00	5.00	20.00	10.00	15.00
55	20.00	12.00	10.00	20.00	18.00	18.00
56	20.00	14.00	12.00	25.00	18.00	18.00
57	20.00	16.00	15.00	25.00	20.00	20.00
58	20.00	20.00	18.00	25.00	22.00	22.00
59	20.00	25.00	20.00	25.00	25.00	25.00
60	20.00	25.00	25.00	25.00	25.00	25.00
61	20.00	30.00	30.00	25.00	25.00	25.00
62	25.00	35.00	30.00	25.00	25.00	25.00
63	25.00	40.00	35.00	30.00	25.00	25.00
64	30.00	40.00	40.00	40.00	30.00	30.00
65	100.00	100.00	100.00	100.00	100.00	100.00

DROP Program: DROP participants are considered active members until they leave the DROP and begin receiving retirement benefits. Members are assumed to remain in the DROP for 5 years. Of all members expected to retire with a service retirement benefit, we project a 95% probability that members have elected the DROP before retirement if they will have also satisfied the requirements for participating in the DROP for 5 years.

Retirement Age and Benefit for Inactive Vested Participants:	For deferred vested members, retirement assumption is age 50.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Definition of Active Members:	First day of biweekly payroll following employment for new department employees or immediately following transfer from other city department.
Percent Married/Domestic Partner:	80% of male members, 60% of female members
Age of Spouse:	Wives are 3 years younger than their husbands.
Future Benefit Accruals:	1.0 year of service per year.
Consumer Price Index:	Increase of 3.25% per year; benefit increases due to CPI subject to a 3.0% maximum for Tiers 3 through 6.
Member Contribution and Matching Account Crediting Rate:	5.00%
Net Investment Return:	7.50%, net of investment expenses
Administrative Expenses:	Out of the total 1.00% of payroll in administrative expense, 0.94% of payroll payable biweekly is allocated to the Retirement Plan. This is equal to 0.91% of payroll payable at beginning of the year.

Salary Increases:

Annual Rate of Compensation Increase	
Inflation: 3.25% per year; plus 0.75% "across the board" salary increases; plus the following Merit and Longevity increases based on years of service.	
Years of Service	**Additional Salary Increase**
0	7.50%
1	6.50
2	5.00
3	4.75
4	3.75
5	3.00
6	2.25
7	2.00
8	1.75
9	1.75
10	1.25
11 or more	0.75

Service Connected Disability Benefits:

Years of Service	Benefit
Less than 20	55% of Final Average Salary
20 – 30	65% of Final Average Salary
More than 30	75% of Final Average Salary

Nonservice Connected Disability Benefits: 40% of Final Average Salary

Actuarial Value of Assets:	The market value of assets less unrecognized returns. Unrecognized return is equal to the difference between the actual and expected returns on a market value basis, and is recognized over a seven-year period. Deferred gains and losses as of June 30, 2013 have been combined and will be recognized in equal amounts over a period of six years from that date. The actuarial value of assets is further adjusted, if necessary, to be within 40% of the market value of assets.
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the current age minus Service Credit. Actuarial Accrued Liability is calculated on an individual basis and is based on costs allocated as a level percentage of compensation, with Normal Cost determined as if the current benefit accrual rate had always been in effect.
Funding Policy:	The City of Los Angeles Fire & Police Pension Plan makes contributions equal to the Normal Cost adjusted by amount to amortize any Surplus or Unfunded Actuarial Accrued Liability. Both the Normal Cost and the Actuarial Accrued Liability are determined under the Entry Age Cost Method. Any Surplus is amortized over an open (non-decreasing) thirty-year period. Any changes in Unfunded Actuarial Accrued Liability due to actuarial gains or losses are amortized over separate twenty-year periods as a level percentage of payroll. Any changes in Unfunded Actuarial Accrued Liability from plan amendments are amortized over separate fifteen-year periods as a level percentage of payroll. Any changes in Unfunded Actuarial Accrued Liability from plan assumption changes are amortized over separate twenty-five year periods as a level percentage of payroll. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service. For Tier 1, the Unfunded Actuarial Accrued Liability is amortized using level dollar amortization ending on June 30, 2037. For Tiers 2, 3 and 4, the Unfunded Actuarial Accrued Liability is amortized using level percent of payroll as a percent of total valuation payroll from the respective employer (i.e., the City or Harbor Port Police). For Tiers 5 and 6, the Unfunded Actuarial Accrued Liability is amortized using level percent of payroll as a percent of combined payroll for these tiers from the respective employer (i.e., City or Harbor Port Police).
Change in Actuarial Assumptions:	There were no assumption changes since the last valuation.

EXHIBIT IV
Summary of Plan Provisions

This exhibit summarizes the major provisions of the City of Los Angeles Fire & Police Pension Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions. For Tiers 1 through 4 and Tier 6, the section codes are from the Los Angeles Charter. For Tier 5 and the DROP program, the section codes are from the Los Angeles Administrative Code.

Plan Year: July 1 through June 30

Census Date: June 30

Service Retirement Benefit:

Tier 1 (§ 1304)

Age & Service Requirement 20 years of service

Amount

Years of Service	Benefit
20	40% of Normal Pension Base
20 to 25	Additional 2% for each year over 20 and under 25
25	50% of Normal Pension Base
25 to 35	Additional 1 2/3% for each year over 25 and under 35
35+	66 2/3% of Normal Pension Base

Tier 2 (§ 1408)

Age & Service Requirement	20 years of service	
Amount	<u>Years of Service</u>	<u>Benefit</u>
	Less than 25	2% of Normal Pension Base per year of service
	25+	55% plus 3% per year over 25 to a maximum of 70% of Normal Pension Base

Tier 3 (§ 1504)

Age & Service Requirement	Age 50 and 10 years of service	
Amount	<u>Years of Service</u>	<u>Benefit</u>
	Less than 20	2% of Final Average Salary per year of service
	20+	For each additional year over 20, 3% of Final Average Salary per year over 20 to a maximum of 70% Final Average Salary

Tier 4 (§ 1604)

Age & Service Requirement	20 years of service	
Amount	<u>Years of Service</u>	<u>Benefit</u>
	20	40% of Final Average Salary
	20+	For each additional year over 20, 3% of Final Average Salary per year over 20 to a maximum of 70% Final Average Salary

Tier 5 (§ 4.2004)

Age & Service Requirement	Age 50 and 20 years of service	
Amount	<u>Years of Service</u>	<u>Benefit</u>
	20	50% of Final Average Salary
	20+	For each additional year over 20, 3% of Final Average Salary per year over 20, except 30th year where 4% is provided, to a maximum of 90% Final Average Salary

Tier 6 (§ 1704)

Age & Service Requirement	Age 50 and 20 years of service	
Amount	Years of Service	Benefit
	20	40% of Final Average Salary
	21 to 25	Additional 3% of Final Average Salary for years 21 through 25
	26 to 30	Additional 4% of Final Average Salary for years 26 through 30
	31+	Additional 5% of Final Average Salary per year over 30, to a maximum of 90% of Final Average Salary

Deferred Retirement Option Plan (DROP) (§4.2100 - 4.2109):

Eligibility	Tier 2:	25 years of service
	Tier 3:	Age 50 and 25 years of service
	Tier 4:	25 years of service
	Tier 5:	Age 50 and 25 years of service
	Tier 6:	Age 50 and 25 years of service

Benefits under DROP

DROP benefits (calculated using age, service, and salary at the commencement date of participation in DROP) will be credited to a DROP account with interest at 5% annually. Members are required to make normal member contributions. DROP benefits receive annual COLA while in DROP (limited to 3% for all Tiers). Members may participate in DROP for up to five years.

Normal Pension Base:

Tier 1, 2 (§ 1302, § 1406)	Final monthly salary rate

Final Average Salary:

Tier 3, 4, 5 (§ 1502, § 1602, § 4.2002)	Highest monthly average salary actually received during any 12 consecutive months of service
Tier 6 (§ 1702)	Highest monthly average salary actually received during any 24 consecutive months of service

Cost of Living Adjustment (COLA):

Tier 1, 2 (§ 1328, § 1422)	Commencing July 1 based on changes to Los Angeles area consumer price index.
Tier 3, 4 (§ 1516, § 1616)	Commencing July 1 based on changes to Los Angeles area consumer price index to a maximum of 3% per year. COLA is prorated in the first year of retirement.
Tier 5, 6 (§ 4.2016, § 1716)	Commencing July 1 based on changes to Los Angeles area consumer price index to a maximum of 3% per year, excess banked. COLA is prorated in the first year of retirement.

Death After Retirement:

Tier 1 (§ 1314, § 1316)	
Service Retirement	Pension equal to the same percentage of the Member's Normal Pension Base to a maximum of 50%.
Service Connected Disability	50% of Member's Normal Pension Base.
Nonservice Connected Disability	40% of highest monthly salary as of Member's death for basic rank of Police Officer III or Firefighter III, and the highest length of service pay.
Tier 2 (§ 1414)	
Service Retirement	Pension equal to the same percentage of the Member's Normal Pension Base to a maximum of 55%.
Service Connected Disability	50% of the Member's Normal Pension Base, or 55% of the Member's Normal Pension Base if Member had at least 25 years of service at the date of death.
Nonservice Connected Disability	40% of highest monthly salary as of Member's death for basic rank of Police Officer III or Firefighter III, and the highest length of service pay (nonservice connected pension base).

Tier 3, 4 (§ 1508, § 1608)	
Service Retirement	Pension equal to 60% of the pension received by the deceased Member.
Service Connected Disability	If death occurs within three years of the Member's effective date of pension, then the eligible spouse or designated beneficiary shall receive 75% of the Final Average Salary. Otherwise, a pension equal to 60% of the pension received by the deceased Member immediately preceding the date of death.
Nonservice Connected Disability	Pension equal to 60% of the pension received by the deceased Member.
Tier 5 (§ 4.2008, § 4.2008.5)	If former Tier 2 member, see Tier 2. Otherwise, see Tier 3.
Tier 6 (§ 1708)	
Service Retirement	Pension equal to 70% of the pension received by the deceased Member.
Service Connected Disability	If death occurs within three years of the Member's effective date of pension, then the eligible spouse or designated beneficiary shall receive 80% of the Final Average Salary. Otherwise, a pension equal to 80% of the pension received by the deceased Member immediately preceding the date of death.
Nonservice Connected Disability	Pension equal to 70% of the pension received by the deceased Member.

Death Before Retirement:

Tier 1 (§ 1314, § 1316)	
Eligible for Service Retirement	
Service Requirement	20 years of service.
Amount	100% of Member's accrued service retirement Member would have received, not to exceed 50% of Normal Pension Base.
Service Connected	
Service Requirement	None.
Amount	50% of Member's Normal Pension Base.

Nonservice Connected	
Service Requirement	5 years of service.
Amount	40% of highest monthly salary as of Member's death for basic rank of Police Officer III or Firefighter III, and the highest length of service pay.
Tier 2 (§ 1414)	
Eligible for Service Retirement	
Service Requirement	20 years of service.
Amount	100% of Member's accrued service retirement Member would have received, not to exceed 55% of Normal Pension Base.
Service Connected	
Service Requirement	None.
Amount	50% of the Member's Normal Pension Base, or 55% of the Member's Normal Pension Base if Member had at least 25 years of service at the date of death.
Nonservice Connected	
Service Requirement	5 years of service.
Amount	40% of highest monthly salary as of Member's death for basic rank of Police Officer III or Firefighter III, and the highest length of service pay (nonservice connected pension base).
Tier 3, 4 (§ 1508, § 1608)	
Eligible for Service Retirement	
Service Requirement	10 years of service for Tier 3. 20 years of service for Tier 4.
Amount	80% of service retirement Member would have received, not to exceed 40% of the Member's Final Average Salary.
Service Connected	
Service Requirement	None.
Amount	75% of the Member's Final Average Salary.

Nonservice Connected	
Service Requirement	5 years of service.
Amount	30% of the Member's Final Average Salary.
Basic Death Benefit	If Member has at least one year of service, in addition to return of contributions, beneficiary receives the Member's one-year average monthly salary times years of completed service (not to exceed 6 years).
Tier 5 (§ 4.2008, § 4.2008.5)	
Eligible for Service Retirement	
Service Requirement	20 years of service.
Amount	For former Tier 2, 100% of Member's accrued service retirement Member would have received, not to exceed 55% of Normal Pension Base. For members who are not former Tier 2, 40% of the Member's Final Average Salary.
Service Connected	
Service Requirement	None.
Amount	For former Tier 2, 75% of the Member's Normal Pension Base payable to an eligible spouse or designated beneficiary. For members who are not former Tier 2, 75% of the Member's Final Average Salary payable to an eligible spouse or designated beneficiary.
Nonservice Connected	
Service Requirement	5 years of service.
Amount	For former Tier 2, 40% of highest monthly salary as of Member's death for basic rank of Police Officer III or Firefighter III, and the highest length of service pay. For members who are not former Tier 2, 30% of the Member's Final Average Salary.
Basic Death Benefit	If Member has at least one year of service, in addition to return of contributions, beneficiary receives the Member's one-year average monthly salary times years of completed service (not to exceed 6 years).

Tier 6 (§ 1708)

Service Connected

Service Requirement	None.
Amount	80% of the Member's Final Average Salary.

Nonservice Connected

Service Requirement	5 years of service.
Amount	50% of the Member's Final Average Salary.
Basic Death Benefit	If Member has at least one year of service, in addition to return of contributions, beneficiary receives the Member's two-year average monthly salary times years of completed service (not to exceed 6 years).

Disability:

Tier 1 (§ 1310, § 1312)

Service Connected

Service Requirement	None.
Amount	50% to 90% of Normal Pension Base depending on severity of disability, with a minimum of Member's service pension percentage rate.

Nonservice Connected

Service Requirement	5 years of service.
Amount	40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay.

Tier 2 (§ 1412)

Service Connected

Service Requirement	None.
Amount	50% to 90% of Normal Pension Base depending on severity of disability, with a minimum of Member's service pension percentage rate.

Nonservice Connected	
Service Requirement	5 years of service.
Amount	40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay.
Tier 3, 4, 5, 6 (§ 1506, § 1606, § 4.2006, § 1706)	
Service Connected	
Service Requirement	None.
Amount	30% to 90% of Final Average Salary depending on severity of disability with a minimum of 2% of Final Average Salary per year of service.
Nonservice Connected	
Service Requirement	5 years of service.
Amount	30% to 50% of Final Average Salary depending on severity of disability.

Deferred Withdrawal Retirement Benefit (Vested):

Tier 3 (§ 1504)	
Age & Service Requirement	10 years of service. Receive service pension at age 50.
Amount	See Tier 3 Service Retirement.
Tier 5, Tier 6 (§ 4.2004, § 1704)	
Age & Service Requirement	20 years of service. Receive service pension at age 50.
Amount	Member is entitled to receive a service pension using Tier 3 retirement formula.

