City of Fresno Fire and Police Retirement System

Actuarial Valuation and Review
as of June 30, 2015

This report has been prepared at the request of the Board of Retirement to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Retirement 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

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November 30, 2015

Board of Retirement
City of Fresno Fire and Police Retirement System
2828 Fresno Street, Suite 201
Fresno, California 93721-1327

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2015. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal year 2016-2017 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 City of Fresno Fire and Police Retirement System. The census information and financial information on which our calculations were based was prepared by the Retirement System. 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 are reasonably related to the experience of and the expectations for the Retirement System.

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
Senior Vice President and Actuary

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

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SECTION 1

VALUATION SUMMARY

SECTION 2

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REPORTING INFORMATION

SECTION 1: Valuation Summary for the City of Fresno Fire and Police Retirement System

Purpose

This report has been prepared by Segal Consulting to present a valuation of the City of Fresno Fire and Police Retirement System as of June 30, 2015. 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 Retirement System, as administered by the Board of Retirement;
- The characteristics of covered active members, DROP participants, inactive vested members, and retired members and beneficiaries as of June 30, 2015, provided by the Retirement System;
- The assets of the System as of June 30, 2015, provided by the Retirement System;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

One of the general goals of an actuarial valuation is to establish contributions which fully fund the Retirement System's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

As of June 30, 2015, there is an actuarial surplus (or prefunded actuarial accrued liability) as the System has valuation value of assets that are in excess of 110% of the actuarial accrued liability. The actuarial surplus in the Retirement System is used to reduce the City's contribution and to provide a Post Retirement Supplemental Benefit (PRSB). The allocation of surplus as of June 30, 2015 as well as for the last valuation as of June 30, 2014 is provided in Appendix B of this report.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the Retirement System's assets, liabilities and future contribution requirements. Our calculations are based upon member data and financial information provided to us by the Retirement System's staff. This information has not been audited by us, but it has been reviewed and found to be consistent, both internally and with the prior year's information.

The contribution requirements are determined as a percentage of payroll. The System's employer rates provide for both normal cost and a contribution to amortize any unfunded or overfunded actuarial accrued liabilities. Any change in the unfunded actuarial accrued liability (UAAL) that arises due to actuarial gains or losses or due to plan amendments at each valuation is amortized over its own declining 15-year period (with the exception of any change due to temporary retirement incentives which is amortized over its own declining period of up to 5 years). Any change in UAAL that arises from changes in actuarial assumptions or methods will be amortized over its own declining 25-year period. When there is any "actuarial surplus" (the funded ratio is over 110%), the portion of surplus in excess of 110% will be amortized over a non-declining 25-year period.

Please note that the Actuarial Standards Board has adopted Actuarial Standard of Practice (ASOP) No. 4 that provides guidance for actuaries to follow when valuing pension liabilities. For a plan such as that offered by the Retirement System that utilizes the actuarial surplus to provide contribution rate offsets and a PRSB benefit, we are required to indicate in the valuation report that the impact of the application of any future actuarial surplus on the future financial condition of the plan has not been explicitly measured in the valuation. Furthermore, under the revised ASOP No. 4 that becomes effective starting with this valuation as of June 30, 2015, we have to consider using alternative procedures (such as stochastic modeling) for "gain sharing provisions that trigger benefit increases when investment returns are favorable but do not trigger benefit decreases when investment returns are unfavorable." Based on our analysis, we do not believe the System's actuarial surplus distribution provisions would necessarily fall under the new guidelines of ASOP No. 4 so as to require quantification. This is based on the observation that only a portion of the surplus is available for distribution (on an amortized basis over 25 years) when the funded status of the System is over 110% in a particular valuation but surplus distribution will be suspended immediately in the following valuation if the funded status falls below 110% in the following valuation. Nonetheless, it should be understood that there is still a financial impact associated with the surplus distribution provision. The Board may wish to consider authorizing a supplemental study as part of the upcoming triennial experience study before the next valuation as of June 30, 2016 so that the potential impact can be quantified.

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2016 through June 30, 2017.

Significant Issues in Valuation Year

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

Reference: Pg. 19

- In the June 30, 2014 valuation, the ratio of the valuation value of assets to actuarial accrued liabilities was 113.6%. In this June 30, 2015 valuation, the funding ratio has increased to 119.6%. The funding ratios as of June 30, 2014 and 2015 if measured using the market value of assets instead of the valuation value of assets are 124.4% and 122.8%, respectively.
- With this valuation, we are recommending a change in the method that has been used by Segal (and by the Retirement System's prior actuaries) since the inception of the DROP in setting the normal cost rate for members enrolled in the DROP as of June 30, 2015. Currently, rather than calculating the normal cost rates explicitly for those members by using their demographic profile (e.g., age at entry into the Retirement System, composition of male and female, etc.) their normal cost rates are assumed to be equal to those of the other active members not enrolled in the DROP. By changing from this implicit to an explicit approach where the normal cost is calculated for all active members, the aggregate employer normal cost rate increases by 0.36% of payroll and the actuarial accrued liability decreases by $1.1 million. There is no impact on the employee normal cost rate.

Reference: Pg. 30

- The Retirement System's prefunded actuarial accrued liability (PAAL) as of June 30, 2014 was $136.6 million on a valuation value of assets basis. In this year's valuation, the PAAL has increased to $200.4 million on a valuation value of

assets basis. The Plan had a net actuarial experience gain of about $55.1 million. A reconciliation of the System's PAAL is provided in Section 3, Exhibit H.

- This valuation concludes the three-year phase-in of the impact of the 2013 changes in assumptions on the employer contribution rate calculated in the June 30, 2013 valuation that began with fiscal year 2014/2015. Contributions established in this valuation for 2016/2017 reflect the final year, or 100% of the final employer contribution rate impact.

Reference: Pg. 15

The aggregate employer rate calculated in this valuation has decreased from 20.14% of payroll as of June 30, 2014 to 19.02% of payroll as of June 30, 2015. This is a net result of: (i) a higher surplus offset and (ii) changes in membership demographics, offset somewhat by (iii) phasing in another one-third of the impact on contributions from the 2013 changes in actuarial assumptions, (iv) the change in method for valuing DROP member normal cost, and (v) the difference between the actual and the estimated 2015/2016 plan year contributions. A reconciliation of the Retirement System's aggregate employer rate is provided in Section 2, Subsection D (see Chart 14).

Reference: Pg. 16

- The aggregate member rate calculated in this valuation has remained unchanged at 8.97% of payroll. A reconciliation of the Retirement System's aggregate member rate is provided in Section 2, Subsection D (see Chart 15). After around February 2011, active members who signed up for the DROP are required to continue their employee contributions; however, those contributions are deposited into the members' DROP accounts and therefore not available to fund the value of the retirement benefit earned up to the date of the DROP. Therefore, those contributions that will be deposited into the DROP accounts are disregarded in this valuation.

Reference: Pg. 6

- As indicated in Section 2, Subsection B (see Chart 7) of this report, the total unrecognized investment gain as of June 30, 2015 is $32.6 million (as compared to an unrecognized gain of $108.4 million in the June 30, 2014 valuation). This deferred investment gain will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years.
- The unrecognized investment gains of $32.6 million represent 2.4% of the market value of assets. Unless offset by future investment losses or other unfavorable experience, the recognition of the $32.6 million market gains is expected to have an impact on the System's future funded ratio and the aggregate employer contributions. To illustrate this potential impact, if the deferred investment gains were recognized immediately in the valuation value of assets:
  - the funded percentage would increase from 119.6% to 122.8%, and
  - the aggregate employer contribution rate for 2016/2017 would decrease from 19.02% of payroll to 17.67% of payroll.
- The actuarial valuation report as of June 30, 2015 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.

Impact of Future Experience on Contribution Rates

Future contribution requirements may differ from those determined in the valuation because of:

1) difference between actual experience and anticipated experience;
2) changes in actuarial assumptions or methods;
3) changes in statutory provisions; and
4) difference between the contribution rates determined by the valuation and those adopted by the Board.

Summary of Key Valuation Results (Dollar amounts in thousands)

	June 30, 2015		June 30, 2014	
Employer Contribution Rates:	Total Rate	Estimated Annual Amount [1]	Total Rate	Estimated Annual Amount [1]
Tier 1 Normal Cost Rate	29.59%	$3,157	26.88%	
Tier 2 Normal Cost Rate	22.24%	19,608	22.07%	
All Categories Combined	23.03%	22,765	22.70%	$22,435
Surplus Offset	-4.09%	-4,043	-1.48%	-1,463
Contribution (Excess)/Shortfall from Prior Fiscal Year	0.08%	80	-0.09%	-89
Adjustment for Phase-In of Assumption Changes	0.00%	0	-0.99%	-978
Required Contributions	19.02%	$18,802	20.14%	$19,905
Average Member Contribution Rates:	Total Rate	Estimated Annual Amount [2]	Total Rate	Estimated Annual Amount [2]
Tier 1	5.25%	$32	5.15%	$32
Tier 2	9.00%	7,678	9.00%	7,678
All Categories Combined	8.97%	7,710	8.97%	7,710
Funded Status:				
Actuarial Accrued Liability		$1,019,916		$1,006,028
Valuation Value of Assets (VVA)		1,220,269		1,142,649
Market Value of Assets (MVA) [3]		1,252,875		1,251,026
Funded Percentage on VVA basis		119.6%		113.6%
Prefunded Actuarial Accrued Liability on VVA basis		$200,353		$136,621
Funded Percentage on MVA basis		122.8%		124.4%
Prefunded Actuarial Accrued Liability on MVA basis		$232,959		$244,998
Key Economic Assumptions:				
Interest Rate		7.50%		7.50%
Inflation Rate		3.25%		3.25%
Across-the-Board Salary Increase		0.50%		0.50%

[1] *Based on projected fiscal year 2016-2017 annual payroll for active non-DROP and DROP members of $98,834.*

[2] *Based on projected fiscal year 2016-2017 annual payroll for members not in the DROP of $85,927.*

