

City of Fresno Employees Retirement System

Actuarial Valuation and Review as of June 30, 2014

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.

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November 17, 2014

Board of Retirement City of Fresno Employees 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, 2014. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2015-2016 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 Employees 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.

The actuarial calculations were directed under our supervision. 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.

Bv:

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

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

JB/gxk

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Purpose

This report has been prepared by The Segal Company to present a valuation of the City of Fresno Employees Retirement System as of June 30, 2014. 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, 2014, provided by the Retirement System;
- > The assets of the System as of June 30, 2014, 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, 2014, there is a surplus (or prefunded actuarial accrued liability) as the System has valuation value of assets is in excess of the actuarial accrued liability. However, because the valuation value of assets is only 104.6% of the actuarial accrued liability (and so is less than the required 110%), there is no actuarial surplus available to reduce the City's and the members' COLA contributions and to fund new PRSB benefits. The determination of actuarial surplus as of June 30, 2013 and 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 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 a 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 that actuaries have 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 the actuarial surplus on the future financial condition of the plan has not been explicitly measured in the valuation. However, under revisions made to ASOP No. 4 that will become effective starting with the next 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." We will report back to the Board before the 2015 valuation on whether we believe the System's actuarial surplus distribution provisions would fall under the new requirements of ASOP No. 4.
		The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2015 through June 30, 2016.
		Significant Issues in Valuation Year
		The following key findings were the result of this actuarial valuation:
Reference:	Pg. 34	In the June 30, 2013 valuation, the ratio of the valuation value of assets to actuarial accrued liabilities was 99.9%. In this June 30, 2014 valuation, the funding ratio has increased to 104.6%. The funding ratios as of June 30, 2013 and 2014 if measured using the market value of assets instead of the valuation value of assets are 101.8% and 114.3%, respectively.
Reference:	Pg. 27	The Retirement System's <u>unfunded</u> actuarial accrued liability (UAAL) as of June 30, 2013 was \$1.2 million on a valuation value of assets basis. In this year's valuation, the system has a <u>prefunded</u> actuarial accrued liability (PAAL) of \$43.4 million on a valuation value of assets basis. The Plan had a net actuarial experience gain of about \$48.6 million. A reconciliation of the System's PAAL is provided in Section 3, Exhibit H.
		This valuation continues the three-year phase-in of the impact of the 2013 changes in assumptions on the employer contribution rate that began with fiscal year 2014/2015. Contributions established in this valuation for 2015/2016 reflect the second year, or 66 ² / ₃ % of the final employer contribution rate impact (excluding interest). The employer should be aware that their contributions for 2016/2017 (that will be established in the June 30, 2015 valuation) will increase again due to the third and final year of recognition of the cost impact of these changes in assumptions.
Reference:	Pg. 15	The aggregate employer rate calculated in this valuation has increased from 11.65% of payroll as of June 30, 2013 to 12.04% of payroll as of June 30, 2014. This is a net result of: (i) a refinement in the normal cost calculation to reflect changes in the actuarial assumptions, (ii) phasing in another one-third of the impact on contributions from the 2013 changes in actuarial assumptions, and (iii) changes in membership demographics, offset somewhat by (iv) the difference between the actual and the estimated 2014/2015 plan year contributions. A reconciliation of the Retirement System's aggregate employer rate is provided in Section 2, Subsection D (see Chart 14).



SECTION 1: Valuation Summary for the City of Fresno Employees Retirement System

Reference:	Pg. 16	The aggregate member rate calculated in this valuation has increased from 8.91% of payroll to 8.93% of payroll. The change in the aggregate member rate is due to changes in member demographics. 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 discreased of 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, 2014 is \$92.6 million (as compared to an unrecognized gain of \$17.6 million in the June 30, 2013 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 \$92.6 million represent 8% of the market value of assets. Unless offset by future investment losses or other unfavorable experience, the recognition of the \$92.6 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 104.6% to 114.3%, and
		• the aggregate employer contribution rate for 2015/2016 would decrease from 12.04% of payroll to 9.87% of payroll.
		The actuarial valuation report as of June 30, 2014 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.
		The Governmental Accounting Standards Board (GASB) approved two new Statements affecting the reporting of pension liabilities for accounting purposes. Statement 67 replaces Statement 25 and is for plan reporting. Statement 68 replaces Statement 27 and is for employer reporting. The information needed to comply with both Statements 67 and 68 will be provided in separate reports.