Member Normal Contributions:	Members are exempt from making contributions if their continuous service exceeds 30 years for Tiers 1 through 4, and 33 years for Tier 5 and Tier 6. Members not in Tier 6 may pay a 2% contribution on their base salary retroactive to August 15, 2011 for a period of 25 years or until retired from the Plan to avoid a freeze on their retiree health subsidy.
Tier 1 (§ 1324)	Normal contribution rate of 6%.
Tier 2 (§ 1420)	Normal contribution rate of 6% plus half of the cost of the cost of living benefit to a maximum of 1%.
Tier 3 (§ 1514)	Normal contribution rate of 8%.
Tier 4 (§ 1614)	Normal contribution rate of 8%.
Tier 5 (§ 4.2014)	Normal contribution rate of 9% with the City of Los Angeles paying 1% provided that the LAFPP is at least 100% actuarially funded for pension benefits.
Tier 6 (§ 1714)	Normal contribution rate of 9%, plus 2% additional contributions to support funding of retiree health benefits. The additional 2% contributions shall not be required for members with more than 25 years of service.
Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation

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City of Los Angeles Fire and Police Pension Plan

Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2016 in accordance with GASB Statements No. 43 and No. 45

Segal Consulting

Segal Consulting
100 Montgomery Street, Suite 500 San Francisco, CA 94104
T 415.263.8200 F 415.263.8290 www.segalco.com

November 18, 2016

Board of Fire and Police Pension Commissioners
City of Los Angeles Fire and Police Pension Plan
701 East 3rd Street, Suite 200
Los Angeles, CA 90013

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2016 under Governmental Accounting Standards Board Statements No. 43 and No. 45. The report summarizes the actuarial data used in the valuation, discloses the Net OPEB obligation (NOO) as of June 30, 2016, establishes the Annual Required Contribution (ARC) for the coming year, and analyzes the preceding year's experience. The census information and financial information on which our calculations were based was prepared by Los Angeles Fire and Police Pensions (LAFPP). That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Thomas Bergman, ASA, MAAA, Enrolled Actuary and Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions used in this valuation and described in Exhibit II are reasonably related to the experience of and the expectations for the Plan. The actuarial projections are based on these assumptions and the plan of benefits as summarized in Exhibit III.

Sincerely,

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

By:

Paul Angelo, FSA, MAAA, FCA, EA	*Andy Yeung, ASA, MAAA, FCA, EA*
Senior Vice President and Actuary	*Vice President and Actuary*

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SECTION 1

EXECUTIVE SUMMARY

SECTION 2

VALUATION RESULTS

SECTION 3

VALUATION DETAILS

SECTION 4

SUPPORTING INFORMATION

PURPOSE

This report presents the results of our actuarial valuation of retiree health benefits offered by the City of Los Angeles Fire and Police Pension Plan as of June 30, 2016. The results are in accordance with the Governmental Accounting Standards, which prescribe an accrual methodology for accumulating the value of other postemployment benefits (OPEB) over participants' active working lifetimes.

HIGHLIGHTS OF THE VALUATION

- The recommended contribution rate has increased from 11.83% of payroll ($166.3 million) to 12.31% of payroll ($172.5 million), assuming contributions are made by the City on July 15. A reconciliation of the employer's rate, if made at the beginning of the year, is provided in Section 3, Exhibit I.
- The employer contribution rates provided in this report have been developed assuming that they will be made by the City either (1) throughout the year (i.e. the City will pay contributions at the end of every pay period), (2) on July 15 or (3) the beginning of the year.
- The funded ratio has increased from 45.4% to 48.1% in this valuation. On a market value of asset basis, the funded ratio has decreased from 46.9% to 46.6%. The unfunded actuarial accrued liability (UAAL) has decreased from $1.618 billion to $1.599 billion. A reconciliation of the change in the UAAL is provided in Section 2, Chart 2.
- The discount rate for this valuation is 7.50%, and is based on the assumption that in the long term, the City is paying a contribution that equals the Annual Required Contribution (ARC) and 100% of benefits will be paid from the trust.
- Segal originally recommended a 6.50% medical trend assumption to project the premiums for the first fiscal year after 2016/2017. In addition, we recommended that the trend assumption be graded down by 0.25% each year until an ultimate rate of 5.00% would be reached after six years. The recommended set of medical trend assumptions was unchanged from the last valuation.

  At the October 20, 2016 Board meeting, the Board adopted a trend assumption of 7.00% for each of the first two fiscal years after 2016/2017, then grading down by 0.25% for each of the next eight years, until reaching the ultimate long-term trend rate of 5.00%. We believe the assumption adopted by the Board is reasonable for the purpose of this valuation.
- The funding method used to develop the ARC is the Entry Age method, with the Normal Cost developed as a level percent of payroll. The contribution to amortize the UAAL is developed as a level percent of payroll.
- The impact of updated 2016/2017 premiums and subsidy levels on the UAAL and ARC is shown in Section 2, Chart 2 and Section 3, Exhibit I respectively.
- The impact of adopted future trend rates after 2016/2017 on the UAAL and ARC is shown in Section 2, Chart 2 and Section 3, Exhibit I respectively.
- Contributions will generally increase with payroll growth. Other factors such as gains or losses, or

changes in trend assumptions will also change the ARC for future years.

- As indicated in Section 3, Exhibit H of this report, the total unrecognized investment <u>loss</u> as of June 30, 2016 is $586.5 million for the assets for Retirement and Health Subsidy Benefits. For comparison purposes, the total unrecognized investment <u>gain</u> as of June 30, 2015 was $622.7 million.
- The unrecognized losses of $586.5 million represent 3.2% of the market value of assets as of June 30, 2016. Unless offset by future investment losses, or other unfavorable experience, the recognition of the $586.5 million market losses is expected to have an impact on the Health Plan's future funded percentage and contribution rate requirements. This potential impact may be illustrated as follows:
  - If the deferred losses were recognized immediately in the valuation value of assets, the funded percentage would decrease from 48.1% to 46.6%.
  - If the deferred losses were recognized immediately in the valuation value of assets, the aggregate employer rate (payable throughout the fiscal year) would increase from 12.73% to 12.96% of payroll.
- The actuarial valuation report as of June 30, 2016 is based on financial and demographic information[1] as of that date. Changes subsequent to that date are not reflected and will impact the actuarial cost of the Plan.

[1] *Recently, we were informed by LAFPP that there were approximately 780 Tier 6 active members whose service (and member contributions with interest) were underreported by about half a year in the data provided for our June 30, 2015 valuation. After discussing with LAFPP, we have decided to make no adjustment to liabilities and contribution rates as previously provided in our June 30, 2015 funding valuation but to reflect those in the June 30, 2016 valuation.*

The key valuation results for the current and prior years are shown.

SUMMARY OF VALUATION RESULTS

	June 30, 2016	June 30, 2015
Actuarial Accrued Liability (AAL)	$3,079,669,517	$2,962,702,884
Actuarial Value of Assets	1,480,809,977	1,344,333,306
Unfunded Actuarial Accrued Liability	1,598,859,540	1,618,369,578
Funded Ratio on Actuarial Value of Assets***	48.08%	45.38%
Market Value of Assets	$1,435,403,645	$1,390,546,626
Funded Ratio on Market Value of Assets	46.61%	46.94%
Annual Required Contribution (ARC) for coming year		
Normal cost (beginning of year)	$65,407,443	$61,291,559*
Amortization of the unfunded actuarial accrued liability	105,723,438	103,668,175*
Allocated amount for administrative expenses	810,636	813,160*
Total Annual Required Contribution at beginning of year	$171,941,517	$165,772,894*
ARC as a percentage of pay at beginning of year	12.27%	11.80%*
Total Annual Required Contribution (payable throughout the year)	$178,272,759	$171,876,995*
ARC as a percentage of pay (payable throughout the year)	12.73%	12.23%*
Total Annual Required Contribution (payable July 15)	$172,460,420	$166,273,181*
ARC as a percentage of pay (payable July 15)	12.31%	11.83%*
Projected total payroll	$1,400,808,351	$1,405,171,211
Total Participants (including retirees/beneficiaries not receiving subsidy)	25,938	25,719
Total Participants (excluding retirees/beneficiaries not receiving subsidy)	24,708	23,617**
Annual OPEB Cost (AOC) for Coming Year		
Annual Required Contributions (payable end of fiscal year)	$184,837,131	$178,205,861*
Interest on Net OPEB Obligations	9,937,977	9,877,344
ARC Adjustments	-9,419,029	-9,068,911
Total Annual OPEB Cost	$185,356,079	$179,014,294*
AOC as percentage of pay	13.23%	12.74%

* *Before reflecting payroll for the June 30, 2016 valuation.*

** *Prior year participant count excluded 842 members whose health benefits were not yet in pay status as of June 30, 2015. However, their liabilities were included in the June 30, 2015 valuation as retired members eligible for deferred health benefits.*

*** *The funded ratios on AVA basis excluding Harbor Port Police are 47.99% and 45.29% for 2016 and 2015 respectively.*

IMPORTANT INFORMATION ABOUT ACTUARIAL VALUATIONS

An actuarial valuation is a budgeting tool with respect to the defining future uncertain obligations of a postretirement health plan. As such, it will never forecast the precise future stream of benefit payments. It is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

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

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important for LAFPP to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. In any event, the actuarial valuation is based on a future work force that is presumed to be the same as the active population included in the valuation, but in fact, employment varies from year to year, sometimes quite considerably. It is not necessary to have perfect data for an actuarial valuation: the valuation is an estimated forecast, not a prediction. The uncertainties in other factors are such that even perfect data does not produce a "perfect" result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** Part of the cost of a plan will be paid from existing assets – the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date. Some plans include assets, such as private equity holdings, real estate, or hedge funds, that are not subject to valuation by reference to transactions in the marketplace. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results and will have no impact on the actual cost of the plan. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Given the above, the user of Segal's actuarial valuation (or other actuarial calculations) needs to keep the following in mind:

- The actuarial valuation is prepared for use by LAFPP. It includes information for compliance with accounting standards and for the plan's auditor. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial snapshot is a measurement at a specific date – it is not a prediction of a plan's future financial condition.
- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in employment levels, variation in claims, and investment losses, not just the current valuation results.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. LAFPP should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
- Segal's report shall be deemed to be final and accepted by LAFPP upon delivery and review. LAFPP should notify Segal immediately of any questions or concerns about the final content.

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

November 18, 2016

ACTUARIAL CERTIFICATION

This is to certify that Segal Consulting has conducted an actuarial valuation of certain benefit obligations of the City of Los Angeles Fire and Police Pension Plan's other postemployment benefit program as of June 30, 2016, in accordance with generally accepted actuarial principles and practices. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of GASB Statements No. 43 and No. 45 for the determination of the liability for postemployment benefits other than pensions.

The actuarial valuation is based on the plan of benefits verified by LAFPP and reliance on participant, premium, claims and expense data provided by LAFPP. Segal Consulting has not audited the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. Segal Consulting, however, has reviewed the data for reasonableness and consistency.

The actuarial computations made are for purposes of fulfilling plan accounting and funding requirements. Determinations for purposes other than meeting financial accounting and funding requirements may be significantly different from the results reported here. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security at termination of the plan, or determining short-term cash flow requirements.

To the best of our knowledge, this report is complete and accurate and in our opinion presents the information necessary to comply with GASB Statements No. 43 and No. 45 with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries, and other professional actuarial organizations and collectively meet their "General Qualification Standards for Statements of Actuarial Opinions" to render the actuarial opinion contained herein.

Thomas Bergman, ASA, MAAA, EA Associate Actuary	Andy Yeung, ASA, MAAA, FCA, EA Vice President and Actuary

The actuarial present value of total projected benefits uses the actuarial assumptions disclosed in Section 4 to calculate the value today of all benefits expected to be paid to current actives and retired plan members. The actuarial balance sheet shows the expected breakdown of how these benefits will be financed.

CHART 1

Actuarial Present Value of Total Projected Benefits (APB) and Actuarial Balance Sheet

	Actuarial Present Value of Total Projected Benefits (APB)	
	June 30, 2016	**June 30, 2015**
Participant Category		
Current retirees, beneficiaries, and dependents	$1,689,309,297	$1,634,193,721
Retirees and beneficiaries with deferred health benefits[(1)]	0	89,474,725
Current active members	1,974,850,699	1,874,010,156
Terminated members entitled but not yet eligible and retirees and beneficiaries with deferred health benefits[(1)]	116,395,136	7,805,065
Total	$3,780,555,132	$3,605,483,667

		June 30, 2016	June 30, 2015
Actuarial Balance Sheet			
The actuarial balance sheet as of the valuation date is as follows:			
	Assets		
1.	Actuarial value of assets	$1,480,809,977	$1,344,333,306
2.	Present value of future normal costs	700,885,615	642,780,783
3.	Unfunded actuarial accrued liability	1,598,859,540	1,618,369,578
4.	Present value of current and future assets	$3,780,555,132	$3,605,483,667
	Liabilities		
5.	Actuarial Present Value of total Projected Benefits	$3,780,555,132	$3,605,483,667

(1) *Liabilities for retirees and beneficiaries not in pay status but eligible for deferred health benefits were included with current retirees, beneficiaries and dependents in the June 30, 2015 valuation. For the June 30, 2016 valuation, those liabilities are now included with terminated members entitled but not yet eligible and deferred retirees and beneficiaries.*

The actuarial accrued liability shows that portion of the APB (Chart 1) allocated to periods prior to the valuation date by the actuarial cost method. The chart below shows the portion of the liability for active and inactive members, and reconciles the unfunded actuarial accrued liability from last year to this year.

CHART 2

Actuarial Accrued Liability (AAL) and Unfunded AAL (UAAL)

	June 30, 2016	June 30, 2015
Participant Category		
Current retirees, beneficiaries, and dependents	$1,689,309,297	$1,634,193,721
Retirees and beneficiaries with deferred health benefits[(1)]	0	89,474,725
Current active members	1,273,965,084	1,231,229,373
Terminated members entitled but not yet eligible and retirees and beneficiaries with deferred health benefits[(1)]	116,395,136	7,805,065
Total actuarial accrued liability	$3,079,669,517	$2,962,702,884
Actuarial value of assets	1,480,809,977	1,344,333,306
Unfunded actuarial accrued liability	$1,598,859,540	$1,618,369,578
Development of Unfunded Actuarial Accrued Liability for the Year Ended June 30, 2016		
1. Unfunded actuarial accrued liability at beginning of year		$1,618,369,578
2. Normal cost and allocated administrative expenses from prior valuation		62,104,719
3. Expected employer contributions during 2015/2016 fiscal year		165,772,894
4. Interest on prior year UAAL, normal cost and contributions		113,602,605
5. Expected unfunded actuarial accrued liability (1 + 2 – 3 + 4)		$1,628,304,008
6. Change due to investment loss		2,804,712
7. Change due to actual contributions less than expected		17,103,027
8. Change due to updated 2016/2017 premium and subsidy levels		-131,521,490
9. Change due to adopted future medical trend rates after 2016/2017		109,309,292
10. Change due to miscellaneous demographic gains and losses[(2)]		-27,140,009
11. Unfunded actuarial accrued liability at end of year		$1,598,859,540

[(1)] *Liabilities for retirees and beneficiaries not in pay status but eligible for deferred health benefits were included with current retirees, beneficiaries and dependents in the June 30, 2015 valuation. For the June 30, 2016 valuation, those liabilities are now included with terminated members entitled but not yet eligible and deferred retirees and beneficiaries.*

[(2)] *Includes a loss of about $1.7 million due to underreporting of service in the June 30, 2015 valuation data that had been corrected in the June 30, 2016 valuation data.*

The unfunded actuarial accrued liability may be amortized over periods of up to 30 years. Amortization payments may be calculated as level dollar amounts or as amounts designed to remain level as a percent of a growing payroll base. The City of Los Angeles Fire and Police Pension Plan has elected to amortize the unfunded actuarial accrued liability using the following rules:

On September 6, 2012, the Board adopted the following amortization policy for bases established after June 30, 2011:

Type of Base	Amortization Period (Closed)
Actuarial Gains or Losses*	20
Assumption or Method Changes	25
Plan Amendments	15
ERIPs	5
Actuarial Surplus	30