[3] *Excludes non-valuation reserves.*

Summary of Key Valuation Demographic and Financial Data

	June 30, 2015	June 30, 2014	Percentage Change
Active Members:			
Non-DROP			
Number of members	880	872	0.9%
Average age	41.0	40.8	N/A
Average service	12.5	12.4	N/A
Projected total compensation [1]	$82,820,376	$82,701,177	0.1%
Average projected compensation	$94,114	$94,841	0.8%
DROP			
Number of members	113	126	-10.3%
Average age	56.0	55.6	N/A
Average service	23.4	23.8	N/A
Projected total compensation [1]	$12,441,847	$13,557,816	-8.2%
Average projected compensation	$110,105	$107,602	2.3%
Retired Member and Beneficiaries:			
Number of members:			
Service retired	361	346	4.3%
Disability retired	376	368	2.2%
Beneficiaries	268	264	1.5%
Total	1,005	978	2.8%
Average age	67.0	66.7	N/A
Average monthly benefit [2]	$3,600	$3,597	0.1%
Vested Terminated Members:			
Number of vested terminated members [3]	87	69	26.1%
Average age	40.7	41.4	N/A
Summary of Financial Data (dollar amounts in thousands):			
Market value of assets [4]	$1,376,718	$1,366,922	0.7%
Return on market value of assets	2.90%	17.12%	N/A
Actuarial value of assets	$1,344,112	$1,258,545	6.8%
Return on actuarial value of assets	9.24%	9.88%	N/A
Valuation value of assets	$1,220,269	$1,142,649	6.8%
Return on valuation value of assets	8.45%	9.35%	N/A

[1] June 30, 2014 payroll was projected payroll for plan year 2014-2015. June 30, 2015 payroll was projected payroll for plan year 2015-2016.

[2] Excludes supplemental benefits (if any) paid from PRSB and benefits derived from DROP account balances.

[3] Includes terminated members due a refund of member contributions.

[4] Includes non-valuation reserves.

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 the Retirement System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the Retirement System.
- **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 the Retirement System. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

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

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

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, 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: 2006 – 2015

Year Ended June 30	Active Members [1]	Vested Terminated Members [2]	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
2006	1,097	44	819	0.79
2007	1,130	69	847	0.81
2008	1,182	73	856	0.79
2009	1,164	76	865	0.81
2010	1,135	57	902	0.84
2011	1,071	53	948	0.93
2012	1,055	50	960	0.96
2013	1,015	60	968	1.01
2014	998	69	978	1.05
2015	993	87	1,005	1.10

[1] *Includes DROP members.*

[2] *Includes terminated* members *due a refund of member contributions.*

Non-DROP Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 880 non-DROP active members with an average age of 41.0 years, average years of service of 12.5 and average compensation of $94,114. The 872 non-DROP active members in the prior valuation had an average age of 40.8 years, average years of service of 12.4 and average compensation of $94,841.

Inactive Members

In this year's valuation, there were 87 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 69 in the prior valuation

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

CHART 2

Distribution of Non-DROP Active Members by Age as of June 30, 2015

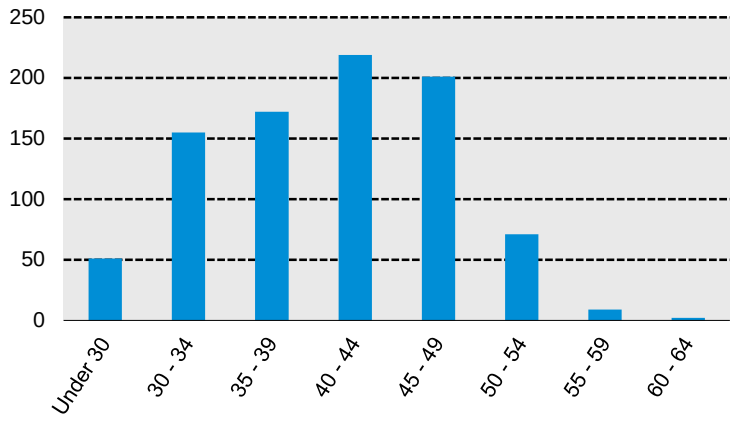
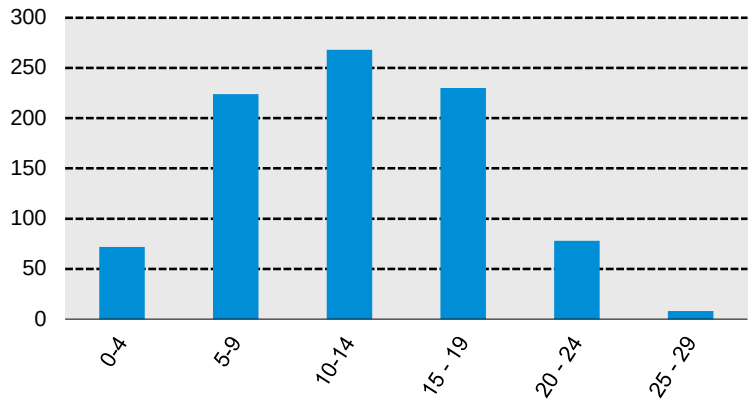


CHART 3

Distribution of Non-DROP Active Members by Years of Service as of June 30, 2015



DROP Active Members

In this year's valuation, there were 113 DROP active members with an average age of 56.0 years, average years of service of 23.4 and average compensation of $110,105. The 126 DROP active members in the prior valuation had an average age of 55.6 years, average years of service of 23.8 and average compensation of $107,602.

Retired Members and Beneficiaries

As of June 30, 2015, 737 retired members and 268 beneficiaries were receiving total monthly benefits of $3,617,937. For comparison, in the previous valuation, there were 714 retired members and 264 beneficiaries receiving monthly benefits of $3,517,876.

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 (Excl. Beneficiaries) by Type and by Monthly Amount as of June 30, 2015

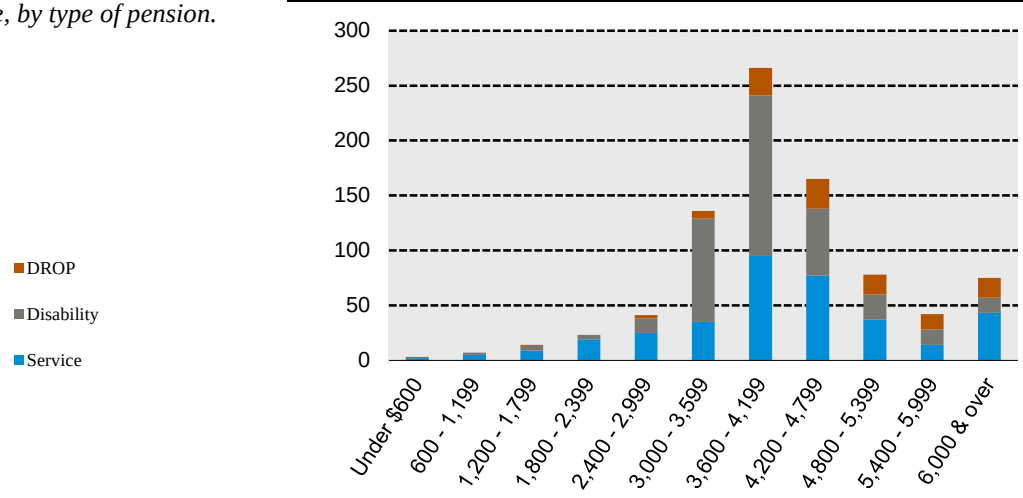
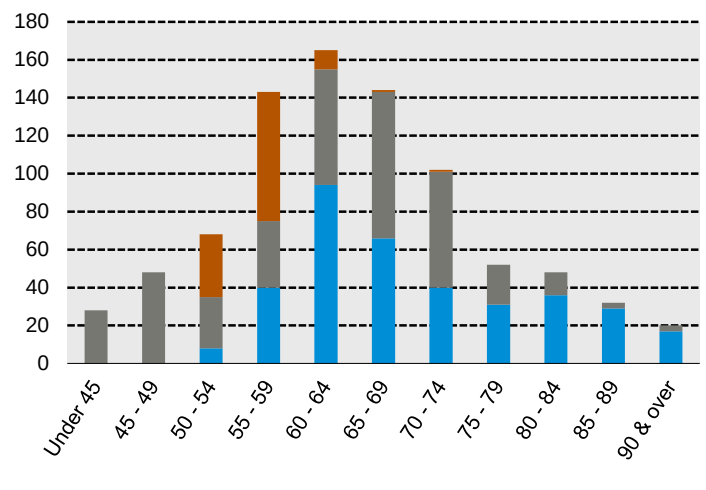


CHART 5

Distribution of Retired Members (Excl. Beneficiaries) by Type and by Age as of June 30, 2015



B. FINANCIAL INFORMATION

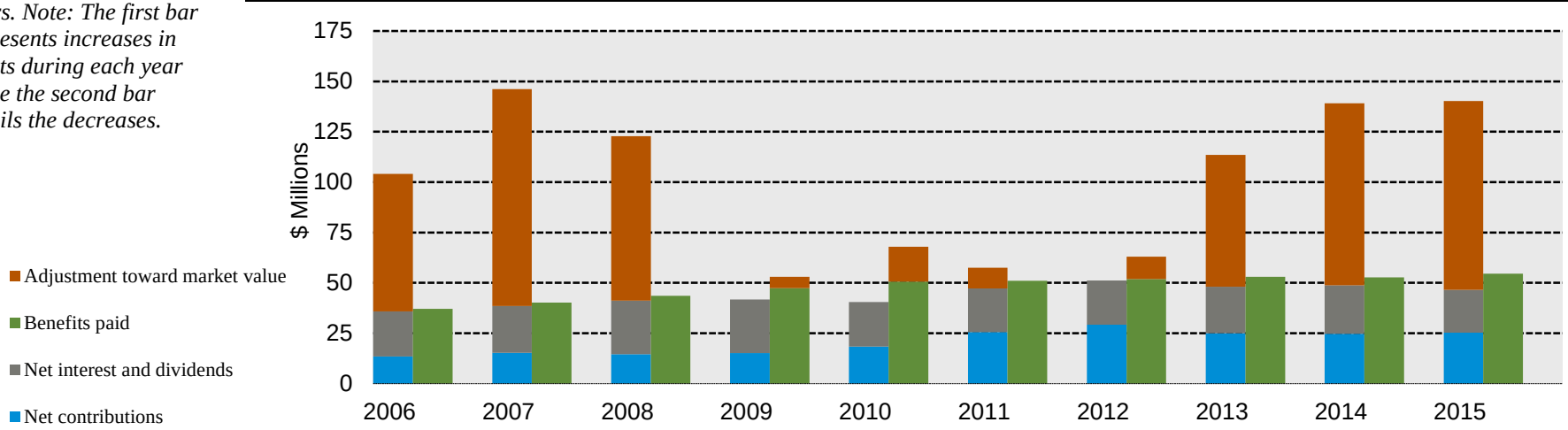
Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. The adjustment toward market value shown in the chart is the "non-cash" earnings on investments implicitly included in the actuarial value of assets. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D and E.