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.



SECTION 1: Valuation Summary for the City of Fresno Employees Retirement System

	June	30, 2014	June	e 30, 2013
Employer Contribution Rates:		Estimated		Estimated
	Total Rate	Annual Amount ⁽¹⁾	Total Rate	Annual Amount ⁽¹⁾
Normal Cost Rate	12.41%	\$14,027	12.03%	\$13,597
UAAL Rate	0.00%	0	0.07%	79
Surplus Offset	0.00%	0	0.00%	0
Contribution (Excess)/Shortfall from Prior Fiscal Year	-0.02%	-18	0.08%	90
Adjustment for Phase-In of Assumption Changes	<u>-0.35%</u>	<u>-396</u>	-0.53%	-599
Required Contributions	12.04%	\$13,613	11.65%	\$13,167
Average Member Contribution Rates:		Estimated		Estimated
	Total Rate	Annual Amount ⁽²⁾	Total Rate	Annual Amount ⁽²⁾
All Members ⁽³⁾	8.93%	\$8,138	8.91%	\$8,120
Funded Status:				
Actuarial Accrued Liability	\$950,274		\$934,947	
Valuation Value of Assets (VVA)	\$993,641		\$933,722	
Market Value of Assets (MVA) ⁽⁴⁾	\$1,086,198		\$951,313	
Funded Percentage on VVA basis	104.6%		99.9%	
Prefunded/(Unfunded) Actuarial Accrued Liability on VVA basis	\$43,367		\$(1,225)	
Funded Percentage on MVA basis	114.3%		101.8%	
Prefunded/(Unfunded)Actuarial Accrued Liability on MVA basis	\$135,924		\$16,366	
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 2015-2016 annual payroll for active non-DROP and DROP members of \$113,027.

⁽²⁾Based on projected fiscal year 2015-2016 annual payroll for members not in the DROP of \$91,136.

⁽³⁾These are the average rates after applying the surplus (if any) to offset the COLA rates. See Section 4, Appendix A for the basic and COLA rates before the surplus offset.

⁽⁴⁾Excludes non-valuation reserves.

SECTION 1: Valuation Summary for the City of Fresno Employees Retirement System

	June 30, 2014	June 30, 2013	Percentage Change
Active Members:			
Non-DROP			
Number of members	1,512	1,528	-1.0%
Average age	47.7	48.0	N/A
Average service	11.3	11.7	N/A
Projected total compensation ⁽¹⁾	\$87,842,034	\$92,244,343	-4.8%
Average projected compensation	\$58,097	\$60,369	-3.8% ⁽⁵
DROP			
Number of members	347	311	11.6%
Average age	59.9	60.0	N/A
Average service	23.1	23.7	N/A
Projected total compensation ⁽¹⁾	\$21,100,432	\$19,610,437	7.6%
Average projected compensation	\$60,808	\$63,056	-3.6% ⁽⁵
Retired Member and Beneficiaries:			
Number of members:			
Service retired	1,242	1,206	3.0%
Disability retired	141	144	-2.1%
Beneficiaries	366	360	1.7%
Total	1,749	1,710	2.3%
Average age	70.5	70.3	N/A
Average monthly benefit ⁽²⁾	\$1,964	\$1,936	1.4%
Vested Terminated Members:			
Number of vested terminated members ⁽³⁾	243	233	4.3%
Average age	45.4	45.8	N/A
Summary of Financial Data (dollar amounts in thousands):			
Market value of assets ⁽⁴⁾	\$1,167,157	\$1,024,666	13.9%
Return on market value of assets	17.11%	13.21%	N/A
Actuarial value of assets	\$1,074,600	\$1,007,075	6.7%
Return on actuarial value of assets	9.86%	8.05%	N/A
Valuation value of assets	\$993,641	\$933,722	6.4%
Return on valuation value of assets	8.99%	7.01%	N/A

⁽¹⁾ June 30, 2013 payroll was projected payroll for plan year 2013-2014. June 30, 2014 payroll was projected payroll for plan year 2014-2015.