* *Retiree health assumption changes in this valuation are treated as gains and losses and amortized over 20 years.*

CHART 3

Table of Amortization Bases

Tier 1

Type	Date Established	Initial Balance	Initial Period	Outstanding Balance	Years Remaining	Annual Payment(1)
Combined Base	06/30/2011(2)	$26,295,692	25	$24,088,786	20	$2,198,067
Experience Gain	06/30/2012	-3,862,723	20	-3,468,277	16	-352,929
Experience Loss	06/30/2013	568,696	20	526,608	17	51,926
Experience Gain	06/30/2014	-116,336	20	-110,762	18	-10,616
Assumption change	06/30/2014	-170,349	25	-165,149	23	-14,216
Experience Gain	06/30/2015	-350,770	20	-342,670	19	-32,007
Experience Gain	06/30/2016	-1,578,952	20	-1,578,952	20	-144,077
Total				$18,949,584		$1,696,148

Tier 2

Type	Date Established	Initial Balance	Initial Period	Outstanding Balance	Years Remaining	Annual Payment(3)
Combined Base	06/30/2011(2)	$892,673,992	25	$940,931,507	20	$63,271,776
Experience Gain	06/30/2012	-78,975,844	20	-78,829,446	16	-6,242,207
Experience Loss	06/30/2013	11,740,672	20	11,765,679	17	890,173
Experience Gain	06/30/2014	-19,495,604	20	-19,548,980	18	-1,417,932
Assumption change	06/30/2014	9,333,499	25	9,558,519	23	583,944
Experience Loss	06/30/2015	34,495,425	20	34,589,010	19	2,412,386
Experience Gain	06/30/2016	-26,904,116	20	-26,904,116	20	-1,809,134
Total				$871,562,173		$57,689,006

(1) *Level dollar amortization.*

(2) *Prior to the June 30, 2012 valuation, separate amortization layers were not maintained.*

(3) *Level percentage of payroll amortization.*

CHART 3 - Table of Amortization Bases (Continued)

Tier 3

Type	Date Established	Initial Balance	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Combined Base	06/30/2011[2]	$68,153,341	25	$71,837,677	20	$4,830,636
Experience Gain	06/30/2012	-4,428,062	20	-4,419,854	16	-349,992
Experience Loss	06/30/2013	13,070,888	20	13,098,728	17	991,029
Experience Gain	06/30/2014	-7,497,023	20	-7,517,549	18	-545,265
Assumption Change	06/30/2014	2,693,968	25	2,758,915	23	168,546
Experience Gain	06/30/2015	-1,747,416	20	-1,752,156	19	-122,203
Experience Loss	06/30/2016	2,480,551	20	2,480,551	20	166,802
Total				$76,486,312		$5,139,553

Tier 4

Type	Date Established	Initial Balance	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[1]
Combined Base	06/30/2011[2]	$49,380,711	25	$52,050,209	20	$3,500,052
Experience Gain	06/30/2012	-3,240,833	20	-3,234,826	16	-256,154
Experience Loss	06/30/2013	1,622,876	20	1,626,332	17	123,046
Experience Gain	06/30/2014	-6,372,636	20	-6,390,084	18	-463,487
Assumption Change	06/30/2014	4,070,034	25	4,168,158	23	254,639
Experience Gain	06/30/2015	-3,458,772	20	-3,468,155	19	-241,884
Experience Loss	06/30/2016	2,516,035	20	2,516,035	20	169,188
Total				$47,267,669		$3,085,400

(1) *Level percentage of payroll amortization.*

(2) *Prior to the June 30, 2012 valuation, separate amortization layers were not maintained.*

CHART 3 - Table of Amortization Bases (Continued)

Tiers 5 and 6 (without Harbor Port Police)

Type	Date Established	Initial Balance	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[(1)]
Combined Base	06/30/2011[(2)]	$635,657,540	25	$670,020,872	20	$45,054,725
Experience Gain	06/30/2012	-36,520,953	20	-36,453,254	16	-2,886,596
Experience Gain	06/30/2013	-195,938	20	-196,355	17	-14,856
Experience Gain	06/30/2014	-85,025,359	20	-85,258,150	18	-6,183,967
Assumption change	06/30/2014	45,164,286	25	46,253,145	23	2,825,674
Experience Gain	06/30/2015	-5,944,485	20	-5,960,612	19	-415,719
Experience Gain	06/30/2016	-6,139,038	20	-6,139,038	20	-412,812
Total				$582,266,608		$37,966,449

Harbor Port Police (Tiers 5 and 6)

Type	Date Established	Initial Balance	Initial Period	Outstanding Balance	Years Remaining	Annual Payment[(1)]
Combined Base	06/30/2011[(2)]	$2,555,060	25	$2,693,185	20	$181,100
Experience Gain	06/30/2012	-481,777	20	-480,884	16	-38,079
Experience Gain	06/30/2013	-71,817	20	-71,970	17	-5,445
Experience Gain	06/30/2014	-232,604	20	-233,241	18	-16,917
Assumption change	06/30/2014	296,216	25	303,357	23	18,533
Experience Gain	06/30/2015	-64,131	20	-64,305	19	-4,485
Experience Loss	06/30/2016	181,052	20	181,052	20	12,175
Total				$2,327,194		$146,882

(1) *Level percentage of payroll amortization.*

(2) *Prior to the June 30, 2012 valuation, separate amortization layers were not maintained.*

The Annual Required Contribution (ARC) is the amount calculated to determine the annual cost of the OPEB plan for accounting purposes on an accrual basis. The calculation consists of adding the Normal Cost of the plan to an amortization payment. Both are determined as of the start of the accounting period and adjusted as if the annual cost were to be contributed throughout the fiscal year or on July 15th.

The amortization payments are based on amortization of the Unfunded Actuarial Accrued Liability on a level percent of pay basis, except that Tier 1 is based on a level dollar basis.

CHART 4
Determination of Annual Required Contribution (ARC)

Cost Element	Determined as of June 30 2016 Amount	2016 Percentage of Compensation	2015 Amount	2015 Percentage of Compensation
1. Normal cost	$65,407,443	4.67%	$61,291,559	4.36%
2. Amortization of the unfunded actuarial accrued liability	105,723,438	7.54%	103,668,175	7.38%
3. Allocated amount for administrative expenses	810,636	0.06%	813,160	0.06%
4. Total Annual Required Contribution at beginning of year	$171,941,517	12.27%	$165,772,894	11.80%
5. Adjustment for timing (payable throughout the year)	6,331,242	0.46%	6,104,101	0.43%
6. Total Annual Required Contribution (payable throughout the year)	$178,272,759	12.73%	$171,876,995	12.23%
7. Adjustment for timing (payable July 15)	518,903	0.04%	500,287	0.03%
8. Total Annual Required Contribution (payable July 15)	$172,460,420	12.31%	$166,273,181	11.83%
9. Projected Total Payroll	$1,400,808,351		$1,405,171,211	

The Annual OPEB Cost (AOC) adjusts the ARC for timing differences between the ARC and contributions in relation to the ARC. The AOC is the cost of OPEB actually booked as an expense for the Fiscal Year under GASB 45.

CHART 4 (continued)

Determination of Annual OPEB Cost (AOC)

Cost Element	Determined as of June 30 2016	2015
	Amount	Amount
1. Annual Required Contribution (adjusted with interest to end of fiscal year)	$184,837,131	$178,205,861
2. Interest on Beginning of Year Net OPEB Obligation (NOO)	9,937,977	9,877,344
3. ARC adjustment	-9,419,029	-9,068,911
4. Annual OPEB Cost	$185,356,079	$179,014,294
5. AOC as percentage of pay	13.23%	12.74%
6. Projected Total Payroll	$1,400,808,351	$1,405,171,211

For GASB 43 (plan reporting) purposes, the schedule of employer contributions compares actual contributions to the ARC. For GASB 45 (employer reporting) purposes, the schedule of employer contributions compares actual contributions to the AOC.

CHART 5

Required Supplementary Information – Schedule of Employer Contributions

GASB 43

Fiscal Year Ended June 30	Annual Required Contributions	Actual Contributions	Percentage Contributed
2011	$111,681,208[1]	$111,681,208[1]	100.00%
2012	122,971,851[1]	122,971,851[1]	100.00
2013	132,939,191[1]	132,939,191[1]	100.00
2014	138,106,847[1]	138,106,847[1]	100.00
2015	148,476,512[1]	148,476,512[1]	100.00
2016	150,315,374[1]	150,315,374[1]	100.00

Required Supplementary Information – Schedule of Employer Contributions

GASB 45

Fiscal Year Ended June 30	Annual OPEB Cost	Actual Contributions[2]	Percentage Contributed
2011	$ 173,645,281	$119,975,864	69.09%
2012	159,777,456	132,105,073	82.68
2013	144,568,706[3]	142,812,695	98.79
2014	149,887,239[3]	148,348,025	98.97
2015	160,865,397[3]	159,486,643	99.14
2016	161,911,267[3]	161,102,834	99.50

(1) *Payable as of July 15.*

(2) *Shown with interest to end of year.*

(3) *Based on calculated expense as percent of pay and actual payroll.*

This schedule of funding progress presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

CHART 6

Required Supplementary Information – Schedule of Funding Progress

	(Amounts in $1,000s)					
Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]
06/30/2011	$882,890	$2,557,607	$1,674,716	34.52%	$1,343,963	124.61%
06/30/2012	927,362	2,499,289	1,571,927	37.11%	1,341,914	117.14%
06/30/2013	1,013,400	2,633,793	1,620,393	38.48%	1,367,237	118.52%
06/30/2014	1,200,874	2,783,283	1,582,409	43.15%	1,402,715	112.81%
06/30/2015	1,344,333	2,962,703	1,618,370	45.38%	1,405,171	115.17%
06/30/2016	1,480,810	3,079,670	1,598,860	48.08%	1,400,808	114.14%

The Net OPEB obligation measures the accumulated differences between the annual OPEB cost and the actual contributions in relation to the ARC.

CHART 7

Required Supplementary Information – Net OPEB Obligation (NOO)

Fiscal Year Beginning	Annual Required Contribution (a)	Interest on Existing NOO (b)	ARC Adjustment (c)	Annual OPEB Cost (a) + (b) + (c) (d)	Actual Contribution Amount[1] (e)	Net Increase in NOO (d) - (e) (f)	NOO as of End of Fiscal Year (g)
07/01/2010	$172,841,037[1]	$3,654,571	-$2,850,327	$173,645,281	$119,975,864	$53,669,417	$99,351,560
07/01/2011	158,264,914[1]	7,700,361	-6,187,819	159,777,456	132,105,073	27,672,383	127,023,943
07/01/2012	142,812,695[1][2]	9,844,356	-8,088,345	144,568,706	142,812,695	1,756,011	128,779,954
07/01/2013	148,348,025[1][2]	9,980,446	-8,441,233	149,887,239	148,348,025	1,539,214	130,319,167
07/01/2014	159,486,643[1][2]	10,099,735	-8,720,981	160,865,397	159,486,643	1,378,754	131,697,921
07/01/2015	161,102,834[1][2]	9,877,344	-9,068,911	161,911,267	161,102,834	808,433	132,506,354

(1) *With interest to end of year.*

(2) *Based on calculated expense as percent of pay and actual payroll.*

EXHIBIT A

Summary of Participant Data – Retiree Health Actuarial Valuation

	June 30, 2016	June 30, 2015
Retired members:		
Number of non-disabled retirees	7,623	7,441
Number of disabled retirees	1,347	1,386
Total Number of retirees	8,970	8,827
Average age of retirees	70.9	70.8
Number of spouses/domestic partners of retirees receiving subsidy	6,125	5,987
Average age of spouses/domestic partners of retirees receiving subsidy	66.8	66.8
Beneficiaries:		
Number	1,678	1,664
Average age	79.7	79.5
Active members in valuation:		
Number	13,050	13,068
Average age	42.3	42.5
Average years of service	15.3	15.5
Vested terminated members:		
Number		
Eligible for deferred pension and health benefits	69	58
Retirees and beneficiaries not in pay status but eligible for deferred health benefits	941	842
Total	1,010	900
Average age	53.1	52.9

EXHIBIT A (Continued)

Summary of Participant Data – Pension Actuarial Valuation

	June 30, 2016	June 30, 2015
Retired members:		
Number of non-disabled retirees	8,414	8,122
Number of disabled retirees	1,983	2,031
Total Number of retirees	10,397	10,153
Average age of retirees	69.6	69.6
Number of spouses/domestic partners of retirees receiving health subsidy	6,125	5,987
Average age of spouses/domestic partners of retirees receiving health subsidy	66.8	66.8
Beneficiaries:		
Number	2,422	2,440
Average age	76.6	76.6
Active members in valuation:		
Number	13,050	13,068
Average age	42.3	42.5
Average years of service	15.3	15.5
Vested terminated members(1):		
Number	69	58
Average age	46.5	45.7

(1) *Excludes terminated members not eligible for retiree health benefit due to service or due only a refund of member contributions.*

EXHIBIT B

Reconciliation of Retiree Health Participant Data with Pension Participant Data

	June 30, 2016	June 30, 2015
Retired members:		
Pension valuation	8,414	8,122
Retirees with no subsidy due to service or decision not to enroll	-205	-205
Deferred retirees eligible for future health benefits	-586	-476
Health valuation	7,623	7,441
Disabled members:		
Pension valuation	1,983	2,031
Disableds with no subsidy due to service or decision not to enroll	-449	-460
Deferred disableds eligible for future health benefits	-187	-185
Health valuation	1,347	1,386
Beneficiaries:		
Pension valuation	2,422	2,440
Surviving spouses with no subsidy due to service or decision not to enroll	-576	-595
Deferred surviving spouses eligible for future health benefits	-168	-181
Health valuation	1,678	1,664
Active members:		
Pension valuation	13,050	13,068
Health valuation	13,050	13,068
Vested terminated members:		
Pension valuation*	69	58
Retirees eligible for deferred health benefits	+586	+476
Disableds eligible for deferred health benefits	+187	+185
Beneficiaries eligible for deferred health benefits	+168	+181
Health valuation	1,010	900

** Excludes terminated members due only a refund of member contributions.*

EXHIBIT C
Allocation of ARC by Tier

Tier 1 Members		June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount	June 30, 2015 % of Payroll
1	Employer normal cost	$0	N/A	$0	N/A
2	Actuarial accrued liability	13,770,981		15,808,044	
3	Valuation value of assets	-5,178,603		-5,128,494	
4	Unfunded actuarial accrued liability	18,949,584		20,936,538	
5	Amortization of unfunded accrued liability	1,696,148	N/A	1,840,225	N/A
6	Allocated amount for admin expenses, calculated with payroll in 10	0		0	
7	Total recommended contribution, July 1	$1,696,148	N/A	$1,840,225	N/A
8	Total recommended contribution, July 15	1,701,267	N/A	1,845,779	N/A
9	Total recommended contribution, biweekly	1,758,604	N/A	1,907,986	N/A
10	Projected payroll used for developing normal cost rate	0		N/A	

Tier 2 Members		June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[2]	June 30, 2015 % of Payroll
1	Employer normal cost	$57,910	3.47%	$58,568	3.51%
2	Actuarial accrued liability	898,727,146		933,536,742	
3	Valuation value of assets	27,164,973		40,544,398	
4	Unfunded actuarial accrued liability	871,562,173		892,992,344	
5	Amortization of unfunded accrued liability [1]	57,689,006	4.15%	57,072,995	4.11%
6	Allocated amount for admin expenses, calculated with payroll in 10	966	0.06%	966	0.06%
7	Total recommended contribution, July 1	57,747,882	N/A	57,132,529	N/A
8	Total recommended contribution, July 15	57,922,160	N/A	57,304,950	N/A
9	Total recommended contribution, biweekly	59,874,278	N/A	59,236,267	N/A
10	Projected payroll used for developing normal cost rate	1,668,603		N/A	

(1) UAAL rate is calculated using the City's total payroll of $1,388,637,346.
(2) Amounts are revised to reflect payroll as of June 30, 2016.