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, 2006-2015



It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Retirement 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 of assets.

The determination of the Actuarial and Valuation Value of Assets are provided on the following page.

CHART 7

Determination of Actuarial and Valuation Value of Assets for Year Ended June 30, 2015

Plan Year Ending June 30	Total Actual Market Return	Expected Return	Investment Gain/(Loss) [2]	Deferred Factor	Deferred Return
2012 [1]			$(31,168,873)	0.25	$(7,792,219)
2013	$140,701,338	$85,309,840	55,391,498	0.4	22,156,599
2014	201,837,997	88,430,161	113,407,836	0.6	68,044,701
2015	39,163,617	101,417,840	(62,254,223)	0.8	(49,803,379)
1. Total Deferred Return					$32,605,702
2. Net Market Value					1,376,717,663
3. Actuarial Value of Assets (Item 2 – Item 1)					$1,344,111,961
4. Ratio of Actuarial Value to Market Value					97.6%
5. Non-Valuation Reserves and Other Adjustments					
a. DROP Reserve					$123,506,000
b. PRSB Reserve					496,000
c. City Surplus Reserve [3]					(159,000)
d. Total					123,843,000
6. Valuation Value of Assets (Item 3 – Item 5d)					$1,220,268,961

[1] *Based on action taken by the Board in 2013, the net deferred loss of $31,168,873 as of June 30, 2012 was combined and will be recognized in four level amounts beginning with the June 30, 2013 valuation.*

[2] *Administrative expenses are treated as benefit payments and are excluded from the calculation of actual versus expected income.*

[3] *The City Surplus Reserve is treated as an asset; it represents the City's prior shortfall contributions due to the difference between the actual versus the estimated contributions for 2014/2015. This difference is taken into account in developing the contribution rate requirement for 2016/2017. See Steps (4) and (12) in Table 4 of Appendix B for calculations.*

Deferred return as of June 30, 2015 recognized in each of the next four years:

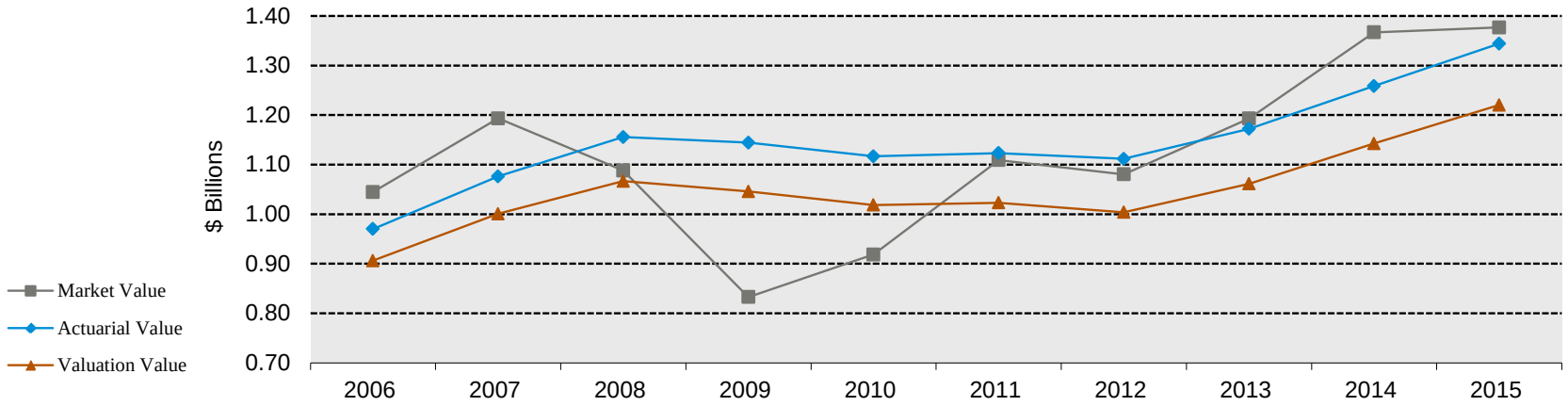
6/30/2016	$13,516,804
6/30/2017	21,309,022
6/30/2018	10,230,722
6/30/2019	(12,450,846)
	$32,605,702

The market value, actuarial value, and valuation value of assets are representations of the Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets, but with less volatility. The valuation value of assets is the actuarial value, excluding any non-valuation reserves. The valuation value of assets is significant because the Retirement System'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 market value, actuarial value and valuation value over the past ten years.

CHART 8

Market Value, Actuarial Value and Valuation Value of Assets as of June 30, 2006-2015



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 experience gain was $55.1 million, including a gain of $10.8 million from investments (after smoothing) and a gain of $44.3 million from all other sources. The net experience variation from individual sources other than investments was 4.3% of the actuarial accrued liability. 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, 2015

1.	Net gain/(loss) from investments [(1)]	$10,784,000
2.	Net gain/(loss) from other experience [(2)]	44,306,000
3.	Net experience gain/(loss): (1) + (2)	$55,090,000

[(1)] Details in Chart 10.

[(2)] See Items (6b) through (6e) in Section 3, Exhibit H.

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 the Retirement System's investment policy. For valuation purposes, the assumed rate of return on the valuation value of assets was 7.50% (based on the June 30, 2014 valuation). The actual rate of return on a valuation basis for the 2014/2015 plan year was 8.45%.

Since the actual return for the year was greater than the assumed return, the Retirement System experienced an actuarial gain during the year ended June 30, 2015 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10

Investment Experience for Year Ended June 30, 2015 – Market Value, Actuarial Value and Valuation Value of Assets

	Market Value	Actuarial Value	Valuation Value
1. Actual return	$39,163,617	$114,934,646	$95,800,897
2. Average value of assets	$1,352,237,873	$1,243,861,142	$1,133,558,516
3. Actual rate of return: (1) ÷ (2)	2.90%	9.24%	8.45%
4. Assumed rate of return	7.50%	7.50%	7.50%
5. Expected return: (2) x (4)	$101,417,840	$93,289,586	$85,016,889
6. Actuarial gain/(loss): (1) – (5)	$(62,254,223)	$21,645,060	$10,784,008

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 a market, actuarial and valuation basis for the last ten years.

CHART 11

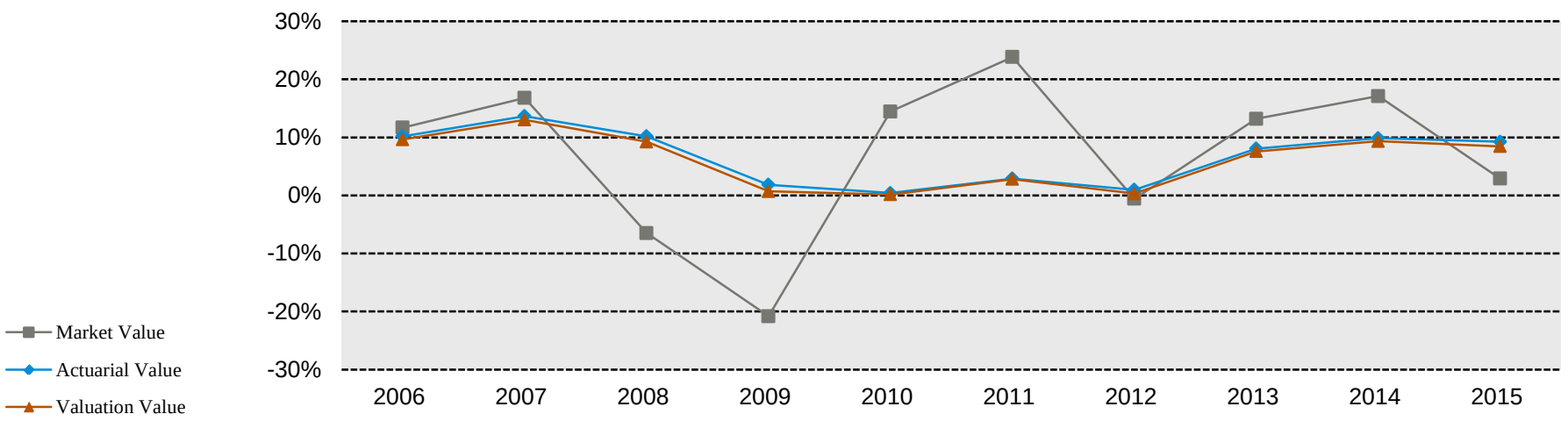
Investment Return – Market Value, Actuarial Value and Valuation Value: 2006 – 2015

	Market Value Investment Return		Actuarial Value Investment Return		Valuation Value Investment Return	
Year Ended June 30	Amount	Percent	Amount	Percent	Amount	Percent
2006	$110,590,200	11.69%	$90,688,128	10.17%	$80,618,910	9.64%
2007	173,484,408	16.81%	130,869,517	13.66%	116,690,509	13.03%
2008	(76,360,019)	(6.48%)	108,238,256	10.19%	91,350,305	9.24%
2009	(223,116,857)	(20.81%)	21,006,314	1.84%	7,352,713	0.70%
2010	118,017,947	14.45%	4,642,820	0.41%	1,619,733	0.16%
2011	215,994,016	23.84%	31,935,944	2.89%	28,156,867	2.80%
2012	(6,201,334)	(0.56%)	10,823,427	0.97%	3,177,454	0.31%
2013	140,701,338	13.19%	88,595,923	8.07%	75,341,263	7.57%
2014	201,837,997	17.12%	114,397,808	9.88%	98,429,333	9.35%
2015	39,163,617	2.90%	114,934,646	9.24%	95,800,897	8.45%
Five-Year Annualized Average Return		10.93%		6.15%		5.64%
Ten-Year Annualized Average Return		6.39%		6.64%		6.03%

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.