⁽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.

⁽⁴⁾There was a delay in the recognition of lower than expected salary increases from 2011/2012 to 2012/2013 because salaries reported in the June 30, 2013 valuation had 27 pay periods.



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: 2005 – 2014

Year Ended June 30	Active Members ⁽¹⁾	Vested Terminated Members ⁽²⁾	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
2005	2,286	127	1,202	0.58
2006	2,319	172	1,256	0.62
2007	2,422	190	1,306	0.62
2008	2,509	195	1,358	0.62
2009	2,490	188	1,400	0.64
2010	2,283	184	1,503	0.74
2011	1,993	212	1,622	0.92
2012	1,900	221	1,672	1.00
2013	1,839	233	1,710	1.06
2014	1,859	243	1,749	1.07

⁽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 1,512 non-DROP active members with an average age of 47.7 years, average years of service of 11.3 and average compensation of \$58,097. The 1,528 non-DROP active members in the prior valuation had an average age of 48.0 years, average years of service of 11.7 and average compensation of \$60,369.

Inactive Members

In this year's valuation, there were 243 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 233 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, 2014

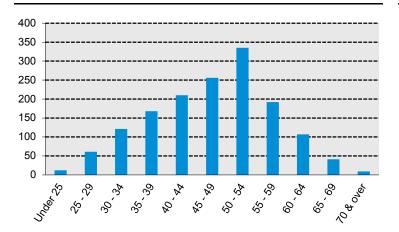
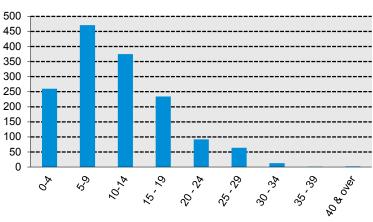


CHART 3

Distribution of Non-DROP Active Members by Years of Service as of June 30, 2014



DROP Active Members

In this year's valuation there were 347 DROP active members with an average age of 59.9 years, average years of service of 23.1, and average compensation of \$60,808. The 311 DROP active members in the prior valuation had an average age of 60.0 years, average years of service of 23.7, and average compensation of \$63,056.

Retired Members and Beneficiaries

As of June 30, 2014, 1,383 retired members and 366 beneficiaries were receiving total monthly benefits of \$3,435,107. For comparison, in the previous valuation, there were 1,350 retired members and 360 beneficiaries receiving monthly benefits of \$3,310,947.

CHART 4

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



Distribution of Retired Members (Excl. Beneficiaries) by Type and by Monthly Amount as of June 30, 2014

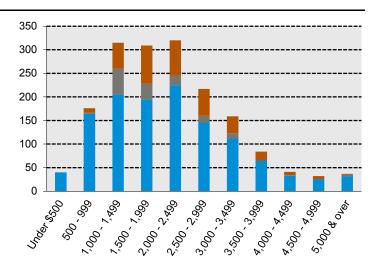
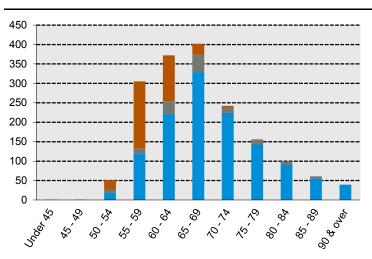


CHART 5

Distribution of Retired Members (Excl. Beneficiaries) by Type and by Age as of June 30, 2014



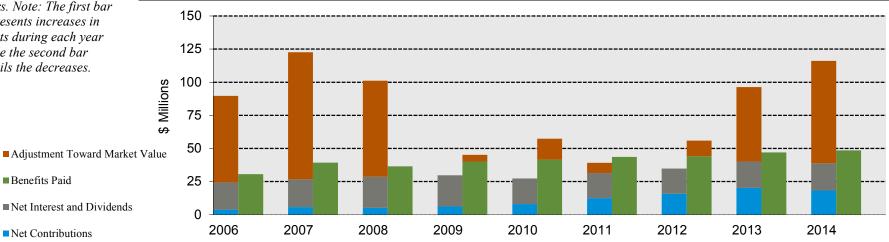
B. FINANCIAL INFORMATION

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.