Tier 3 Members		June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[2]	June 30, 2015 % of Payroll
1	Employer normal cost	$4,207,622	4.64%	$3,992,926	4.40%
2	Actuarial accrued liability	188,172,851		171,033,853	
3	Valuation value of assets	111,686,539		97,409,792	
4	Unfunded actuarial accrued liability	76,486,312		73,624,061	
5	Amortization of unfunded accrued liability [1]	5,139,553	0.37%	4,721,367	0.34%
6	Allocated amount for admin expenses, calculated with payroll in 10	52,515	0.06%	52,515	0.06%
7	Total recommended contribution, payable July 1	9,399,690	N/A	8,766,808	N/A
8	Total recommended contribution, payable July 15	9,428,057	N/A	8,793,265	N/A
9	Total recommended contribution, payable biweekly	9,745,806	N/A	9,089,620	N/A
10	Projected payroll used for developing normal cost rate	90,748,319		N/A	

Tier 4 Members		June 30, 2016 Amount	June 30, 2016 % of Payroll	June 30, 2015 Amount[2]	June 30, 2015 % of Payroll
1	Employer normal cost	$1,535,198	4.42%	$1,460,337	4.20%
2	Actuarial accrued liability	98,082,027		88,815,964	
3	Valuation value of assets	50,814,358		44,382,488	
4	Unfunded actuarial accrued liability	47,267,669		44,433,476	
5	Amortization of unfunded accrued liability [1]	3,085,400	0.22%	2,777,275	0.20%
6	Allocated amount for admin expenses, calculated with payroll in 10	20,121	0.06%	20,121	0.06%
7	Total recommended contribution, payable July 1	4,640,719	N/A	4,257,733	N/A
7	Total recommended contribution, payable July 15	4,654,724	N/A	4,270,582	N/A
9	Total recommended contribution, payable biweekly	4,811,600	N/A	4,414,512	N/A
10	Projected payroll used for developing normal cost rate	34,769,925		N/A	

[1] UAAL rate is calculated using the City's total payroll of $1,388,637,346.

[2] Amounts are revised to reflect payroll as of June 30, 2016.

Tier 5 Members (without Harbor Port Police)

		June 30, 2016		June 30, 2015	
		Amount	% of Payroll	Amount[1]	% of Payroll
1	Employer normal cost	$49,688,966	4.40%	$47,233,275	4.18%
2	Actuarial accrued liability	*(Tiers 5 and 6 are combined. See table on the next page)*		*(Tiers 5 and 6 are combined. See table on the next page)*	
3	Valuation value of assets				
4	Unfunded actuarial accrued liability				
5	Amortization of unfunded accrued liability	34,009,267	3.01%	33,108,492	2.93%
6	Allocated amount for admin expenses, calculated with payroll in 10	653,911	0.06%	653,911	0.06%
7	Total recommended contribution, payable July 1	84,352,144	7.46%	80,995,678	7.17%
8	Total recommended contribution, payable July 15	84,606,711	7.49%	81,240,115	7.19%
9	Total recommended contribution, payable biweekly	87,458,164	7.74%	83,978,106	7.43%
10	Projected payroll used for developing normal cost rate	1,129,982,660		N/A	

Tier 6 Members (without Harbor Port Police)

		June 30, 2016		June 30, 2015	
		Amount	% of Payroll	Amount[1]	% of Payroll
1	Employer normal cost	$9,200,349	7.00%	$8,768,905	6.67%
2	Actuarial accrued liability	*(Tiers 5 and 6 are combined. See table on the next page)*		*(Tiers 5 and 6 are combined. See table on the next page)*	
3	Valuation value of assets				
4	Unfunded actuarial accrued liability				
5	Amortization of unfunded accrued liability	3,957,182	3.01%	3,852,008	2.93%
6	Allocated amount for admin expenses, calculated with payroll in 10	76,079	0.06%	76,079	0.06%
7	Total recommended contribution, payable July 1	13,233,610	10.07%	12,696,992	9.66%
8	Total recommended contribution, payable July 15	13,273,548	10.10%	12,735,310	9.69%
9	Total recommended contribution, payable biweekly	13,720,899	10.44%	13,164,521	10.01%
10	Projected payroll used for developing normal cost rate	131,467,839		N/A	

[1] *Amounts are revised to reflect payroll as of June 30, 2016.*

Combined Tiers 5 and 6 UAAL Contribution Rate Calculations for the City

		June 30, 2016				June 30, 2015	
		Tier 5	Tier 6	Combined Tiers 5 and 6		Combined Tiers 5 and 6	
				Amount	% of Payroll	Amount	% of Payroll
2	Actuarial accrued liability	$1,860,093,220	$10,791,265	$1,870,884,485		$1,744,832,977	
3	Valuation value of assets			1,288,617,877		1,160,575,753	
4	Unfunded actuarial accrued liability			582,266,608		584,257,224	
5	Amortization of unfunded accrued liability			37,966,449	3.01%	36,960,500	2.93%
	Projected payroll used for developing combined UAAL rate	1,129,982,660	131,467,839	1,261,450,499		N/A	

All Tiers Combined (without Harbor Port Police)

		June 30, 2016		June 30, 2015	
		Amount	% of Payroll	Amount[1]	% of Payroll
1	Employer normal cost	$64,690,045	4.66%	$61,514,011	4.43%
2	Actuarial accrued liability	3,069,637,490		2,954,027,580	
3	Valuation value of assets	1,473,105,144		1,337,783,937	
4	Unfunded actuarial accrued liability	1,596,532,346		1,616,243,643	
5	Amortization of unfunded accrued liability	105,576,556	7.60%	103,372,362	7.44%
6	Allocated amount for admin expenses, calculated with payroll in 10	803,592	0.06%	803,592	0.06%
7	Total recommended contribution, payable July 1	171,070,193	12.32%	165,689,965	11.93%
8	Total recommended contribution, payable July 15	171,586,467	12.36%	166,190,002	11.97%
9	Total recommended contribution, payable biweekly	177,369,351	12.77%	171,791,012	12.37%
10	Projected payroll used for developing normal cost rate	1,388,637,346		N/A	

[1] *Amounts are revised to reflect payroll as of June 30, 2016.*

Harbor Port Police Tier 5

		June 30, 2016		June 30, 2015	
		Amount	% of Payroll	Amount[1]	% of Payroll
1	Employer normal cost	$636,052	5.92%	$602,710	5.61%
2	Actuarial accrued liability	*(Tiers 5 and 6 are combined. See table on the next page)*		*(Tiers 5 and 6 are combined. See table on the next page)*	
3	Valuation value of assets				
4	Unfunded actuarial accrued liability				
5	Amortization of unfunded accrued liability	129,609	1.21%	117,104	1.09%
6	Allocated amount for admin expenses, calculated with payroll in 10	6,217	0.06%	6,217	0.06%
7	Total recommended contribution, payable July 1	771,878	7.18%	726,031	6.76%
8	Total recommended contribution, payable July 15	774,207	7.21%	728,222	6.78%
9	Total recommended contribution, payable biweekly	800,300	7.45%	752,765	7.00%
10	Projected payroll used for developing normal cost rate	10,743,485		N/A	

Harbor Port Police Tier 6

		June 30, 2016		June 30, 2015	
		Amount	% of Payroll	Amount[1]	% of Payroll
1	Employer normal cost	$81,346	5.70%	$83,938	5.88%
2	Actuarial accrued liability	*(Tiers 5 and 6 are combined. See table on the next page)*		*(Tiers 5 and 6 are combined. See table on the next page)*	
3	Valuation value of assets				
4	Unfunded actuarial accrued liability				
5	Amortization of unfunded accrued liability	17,273	1.21%	15,560	1.09%
6	Allocated amount for admin expenses, calculated with payroll in 10	826	0.06%	826	0.06%
7	Total recommended contribution, payable July 1	99,445	6.97%	100,324	7.02%
8	Total recommended contribution, payable July 15	99,745	6.99%	100,627	7.05%
9	Total recommended contribution, payable biweekly	103,107	7.22%	104,018	7.28%
10	Projected payroll used for developing normal cost rate	1,427,520		N/A	

[1] *Amounts are revised to reflect payroll as of June 30, 2016.*

Combined Tiers 5 and 6 UAAL Contribution Rate Calculations for Harbor Port Police

		June 30, 2016				June 30, 2015	
		Tier 5	*Tier 6*	*Combined Tiers 5 and 6*		*Combined Tiers 5 and 6*	
				Amount	% of Payroll	Amount	% of Payroll
2	Actuarial accrued liability	$9,977,521	$54,506	$10,032,027		$8,675,304	
3	Valuation value of assets			7,704,833		6,549,369	
4	Unfunded actuarial accrued liability			2,327,194		2,125,935	
5	Amortization of unfunded accrued liability			146,882	1.21%	132,664	1.09%
	Projected payroll used for developing combined UAAL rate	10,743,485	1,427,520	12,171,005		N/A	

Harbor Port Police Combined (Tiers 5 and 6)

		June 30, 2016		June 30, 2015	
		Amount	% of Payroll	Amount[1]	% of Payroll
1	Employer normal cost	$717,398	5.89%	$686,648	5.64%
2	Actuarial accrued liability	10,032,027		8,675,304	
3	Valuation value of assets	7,704,833		6,549,369	
4	Unfunded actuarial accrued liability	2,327,194		2,125,935	
5	Amortization of unfunded accrued liability	146,882	1.21%	132,664	1.09%
6	Allocated amount for admin expenses, calculated with payroll in 10	7,043	0.06%	7,043	0.06%
7	Total recommended contribution, payable July 1	871,323	7.16%	826,355	6.79%
8	Total recommended contribution, payable July 15	873,952	7.18%	828,849	6.81%
9	Total recommended contribution, payable biweekly	903,407	7.42%	856,783	7.04%
10	Projected payroll used for developing normal cost rate	12,171,005		N/A	

[1] *Amounts are revised to reflect payroll as of June 30, 2016.*

All Tiers Combined		June 30, 2016		June 30, 2015	
		Amount	% of Payroll	Amount[1]	% of Payroll
1	Employer normal cost	$65,407,443	4.67%	$62,200,659	4.44%
2	Actuarial accrued liability	3,079,669,517		2,962,702,884	
3	Valuation value of assets	1,480,809,977		1,344,333,306	
4	Unfunded actuarial accrued liability	1,598,859,540		1,618,369,578	
5	Amortization of unfunded accrued liability	105,723,438	7.54%	103,505,026	7.39%
6	Allocated amount for admin expenses, calculated with payroll in 10	810,636	0.06%	810,636	0.06%
7	Total recommended contribution, payable July 1	171,941,517	12.27%	166,516,321	11.89%
8	Total recommended contribution, payable July 15	172,460,420	12.31%	167,018,851	11.92%
9	Total recommended contribution, payable biweekly	178,272,759	12.73%	172,647,796	12.32%
10	Projected payroll used for developing normal cost rate	1,400,808,351		N/A	

[1] *Amounts are revised to reflect payroll as of June 30, 2016.*

EXHIBIT D
Cash Flow Projections

The ARC generally exceeds the current pay-as-you-go ("paygo") cost of an OPEB plan. Over time the paygo cost will tend to grow and may even eventually exceed the ARC in a well-funded plan. The following table projects the paygo cost as the projected net fund payment over the next ten years.

Year Ending June 30	Projected Number of Retirees*			Projected Benefit Payments		
	Current**	Future	Total	Current	Future	Total
2017	17,061	183	17,244	$118,777,433	$1,515,693	$120,293,126
2018	16,611	743	17,354	124,818,516	6,738,442	131,556,957
2019	16,149	1,427	17,576	128,694,202	13,931,627	142,625,829
2020	15,679	2,391	18,070	132,203,087	24,839,155	157,042,241
2021	15,198	3,446	18,644	135,578,520	37,891,436	173,469,956
2022	14,707	4,332	19,039	138,097,945	50,286,835	188,384,779
2023	14,209	4,945	19,154	140,144,162	60,232,787	200,376,949
2024	13,704	5,536	19,240	141,885,231	70,488,508	212,373,740
2025	13,191	6,171	19,362	142,987,556	81,733,067	224,720,622
2026	12,670	6,838	19,508	143,972,471	93,589,713	237,562,184

* *Includes spouses of retirees.*

** *Counts excludes 57 retirees with dental subsidy only.*

EXHIBIT E

Summary Statement of Income and Expenses on an Actuarial Value Basis for All Retirement and Health Subsidy Benefits Assets

	Year Ended June 30, 2016		Year Ended June 30, 2015	
Contribution income:				
Employer contributions	$628,700,812		$628,808,763	
Employee contributions	129,733,559		126,770,882	
Net contribution income		$758,434,371		$755,579,645
Investment income:				
Interest, dividends and other income	$898,786,837		$1,524,766,970	
Recognition of capital appreciation	563,251,453		87,669,422	
Less investment and administrative fees	-80,778,689		-84,478,748	
Net investment fees*		1,381,259,601		1,527,957,644
Total income available for benefits		$2,139,693,972		$2,283,537,289
Less benefit payments		-$1,107,041,622		-$1,029,319,785
Less administrative expenses		-20,897,310		-19,178,885
Change in reserve for future benefits		$1,011,755,040		$1,235,038,619

EXHIBIT F

Summary Statement of Assets for Retirement and Health Subsidy Benefits

	Year Ended June 30, 2016		Year Ended June 30, 2015	
Cash equivalents		$2,192,456		$1,030,837
Accounts receivable:				
Accrued interest and dividends	$65,462,527		$53,667,875	
Contributions	7,499,627		6,686,968	
Due from brokers	68,578,711		204,331,276	
Total accounts receivable		141,540,865		264,686,119
Investments:				
Equities	$11,405,646,262		$13,533,110,602	
Fixed income investments	5,940,532,422		3,843,514,633	
Real estate	1,531,754,098		1,581,094,151	
Total investments at market value		18,877,932,782		18,957,719,386
Total assets		$19,021,666,103		$19,223,436,342
Less accounts payable:				
Accounts payable and benefits in process	-$45,770,044		-$34,359,392	
Due to brokers	-253,277,481		-245,774,104	
Mortgage payable	-182,938,598		-206,202,144	
Total accounts payable		-$481,986,123		-$486,335,640
Net assets at market value		$18,539,679,980		$18,737,100,702
Net assets at actuarial value		$19,126,148,372		$18,114,393,332
Net assets at valuation value (health benefits)		$1,480,809,977		$1,344,333,306

EXHIBIT G

Development of the Fund Through June 30, 2016 for All Retirement and Health Subsidy Benefits Assets