CHART 12

Market, Actuarial and Valuation Rates of Return for Years Ended June 30, 2006 – June 30, 2015



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:

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

The net gain from this other experience for the year ended June 30, 2015 amounted to $44.3 million which is 4.3% of the actuarial accrued liability. See Section 3, Exhibit H for a detailed development of the prefunded actuarial accrued liability.

D. EMPLOYER AND MEMBER CONTRIBUTIONS

Employer contributions consist of two components:

Normal Cost	The annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement-related benefits. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution rate is expressed as a level percentage of the member's compensation.
Contribution to the Unfunded Actuarial Accrued Liability (UAAL)	The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution (or rate credit in the case of a prefunded actuarial accrued liability) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the Retirement System) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (credits) are scheduled to increase at the annual rate of 3.75% (i.e., 3.25% inflation plus 0.50% real across-the-board salary increase). Effective with the June 30, 2013 valuation, any new UAAL established on each subsequent valuation as a result of actuarial gains or losses or plan amendments are amortized over separate 15-year declining periods (with the exception of temporary retirement incentives which are amortized over its own declining period of up to 5 years). Any new UAAL established as a result of changes in actuarial assumptions or methods at each valuation is amortized over separate 25-year declining periods. Any actuarial surplus (when the funded ratio is over 110% will be amortized over a non-declining 25-year period. The recommended employer contributions are provided on Chart 13.
Member Contributions	
Tier 1	Provide 1/3 of the funding required to pay a benefit equal to 50% of FAS at age 50 (or when a member has 20 years of service if later but not later than age 60) to a member with 66-2/3% automatic continuance payable to his/her eligible spouse/domestic partner (§3-319). The contribution will be prorated if the member has less than 20 years of service at age 60.
Tier 2	9% of pay (§3-405).

CHART 13
Recommended Employer Contribution Rates (Dollar Amounts in Thousands)

	June 30, 2015		June 30, 2014	
Tier 1 Members	**Rate**	**Estimated Annual Amount[(1)]**	**Rate**	**Estimated Annual Amount[(1)]**
Normal Cost	29.59%	$3,157	26.88%	
Tier 2 Members				
Normal Cost	22.24%	$19,608	22.07%	
All Categories Combined				
Normal Cost	23.03%	$22,765	22.70%	$22,435
Surplus Offset	-4.09%	-4,043	-1.48%	-1,463
Contribution (Excess)/Shortfall from Prior Fiscal Year	0.08%	80	-0.09%	-89
Adjustment for Phase-In of Assumption Changes	0.00%	0	-0.99%	-978
Total Contribution	19.02%	$18,802	20.14%	$19,905

[(1)] *Amounts are in thousands and are based on projected fiscal year 2016 – 2017 annual payroll for active non-DROP and DROP members (also in thousands):*

Tier 1	$10,670
Tier 2	88,164
Total	$98,834

The employer contribution rates as of June 30, 2015 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. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Employer Contribution

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

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

CHART 14

Reconciliation of Recommended Employer Contribution from June 30, 2014 to June 30, 2015 (Dollars in Thousands)

		Contribution Rate	Estimated Amount [1]
1.	Recommended Contribution Rate as of June 30, 2014	20.14%	$19,905
	a. Reverse effect of 2014/2015 plan year contribution offset included in the above rate (payable 2015/2016)	0.09%	$89
	b. Reverse effect of 2015/2016 adjustment for phase-in of employer's contribution rate impact due to changes in actuarial assumptions	0.99%	$978
	c. Reverse effect of surplus allocated to the City in the 6/30/2014 valuation for the 2015/2016 plan year	1.48%	$1,463
	d. Normal Cost Rate as of June 30, 2014	22.70%	$22,435
2.	Effect of actuarial experience during 2014/2015 on Normal Cost Rate		
	a. Effect of changes in membership demographics	-0.03%	-$56
	b. Effect of change in method for valuing DROP member normal cost	0.36%	$386
	c. Normal Cost Rate as of June 30, 2015	23.03%	$22,765
3.	Effect of the difference between the actual and the estimated 2015/2016 plan year contribution after taking into account surplus available as of 6/30/2015	0.08%	$80
4.	Effect of surplus allocated to the City in the 6/30/2015 valuation for the 2016/2017 plan year	-4.09%	-$4,043
5.	Recommended Contribution Rate as of June 30, 2015	19.02%	$18,802

[1] *Based on projected fiscal year 2016 – 2017 annual payroll of $98,834 for active non-DROP and DROP members.*

The member contribution rates as of June 30, 2015 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. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Member Contribution
The chart below details the changes in the recommended member contribution rate from the prior valuation to the current year's valuation.

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

CHART 15

Reconciliation of Recommended Member Contribution from June 30, 2014 to June 30, 2015 (Dollar Amounts in Thousands)

	Contribution Rate	Estimated Amount [1]
Average Contribution Rate as of June 30, 2014	8.97%	$7,710
Effect of changes in membership demographics	0.00%	$0
Average Contribution Rate as of June 30, 2015	8.97%	$7,710

[1] *Based on projected fiscal year 2016 – 2017 annual payroll for members NOT in the DROP of $85,927.*

CHART 16
Breakdown of Normal Cost Rate

As requested by the Retirement System, we have provided a breakdown of the Normal Cost to fund each type of benefit.

	June 30, 2015	
	Tier 1	**Tier 2**
Service Retirement	21.48%	19.99%
Vested Deferred Retirement and Contribution Refunds	1.90%	1.17%
Death-In-Service	0.54%	0.63%
Disability	5.97%	9.16%
Total Normal Cost	29.89%	30.95%
Less		
Employee Contributions [1]	0.30%	8.71%
Equals		
Net Employer Normal Cost	29.59%	22.24%

[1] *The offset for employee contributions is less than the aggregate employee rate because it expresses the employee contribution dollar amount as a percent of projected fiscal year 2016-2017 annual payroll for all active members (non-DROP and DROP) of $98,834 instead of annual payroll for only active non-DROP members of $85,927.*

E. FUNDED RATIO

A critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the valuation value of assets and market value of assets to the actuarial accrued liabilities of the plan. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

The chart below depicts a history of the funded ratio for the 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 17

Funded Ratio for Plan Years ending June 30, 2006 - 2015

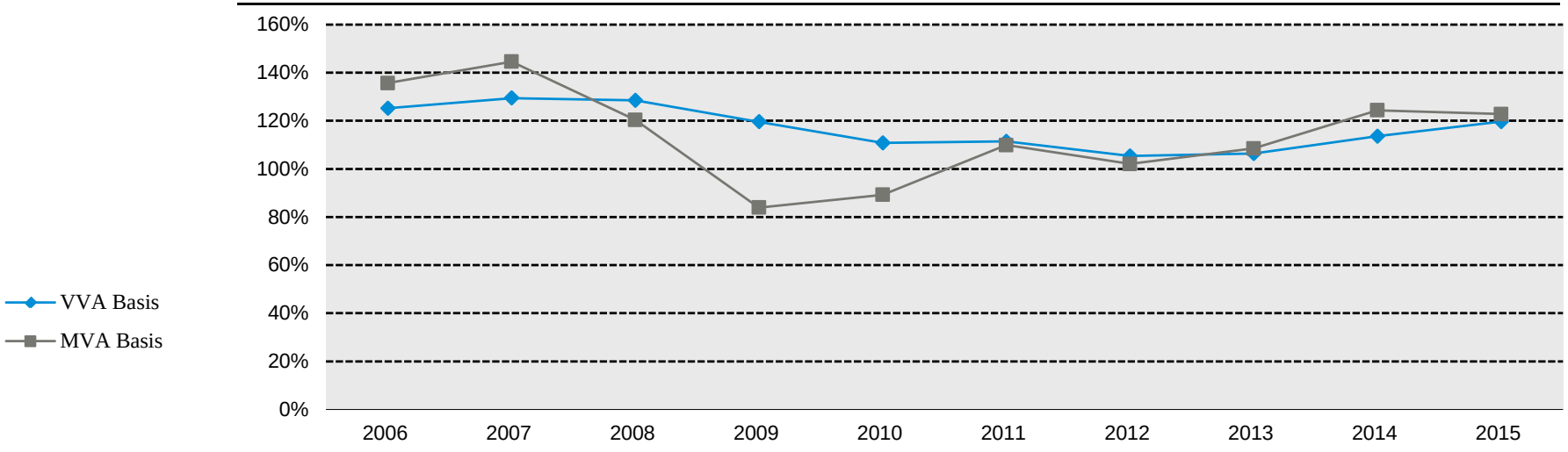


CHART 18

Schedule of Funding Progress (Dollar Amounts in Thousands)

Actuarial Valuation Date	Valuation Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Prefunded AAL (a) - (b)	Funded Ratio (%) (a) / (b)	Covered Payroll (c)	Prefunded AAL/ (UAAL) as a Percentage of Covered Payroll (%) [(a) - (b)] / (c)
6/30/2006	$906,223	$722,722	$183,501	125.4	$82,493	222.4
6/30/2007	1,000,961	773,236	227,725	129.5	89,516	254.4
6/30/2008	1,066,778	830,036	236,742	128.5	98,913	239.3
6/30/2009	1,045,774	874,355	171,419	119.6	102,355	167.5
6/30/2010	1,018,605	919,286	99,319	110.8	102,686	96.7
6/30/2011	1,022,996	917,941	105,055	111.4	99,000	106.1
6/30/2012	1,003,929	952,866	51,063	105.4	100,596	50.8
6/30/2013	1,061,399	997,836	63,563	106.4	100,705	63.1
6/30/2014	1,142,649	1,006,028	136,621	113.6	96,259	141.9
6/30/2015	1,220,269	1,019,916	200,353	119.6	95,262	210.3

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 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 the Retirement System, the current AVR is about 14.5.[(1)] This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 14.5% of one-year's payroll. Since the Retirement System amortizes actuarial gains and losses over a period of 15 years, there would be a 1.2% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss) if the Retirement System has an unfunded actuarial accrued liability.