CHART 6

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

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 2006-2014



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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, 2014

Plan Year Ending June 30	Total Actual Market Return	Expected Return	Investment Gain/(Loss) ⁽²⁾	Deferred Factor	Deferred Return
2012 (1)			\$(27,488,412)	0.5	\$(13,744,206)
2013	\$121,116,558	\$73,358,069	47,758,489	0.6	28,655,093
2014	172,772,730	75,714,372	97,058,358	0.8	77,646,686
. Total Deferred Return					\$92,557,573
2. Net Market Value					1,167,157,093
Actuarial Value of As	sets (Item 2 – Item 1)				\$1,074,599,520
. Ratio of Actuarial Val	ue to Market Value				92.1%
5. Non-Valuation Reserv	ves and Other Adjustments				
a. DROP Reserve					\$81,027,000
b. PRSB Reserve					0
c. City Surplus Reser	rve ⁽³⁾				(68,000)
d. Total					80,959,000
5. Valuation Value of As	ssets (Item 3 – Item 5d)				\$993,640,520

(1) Based on action taken by the Board in 2013, the net deferred loss of \$27,488,412 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 2013/2014. This difference is taken into account in developing the contribution rate requirement for 2015/2016. See Step (4) in Table 2 of Appendix B for calculations.

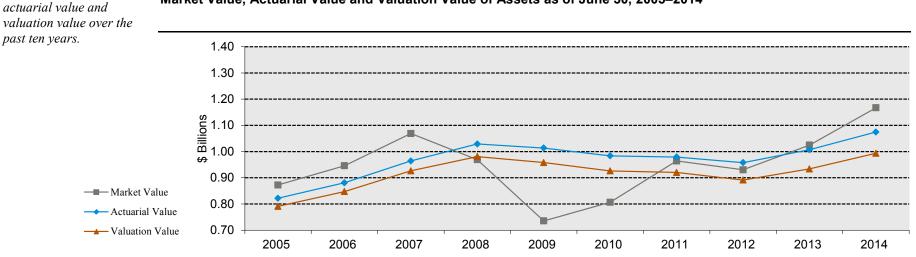
Deferred return as of June 30, 2014 recognized in each of the next four years:

6/30/2015	\$22,091,266
6/30/2016	22,091,266
6/30/2017	28,963,369
6/30/2018	19,411,672
	\$92,557,573



The chart shows the

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.



Market Value, Actuarial Value and Valuation Value of Assets as of June 30, 2005–2014

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This chart shows the change in market value,

CHART 8

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 \$48.6 million, including a gain of \$13.7 million from investments (after smoothing) and a gain of \$34.9 million from all other sources. The net experience variation from individual sources other than investments was 3.7% 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, 2014

1.	Net gain/(loss) from investments ⁽¹⁾	\$13,714,000
2.	Net gain/(loss) from other experience ⁽²⁾	34,933,000
3.	Net experience gain/(loss): $(1) + (2)$	\$48,647,000

⁽¹⁾Details in Chart 10.

⁽²⁾ See Items (6b) through (6d) in Section 3, Exhibit H.

Investment Rate of Return

CHART 10

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, 2013 valuation). The actual rate of return on a valuation basis for the 2013/2014 plan year was 8.99%.

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, 2014 with regard to its investments.