Year Ended June 30	Employer Contributions	Employee Contributions	Net Investment Return[1]	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2007	$286,167,278[2]	$91,263,474	$1,590,968,304	-	$800,819,286	$13,902,764,838
2008	333,672,743	98,074,219	1,414,391,128	-	827,959,245	14,920,943,683
2009	326,876,839	103,685,447	557,346,783	-	842,565,358	15,066,287,394
2010	357,165,140	106,411,630	360,741,904	-	853,749,429	15,036,856,639
2011	388,773,459	105,471,264	568,411,044	-	878,952,809	15,220,559,597
2012	444,565,284	120,099,124	320,400,668	-	926,349,506	15,179,275,167
2013	508,387,283	121,777,655	827,790,619	-	966,118,502	15,671,112,222
2014	578,805,107	124,394,889	1,468,399,449	-	963,356,954	16,879,354,713
2015	628,808,763	126,770,882	1,527,957,644	$19,178,885	1,029,319,785	18,114,393,332
2016	628,700,812	129,733,559	1,381,259,601	20,897,310	1,107,041,622	19,126,148,372

[1] *Net of investment fees and administrative expenses prior to 2015. Starting in 2015, administrative expenses are shown separately.*

[2] *Includes $6,220,076 (discounted to $6,058,515) of Harbor Port Police assets transferred in October, 2007.*

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Commissioners has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

EXHIBIT H

Determination of Actuarial Value of Assets for All Retirement and Health Subsidy Benefits

	Original Amount	Portion Not Recognized	Amount Not Recognized	
1. Market value of assets (for Retirement and Health Subsidy Benefits)				$18,539,679,980
2. Calculation of unrecognized return[1]				
(a) Year ended June 30, 2016	$(1,240,953,883)	6/7	$(1,063,674,757)	
(b) Year ended June 30, 2015	(643,447,599)	5/7	(459,605,428)	
(c) Year ended June 30, 2014	1,571,818,656	4/7	898,182,089	
(d) Combined Net Deferred Gain as of June 30, 2013[2]	77,259,408	3/6	38,629,704	
(e) Total unrecognized return				(586,468,392)
3. Preliminary actuarial value: (1) - (2e)				19,126,148,372
4. Adjustment to be within 40% corridor				0
5. Final actuarial value of assets: (3) + (4)				$19,126,148,372
6. Actuarial value as a percentage of market value: (5) ÷ (1)				103.2%
7. Market value of health assets				$1,435,403,645
8. Valuation value of health assets: (5) ÷ (1) x (7)				$1,480,809,977
9. Deferred return recognized in each of the next 6 years (for Retirement and Health Subsidy Benefits):				
(a) Amount recognized on June 30, 2017				$(31,778,122)
(b) Amount recognized on June 30, 2018				(31,778,122)
(c) Amount recognized on June 30, 2019				(31,778,122)
(d) Amount recognized on June 30, 2020				(44,654,689)
(e) Amount recognized on June 30, 2021				(269,200,210)
(f) Amount recognized on June 30, 2022				(177,279,127)
(g) Subtotal (may not total exactly due to rounding)				$(586,468,392)

(1) *Total return minus expected return on a market value basis. Effective with the calculation for period ended June 30, 2015, both actual and expected returns on market value have been adjusted to exclude administrative expense paid during the plan year.*

(2) *Net deferred unrecognized investment gains as of June 30, 2013 have been combined into a single layer to be recognized over the six-year period effective July 1, 2013*

The chart below details the changes in the ARC from the prior valuation to the current year's valuation.

EXHIBIT I

Reconciliation of Recommended Contribution from June 30, 2015 to June 30, 2016[1]

Recommended Contribution as of June 30, 2015	11.80%
Effect of amortizing prior year's UAAL over a smaller than expected projected total payroll	0.32%
Effect of actual contributions less than expected	0.08%
Effect of combined investment and demographic experience	0.10%
Effect of updated 2016/2017 premium and subsidy levels	-0.76%
Effect of adopted future medical trend rates after 2016/2017	0.72%
Effect of miscellaneous factors including change in active normal cost	0.01%
Recommended Contribution as of June 30, 2016	12.27%

[1]*Based on contributions at beginning of year.*

EXHIBIT I

Summary of Required Supplementary Information

Valuation date	June 30, 2016
Actuarial cost method	Entry age normal, level percent of pay
Amortization method	Closed amortization periods. On September 6, 2012, the Board adopted the following amortization policy:

Type of Base	Amortization Period (Closed)
Actuarial Gains or Losses[1]	20
Assumption or Method Changes	25
Plan Amendments	15
ERIPs	5
Actuarial Surplus	30

Asset valuation method	Market value of assets less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period. Deferred gains and losses as of June 30, 2013 have been combined and will be recognized over a period of six years from July 1, 2013. The actuarial value of assets is further adjusted, if necessary, to be within 40% of the market value of assets.
Actuarial assumptions:	
Investment rate of return	7.50%
Inflation rate	3.25%
Across-the-board pay increase	0.75%
Projected payroll increases	4.00%
Health care cost trend rate (to calculate following year's premium)	
• Medical	7.00% in 2016-2017[2] and 2017-2018, then decreasing by 0.25% for each year for eight years until it reaches an ultimate rate of 5%.
• Dental	5.00% for all years
• Medicare Part B Premium	5.00% for all years

(1) *Retiree health assumption changes are treated as gains and losses and amortized over 20 years.*
(2) *For example, the 7.00% assumption, when applied to the 2016/2017 medical premiums, would provide the projected 2017/2018 medical premiums.*

Actuarial assumptions (continued):

• Medical Subsidy Trend	▪ For all non-Medicare retirees, increase at lesser of 7% or medical trend. ▪ For Medicare retirees with single party premium, increase with medical trend. ▪ For Medicare retirees with 2-party premium less than or equal to the maximum subsidy as of July 1, 2016 (e.g. Fire Kaiser), increase with medical trend. ▪ For Medicare retirees with 2-party premium greater than the maximum subsidy as of July 1, 2016 (e.g. Police Blue Cross PPO), increase with lesser of 7% or medical trend.

Plan membership – Excluding retirees and beneficiaries not receiving subsidy:	June 30, 2016	June 30, 2015
Current retirees and beneficiaries	10,648	10,491
Current active participants	13,050	13,068
Terminated participants entitled but not yet enrolled in health benefits		
Eligible for deferred pension and health benefits	69	58
Retirees and beneficiaries not in pay status but eligible for deferred health benefits	941	842
Subtotal	1,010	900
Total	24,708	24,459

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2010 through June 30, 2013 Actuarial Experience Study dated July 3, 2014 and the Economic Actuarial Assumption Study for June 30, 2014 Actuarial Valuation dated July 3, 2014. Unless otherwise noted, all actuarial assumptions and methods shown below apply to all members. These assumptions have been adopted by the Board.

Demographic Assumptions:

Mortality Rates

Healthy:	RP-2000 Combined Healthy Mortality Table (separate for males and females), projected to 2022 with scale BB set back one year for members. RP-2000 Combined Healthy Mortality Table (separate for males and females), projected to 2022 with scale BB set forward one year for beneficiaries.
Disabled:	RP-2000 Combined Healthy Mortality Table (separate for males and females), projected to 2022 with scale BB set forward one year.

The above mortality tables contain about a 10% margin, based on actual to expected deaths, as a provision appropriate to reasonably anticipate future mortality improvement, based on a review of mortality experience as of the measurement date.

Termination Rates Before Retirement:

Pre-Retirement Mortality:

	Rate (%)	
	Mortality	
Age	Male	Female
20	0.03	0.02
25	0.04	0.02
30	0.04	0.02
35	0.07	0.04
40	0.10	0.06
45	0.13	0.10
50	0.19	0.15
55	0.30	0.22
60	0.52	0.36

All pre-retirement deaths are assumed to be service connected.

Termination Rates Before Retirement (continued):

	Rate (%)	
	Disability[1]	
Age	Fire	Police
20	0.02	0.02
25	0.02	0.03
30	0.03	0.05
35	0.06	0.08
40	0.15	0.22
45	0.23	0.36
50	0.28	0.46
55	1.02	0.08
60	3.00	1.18

(1) *90% of disabilities are assumed to be service connected.
Disability rates are not applied to members eligible for DROP.*

Termination Rates Before Retirement (continued):

	Rate (%) Termination (< 5 Years of Service)	
Years of Service	**Fire**	**Police**
0 - 1	8.00	8.00
1 - 2	2.50	3.00
2 – 3	1.50	2.50
3 – 4	0.75	2.50
4 – 5	0.50	1.75

	Rate (%) Termination (5+ Years of Service) [1]	
Age	**Fire**	**Police**
20	1.00	2.00
25	1.00	2.00
30	0.85	1.70
35	0.54	1.20
40	0.37	0.85
45	0.17	0.66
50	0.02	0.24
55	0.00	0.00
60	0.00	0.00

(1) *No termination is assumed after a member is eligible for retirement. This includes all active members currently in Tier 2. Members in Tiers 3, 5 and 6 who are not eligible to receive a deferred vested retirement benefit are assumed to receive refund of member contributions.*

Retirement Rates:

	Rate(%)					
	Fire			Police		
Age	Tiers 2&4	Tiers 3&5	Tier 6	Tiers 2&4	Tiers 3&5	Tier 6
41	1.00	0.00	0.00	10.00	0.00	0.00
42	1.00	0.00	0.00	10.00	0.00	0.00
43	1.00	0.00	0.00	10.00	0.00	0.00
44	1.00	0.00	0.00	10.00	0.00	0.00
45	1.00	0.00	0.00	10.00	0.00	0.00
46	1.00	0.00	0.00	7.00	0.00	0.00
47	1.00	0.00	0.00	7.00	0.00	0.00
48	2.00	0.00	0.00	7.00	0.00	0.00
49	2.00	0.00	0.00	7.00	0.00	0.00
50	3.00	3.00	3.00	12.00	7.00	8.00
51	4.00	3.00	3.00	12.00	6.00	10.00
52	5.00	3.00	4.00	12.00	6.00	10.00
53	10.00	3.00	5.00	15.00	6.00	15.00
54	15.00	7.00	5.00	20.00	10.00	15.00
55	20.00	12.00	10.00	20.00	18.00	18.00
56	20.00	14.00	12.00	25.00	18.00	18.00
57	20.00	16.00	15.00	25.00	20.00	20.00
58	20.00	20.00	18.00	25.00	22.00	22.00
59	20.00	25.00	20.00	25.00	25.00	25.00
60	20.00	25.00	25.00	25.00	25.00	25.00
61	20.00	30.00	30.00	25.00	25.00	25.00
62	25.00	35.00	30.00	25.00	25.00	25.00
63	25.00	40.00	35.00	30.00	25.00	25.00
64	30.00	40.00	40.00	40.00	30.00	30.00
65	100.00	100.00	100.00	100.00	100.00	100.00

DROP Program: DROP participants are considered active members until they leave DROP and begin receiving retirement benefits. Members are assumed to remain in the DROP for 5 years. Of all members expected to retire with a service retirement benefit, we project a 95% probability that members have elected DROP before retirement if they will have also satisfied the requirements for participating in the DROP for 5 years.

Salary Increases:

Annual Rate of Compensation Increase

Inflation: 3.25% per year; plus 0.75% "across the board" salary increases; plus the following Merit and Longevity increases based on years of service.

Years of Service	Additional Salary Increase
0	7.50%
1	6.50
2	5.00
3	4.75
4	3.75
5	3.00
6	2.25
7	2.00
8	1.75
9	1.75
10	1.25
11+	0.75

Measurement Date: June 30, 2016

Unknown Data for Members: Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Definition of Active Members: First day of biweekly payroll following employment for new department employees or immediately following transfer from other city department.

Actuarial Value of Assets: Market value of assets less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period. Deferred gains and losses as of June 30, 2013 have been combined and will be recognized over a period of six years from July 1, 2013. The actuarial value of assets is further adjusted, if necessary, to be within 40% of the market value of assets.

Actuarial Cost Method: Entry Age Actuarial Cost Method. Entry Age is the current age minus Service Credit. Actuarial Accrued Liability is calculated on an individual basis and is based on costs allocated as a level percentage of compensation. Normal Cost and amortization of unfunded are computed as a percent of pay and applied to actual payroll.

Funding Policy: The City of Los Angeles Fire & Police Pension Plan makes contributions equal to the Normal Cost adjusted by amounts to amortize any Surplus or Unfunded Actuarial Accrued Liability (UAAL). Both the Normal Cost and the Actuarial Accrued Liability are determined under the Entry Age cost method. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis.

On September 6, 2012, the Board adopted the following amortization policy:

Type of Base	Amortization Period (Closed)
Actuarial Gains or Losses[1]	20
Assumption or Method Changes	25
Plan Amendments	15
ERIPs	5
Actuarial Surplus	30

[1] *Retiree health assumption changes are treated as gains and losses and amortized over 20 years.*

Data: Detailed census data and financial data for postemployment benefits were provided by the City of Los Angeles Fire and Police Pension Plan.

Future Benefit Accruals: 1.0 year of service per year.

Net Investment Return: 7.50%, net of investment expenses.

Administrative Expenses Out of the total 1.00% of payroll in administrative expense, 0.06% of payroll payable biweekly is allocated to the Retiree Health Plan. This is equal to 0.06% of payroll payable at beginning of the year.

Spouse Age Difference Husbands are assumed to be 3 years older than wives.

Participation

Service Range (Years)	(a) Participation for Future Retirees Under 65	(b) Participation for Future Retirees Over 65	Participation Upon Attaining Age 65 for Current Retirees aged 55-64 Without Subsidy [(b-a)/(1-a)]
10-14	45%	80%	63.64%
15-19	60	85	62.50
20-24	75	90	60.00
25 and over	95	95	0.00

Medicare Coverage 100% of future retirees are assumed to elect Medicare Parts A & B.

Dental Coverage 80% of future retirees are assumed to elect dental coverage.

Spousal Coverage Of future retirees receiving a medical subsidy 80% are assumed to elect coverage for married and surviving spouses or domestic partners. For those retired on valuation date with a subsidy, spousal coverage is based on census data.

Implicit Subsidy No implicit subsidy exists since retiree medical premiums are underwritten separately from active premiums, except for one small group (Fire Blue Cross and Fire California Care) that has some active/retiree experience blending.

Per Capita Cost Development – Not Subject to Retiree Medical Freeze:

Retirees Under Age 65

Future retirees under age 65 are assumed, upon retirement, to elect carriers in the percentages and corresponding premiums and subsidies as noted in the table below. Current retirees and current eligible survivors under age 65 are assumed to continue to cover themselves (and their spouse or domestic partner) – but all children are assumed to age out at the valuation date.

2016 – 2017 Fiscal Year		Single Party			Married/With Domestic Partner			Eligible Survivor		
Carrier	Assumed Election Percent	Monthly Premium	Maximum Subsidy	Subsidy	Monthly Premium	Maximum Subsidy	Subsidy	Monthly Premium	Maximum Subsidy	Subsidy
Fire										
Fire Medical	80	$903.02	$1,535.59	**$903.02**	$1,472.62	$1,535.59	**$1,472.62**	$903.02	$748.03	**$748.03**
Fire Kaiser	10	$685.44	$1,535.59	**$685.44**	$1,360.86	$1,535.59	**$1,360.86**	$685.44	$748.03	**$685.44**
Fire Blue Cross	5	$1,435.13	$1,535.59	**$1,435.13**	$1,781.12	$1,535.59	**$1,535.59**	$1,208.32	$748.03	**$748.03**
Fire California Care	5	$1,435.13	$1,535.59	**$1,435.13**	$1,439.35	$1,535.59	**$1,439.35**	$869.09	$748.03	**$748.03**
Police										
Blue Cross PPO	65	$947.42	$1,535.59	**$947.42**	$1,884.91	$1,535.59	**$1,535.59**	$947.42	$748.03	**$748.03**
Blue Cross HMO	15	$836.17	$1,535.59	**$836.17**	$1,554.22	$1,535.59	**$1,535.59**	$836.17	$748.03	**$748.03**
Police Kaiser	20	$579.90	$1,535.59	**$579.90**	$1,149.04	$1,535.59	**$1,149.04**	$579.90	$748.03	**$579.90**

Members who are subject to the retiree medical subsidy freeze have monthly health insurance subsidy maximums fixed at the level in effect on July 1, 2011, as shown on page 45.