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 the Retirement System, the current LVR is about 10.7. This is about 26% lower than the AVR. Therefore, we would expect that contribution volatility will decrease over the long-term.

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

CHART 19

Volatility Ratios for Years Ended June 30, 2009 – 2015

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2009	8.1	8.5
2010	8.9	9.0
2011	11.2	9.3
2012	10.7	9.5
2013	11.8	9.9
2014	14.2	10.5
2015	14.5	10.7

(1) *The AVR has been calculated without any adjustment for the non-valuation reserves.*

EXHIBIT A

Table of Plan Coverage - i. Tier 1

Category	Year Ended June 30 2015	2014	Change From Prior Year
Active members in valuation			
Non-DROP			
Number	6	11	-45.5%
Average age	48.8	48.7	N/A
Average service	25.3	25.3	N/A
Projected total compensation	$590,849	$1,222,947	-51.7%
Projected average compensation	$98,475	$111,177	-11.4%
Member account balances	$1,452,991	$2,711,902	-46.4%
Total active vested members	6	11	-45.5%
DROP			
Number	85	102	-16.7%
Average age	55.3	55.1	N/A
Average service	25.1	25.2	N/A
Projected total compensation	$9,694,441	$11,322,774	-14.4%
Projected average compensation	$114,052	$111,008	2.7%
Vested terminated members			
Number	0	0	0.0%
Average age	N/A	N/A	N/A
Retired members			
Number in pay status	339	330	2.7%
Average age	70.6	70.5	N/A
Average monthly benefit [(1)]	$4,358	$4,352	0.1%
Disabled members			
Number in pay status	273	274	-0.4%
Average age	67.2	66.5	N/A
Average monthly benefit [(1)]	$4,207	$4,209	0.0%
Beneficiaries			
Number in pay status	258	257	0.4%
Average age	71.2	70.5	N/A
Average monthly benefit [(1)]	$2,216	$2,204	0.5%

[(1)] *Excludes supplemental benefits (if any) paid from PRSB and benefits derived from DROP account balances.*

EXHIBIT A

Table of Plan Coverage - ii. Tier 2

Category	Year Ended June 30 2015	2014	Change From Prior Year
Active members in valuation			
Non-DROP			
Number	874	861	1.5%
Average age	40.9	40.7	N/A
Average service	12.4	12.3	N/A
Projected total compensation	$82,229,526	$81,478,229	0.9%
Projected average compensation	$94,084	$94,632	-0.6%
Member account balances	$130,374,998	$121,838,425	7.0%
Total active vested members	802	830	-3.4%
DROP			
Number	28	24	16.7%
Average age	58.1	57.7	N/A
Average service	18.4	17.5	N/A
Projected total compensation	$2,747,406	$2,235,042	22.9%
Projected average compensation	$98,122	$93,127	5.4%
Vested terminated members			
Number	87	69	26.1%
Average age	40.7	41.4	N/A
Retired members			
Number in pay status	22	16	37.5%
Average age	58.7	58.7	N/A
Average monthly benefit [(1)]	$2,165	$1,719	25.9%
Disabled members			
Number in pay status	103	94	9.6%
Average age	47.0	46.3	N/A
Average monthly benefit [(1)]	$3,493	$3,480	0.4%
Beneficiaries			
Number in pay status	10	7	42.9%
Average age	52.0	50.2	N/A
Average monthly benefit [(1)]	$1,297	$1,016	27.7%

[(1)] *Excludes supplemental benefits (if any) paid from PRSB and benefits derived from DROP account balances.*

EXHIBIT B

Members in Active Service and Projected Average Compensation
By Age, Years of Service as of June 30, 2015 – Non-DROP Active Members Only

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	6	--	--	--	--	--	6	--	--	--
	$98,475	--	--	--	--	--	$98,475	--	--	--
50 - 54	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
55 - 59	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
60 - 64	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
65 - 69	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
Total	6	--	--	--	--	--	6	--	--	--
	$98,475	--	--	--	--	--	$98,475	--	--	--

Note: Excludes 85 active members in DROP with projected average compensation of $114,052.

EXHIBIT B

Members in Active Service and Projected Average Compensation
By Age, Years of Service as of June 30, 2015 – Non-DROP Active Members Only

ii. Tier 2

		Years of Service							
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & over
Under 25	5	5	- -	- -	- -	- -	- -	- -	- -
	$57,326	$57,326	- -	- -	- -	- -	- -	- -	- -
25 - 29	46	25	21	- -	- -	- -	- -	- -	- -
	73,207	59,593	$89,414	- -	- -	- -	- -	- -	- -
30 - 34	155	29	88	38	- -	- -	- -	- -	- -
	86,668	67,120	89,820	$94,287	- -	- -	- -	- -	- -
35 - 39	172	10	58	88	16	- -	- -	- -	- -
	92,068	66,147	89,041	95,106	$102,530	- -	- -	- -	- -
40 - 44	219	3	37	83	87	9	- -	- -	- -
	96,750	77,336	91,250	95,424	100,141	$105,279	- -	- -	- -
45 - 49	195	- -	12	42	94	45	2	- -	- -
	101,494	- -	93,553	96,645	99,656	112,297	$94,287	- -	- -
50 - 54	71	- -	5	13	31	22	- -	- -	- -
	101,395	- -	96,012	95,648	100,549	107,208	- -	- -	- -
55 - 59	9	- -	2	3	2	2	- -	- -	- -
	103,856	- -	116,475	94,332	104,465	104,916	- -	- -	- -
60 - 64	2	- -	1	1	- -	- -	- -	- -	- -
	96,432	- -	109,689	83,175	- -	- -	- -	- -	- -
65 - 69	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	874	72	224	268	230	78	2	- -	- -
	$94,084	$64,117	$90,481	$95,303	$100,202	$109,862	$94,287	- -	- -

Note: Excludes 28 active members in DROP with projected average compensation of $98,122.

EXHIBIT C

Reconciliation of Member Data – June 30, 2014 to June 30, 2015

	Non-DROP Active Members	DROP Members	Vested Terminated Members	Pensioners	Disableds	Beneficiaries	Total
Number as of June 30, 2014	872 [1]	126 [1]	69	346	368	264	2,045
New members	53	0	0	0	0	0	53
Terminations – with vested rights	-17	0	17	0	0	0	0
Contributions Refunds	-3	0	-4	0	0	0	-7
DROP Entry	-13	13	0	0	0	0	0
Retirements	-4	-23	0	27	0	0	0
New disabilities	-6	-2	-2	-4	14	0	0
Return to work	0	0	0	0	0	0	0
Died with or without beneficiary	-2	-1	0	-8	-6	4 [3]	-13
Data adjustments	0	0	7	0	0	0	7
Number as of June 30, 2015	880 [2]	113 [2]	87	361	376	268	2,085

[1] There was a total of 998 actives (including non-DROP and DROP members) at the beginning of the plan year.

[2] There was a total of 993 actives (including non-DROP and DROP members) at the end of the plan year.

[3] This is the net increase in the number of beneficiaries after subtracting the number of beneficiaries who died during the year.

EXHIBIT D

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2015		Year Ended June 30, 2014	
Contribution income:				
Employer contributions	$18,966,930		$18,574,840	
Employee contributions	7,385,169		7,294,314	
Less administrative expenses	-1,107,741		-1,119,495	
Net contribution income		$25,244,358		$24,749,659
Investment income:				
Interest, dividends and other income	$27,752,246		$30,086,024	
Adjustment toward market value	93,578,090		90,395,966	
Less investment fees	-6,395,690		-6,084,182	
Net investment income		114,934,646		114,397,808
Total income available for benefits		$140,179,004		$139,147,467
Less benefit payments:				
Benefit payments	-$53,470,508		-$52,513,147	
Post retirement supplemental benefits	-240,653		-60,750	
Refunds of contributions	-900,850		-145,990	
Net benefits payments		-$54,612,011		-$52,719,887
Change in reserve for future benefits		$85,566,993		$86,427,580

Note: Results may not total properly due to rounding.

EXHIBIT E

Summary Statement of Assets

	Year Ended June 30, 2015		Year Ended June 30, 2014	
Cash equivalents		$1,278,811		$855,278
Accounts receivable:				
Receivables for investments sold	$30,076,230		$7,975,793	
Interest and dividends	4,653,547		4,198,568	
Others receivables	26,330,099		20,193,254	
Total accounts receivable		61,059,876		32,367,615
Investments:				
Domestic and international equity	$758,615,875		$802,575,089	
Government and corporate bonds	360,107,272		336,299,680	
Real estate	170,456,005		153,373,164	
Emerging market equity	43,822,480		24,331,069	
Collateral held for securities lent	145,426,320		136,469,361	
Other investments	41,695,303		52,760,536	
Total investments at market value		1,520,123,254		1,505,808,899
Total assets		$1,582,461,941		$1,539,031,792
Less accounts payable:				
Collateral held for securities lent	-$145,426,320		-$136,469,361	
Payable for investments and foreign currency purchased	-58,054,124		-34,167,608	
Other liabilities	-2,263,835		-1,473,124	
Total accounts payable		-$205,744,279		-$172,110,093
Net assets at market value		$1,376,717,663		$1,366,921,699
Net assets at actuarial value		$1,344,111,961		$1,258,544,968
Net assets at valuation value		$1,220,268,961		$1,142,648,968

Note: Results may not total properly due to rounding.

EXHIBIT F

Actuarial Balance Sheet

An overview of the System's funding is given by an Actuarial Balance Sheet. In this approach, we first determine the amount and timing of all future payments that will be made by the System for current participants. We then discount these payments at the valuation interest rate to the date of the valuation, thereby determining their present value. We refer to this present value as the "liability" of the Plan.

Second, we determine how this liability will be met. These actuarial "assets" include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments.