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

Investment Experience for Year Ended June 30, 2014 – Market Value, Actuarial Value and Valuation Value of Assets

	Market Value	Actuarial Value	Valuation Value
. Actual return	\$172,772,730	\$97,805,639	\$82,881,705
2. Average value of assets	\$1,009,524,960	\$991,934,478	\$922,240,445
3. Actual rate of return: $(1) \div (2)$	17.11%	9.86%	8.99%
Assumed rate of return	7.50%	7.50%	7.50%
5. Expected return: $(2) \times (4)$	\$75,714,372	\$74,395,086	\$69,168,033
5. Actuarial gain/(loss): $(1) - (5)$	<u>\$97,058,358</u>	<u>\$23,410,553</u>	\$13,713,672

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

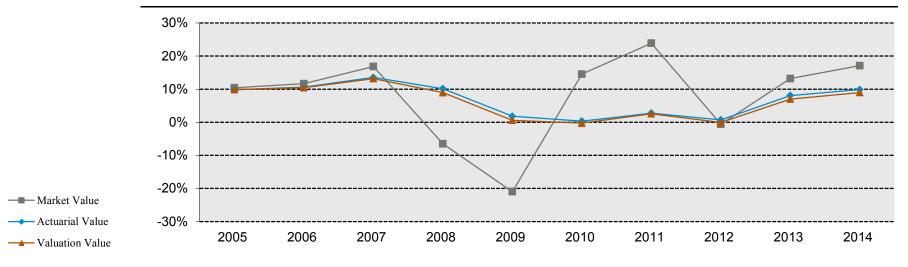
Investment Return – Market Value, Actuarial Value and Valuation Value: 2005 – 2014

		Market Value Investment Return		al Value nt Return	Valuation Value Investment Return	
Year EndedJune 30	Amount	Percent	Amount	Percent	Amount	Percent
2005	\$83,471,311	10.42%	N/A	N/A	\$67,602,316	9.84%
2006	100,177,718	11.66%	\$85,932,037	10.63%	81,292,494	10.44%
2007	156,545,863	16.85%	116,910,064	13.53%	109,598,151	13.17%
2008	(68,481,857)	(6.50%)	96,073,943	10.13%	81,711,433	8.95%
2009	(199,694,398)	(20.97%)	18,308,120	1.81%	5,743,642	0.59%
2010	104,511,346	14.54%	3,460,859	0.35%	(2,390,978)	(0.25%)
2011	188,925,406	23.88%	26,707,381	2.76%	23,379,931	2.56%
2012	(5,620,568)	(0.59%)	7,136,014	0.74%	(635,732)	(0.07%)
2013	121,116,558	13.21%	76,037,664	8.05%	61,830,441	7.01%
2014	172,772,730	17.11%	97,805,639	9.86%	82,881,705	8.99%
ive-Year Annualized Ave	erage Return	13.34%		4.28%		3.58%
en-Year Annualized Ave	rage Return	7.13%		6.32%		6.02%

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, 2005 - 2014



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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 increases different than assumed.

The net gain from this other experience for the year ended June 30, 2014 amounted to \$34.9 million which is 3.7% of the actuarial accrued liability. See Section 3, Exhibit H for a detailed development of the unfunded 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 periods 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	Provide for an average annuity at age 55 equal to $1/150$ of FAS for each of the first 25 years of service and $1/300$ for each year in excess of 25 (§3-523).



CHART 13

Recommended Employer Contribution Rates (Dollar Amounts in Thousands)

	June	30, 2014	June 30, 2013	
All Categories Combined	<u>Rate</u>	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
Normal Cost	12.41%	\$14,027	12.03%	\$13,597
UAAL	0.00%	0	0.07%	79
Surplus Offset	0.00%	0	0.00%	0
Contribution (Excess)/Shortfall from Prior Fiscal Year	-0.02%	-18	0.08%	90
Adjustment for Phase-In of Assumption Changes	<u>-0.35%</u>	<u>-396</u>	<u>-0.53%</u>	<u>-599</u>
Total Contribution	12.04%	\$13,613	11.65%	\$13,167

⁽¹⁾ Amounts are in thousands and are based on projected fiscal year 2015 – 2016 annual payroll for active non-DROP and DROP members (also in thousands):

Payroll \$113,027

The employer contribution rates as of June 30, 2014 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.