For the valuation of current retirees, subsidies valued are based on actual subsidies provided in the data reported for the Health Plan.

We understand that Harbor Port Police, upon reaching eligibility to retire, have a choice of retiree medical plans with contracts at the Los Angeles City Employees' Retirement System (LACERS), but will only be eligible for a subsidy up to the LAFPP maximum medical subsidy limit. In order to estimate the liability in the June 30, 2016 valuation, we have assumed that Harbor Port Police will select similar plans at LACERS roughly in proportion to those assumed for future LAFPP Police retirees. For pre-65 retirees, we have assumed that 65% will enroll in the Anthem Blue Cross PPO and 35% will enroll in the Kaiser Permanente HMO, available through LACERS.

Per Capita Cost Development – Not Subject to Retiree Medical Freeze:

Retirees Age 65 and Older

Future retirees and current retirees under age 65 are assumed, upon reaching age 65, to elect carriers in the percentages and corresponding premiums and subsidies as noted in the table below. Current retirees and current eligible survivors over age 65 are assumed to continue to cover themselves (and their spouse or domestic partner) – but all children are assumed to age out at the valuation date.

2016 – 2017 Fiscal Year		**Single Party**			**Married/With Domestic Partner**			**Eligible Survivor**		
Carrier	**Assumed Election Percent**	**Monthly Premium**	**Maximum Subsidy**	**Subsidy**	**Monthly Premium**	**Maximum Subsidy**	**Subsidy**	**Monthly Premium**	**Maximum Subsidy**	**Subsidy**
Fire										
Fire Medical	85	$610.02	$487.71	**$487.71**	$886.62	$764.31	**$764.31**	$610.02	$487.71	**$487.71**
Fire Kaiser	15	$387.52	$487.71	**$387.52**	$765.04	$765.04	**$765.04**	$387.52	$487.71	**$387.52**
Fire Blue Cross	0	$830.38	$487.71	**$487.71**	$1,733.24	$1,390.57	**$1,390.57**	$830.38	$487.71	**$487.71**
Fire California Care	0	$523.25	$487.71	**$487.71**	$1,465.52	$1,429.98	**$1,429.98**	$523.25	$487.71	**$487.71**
Police										
Blue Cross PPO	75	$574.42	$487.71	**$487.71**	$1,121.42	$1,034.71	**$1,034.71**	$574.42	$487.71	**$487.71**
Blue Cross HMO	10	$607.17	$487.71	**$487.71**	$1,202.73	$1,083.27	**$1,083.27**	$607.17	$487.71	**$487.71**
Police Kaiser	15	$209.32	$487.71	**$209.32**	$413.64	$413.64	**$413.64**	$209.32	$487.71	**$209.32**

Members who are subject to the retiree medical subsidy freeze have monthly health insurance subsidy maximums fixed at the level in effect on July 1, 2011, as shown on page 45.

For the valuation of current retirees, subsidies valued are based on actual subsidies provided in the data reported for the Health Plan.

We understand that Harbor Port Police, upon reaching eligibility to retire, have a choice of retiree medical plans with contracts at the Los Angeles City Employees' Retirement System (LACERS), but will only be eligible for a subsidy up to the LAFPP maximum medical subsidy limit. In order to estimate the liability in the June 30, 2016 valuation, we have assumed that Harbor Port Police will select similar plans at LACERS roughly in proportion to those assumed for future LAFPP Police retirees. For retirees over age 65, we have assumed that 85% will enroll in the Anthem Blue Cross PPO Medicare plan and 15% will enroll in the Kaiser Permanente Senior Advantage HMO, available through LACERS.

Per Capita Cost Development – Subject to Retiree Medical Subsidy Freeze:

	Single Party	Married/With Domestic Partner	Eligible Survivor
Under 65 – All Plans	$1,097.41	$1,097.41	$595.60
Over 65			
Fire Medical	$480.41	$757.01	$480.41
Fire Kaiser	$387.52*	$765.04	$387.52*
Fire Blue Cross	$480.41	$1,054.57	$480.41
Fire California Care	$480.41	$1,054.57	$480.41
Police Blue Cross PPO	$480.41	$818.40	$480.41
Police Blue Cross HMO	$480.41	$840.65	$480.41
Police Kaiser	$209.32*	$413.64	$209.32*

**Future single-party subsidy levels limited to $480.41.*

Adjustment of Per Capita Medical Costs for Age, Gender and Spouse Status

Applied to Per Capita Costs under Age 65 for 2016-2017

	Retiree		Spouse	
Age	Male	Female	Male	Female
55	0.9269	0.9570	0.7295	0.8262
60	1.1008	1.0315	0.9766	0.9583
64	1.2629	1.0942	1.2328	1.0785

Applied to Per Capita Costs Age 65 or Older for 2016-2017

	Retiree		Spouse	
Age	Male	Female	Male	Female
65	0.9132	0.7762	0.9132	0.7762
70	1.0584	0.8365	1.0584	0.8365
75	1.1406	0.9004	1.1406	0.9004
80+	1.2283	0.9708	1.2283	0.9708

Health Care Premium Cost Trend Rates:

Trends to be applied in following fiscal years, to all health plans.

Trend is to be applied to premium for shown fiscal year to calculate next fiscal year's projected premium.*

First Fiscal Year (July 1, 2016 through June 30, 2017).

The fiscal year trend rates are the following:

	Trend (applied to calculate following year premium)	
Fiscal Year	**Non-Medicare**	**Medicare**
2016-2017	7.00%**	7.00%
2017-2018	7.00%	7.00%
2018-2019	6.75%	6.75%
2019-2020	6.50%	6.50%
2020-2021	6.25%	6.25%
2021-2022	6.00%	6.00%
2022-2023	5.75%	5.75%
2023-2024	5.50%	5.50%
2024-2025	5.25%	5.25%
2025 and later	5.00%	5.00%

Dental Premium Trend	5.00% for all years
Medicare Part B Premium Trend	5.00% for all years

* For example, the 7.00% assumption, when applied to the 2016/2017 medical premiums, would provide the projected 2017/2018 medical premiums.

** The maximum non-Medicare health subsidy for 2017/2018 would be calculated by multiplying the maximum non-Medicare health subsidy for 2016/2017 by (1 + 7.00%).

Health Care Reform:

As stated in our June 30, 2011 retiree health report, based on direction provided to Segal, the impact of the excise tax that will be imposed in 2020 (deferred from 2018 since prior valuation) by the Affordable Care Act (ACA) and related statutes on certain health plans was not included in calculating the contribution rates for the employer. We understand that the recently adopted Statements No. 74 and No. 75 by the Governmental Accounting Standards Board (GASB) for financial reporting purposes is expected to require the inclusion of the excise tax in the liability. Statement No. 74 is effective for fiscal years beginning after June 15, 2016 for plan reporting and Statement No. 75 is effective for fiscal years beginning after June 15, 2017 for employer reporting.

For the June 30, 2016 valuation, we have continued to exclude the projected excise tax from the valuation results (i.e., the projected excise tax has not been used to set the contribution rates for the employer).

Expected annual rate of increase in the Board's health subsidy amount:

For employees not subject to freeze, we assume that the Board's health subsidy amount will increase at the same rate as medical trend.

Plan Design:

Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit III.

Changes in Assumptions:

Premiums and maximum subsidies were updated.

Medical election assumptions for future Fire retirees under age 65 were updated.

Future medical trend rate assumption was updated.

EXHIBIT III

Summary of Plan

This exhibit summarizes the major benefit provisions as included in the valuation. To the best of our knowledge, the summary represents the substantive plans as of the measurement date. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

SUBSIDY FOR MEMBERS NOT ELIGIBLE FOR MEDICARE A & B

Eligibility	Retired Members who retired with 10 or more years of service. Benefits commence no earlier than age 55. Members who retired prior to July 1, 1998 are subject to an eligibility requirement of age 60 with 10 or more years of service. Subsidy is paid only to Members on service or disability retirements. Surviving spouses and surviving domestic partners are eligible for health benefits upon the Member's date of death if the Member had attained age 55 prior to death. Otherwise, health benefits for survivors shall commence on the date that the Member would have reached age 55. Basic subsidy is paid until age 65, or after age 65 if Member is not covered by Medicare Parts A and B.
Amount of Subsidy	4% per year of service, to a maximum of 100%, times Maximum Subsidy, subject to a maximum of the actual premium paid to the Board's approved health carrier.
Maximum Subsidy	As of July 1, 2016, maximum is $1,535.59 per month. For surviving spouse or domestic partner, the maximum subsidy is $748.03 per month.
Increase in Subsidy	For employees not subject to freeze, the Board's health subsidy amount may increase at lesser of 7% or medical trend as shown in Exhibit II - Healthcare Premium Cost Trend Rates.
Dependent Portion	Difference between basic subsidy maximum amount and single-party premium.

EXHIBIT III

Summary of Plan (continued)

SUBSIDY FOR MEMBERS ELIGIBLE FOR MEDICARE A & B

Eligibility: Retired Members over age 65 with 10 or more years of service who participate in Medicare Parts A & B.

Amount of Subsidy to Participant: For retirees, health subsidy is provided subject to the following vesting schedule:

Completed Years of Service	Vested Percentage
10-14	75%
15-19	90%
20+	100%

Surviving spouses or surviving domestic partners are eligible for benefits upon the death of the Member.

Maximum Subsidy: As of July 1, 2016, the single coverage maximum subsidy for retirees and surviving spouse or domestic partner is $487.71. The multi-person coverage maximum subsidy is $1,429.98 and depends on the carrier elected.

The Board's health subsidy amount may:

- For Medicare retirees with single party premium, increase with medical trend as shown in Exhibit II - Healthcare Premium Cost Trend Rates.
- For Medicare retirees with 2-party premium less than or equal to the maximum subsidy as of July 1, 2016 (e.g., Fire Kaiser), increase with medical trend as shown in Exhibit II - Healthcare Premium Cost Trend Rates, and
- For Medicare retirees with 2-party premium greater than the maximum subsidy as of July 1, 2016 (e.g., Police Blue Cross), increase with lesser of 7% or medical trend as shown in Exhibit II - Healthcare Premium Cost Trend Rates.

EXHIBIT III

Summary of Plan (continued)

Dependent Portion: Calculation based on Board of Fire and Police Pension Commissioners Resolution No. 9320: equal to the amount payable on behalf of the dependents of a retired member in the same plan, with the same years of service, who qualifies for an under 65 or Part B/D only subsidy, whichever is greater, providing such subsidy does not exceed the civilian retiree dependent subsidy.

Subsidy Freeze: The retiree health benefits program was changed to freeze the medical subsidy for nonretired members not enrolled in the DROP as of July 14, 2011 who did not begin to contribute an additional 2% of employee contributions to the Pension Plan.

- The frozen subsidy is different for Medicare and non-Medicare retirees.
- The freeze applies to the medical subsidy limits in effect for the 2011/2012 plan year.
- The freeze does not apply to the dental subsidy or the Medicare Part B premium reimbursement.

EXHIBIT III

Summary of Plan (continued)

Medicare Part B -Related Subsidy

Medicare Part B Premium Reimbursement	For retired Members enrolled in Medicare A & B who are receiving a subsidy, the Plan provides payment of Part B premiums ($121.80 for calendar year 2016, for all eligible retirees and beneficiaries).

Dental Subsidy

Eligibility	Retired Members who retired with 10 or more years of service. Benefits commence no earlier than age 55. Subsidy is paid only to Members on service or disability retirements. Surviving spouses/domestic partners are not eligible for benefits upon the death of the Member.
Amount of Subsidy	4% per year of service, to a maximum of 100%, times Maximum Subsidy, subject to a maximum of the single-party premium paid to City approved dental carrier.
Maximum Subsidy	Lesser of monthly amount paid to active Fire and Police Members and retired CERS Members. As of July 1, 2016, maximum is $43.24 per month.

Retiree Contributions: To the extent the subsidies are less than the medical or dental premiums, the retiree contributes the cost difference.

EXHIBIT IV
Definitions of Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Plan is calculated including:

(a) <u>Investment return</u> — the rate of investment yield that the Plan will earn over the long-term future;

(b) <u>Mortality rates</u> — the death rates of employees and pensioners; life expectancy is based on these rates;

(c) <u>Retirement rates</u> — the rate or probability of retirement at a given age;

(d) <u>Turnover rates</u> — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Actuarial Present Value of Total Projected Benefits (APB): Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.

Normal Cost: The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability For Actives: The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability For Retirees: The single sum value of lifetime benefits to existing retirees. This sum takes account of life expectancies appropriate to the ages of the retirees and of the interest which the sum is expected to earn before it is entirely paid out in benefits.

Actuarial Value of Assets (AVA):	The value of assets used by the actuary in the valution. These may be at market value or some other method used to smooth variations in market value from one valuation to the next.
Funded Ratio:	The ratio AVA/AAL.
Unfunded Actuarial Accrued Liability (UAAL):	The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.
Amortization of the Unfunded Actuarial Accrued Liability:	Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.
Investment Return (discount rate):	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next. If the plan is funded on a pay-as-you-go basis, the discount rate is tied to the expected rate of return on day-to-day employer funds.
Covered Payroll:	Annual reported salaries for all active participants on the valuation date.
ARC as a Percentage of Covered Payroll:	The ratio of the annual required contribution to covered payroll.
Health Care Cost Trend Rates:	The annual rate of increase in net claims costs per individual benefiting from the Plan.
Annual Required Contribution (ARC):	The ARC is equal to the sum of the normal cost and the amortization of the unfunded actuarial accrued liability.

Net OPEB Obligation (NOO): The NOO is the cumulative difference between the annual OPEB cost and actual contributions made. If the plan is not pre-funded, the actual contribution would be equal to the annual benefit payments less retiree contributions.

Annual OPEB Cost (AOC): Annual OPEB cost is the measure required by GASB 45 of a sole or agent employer's "cost" of participating in an OPEB plan. When an employer has no net OPEB obligation, annual OPEB cost is equal to the ARC. When a net OPEB obligation has a liability (positive) balance, annual OPEB cost is equal to (a) the ARC, plus (b) one year's interest on the beginning balance of the net OPEB obligation, less (c) an adjustment to the ARC to offset, approximately, the amount included in the ARC for amortization of the past contribution deficiencies. When a net OPEB obligation has an asset (negative) balance, the interest adjustment should be deducted from and the ARC adjustment should be added to the ARC, to determine annual OPEB cost.

ARC Adjustment: The ARC adjustment is an amortization payment based on the prior year NOO. The purpose of the interest and ARC adjustments is to avoid "double-counting" annual OPEB cost and liabilities. Without the adjustments, annual OPEB cost and the net OPEB obligation (liability) would be overstated by the portion of the amortization amount previously recognized in annual OPEB cost. With the adjustments, annual OPEB cost should be approximately equal to the ARC that would have been charged if all prior ARCs had been paid in full, plus one year's interest on the net OPEB obligation.