Actuarial Balance Sheet (Dollar Amounts in Thousands)

Assets	**Total**
1. Total valuation assets	$1,220,269
2. Present value of future member normal cost	61,893
3. Present value of future employer normal cost	186,748
4. Unfunded/(prefunded) actuarial accrued liability	-200,353
5. Total current and future assets	$1,268,557
Liabilities	
6. Present value of benefits already granted, excludes current active DROP	$584,440
7. Present value of benefits for current active DROP	125,536
8. Present value of benefits to be granted	558,581
9. Total liabilities	$1,268,557

EXHIBIT G

Summary of Reported Asset Information as of June 30, 2015

	Reserves $(000)
Employer Advance/Retired Reserves	$1,112,863
Active Member Reserves	140,012
DROP Reserve [1]	123,506
Reserve for PRSB [1]	496
Reserve for City Surplus [1],[2]	(159)
Net Assets Held in Trust for Benefits	$1,376,718

Note: Results may not add due to rounding

[1] *Non-valuation reserve*

[2] *The City Surplus Reserve is treated as an asset; it represents the City's prior shortfall contributions due to the difference between the actual versus the estimated contributions for 2014/2015. This difference is taken into account in developing the contribution rate requirement for 2016/2017.*

EXHIBIT H

Development of Unfunded / (Prefunded) Actuarial Accrued Liability as of June 30, 2015

		(Dollar amounts in Thousands)
1	Unfunded/(prefunded) actuarial accrued liability at beginning of year	-$136,621
2	Gross Normal Cost at middle of year	30,340
3	Expected employer and member contributions	-27,691
4	Interest (whole year on (1) plus half year on (2) + (3))	-10,147
5	Expected unfunded/(prefunded) actuarial accrued liability at end of year	-$144,119
6	Actuarial (gain)/loss due to all changes:	
	Experience (gain)/loss	
	a. (Gain)/loss from investment	-$10,784
	b. Difference between actual and expected contributions primarily due to the phase-in	1,389
	c. Lower than expected salary increases from 2013/2014 to 2014/2015	-9,914
	d. Lower than expected COLA benefit increases for continuing retirees and DROP	-26,627
	e. Other experience (gain)/loss	-9,154
	f. Subtotal	-55,090
	Other (gain)/loss	
	g. Change in method for valuing DROP member normal cost	-1,144
7	Actual unfunded/(prefunded) actuarial accrued liability at end of year (5) + (6f) + (6g)	-$200,353

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 indexed for inflation. That limit is $210,000 for 2015 and 2016. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must generally 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.

Contributions rates determined in this valuation have not been reduced for the Section 415 limitations. Actual limitations will result in gains as they occur.

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 net, in this case, of investment and administrative expenses.

(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 level cost 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 (Prefunded) Actuarial Accrued Liability: The extent to which the actuarial accrued liability of the Plan exceeds (or is exceeded by) the assets of the Plan. There are many approaches to paying off the unfunded or prefunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

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

Investment Return: 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 actual market rate of return 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 268 beneficiaries in pay status)		1,005
2.	Members inactive during year ended June 30, 2015 with vested rights		87
3.	Members active during the year ended June 30, 2015		993
	DROP members	113	
	Fully vested non-DROP members	808	
	Not vested	72	

The actuarial factors as of the valuation date are as follows (amounts in 000s):

	Assets		
1.	Valuation value of assets ($1,376,718 at market value [(1)] as reported by the Retirement System and $1,344,112 at actuarial value [(1)])		$1,220,269
2.	Present value of future normal costs		
	Employee	$61,893	
	Employer	186,748	
	Total		$248,641
3.	Prefunded actuarial accrued liability		-200,353
4.	Present value of current and future assets		$1,268,557
	Liabilities		
5.	Present value of future benefits		
	Retired members and beneficiaries	$584,440	
	Inactive members with vested rights	12,576	
	DROP members	125,536	
	Active non-DROP members	546,005	
	Total		$1,268,557

[(1)] *Includes non-valuation reserves.*

EXHIBIT I (continued)
Summary of Actuarial Valuation Results

The determination of the recommended contribution is as follows (amounts in 000s):	Dollar Amount	% of Payroll [1]
1. Total normal cost	$30,475	30.84%
2. Expected employee contributions	-7,710	-7.81%
3. Employer normal cost: (1) + (2)	$22,765	23.03%
4. Surplus offset	-4,043	-4.09%
5. Contribution (excess)/shortfall from prior year	80	0.08%
6. Total recommended employer contributions: (3) + (4) + (5)	$18,802	19.02%
7. Projected payroll[1]	$98,834	

[1] *Based on projected fiscal year 2016 – 2017 annual payroll for active non-DROP and DROP members shown in (7).*

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, 2009 through June 30, 2012 Actuarial Experience Study and June 30, 2013 Economic Actuarial Assumptions Report both dated April 30, 2013.

Actuarial Assumptions

Post – Retirement Mortality Rates:

Healthy: RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with scale AA to 2021 set back three years for males and set forward one year for females.

Disabled: RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with scale AA to 2021 set forward two years.

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

Employee Contribution Rates and Optional Benefits:

For healthy members: RP-2000 Combined Healthy Mortality Table projected with scale AA to 2021 set back three years for males and set forward one year for females weighted 90% male and 10% female.

For beneficiaries: RP-2000 Combined Healthy Mortality Table projected with scale AA to 2021 set back three years for males and set forward one year for females weighted 10% male and 90% female.

For disabled members: RP-2000 Combined Healthy Mortality Table projected with scale AA to 2021 set forward two years weighted 90% male and 10% female.

Termination Rates Before Retirement:

Rate (%)
Mortality

	Tier 1 & Tier 2	
Age	**Male**	**Female**
25	0.03	0.02
30	0.03	0.03
35	0.05	0.04
40	0.08	0.06
45	0.10	0.09
50	0.13	0.13
55	0.17	0.27
60	0.33	0.52
65	0.64	0.99

All pre-retirement deaths are assumed to be duty.

Rate (%)
Disability

	Tier 1		Tier 2	
Age	**Duty**	**Non-Duty**	**Duty**	**Non-Duty**
20	0.02	0.00	0.14	0.00
25	0.14	0.01	0.29	0.01
30	0.26	0.01	0.50	0.01
35	0.39	0.03	0.72	0.03
40	0.60	0.12	0.98	0.12
45	0.88	0.25	1.22	0.25
50	2.80	0.20	1.48	0.20
55	8.20	0.00	1.78	0.00
60	0.00	0.00	0.00	0.00

Termination Rates Before Retirement (Continued):

Rate (%)
Total Termination (Less than 5 years of service)

Service	Tier 1	Tier 2
0 – 1	4.47	9.00
1 – 2	4.47	3.00
2 – 3	4.47	2.00
3 – 4	4.47	1.50
4 – 5	4.47	1.00

100% of members are assumed to elect a withdrawal of contributions. No termination is assumed after a member is assumed to retire.

Rate (%)
Total Termination (5 or more years of service)

	Tier 1		
Age	5 - 10 Years	10+ Years	Tier 2
20	2.87	3.57	3.10
25	2.87	3.57	2.85
30	1.88	2.63	2.12
35	0.87	1.44	1.46
40	0.44	0.92	1.00
45	0.19	0.63	0.56
50	0.00	0.00	0.00

100% of Tier 1 members with 5 - 10 years of service, 0% of Tier 1 members with 10+ years of service and 50% of Tier 2 members with 5+ years of service are assumed to elect a withdrawal of contributions. The remaining members are assumed to elect a deferred vested benefit. No termination is assumed after a member is assumed to retire.

Retirement Rates:

	Rate (%)	
Age	**Tier 1**	**Tier 2**
50	12.72	5.31
51	7.63	4.12
52	7.63	4.64
53	5.09	5.09
54	5.09	5.09
55	10.60	19.46
56	13.77	11.72
57	14.03	7.82
58	16.66	9.69
59	29.67	9.17
60	100.00	75.00
61	100.00	75.00
62	100.00	75.00
63	100.00	75.00
64	100.00	75.00
65	100.00	100.00

DROP Assumptions:	**Tier 1**	**Tier 2**
First Year Eligible	100%	40%
Second Year Eligible	0%	20%
Third Year Eligible	0%	10%
Thereafter	0%	0%

Members are assumed to remain in DROP for 7 years.

Retirement Age and Benefit for Deferred Vested Members	For current deferred vested members, retirement assumptions are as follows: Tier 1: Age 50 Tier 2: Age 52 It is assumed that 60% of future deferred vested members will continue to work for a reciprocal employer. For those that continue to work for a reciprocal employer, a 4.15% compensation increase per annum is assumed.
Future Benefit Accruals:	1.0 year of service per year.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Inclusion of Deferred Vested Members:	All deferred vested members are included in the valuation.
Percent Married:	85%
Age of Spouse:	Wives are 3 years younger than their husbands.
Net Investment Return:	7.50%, net of administration and investment expenses.
Employee Contribution Crediting Rate:	7.50%, assumed in the valuation.
Consumer Price Index:	Increase of 3.75% per year, retiree COLA increases due to CPI are limited to maximum at 3.75% per year for Tier 1 and 3.00% for Tier 2.

Salary Increases:

Annual Rate of Compensation Increase

Inflation: 3.25% per year plus 0.50% real across-the-board salary increase; plus the following Merit and Promotion increases based on completed years of service and age.

5 or less years of service:

Service	Annual Increase
0-1	8.50%
1-2	7.50%
2-3	5.00%
3-4	4.50%
4-5	3.75%

More than 5 years of service:

Age	Annual Increase
25-29	1.70%
30-34	1.30%
35-39	1.10%
40-44	0.70%
45-49	0.60%
50-54	0.40%
55+	0.00%

Ongoing Pay Elements

To reflect the cash-out of holiday leave to increase salary on an ongoing basis for Fire employees, we have increased the salary for all active Tier 1 employees and Tier 2 management employees by 3.6% and we have increased the salary for all active Tier 2 non-management employees by 1.8%.

Since the salary data provided by the System already reflects the ongoing cash-out of holiday leave for Police employees, no assumption for Police employees is necessary.