CHART 14

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

Reconciliation of Recommended Employer Contribution from June 30, 2013 to June 30, 2014 (Dollars in Thousands)

		Contribution Rate	Estimated Amount ⁽¹⁾
1.	Recommended Contribution Rate as of June 30, 2013	11.65%	\$13,167
	a. Less 2013/2014 plan year contribution offset included in the above rate		
	(payable 2014/2015)	0.08%	\$90
	b. Less UAAL Rate as of June 30, 2013	0.07%	\$79
	c. Less 2014/2015 adjustment for phase-in of employer's contribution rate impact due		
	to changes in actuarial assumptions	<u>-0.53%</u>	<u>-\$599</u>
	d. Normal Cost Rate as of June 30, 2013	12.03%	\$13,597
2.	Effect of actuarial experience during 2013/2014 on Normal Cost Rate		
	a. Refinement in the Normal Cost calculation to reflect changes in the actuarial		
	assumptions	0.25%	\$284
	b. Effect of changes in membership demographics ⁽²⁾	<u>0.13%</u>	<u>\$146</u>
	c. Normal Cost Rate as of June 30, 2014	12.41%	\$14,027
3.	Effect of second year of three-year phase in of the employer's contribution rate impact		
	due to changes in actuarial assumptions ⁽³⁾	-0.35%	-\$396
4.	Effect of the difference between the actual and the estimated 2014/2015 plan year		
	contribution	<u>-0.02%</u>	<u>-\$18</u>
5.	Recommended Contribution Rate as of June 30, 2014	12.04%	\$13,613

⁽¹⁾ Based on projected fiscal year 2015 – 2016 annual payroll of \$99,869 for active non-DROP and DROP members.

⁽²⁾ This includes an increase in the average entry age of about 0.1 years.

⁽³⁾ This has been calculated by taking 1/3 of the sum of: (i) the original phase-in rate (i.e., 0.80%) and (ii) the impact of the refinement in the Normal Cost calculation to reflect changes in the actuarial assumptions (i.e., 0.25%).



The member contribution rates as of June 30, 2014 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.

CHART 15

-

The chart reconciles the member contribution from the prior valuation to the amount determined in this valuation. Reconciliation of Recommended Member Contribution from June 30, 2013 to June 30, 2014 (Dollar Amounts in Thousands)

	Contribution Rate	Estimated Amount ⁽¹⁾
Average Contribution Rate as of June 30, 2013	8.91%	\$8,120
Effect of changes in membership demographics	0.02%	<u>\$18</u>
Average Contribution Rate as of June 30, 2014	8.93%	\$8,138

⁽¹⁾ Based on projected fiscal year 2015 – 2016 annual payroll for members NOT in the DROP of \$91,136.

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, 2014
Service Retirement	15.55%
Vested Deferred Retirement and Contribution Refunds	2.74%
Death-In-Service	0.23%
Disability	<u>1.09%</u>
Total Normal Cost	19.61%
Less	
Employee Contributions ⁽¹⁾	<u>7.20%</u>
Equals	
Net Employer Normal Cost	12.41%

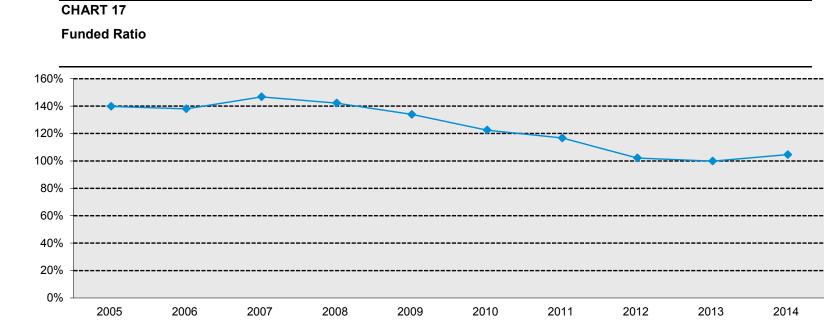
⁽¹⁾ The offset for employee contributions is less than the aggregate employee rate because it expresses the employee contribution dollar amount as a percent of projected fiscal year 2015-2016 annual payroll for all active members (non-DROP and DROP) of \$113,027 instead of annual payroll for only active non-DROP members of \$91,136.