Employer Contributions: For the purposes of GASB 43/45, an employer has contributed to an OPEB plan if the employer has (a) provided benefits directly to retired plan members or their beneficiaries, (b) paid insurance premiums to insure the payment of benefits, or (c) irrevocably transferred assets to a qualifying trust, or equivalent arrangement, in which plan assets are dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan and are legally protected from creditors of the employer(s) or plan administrator.

EXHIBIT V

Accounting Requirements

The Governmental Accounting Standards Board (GASB) issued Statement Number 43 – *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans,* and Statement Number 45 – *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions.* Under these statements, all state and local government entities that provide other post employment benefits (OPEB) are required to report the cost of these benefits on their financial statements. The accounting standards supplement cash accounting, under which the expense for postemployment benefits is equal to benefit and administrative costs paid on behalf of retirees and their dependents (*i.e.*, a pay-as-you-go basis).

The statements cover postemployment benefits of health, prescription drug, dental, vision and life insurance coverage for retirees; long-term care coverage, life insurance and death benefits that are *not* offered as part of a pension plan; and long-term disability insurance for employees. The benefits valued in this report are limited to those described in Exhibit III of Section 4, which are based on those provided under the terms of the substantive plan in effect at the time of the valuation and on the pattern of sharing costs between the employer and plan members. The projection of benefits is not limited by legal or contractual limits on funding the plan unless those limits clearly translate into benefit limits on the substantive plan being valued.

The new standards introduce an accrual-basis accounting requirement, thereby recognizing the employer cost of postemployment benefits over an employee's career. The standards also introduce a consistent accounting requirement for both pension and non-pension benefits.

The total cost of providing postemployment benefits is projected, taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions. These assumptions are summarized in Exhibit II of Section 4. This amount is then discounted to determine the actuarial present value of the total projected benefits (APB). The actuarial accrued liability (AAL) is the portion of the present value of the total projected benefits allocated to years of employment prior to the measurement date. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and actuarial value of assets in the Plan.

Once the UAAL is determined, the Annual Required Contribution (ARC) is determined as the normal cost (the APB allocated to the current year of service) and the amortization of the UAAL. This ARC is compared to actual contributions made and any difference is reported as the Net OPEB Obligation (NOO). In addition, Required Supplementary Information (RSI) must be reported, including historical information about the UAAL and the progress in funding the Plan. Exhibit IV of Section 4 contain a definition of terms as well as more information about GASB 43/45 concepts.

The calculation of an accounting obligation does not, in and of itself, imply that there is any legal liability to provide the benefits valued, nor is there any implication that the Employer is required to implement a funding policy to satisfy the projected expense.

Actuarial calculations reflect a long-term perspective, and the methods and assumptions use techniques designed to reduce short term volatility in accrued liabilities and the actuarial value of assets, if any.

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and the actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

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City of Los Angeles Fire and Police Pension Plan (LAFPP)

Governmental Accounting Standards (GAS) 67
Actuarial Valuation as of June 30, 2016

This report has been prepared at the request of the Board of Commissioners to assist LAFPP in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Commissioners and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

Segal Consulting
100 Montgomery Street Suite 500 San Francisco, CA 94104-4308
T 415.263.8200 www.segalco.com

November 18, 2016

Board of Fire and Police Pension Commissioners
City of Los Angeles Fire and Police Pension Plan
701 East 3rd Street, Suite 200
Los Angeles, CA 90013

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards (GAS) 67 Actuarial Valuation as of June 30, 2016. It contains various information that will need to be disclosed in order to comply with GAS 67.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Plan. The census and financial information on which our calculations were based was prepared by Los Angeles Fire & Police Pensions (LAFPP). That assistance is gratefully acknowledged.

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

The actuarial calculations were completed under the supervision of Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the Plan.

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

Sincerely,

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

By:

Paul Angelo, FSA, MAAA, FCA, EA	*Andy Yeung, ASA, MAAA, FCA, EA*
Senior Vice President and Actuary	*Vice President and Actuary*

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SECTION 1

VALUATION SUMMARY

SECTION 2

GAS 67 INFORMATION

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APPENDIX A

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards (GAS) 67 as of June 30, 2016. This valuation is based on:

- The benefit provisions of LAFPP, as administered by the Board of Commissioners;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2015, provided by LAFPP[1];
- The assets of the Plan as of June 30, 2016, provided by LAFPP;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

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

- The Governmental Accounting Standards Board (GASB) defines pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans can still develop and adopt funding policies under current practices.
- When measuring pension liability, GASB uses the same actuarial cost method (Entry Age method) and the same type of discount rate (expected return on assets) as LAFPP uses for funding. Note that, unrelated to the investment return assumption, the GASB rules use a version of the Entry Age method where the Total Pension Liability (TPL) must be fully accrued by the time a member either enters the DROP or is expected to elect the DROP. This is in contrast to the version of the Entry Age method used for funding, where the Actuarial Accrued Liability (AAL) is not fully accrued until members retire from employment after participation in the DROP. Under GASB, actives who are expected to enroll in the DROP in the future would report an annual Service Cost that is higher than the Normal Cost used for

[1] *Recently, we were informed by LAFPP that there were approximately 780 Tier 6 active members whose service (and member contributions with interest) were underreported by about half a year in the data provided for our June 30, 2015 funding valuation. After consulting with LAFPP, we have adjusted the Total Pension Liability as of June 30, 2016 (which is originally developed based on the June 30, 2015 membership data) to calculate the impact of using the corrected data.*

funding, while members already in the DROP would report no Service Cost even though their Normal Cost continues to accrue.

As the service retirement rates we use in the funding valuation have been developed based on the later date of exit from the DROP, we have adjusted those rates in this valuation so that they are based on the earlier date of first participation in the DROP. Those rates are provided in Appendix A.

- The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan Fiduciary Net Position. The Plan Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis.
- The NPL increased from to $2.039 billion as of June 30, 2015 to $2.461 billion as of June 30, 2016 mainly due to the loss from an approximate return on the market value of assets of 0.9% during 2015/2016 that was less than the assumption of 7.50% used in the June 30, 2015 valuation (that loss was about $1.2 billion). That loss was offset to some degree by lower than expected salary increases for continuing active members, lower than expected COLAs granted to retirees, beneficiaries and DROP members, and a gain due to actual contributions greater than expected. Changes in these values during the last two fiscal years ending June 30, 2015 and June 30, 2016 can be found in Exhibit 3.
- The NPLs measured as of June 30, 2016 and 2015 have been determined by rolling forward the results of the actuarial valuations as of June 30, 2015 and June 30, 2014, respectively.
- The discount rate used to determine the TPL and NPL as of June 30, 2016 and 2015 was 7.50%, following the same assumption used by the Plan in the pension funding valuation as of June 30, 2015. Details on the derivation of the discount rate can be found in Exhibit 5 of Section 2. Various other information that is required to be disclosed can be found throughout Exhibits 1 through 4 in Section 2.

Summary of Key Valuation Results

	2016	2015
Disclosure elements for fiscal year ending June 30:		
Service cost[1]	$365,956,485	$368,700,102
Total Pension Liability	19,565,408,718	19,385,427,756
Plan Fiduciary Net Position	17,104,276,335	17,346,554,076
Net Pension Liability	2,461,132,383	2,038,873,680
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	87.42%	89.48%
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions	$478,385,438	$480,332,251
Actual contributions	478,385,438	480,332,251
Contribution deficiency (excess)	0	0
Demographic data for plan year ending June 30:[2]		
Number of retired members and beneficiaries	12,819	12,593
Number of vested terminated members[3]	128	112
Number of DROP members	1,243	1,359
Number of active members	11,807	11,709
Key assumptions as of June 30:		
Investment rate of return	7.50%	7.50%
Inflation rate	3.25%	3.25%
Projected salary increases[4]	Ranges from 4.75% to 11.50% based on years of service	Ranges from 4.75% to 11.50% based on years of service

(1) *Please note that service cost is always based on the previous year's assumptions, meaning both values are based on those assumptions shown as of June 30, 2015.*

(2) *Data as of June 30, 2015 is used in the measurement of the TPL as of June 30, 2016.*

(3) *Includes terminated members due only a refund of member contributions.*

(4) *Includes inflation at 3.25% plus real across the board salary increases of 0.75% plus merit and promotional increases.*

Important Information about Actuarial Valuations

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

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

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

- The valuation is prepared at the request of LAFPP. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

- If LAFPP is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. LAFPP should look to their other advisors for expertise in these areas.

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

EXHIBIT 1

General Information – "Financial Statements", Note Disclosures and Required Supplementary Information for a Single-Employer Pension Plan

Plan Description

Plan administration. The City of Los Angeles Fire and Police Pensions (LAFPP) was established by the City of Los Angeles in 1899. LAFPP is a single employer public employee retirement system whose main function is to provide retirement benefits to the safety members employed by the City of Los Angeles.

The Fire and Police Pension Plan is administered by a Board of Commissioners composed of five commissioners who are appointed by the Mayor, two commissioners elected by Police Members of the Plan and two commissioners elected by Fire Members of the Plan. Under provisions of the City Charter, the City Administrative Code and the State Constitution, the Board has the responsibility to administer the Plan.

Plan membership. At June 30, 2016, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	12,819
Vested terminated members entitled to, but not yet receiving benefits	128
DROP members	1,243
Active members	11,807
Total	25,997

Note: Data as of June 30, 2016 is not used in the measurement of the TPL as of June 30, 2016.

Benefits provided. LAFPP provides service retirement, disability, death and survivor benefits to eligible sworn members of the Los Angeles Fire, Police and Harbor Departments. Sworn employees become members upon graduation from the Police Academy or Fire Drill Tower.

There are currently six tiers applicable to members of the LAFPP. Tier 1 includes members hired on or before January 28, 1967. Tier 2 includes members hired from January 29, 1967 through December 7, 1980, and those Tier 1 members who transferred to Tier 2 during the enrollment period of January 29, 1967 to January 29, 1968. Tier 3 includes members hired from December 8, 1980 through June 30, 1997 and those Tier 4 members hired during the period of July 1, 1997 through December 31, 1997 who elected to transfer to Tier 3 by the enrollment deadline of June 30, 1998. Tier 4 includes members hired from July 1, 1997 through December 31, 2001 and those Tier 3 members who elected to transfer to Tier 4 by the enrollment deadline of June 30, 1998. Tier 5 includes members hired from January 1, 2002 through June 30, 2011 and those active members of Tiers 2, 3, or 4 who elected to transfer to Tier 5 during the enrollment period of January 2, 2002 through December 31, 2002. Tier 6 was established for all firefighters and police officers hired on or after July 1, 2011.

Tier 1, Tier 2, and Tier 4 members are eligible to retire once they attain 20 years of service. Tier 3 members are eligible to retire once they reach age 50 and have attained 10 or more years of service. Tier 5 and Tier 6 members are eligible to retire once they reach age 50 and have attained 20 or more years of service.

The Service Retirement benefit the member will receive is based upon age at retirement, final average compensation, years of retirement service credit and tier.

The Tier 1 Service Retirement benefit is calculated pursuant to the provisions of Section 1304 of the Los Angeles Charter. The monthly allowance for a member with between 20 to 25 years of service who retires from active status is equal to 40% of the average monthly rate of salary assigned to the ranks or positions held by the member during the three years immediately preceding the date of his/her retirement plus 2% of the average rate of salary for each year of service in excess of 20 years. The monthly allowance for a member with between 25 to 34 years of service who retires from active status is equal to 50% of the average monthly rate of salary assigned to the ranks or positions held by the member during the three years immediately preceding the date of his/her retirement plus 1 2/3% of the average rate of salary for each year of service in excess of 25 years. The monthly allowance for a member with 35 or more years of service who retires from active status is equal to 66 2/3% of the average monthly rate of salary assigned to the ranks or positions held by the member during the three years immediately preceding the date of his/her retirement.

The Tier 2 Service Retirement benefit is calculated pursuant to the provisions of Section 1408 of the Los Angeles Charter. The monthly allowance for a member with less than 25 years of service who retires from active status is equal to 2% of Normal Pension Base per year of service. The monthly allowance for a member with 25 or more years of service who retires from active status is equal to 55% of Normal Pension Base plus 3% of Normal Pension Base for each year of service in excess of 25 years, with a maximum of 70% of Normal Pension Base.

The Tier 3 Service Retirement benefit is calculated pursuant to the provisions of Section 1504 of the Los Angeles Charter. The monthly allowance for a member with less than 20 years of service who retires from active status is equal to 2% of Final Average Salary per year of service. The monthly allowance for a member with 20 or more years of service who retires from active status is equal to 40% of Final Average Salary plus 3% of Final Average Salary for each year of service in excess of 20 years, with a maximum of 70% of Final Average Salary.

The Tier 4 Service Retirement benefit is calculated pursuant to the provisions of Section 1604 of the Los Angeles Charter. The monthly allowance for a member who retires from active status is equal to 40% of Final Average Salary plus 3% per year of service over 20 years, with a maximum of 70% of Final Average Salary.

The Tier 5 Service Retirement benefit is calculated pursuant to the provisions of Section 4.2004 of the Los Angeles Administrative Code. The monthly allowance for a member who retires from active status is equal to 50% of Final Average Salary plus 3% per year of service over 20 years, except for the 30th year, where 4% is provided, with a maximum of 90% of Final Average Salary.

The Tier 6 Service Retirement benefit is calculated pursuant to the provisions of Section 1704 of the Los Angeles Charter. The monthly allowance for a member who retires from active status is equal to 40% of Final Average Salary, plus 3% of Final Average Salary per year of service from 21 through 25 years, 4% of Final Average Salary per year of service from 26 through 30 years, and 5% of Final Average Salary per year of service over 30 years, with a maximum of 90% of Final Average Salary.

Under Tier 1, pension benefits are calculated based on the average monthly rate of salary assigned to the ranks or positions held by the member during the three years immediately preceding the date of his/her retirement. Under Tier 2, pension benefits are calculated based on the Normal Pension Base, the final monthly salary rate. Under Tiers 3 – 6, pension benefits are calculated based on the Final Average Salary. Under Tiers 3 – 5, the Final Average Salary is the highest monthly average salary actually received during any 12 consecutive months of service. Under Tier 6 the Final Average Salary is the highest monthly average salary actually received during any 24 consecutive months of service.

LAFPP provides annual cost-of-living adjustments (COLAs) to retirees. The cost-of-living adjustments are made each July 1 and vary by Tier. Under Tier 1 and Tier 2, the COLA is based on the percentage change in the average of the Consumer Price Index for the Los Angeles-Riverside-Orange County Area--All Items For All Urban Consumers. Under Tier 3 and Tier 4, the COLA is the same as under Tier 1 and Tier 2 but is capped at 3%, with a prorated COLA in the first year of retirement. Under Tier 5 and Tier 6, the COLA is the same as under Tier 3 and Tier 4, with the excess of the COLA over 3% banked for future use when the COLA is under 3%.

The City of Los Angeles contributes to the retirement plan based upon actuarially determined contribution rates adopted by the Board of Commissioners based upon recommendations received from LAFPP's actuary after the completion of the annual actuarial valuation. The average employer contribution rate for fiscal year 2015 – 2016 (based on the June 30, 2014 valuation) was 35.39% of compensation if paid on July 15, 2015.

All members are required to make contributions to LAFPP regardless of tier in which they are included. However, members are exempt from making contributions when their continuous service exceeds 30 years for Tiers 1 through 4, and 33 years for Tier 5 and Tier 6. The average member contribution rate for fiscal year 2015 – 2016 (based on the June 30, 2014 valuation) was 9.60% of compensation paid biweekly.