	Cash-out Elements There is an additional 1.00% increase for Fire and Police management employees and an additional 0.25% increase for Fire and Police non-management employees to reflect the average leave time cash-outs for management employees to increase final average salary at retirement. There is an additional 7.00% increase for all Fire and Police employees to reflect the conversion of sick leave to increase final average salary at retirement. To reflect the cash-out of additional holiday leave balance to increase final average salary at retirement for non-management Tier 2 Police employees, there is an additional increase equal to the actual hours reported in an employee's holiday balance if that balance is greater than 96 hours and for those with a balance less than 96 hours the additional increase is equal to 1.5%.
Actuarial Methods	
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age at the member's hire date. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation.
Actuarial Value of Assets:	The Actuarial Value of Assets is determined by phasing in any difference between actual market return and expected return on market value over 5 years. Deferred gains and losses as of June 30, 2012 have been combined and will be recognized in four equal annual amounts over a period of four years from that date.
Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of the non-valuation reserves.
Change in Actuarial Assumptions or Methods:	In prior valuations, the normal cost rates for members enrolled in the DROP had been assumed to be the same as those other active members not enrolled in the DROP. With this valuation, their normal cost rates have been calculated explicitly using their demographic profile. Other than that, there have been no changes in actuarial assumptions or methods since the previous actuarial valuation.

EXHIBIT III

Summary of Plan Provisions

This exhibit summarizes the major provisions of the Retirement System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Membership Eligibility:	
	All sworn Fire, Police, and Airport Public Safety personnel are eligible.
Tier 1	Safety members hired before August 27, 1990.
Tier 2	Safety members hired on or after August 27, 1990.
Final Compensation (FAS) for Benefit Determination:	
Tier 1	Final highest consecutive thirty-six months of compensation earnable calculated using the rate of pay actually earned by the member in effect at the time of retirement. Some members are also entitled to final compensation determined based on a rank average (§3-301 and §3-302).
Tier 2	Highest consecutive thirty-six months of compensation earnable during any thirty-six months of service before the date of retirement (§3-401).
Service:	Years of service (Yrs).
Service Retirement Eligibility:	
Tier 1	Age 50 with 10 years of service, or age 65 regardless of service (§3-332).
Tier 2	Age 50 with 5 years of service, or age 65 regardless of service (§3-410).

Benefit Formula:

Tier 1 (§3-333)

If a member has at least 20 years of service at retirement from active status:

55% * FAS +
Yrs of service in excess of 20 completed after age 50 * 2.00% * FAS

If a member has less than 20 years of service at retirement from active status:

55% * FAS * Yrs of service / 20

If a member retires from deferred status:

55% * FAS * Yrs of service / (Greater of 20 Yrs or Yrs of service member would have completed if the member had remained in City service until age 50)

Tier 2 (§3-411)

Retirement Age	Benefit Formula
50	2.00% x FAS x Yrs
51	2.14% x FAS x Yrs
52	2.28% x FAS x Yrs
53	2.42% x FAS x Yrs
54	2.56% x FAS x Yrs
55+	2.70% x FAS x Yrs

Maximum Benefit
(§3-333 and §3-411)**:** 75% of FAS

Deferred Retirement Option Program (DROP):	
Eligibility	Same as Service Retirement.
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 rates determined by the Board. Members will no longer be required to make member contributions. After around February 2011, active members who signed up for the DROP are required to continue their employee contributions; however, those contributions are deposited into the members' DROP accounts and therefore not available to fund the value of the retirement benefit earned up to the date of the DROP. Therefore, those contributions that will be deposited into the DROP accounts are disregarded in this valuation. Members may participate in DROP for up to ten years (§3-353 and §3-424).
Ordinary Disability:	
Tier 1	
Eligibility	Ten years of service (§3-335).
Benefit Formula	Greater of 1.65% x FAS x Yrs, 36.67% of FAS or Service Retirement benefit (§3-336).
Tier 2	
Eligibility	Ten years of service (§3-412).
Benefit Formula	Greater of 1.5% x FAS x Yrs, 33.00% of FAS or Service Retirement benefit (§3-413).

Duty Disability:	
Tier 1	
Eligibility	No age or service requirements (§3-335).
Benefit Formula	55% of FAS or Service Retirement benefit, if greater (§3-336).
Tier 2	
Eligibility	No age or service requirements (§3-412)
Benefit Formula	50% of FAS or Service Retirement benefit, if greater (§3-413).
Pre-Retirement Death:	
All Members	
Eligibility	None.
Basic Lump Sum Benefit	Refund of employee contributions with interest, plus one month's compensation for each year of service, to a maximum of six month's compensation (§3-330 and §3-408 for Tier 1 and Tier 2, respectively).
Death in Line of Duty	55% (50% for Tier 2) of FAS or Service Retirement benefit, if greater and, payable to eligible spouse/domestic partner or minor children (§3-330 and 3-408 for Tier 1 and Tier 2, respectively).
	OR
Vested Members	
Eligibility	Ten (five for Tier 2) years of service.
Basic Benefit	66-2/3% of member's unmodified allowance continued to eligible spouse/domestic partner (§3-338 and §3-415 for Tier 1 and Tier 2, respectively).

Death After Retirement:	
All Members	
Service or Disability Retirement	66-2/3% of member's unmodified allowance continued to eligible spouse/domestic partner (§3-338 and §3-415 for Tier 1 and Tier 2, respectively).
Withdrawal Benefits:	
Less than Five Years of Service (Ten Years for Tier 1)	Refund of accumulated employee contributions with interest.
Five or More Years of Service (Ten Years for Tier 1)	If contributions left on deposit, entitled to earned benefits commencing at any time after eligible to retire (§3-344 and §3-420 for Tier 1 and Tier 2, respectively).
Post-retirement Cost-of-Living Benefits:	
Tier 1	Future changes based on Consumer Price Index to a maximum of 5% per year. Some members are entitled to a cost-of-living benefit based on a rank average (§3-301).
Tier 2	Future changes based on Consumer Price Index to a maximum of 3% per year (§3-411).

Member Contributions:	Please refer to Appendix A for specific rates.
Tier 1	Provide 1/3 of the funding required to pay a benefit equal to 50% of FAS at age 50 (or when a member has 20 years of service if later but not later than age 60) to a member with 66-2/3% automatic continuance payable to his/her eligible spouse/domestic partner (§3-319). The contribution will be prorated if the member has less than 20 years of service at age 60.
Tier 2	9% of pay (§3-405)
Tier 1	Refund of contribution paid for 66-2/3% automatic continuance. Provide a refund of contributions at service or disability retirement for those members without an eligible spouse/domestic partner (§3-319).
City Contributions:	Effective with the June 30, 2013 valuation, any new UAAL established on each subsequent valuation as a result of actuarial gains or losses or plan amendments are amortized over separate 15-year declining periods (with the exception of temporary retirement incentives which are amortized over its own declining period of up to 5 years). Any new UAAL established as a result of changes in actuarial assumptions or methods at each valuation is amortized over separate 25-year declining periods. When there is any "actuarial surplus" (the funded ratio is over 110%), the portion of surplus in excess of 110% will be amortized over a non-declining 25-year period.
Post Retirement Supplemental Benefits (PRSB):	PSRB may be paid to active and retired DROP participants and eligible retirees and beneficiaries (§3-354). This benefit has been excluded from this valuation.

NOTE: *The summary of major plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the Retirement System should find the plan summary not in accordance with the actual provisions, the Retirement System should alert the actuary so they can both be sure the proper provisions are valued.*

Appendix A
Member Contribution Rates

Comparison of member rates calculated in the June 30, 2015 and June 30, 2014 valuations:

	June 30, 2015		June 30, 2014	
	Rate	[1] Estimated Annual Amount	Rate	[1] Estimated Annual Amount
Tier 1 Members	5.25%	$32	5.15%	$32
Tier 2 Members	9.00%	$7,678	9.00%	$7,678
All Member Categories Combined	8.97%	$7,710	8.97%	$7,710

[1] *Amounts are in thousands and are based on the following projected fiscal year 2016 – 2017 annual payroll for active members NOT in the DROP (also in thousands):*

Tier 1	$613
Tier 2	85,314
Total	$85,927

Appendix A
Member Contribution Rates (Continued)

Tier 1 Members' Contribution Rates based on the June 30, 2015 Actuarial Valuation as a percentage of payroll

Entry Age	Exact Age		¼ Age		½ Age		¾ Age	
	Rate	Dependent Portion	Rate	Dependent Portion	Rate	Dependent Portion	Rate	Dependent Portion
20	4.52%	0.03494	4.57%	0.03494	4.62%	0.03494	4.68%	0.03494
21	4.73%	0.03494	4.79%	0.03494	4.85%	0.03494	4.90%	0.03494
22	4.96%	0.03494	5.02%	0.03494	5.09%	0.03494	5.15%	0.03494
23	5.21%	0.03494	5.28%	0.03494	5.35%	0.03494	5.41%	0.03494
24	5.48%	0.03494	5.56%	0.03494	5.63%	0.03494	5.70%	0.03494
25	5.78%	0.03494	5.86%	0.03494	5.94%	0.03494	6.02%	0.03494
26	6.10%	0.03494	6.19%	0.03494	6.28%	0.03494	6.37%	0.03494
27	6.46%	0.03494	6.56%	0.03494	6.65%	0.03494	6.75%	0.03494
28	6.85%	0.03494	6.96%	0.03494	7.06%	0.03494	7.17%	0.03494
29	7.28%	0.03494	7.40%	0.03494	7.52%	0.03494	7.64%	0.03494
30	7.75%	0.03494	7.74%	0.03546	7.72%	0.03597	7.71%	0.03648
31	7.69%	0.03700	7.67%	0.03755	7.66%	0.03810	7.64%	0.03865
32	7.62%	0.03920	7.60%	0.03979	7.59%	0.04038	7.57%	0.04097
33	7.55%	0.04156	7.53%	0.04219	7.51%	0.04283	7.49%	0.04346
34	7.47%	0.04409	7.45%	0.04476	7.43%	0.04542	7.41%	0.04609
35	7.39%	0.04676	7.37%	0.04747	7.36%	0.04818	7.34%	0.04889
36	7.32%	0.04960	7.30%	0.05036	7.28%	0.05111	7.26%	0.05187
37	7.24%	0.05262	7.21%	0.05343	7.19%	0.05423	7.17%	0.05504
38	7.14%	0.05584	7.12%	0.05669	7.09%	0.05753	7.07%	0.05837
39	7.04%	0.05921	7.02%	0.06007	6.99%	0.06094	6.97%	0.06181