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 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.



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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 10.7. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 10.7% of one-year's payroll. Since the Retirement System amortizes actuarial gains and losses over a period of 15 years, there would be a 0.9% 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 8.7. This is about 19% lower than the AVR. Therefore, we would expect that contribution volatility will decrease over the long term.

CHART 19

Volatility Ratios for Years Ended June 30, 2009 – 2014

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2009	5.3	5.1
2010	6.1	5.8
2011	8.2	6.7
2012	8.3	7.8
2013	9.2	8.4
2014	10.7	8.7

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

EXHIBIT A

Table of Plan Coverage

	Year Ende	ed June 30		
Category	2014	2013	Change Fron Prior Year	
Active members in valuation				
Non-DROP				
Number	1,512	1,528	-1.0%	
Average age	47.7	48.0	N/A	
Average service	11.3	11.7	N/A	
Projected total compensation	\$87,842,034	\$92,244,343	-4.8%	
Projected average compensation	\$58,097	\$60,369	-3.8% ⁽²⁾	
Member account balances	\$85,712,459	\$86,768,277	-1.2%	
Total active vested members	1,252	1,343	-6.8%	
DROP				
Number	347	311	11.6%	
Average age	59.9	60.0	N/A	
Average service	23.1	23.7	N/A	
Projected total compensation	\$21,100,432	\$19,610,437	7.6%	
Projected average compensation	\$60,808	\$63,056	-3.6% ⁽²⁾	
Vested terminated members				
Number	243	233	4.3%	
Average age	45.4	45.8	N/A	
Retired members				
Number in pay status	1,242	1,206	3.0%	
Average age	69.7	69.5	N/A	
Average monthly benefit ⁽¹⁾	\$2,169	\$2,140	1.4%	
Disabled members	i.			
Number in pay status	141	144	-2.1%	
Average age	67.0	66.4	N/A	
Average monthly benefit ⁽¹⁾	\$1,911	\$1,860	2.7%	
Beneficiaries				
Number in pay status	366	360	1.7%	
Average age	74.6	74.2	N/A	
Average monthly benefit ⁽¹⁾	\$1,290	\$1,285	0.4%	

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

⁽²⁾ There was a delay in the recognition of lower than expected salary increases from 2011/2012 to 2012/2013 because salaries reported in the June 30, 2013 valuation had 27 pay periods.



EXHIBIT B

Members in Active Service and Projected Average Compensation By Age, Years of Service as of June 30, 2014 – Non-DROP Active Members Only

	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	12	12								
	\$35,808	\$35,808								
25 - 29	61	46	15							
	49,491	46,564	\$58,467							
30 - 34	121	48	65	8						
	55,988	53,093	57,912	\$57,720						
35 - 39	168	34	77	49	8					
	55,604	49,899	55,059	60,115	\$57,471					
40 - 44	210	33	63	74	39	1				
	55,089	46,578	57,187	55,288	58,673	\$49,314				
45 - 49	256	29	64	76	50	26	11			
	59,806	62,765	61,565	56,223	60,733	63,611	\$53,313			
50 - 54	335	28	89	61	66	41	42	8		
	62,364	61,140	60,305	61,358	62,636	62,455	68,157	\$64,085		
55 - 59	192	20	48	60	37	14	8	4	1	
	60,205	66,603	59,962	58,253	57,547	62,620	67,010	62,731	\$60,956	
60 - 64	107	5	35	35	23	7	1	1		
	57,433	61,780	58,660	56,451	54,878	64,186	47,403	48,580		
65 - 69	41	3	13	12	7	3	1			2
	56,733	86,151	60,432	50,172	40,442	48,591	89,238			\$80,916
70 & over	9	2	2		4		1			
	52,867	55,426	77,508		41,904		42,320			
Total	1,512	260	471	375	234	92	64	13	1	2
	\$58,097	\$53,447	\$58,732	\$57,567	\$58,807	\$62,344	\$65,064	\$62,476	\$60,956	\$80,916

Note: Excludes 347 active members in DROP with projected average compensation of \$60,808.