EXHIBIT 2

Net Pension Liability

	June 30, 2016	June 30, 2015
The components of the Net Pension Liability are as follows:		
Total Pension Liability	$19,565,408,718	$19,385,427,756
Plan Fiduciary Net Position	17,104,276,335	17,346,554,076
Net Pension Liability	$2,461,132,383	$2,038,873,680
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	87.42%	89.48%

The Net Pension Liability (NPL) was measured as of June 30, 2016 and June 30, 2015 and determined based upon plan assets as of each measurement date and upon rolling forward to each measurement date the Total Pension Liability (TPL) from the actuarial valuations as of June 30, 2015 and 2014, respectively.

Actuarial assumptions. The TPLs as of June 30, 2016 and June 30, 2015 were determined by actuarial valuations as of June 30, 2015 and June 30, 2014, respectively. The actuarial assumptions used in the June 30, 2015 and June 30, 2014 valuations were based on the results of an experience study for the period from July 1, 2010 through June 30, 2013. They are the same as the assumptions used in the June 30, 2016 funding actuarial valuation for LAFPP. The assumptions are outlined on page 9 of this report. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation	3.25%
Salary increases	Ranges from 4.75% to 11.50% based on years of service, including inflation
Investment rate of return	7.50%, including inflation but net of pension plan investment expense
Other assumptions	See analysis of actuarial experience during the period July 1, 2010 through June 30, 2013 and Appendix A for the service retirement rates after they have been adjusted to be based on the earlier date of first participation in the DROP.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation and deducting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each measurement class, after deducting inflation, but before reduction for investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Large Cap U.S. Equity	23.00%	6.03%
Small Cap U.S. Equity	6.00%	6.71%
Developed International Equity	16.00%	6.71%
Emerging Markets Equity	5.00%	8.02%
U.S. Core Fixed Income	14.00%	0.52%
High Yield Bonds	3.00%	2.81%
Real Estate	10.00%	4.73%
TIPS	5.00%	0.43%
Commodities	5.00%	4.67%
Cash	1.00%	-0.19%
Unconstrained Fixed Income	2.00%	2.50%
Private Equity	10.00%	9.25%
Total Portfolio	100.00%	5.12%

Discount rate. The discount rate used to measure the TPL was 7.50% as of June 30, 2016 and June 30, 2015. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates for each tier and that employer contributions will be made at rates equal to the actuarially determined contribution rates for each tier. For this purpose, only employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL as of both June 30, 2016 and June 30, 2015.

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the NPL of LAFPP as of June 30, 2016, calculated using the discount rate of 7.50%, as well as what LAFPP's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50%) or 1-percentage-point higher (8.50%) than the current rate:

	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Net Pension Liability as of June 30, 2016	$5,059,215,255	$2,461,132,383	$325,047,115

EXHIBIT 3

Schedule of Changes in LAFPP Net Pension Liability – Last Two Fiscal Years

		2016	2015
Total Pension Liability			
1.	Service cost	$365,956,485	$368,700,102
2.	Interest	1,399,576,068	1,384,526,680
3.	Change of benefit terms	0	0
4.	Differences between expected and actual experience	(595,188,412)	(310,881,738)
5.	Changes of assumptions	0	0
6.	Benefit payments, including refunds of employee contributions	(990,363,179)	(918,909,316)
7.	**Net change in Total Pension Liability**	$179,980,962	$523,435,728
8.	**Total Pension Liability – beginning**	19,385,427,756	18,861,992,028
9.	**Total Pension Liability – ending**	$19,565,408,718	$19,385,427,756
Plan Fiduciary Net Position			
10.	Contributions – employer	$478,385,438	$480,332,251
11.	Contributions – employee	129,733,559	126,770,882
12.	Net investment income	159,312,887	686,470,123
13.	Benefit payments, including refunds of employee contributions	(990,363,179)	(918,909,316)
14.	Administrative expense	(19,346,446)	(17,814,449)
15.	Other	0	0
16.	**Net change in Plan Fiduciary Net Position**	(242,277,741)	$356,849,491
17.	**Plan Fiduciary Net Position – beginning**	17,346,554,076	16,989,704,585
18.	**Plan Fiduciary Net Position – ending**	$17,104,276,335	$17,346,554,076
19.	**Net Pension Liability – ending (9) – (18)**	$2,461,132,383	$2,038,873,680
20.	**Plan Fiduciary Net Position as a percentage of the Total Pension Liability**	87.42%	89.48%
21.	**Covered employee payroll**	$1,351,788,221	$1,316,968,607
22.	**Net Pension Liability as percentage of covered employee payroll**	182.06%	154.82%

EXHIBIT 4

Schedule of Employer Contributions – Last Ten Fiscal Years

Year Ended June 30	Actuarially Determined Contributions[1]	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered-Employee Payroll[2]	Contributions as a Percentage of Covered Employee Payroll[3]
2007	$224,946,082	$224,946,082	$0	$1,130,296,904	19.90%
2008[4]	261,635,491	261,635,491	0	1,188,972,417	22.01%
2009	238,697,929	238,697,929	0	1,253,658,885	19.04%
2010	250,516,858	250,516,858	0	1,266,311,709	19.78%
2011	277,092,251	277,092,251	0	1,289,856,708	21.48%
2012	321,593,433	321,593,433	0	1,213,395,874	26.50%
2013	375,448,092	375,448,092	0	1,277,031,317	29.40%
2014	440,698,260	440,698,260	0	1,308,148,504	33.69%
2015	480,332,251	480,332,251	0	1,316,968,607	36.47%
2016	478,385,438	478,385,438	0	1,351,788,221	35.39%

See accompanying notes to this schedule on next page.

(1) *All "Actuarially Determined Contributions" through June 30, 2016 were determined as the "Annual Required Contribution" under GAS 25 and 27.*

(2) *Covered employee payroll represents the collective total of the LAFPP eligible wages of all LAFPP member categories.*

(3) *Contribution rate as a percentage of payroll reflects discount applied when the employer prepays its contributions. This rate has been "backed" into by dividing the actual contributions by the budgeted covered-employee payroll.*

(4) *Figures include amounts transferred and contributed during the fiscal year that were related to the transfer of certain Harbor Port Police members from the Los Angeles City Employees' Retirement System into LAFPP.*

Notes to Exhibit 4

Methods and assumptions used to establish "actuarially determined contribution" (ADC) rates:

The assumptions used in establishing the ADC for the year ended June 30, 2016 were based on the June 30, 2014 funding valuation.

Valuation date	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported
Actuarial cost method	Entry Age Actuarial Cost Method
Amortization method	For Tier 1, level dollar amortization is used with last period ending on June 30, 2037. For Tiers 2, 3 and 4, level percent of payroll amortization with multiple layers is used as a percent of total valuation payroll from the respective employer (i.e., City or Harbor Port Police). For Tiers 5 and 6, level percent of payroll with multiple layers is used as a percent of combined payroll for these tiers from the respective employer (i.e., City or Harbor Port Police).
Remaining amortization period	Actuarial gains/losses are amortized over 20 years. Assumption changes are amortized over 25 years. Plan changes are amortized over 15 years.
Asset valuation method	The market value of assets less unrecognized returns. Unrecognized return is equal to the difference between the actual and the expected return on a market value basis, and is recognized over a seven-year period. Deferred gains and losses as of June 30, 2013 have been combined and will be recognized over a period of six years from July 1, 2013. The actuarial value of assets is further adjusted, if necessary, to be within 40% of the market value of assets.
Actuarial assumptions:	
June 30, 2014 valuation	
Investment rate of return	7.50%, net of investment expenses
Inflation rate	3.25%
Administrative Expenses:	Out of the total 1.00% of paroll in administrative expense, 0.94% of payroll payable biweekly is allocated to the Retirement Plan. This is equal to 0.91% of payroll payable at beginning of the year.
Real across-the-board salary increase	0.75%
Projected salary increases(1)	Ranges from 4.75% to 11.50% based on years of service
Cost of living adjustments	3.25% of Tiers 1 and 2 retirement income and 3.00% of Tiers 3, 4, 5, and 6 retirement income.
Other assumptions	Same as those used in the June 30, 2014 funding actuarial valuation.

(1) *Includes inflation at 3.25% plus across-the-board salary increases of 0.75% plus merit and promotional increases.*

EXHIBIT 5

Projection of Plan Fiduciary Net Position for Use in Calculation of Discount Rate as of June 30, 2016 ($ in millions)

Year Beginning July 1,	Projected Beginning Plan Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Plan Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2015	$17,347	$608	$990	$19	$159	$17,104
2016	17,104	602	1,052	13	1,282	17,923
2017	17,923	592	998	13	1,345	18,849
2018	18,849	615	1,089	13	1,412	19,775
2019	19,775	598	1,231	12	1,474	20,603
2020	20,603	558	1,298	12	1,530	21,380
2021	21,380	576	1,238	12	1,592	22,299
2022	22,299	597	1,302	12	1,660	23,242
2023	23,242	601	1,365	12	1,728	24,195
2024	24,195	538	1,433	12	1,792	25,080
2039	32,561	330	2,599	5	2,353	32,640
2040	32,640	259	2,667	4	2,351	32,580
2041	32,580	143	2,723	4	2,335	32,332
2042	32,332	90	2,767	3	2,311	31,962
2043	31,962	74	2,798	3	2,281	31,516
2083	1,169	0	302	0	75	941
2084	941	0	251	0	60	750
2085	750	0	206	0	47	592
2086	592	0	167	0	37	462
2087	462	0	134	0	29	356
2102	3	0	1	0	0 *	2
2103	2	0	1	0	0 *	1
2104	1	0	0 *	0	0 *	1
2105	1	0	0 *	0	0 *	0 *
2106	0 *	0	0 *	0	0 *	0 *
2120	0 *	0	0 *	0	0 *	0 *
2121	0 *					
2121	Discounted Value: 0 *					

* *Less than $1 million, when rounded.*

EXHIBIT 5 (continued)

Projection of Plan Fiduciary Net Position for Use in Calculation of Discount Rate as of June 30, 2016 ($ in millions)

Notes:

(1) Amounts may not total exactly due to rounding.

(2) Amounts shown in the year beginning July 1, 2015 row are actual amounts, based on the information provided by LAFPP.

(3) Years 2025-2038, 2044-2082, 2088-2101, and 2107-2119 have been omitted from this table.

(4) Column (a): Except for the "discounted value" shown for 2120, none of the projected beginning Plan Fiduciary Net Position amounts shown have been adjusted for the time value of money.

(5) Column (b): Projected total contributions include employee and employer normal cost contributions based on closed group projections (based on covered active members as of June 30, 2015); plus employer contributions to the unfunded actuarial accrued liability; plus employer contributions to fund each year's annual administrative expenses. Contributions are assumed to occur beginning of the year.

(6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of June 30, 2015. The projected benefit payments reflect the cost of living increase assumptions used in the June 30, 2016 valuation report. The projected benefit payments are assumed to occur beginning of the month, on average.

(7) Column (d): Projected administrative expenses (payable at the beginning of the year) are calculated as 0.91% of projected payroll, based on the closed group of active members as of June 30, 2015. Projected administrative expenses are then adjusted to reflect the assumption that they occur halfway through the year, on average.

(8) Column (e): Projected investment earnings are based on the assumed investment rate of return of 7.50% per annum except for 2015/2016.

(9) As illustrated in this Exhibit, the Plan Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.50% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of June 30, 2016 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

Appendix A

Retirement Rates After Adjustment for DROP Participation

As the service retirement rates we use in the funding valuation have been developed based on the later date of exit from the DROP, we have adjusted those rates in this GASB valuation so that they are based on the earlier date of first participation in the DROP. Retirement rates used in our June 30, 2016 funding valuation are shown on the next page. Please note that those rates are applicable in the GASB valuation for actives not eligible to enter the DROP. A sample of those rates used in the GASB valuation for an active eligible to enter the DROP at age 55 are as follows:

Retirement Rates for funding valuation
(Also applicable to actives not eligible to enter the DROP in GASB valuation)

	Fire			Police		
Age	Tiers 2&4	Tiers 3&5	Tier 6	Tiers 2&4	Tiers 3&5	Tier 6
41	1.00%	0.00%	0.00%	10.00%	0.00%	0.00%
42	1.00	0.00	0.00	10.00	0.00	0.00
43	1.00	0.00	0.00	10.00	0.00	0.00
44	1.00	0.00	0.00	10.00	0.00	0.00
45	1.00	0.00	0.00	10.00	0.00	0.00
46	1.00	0.00	0.00	7.00	0.00	0.00
47	1.00	0.00	0.00	7.00	0.00	0.00
48	2.00	0.00	0.00	7.00	0.00	0.00
49	2.00	0.00	0.00	7.00	0.00	0.00
50	3.00	3.00	3.00	12.00	7.00	8.00
51	4.00	3.00	3.00	12.00	6.00	10.00
52	5.00	3.00	4.00	12.00	6.00	10.00
53	10.00	3.00	5.00	15.00	6.00	15.00
54	15.00	7.00	5.00	20.00	10.00	15.00
55	20.00	12.00	10.00	20.00	18.00	18.00
56	20.00	14.00	12.00	25.00	18.00	18.00
57	20.00	16.00	15.00	25.00	20.00	20.00
58	20.00	20.00	18.00	25.00	22.00	22.00
59	20.00	25.00	20.00	25.00	25.00	25.00
60	20.00	25.00	25.00	25.00	25.00	25.00
61	20.00	30.00	30.00	25.00	25.00	25.00
62	25.00	35.00	30.00	25.00	25.00	25.00
63	25.00	40.00	35.00	30.00	25.00	25.00
64	30.00	40.00	40.00	40.00	30.00	30.00
65	100.00	100.00	100.00	100.00	100.00	100.00

Sample Retirement Rates for GASB valuation
(For actives eligible to enter the DROP at 55)

	Fire			Police		
Age	Tiers 2&4	Tiers 3&5	Tier 6	Tiers 2&4	Tiers 3&5	Tier 6
41	1.00%	0.00%	0.00%	10.00%	0.00%	0.00%
42	1.00	0.00	0.00	10.00	0.00	0.00
43	1.00	0.00	0.00	10.00	0.00	0.00
44	1.00	0.00	0.00	10.00	0.00	0.00
45	1.00	0.00	0.00	10.00	0.00	0.00
46	1.00	0.00	0.00	7.00	0.00	0.00
47	1.00	0.00	0.00	7.00	0.00	0.00
48	2.00	0.00	0.00	7.00	0.00	0.00
49	2.00	0.00	0.00	7.00	0.00	0.00
50	3.00	3.00	3.00	12.00	7.00	8.00
51	4.00	3.00	3.00	12.00	6.00	10.00
52	5.00	3.00	4.00	12.00	6.00	10.00
53	10.00	3.00	5.00	15.00	6.00	15.00
54	15.00	7.00	5.00	20.00	10.00	15.00
55	26.23	21.06	20.49	26.01	25.47	25.47
56	27.70	26.20	25.81	32.42	27.00	27.00
57	31.92	32.30	30.46	34.77	30.84	30.84
58	34.71	41.79	38.90	40.44	35.38	35.38
59	41.79	51.69	48.62	52.03	45.33	45.33
60	90.43	88.44	88.89	89.56	90.23	90.23
61	1.00	1.50	1.50	1.25	1.25	1.25
62	1.25	1.75	1.50	1.25	1.25	1.25
63	1.25	2.00	1.75	1.50	1.25	1.25
64	1.50	2.00	2.00	2.00	1.50	1.50
65	100.00	100.00	100.00	100.00	100.00	100.00