Appendix A
Member Contribution Rates (Continued)

Entry Age	Exact Age		¼ Age		½ Age		¾ Age	
	Rate	Dependent Portion	Rate	Dependent Portion	Rate	Dependent Portion	Rate	Dependent Portion
40	6.94%	0.06267	6.97%	0.06267	7.00%	0.06267	7.03%	0.06267
41	7.07%	0.06267	7.10%	0.06267	7.13%	0.06267	7.16%	0.06267
42	7.20%	0.06267	7.23%	0.06267	7.26%	0.06267	7.30%	0.06267
43	7.33%	0.06267	7.36%	0.06267	7.40%	0.06267	7.43%	0.06267
44	7.47%	0.06267	7.50%	0.06267	7.54%	0.06267	7.58%	0.06267
45	7.61%	0.06267	7.65%	0.06267	7.69%	0.06267	7.73%	0.06267
46	7.77%	0.06267	7.81%	0.06267	7.85%	0.06267	7.89%	0.06267
47	7.93%	0.06267	7.97%	0.06267	8.01%	0.06267	8.05%	0.06267
48	8.09%	0.06267	8.14%	0.06267	8.18%	0.06267	8.23%	0.06267
49	8.27%	0.06267	8.32%	0.06267	8.36%	0.06267	8.41%	0.06267
50	8.46%	0.06267	8.51%	0.06267	8.57%	0.06267	8.63%	0.06267
51	8.68%	0.06267	8.74%	0.06267	8.80%	0.06267	8.86%	0.06267
52	8.93%	0.06267	8.97%	0.06267	9.01%	0.06267	9.05%	0.06267
53	9.10%	0.06267	9.12%	0.06267	9.14%	0.06267	9.16%	0.06267
54	9.18%	0.06267	9.18%	0.06267	9.18%	0.06267	9.18%	0.06267
55	9.18%	0.06267	9.16%	0.06267	9.15%	0.06267	9.13%	0.06267
56	9.11%	0.06267	9.07%	0.06267	9.04%	0.06267	9.00%	0.06267
57	8.96%	0.06267	9.04%	0.06267	9.12%	0.06267	9.19%	0.06267
58	9.27%	0.06267	9.35%	0.06267	9.44%	0.06267	9.52%	0.06267
59	9.60%	0.06267	9.60%	0.06267	9.60%	0.06267	9.60%	0.06267

Interest: 7.50% per annum

Mortality: RP-2000 Combined Healthy Mortality Table projected with scale AA to 2021 set back three years for males and set forward one year for females weighted 90% male and 10% female for member
RP-2000 Combined Healthy Mortality Table projected with scale AA to 2021 set back three years for males and set forward one year for females weighted 10% male and 90% female for beneficiary

Salary Increase: See Exhibit II in Section 4

Appendix B
Allocation of Actuarial Surplus

	June 30	
	2015	2014
Surplus as of Date of Valuation (Table 1)	$200,352,961	$136,620,968
Actuarial Surplus (Table 1)	98,361,361	36,018,168
Distributable Actuarial Surplus as of date of valuation (Table 2)	6,064,233	2,220,614
Allocation of Distributable Surplus as of Date of Valuation:		
City Allocation (Table 3)	4,042,822	1,480,409
PRSB Allocation (Table 3)	2,021,411	740,205
Total	$6,064,233	$2,220,614

The Allocation of Distributable Actuarial Surplus is sufficient to:

- Only partially offset the City's contribution requirement for the 2016-2017 fiscal year from $22,765,050 to $18,722,228 (see Table 4); and
- Provide a PRSB benefit of $135.16 per month over the 2016 calendar year (see Table 5) under the current policy of 80% distribution.

Appendix B
Allocation of Actuarial Surplus (Continued)

	June 30	
	2015	2014
Table 1: Calculation of Actuarial Surplus		
(1) Valuation Value of Assets	$1,220,268,961	$1,142,648,968
(2) Actuarial Accrued Liability	1,019,916,000	1,006,028,000
(3) Surplus: (1) – (2)	200,352,961	136,620,968
(4) Contingency Reserve: 10% of (2), not more than (3)	101,991,600	100,602,800
(5) Actuarial Surplus: (3) – (4)	98,361,361	36,018,168
Table 2: Determination of Distributable Actuarial Surplus		
(1) Actuarial Surplus (Table 1)	$98,361,361	$36,018,168
(2) Amortization of Balance of Actuarial Surplus:		
a. Amortization Period	25	25
b. Amortization Factor	0.061653	0.061653
c. Amortization of Balance of Actuarial Surplus (1) x (2b)	$6,064,233	$2,220,614

Appendix B
Allocation of Actuarial Surplus (Continued)

	June 30	
	2015	2014
Table 3: Allocation of Distributable Actuarial Surplus:		
(1) Distributable Actuarial Surplus	$6,064,233	$2,220,614
(2) City Allocation: (1) x 2/3	4,042,822	1,480,409
(3) PRSB Allocation: (1) – (2)	2,021,411	740,205
The City Allocation (2) (along with any City Surplus Reserve and City Prepaid Contribution Accounts) is available to reduce the City's contributions for the fiscal year that commences one year following the date of the valuation.		
The PRSB Allocations (along with the PRSB Reserve Account) is available to provide retirees, beneficiaries and DROP participants a monthly PRSB benefit during the calendar year that commences 6 months following the date of the valuation. The benefit is derived in Table 5.		

Appendix B
Allocation of Actuarial Surplus (Continued)

		Fiscal Year 2016-2017			Fiscal Year 2015-2016		
		Tier 1	Tier 2	Total	Tier 1	Tier 2	Total
Table 4: City Contribution Requirements Prepared using Recommended Procedure:							
(1)	a. City Normal Cost Rate	29.59%	22.24%	23.03%	26.88%	22.07%	22.70%
	b. Adjustment for Phase-In of Assumption Changes	0.00%	0.00%	0.00%	-0.99%	-0.99%	-0.99%
	c. City Contribution Rate after Adjustment for Phase-In of Assumption Changes	29.59%	22.24%	23.03%	25.89%	21.08%	21.71%
(2)	Projected Annual Payroll	$10,670,688	$88,163,638	$98,834,326	$10,285,000	$84,977,000	$95,262,000
(3)	City Allocation of Distributable Actuarial Surplus	560,730	3,482,092	4,042,822	191,584	1,288,825	1,480,409
(4)	City Surplus Reserve Account (From Prior Years)	0	0	0	-20,577	-138,423	-159,000
(5)	½ Year Interest on (4)	0	0	0	-772	-5,191	-5,963
(6)	Total Contribution Offsets (3) + (4) + (5)	560,730	3,482,092	4,042,822	170,235	1,145,211	1,315,446
(7)	Total Contribution Requirement (1c) * (2)	3,157,457	19,607,593	22,765,050	2,662,787	17,913,152	20,575,938
(8)	City Contribution Requirement Prior To Application of Prepaid Employer Contribution Account (7) – (6), not less than 0	2,596,727	16,125,501	18,722,228	2,492,552	16,767,941	19,260,492
(9)	Contribution Rate Adopted by the City for Fiscal Year 2015-2016						20.14%
(10)	Projected City Contributions Based on Rate Adopted by the City (9) * (2)				2,071,399	17,114,368	19,185,767
(11)	Net Additional City Contribution Before Application of Prepaid Employer Contribution Account (8) – (10)	2,596,727	16,125,501	18,722,228	421,153	-346,427	74,725
(12)	City's Prepaid Employer Contribution Account Balance (Negative Account Balance Represents Contribution Shortfall)			-77,527[(1)]			0
(13)	½ Year Interest on (12)			-2,907			0
(14)	a. City's Fiscal Year Contribution After Application of Prepaid Employer Contribution Account (11) – (12) – (13), not less than 0	2,607,883	16,194,780	18,802,662	421,153	-346,427	74,725
	b. City's Fiscal Year 2016/2017 Contribution Rate			19.02%			
(15)	Projected City Surplus Reserve Account for Future Years			0			0
(16)	Projected Residual Prepaid Employer Contribution Account at Year End. (12) + (13) – (11) Adjusted with ½ Year Interest (Negative Account Balance Represents Contribution Shortfall			0			-77,527

[(1)] *Contribution shortfall based on the projection of the prepaid contribution account balance*

Appendix B
Allocation of Actuarial Surplus (Continued)

	June 30	
	2015	2014
Table 5: Calculation of PRSB and PRSB Reserve Account:		
(1) PRSB Allocation of Distributable Actuarial Surplus	$2,021,411	$740,205
(2) Distribution percentage	80%	80%
(3) Preliminary PRSB distribution: (1) x (2)	$1,617,129	$592,164
(4) Number of eligible participants (Retirees, Beneficiaries & DROP Participants)	1,118	1,104
(5) Preliminary Monthly PRSB Benefit: (3) / (4) / 12	$120.54	$44.70
(6) Monthly Retiree Medical Trust Premium for the calendar year that commences 6 months following the date of valuation	$1,176.00	$1,084.00
(7) Benefit Shortfall: (6) – (5)	$1,055.46	$1,039.30
(8) PRSB Reserve Account	$496,000	$0
(9) Estimated July 1 to December 31 PRSB Payments	$299,848	$0
(10) Net PRSB Reserve Account 6 months following the date of valuation	$196,152	$0
(11) Draw from PRSB Reserve Account (lesser of (10) / (4) /12 or (7))	$14.62	$0.00
(12) Final monthly PRSB Benefit for next calendar year: (5) + (11)	$135.16	$44.70
(13) Estimated PRSB Reserve Account at the end of the next calendar year: (1) + (10) – [(12) * (4) * 12]	$404,257	$148,019

Note: The actual, rather than the projected 2016 surplus, will be used to determine the 2017 calendar year PRSB benefit.

Appendix C
UAAL Amortization Schedule as of June 30, 2015 (Dollar Amounts in Thousands)

	Date Established	Source	Initial Amount	Outstanding Balance	Years Remaining	Annual Payment
	June 30, 2015	UAAL	N/A	N/A	N/A	N/A
Grand Total				N/A		N/A

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