EXHIBIT C

Reconciliation of Member Data - June 30, 2013 to June 30, 2014

	Non-DROP Active Members	DROP Members	Vested Terminated Members	Pensioners	Disableds	Beneficiaries	Total
Number as of June 30, 2013	1,528 (1)	311 (1)	233	1,206	144	360	3,782
New members	134	0	0	0	0	0	134
Terminations - with vested righ	ts -36	0	36	0	0	0	0
Contributions Refunds	-19	0	-19	0	0	0	-38
DROP Entry	-74	74	0	0	0	0	0
Retirements	-28	-38	-12	78	0	0	0
New disabilities	-1	0	0	-2	3	0	0
Return to work	11	0	-7	-4	0	0	0
Died with or without beneficiary	y -3	0	0	-37	-6	9 ⁽³⁾	-37
Data adjustments	0	0	12	1	0	-3	10
Number as of June 30, 2014	1,512 (2)	347 (2)	243	1,242	141	366	3,851

⁽¹⁾ There was a total of 1,839 actives (including non-DROP and DROP members) at the beginning of the plan year.

⁽²⁾ There was a total of 1,859 actives (including non-DROP and DROP members) at the end of the plan year.

⁽³⁾ This is the net <u>increase</u> 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 J	lune 30, 2014	Year Ended June 30, 2013		
Contribution income:					
Employer contributions	\$11,439,981		\$13,329,655		
Employee contributions	7,945,519		7,995,145		
Less administrative expenses	<u>-1,086,164</u>		<u>-1,138,182</u>		
Net contribution income		\$18,299,336		\$20,186,618	
Investment income:					
Interest, dividends and other income	\$25,743,132		\$24,701,946		
Adjustment toward market value	77,266,002		56,163,980		
Less investment fees	<u>-5,203,495</u>		-4,828,262		
Net investment income		<u>97,805,639</u>		76,037,664	
Total income available for benefits		\$116,104,975		\$96,224,282	
Less benefit payments:					
Benefit payments	-\$47,367,501		-\$45,806,771		
Post retirement supplemental benefits	-9,050		-76,286		
Refunds of contributions	<u>-1,203,979</u>		<u>-1,157,287</u>		
Net benefit payments		-\$48,580,530		-\$47,040,344	
Change in reserve for future benefits		\$67,524,445		\$49,183,938	

Note: Results may not total properly due to rounding.



EXHIBIT E

Summary Statement of Assets

	Year Ended	June 30, 2014	Year Ended June 30, 2013		
Cash equivalents		\$613,344		\$933,365	
Accounts receivable:					
Receivables for investments sold	\$6,709,195		\$9,808,701		
Interest and dividends	3,641,720		4,125,845		
Other receivables	17,181,270		7,806,925		
Total accounts receivable		27,532,185		21,741,471	
Investments:					
Domestic and international equity	\$685,148,197		\$564,961,061		
Government and corporate bonds	287,094,781		294,474,706		
Real estate	131,280,719		115,099,623		
Emerging market equity	20,771,126		36,004,600		
Collateral held for securities lent	116,502,167		149,473,656		
Other investments	45,140,208		24,614,083		
Total investments at market value		1,285,937,198		1,184,627,729	
Total assets		\$1,314,082,727		\$1,207,302,566	
Less accounts payable:					
Collateral held for securities lent	-\$116,502,167		-\$149,473,656		
Payable for investments and foreign currency purchased	-29,168,236		-32,093,996		
Other liabilities	-1,255,231		-1,069,356		
Total accounts payable		-\$146,925,634		-\$182,637,008	
Net assets at market value		<u>\$1,167,157,093</u>		<u>\$1,024,665,557</u>	
Net assets at actuarial value		<u>\$1,074,599,520</u>		<u>\$1,007,075,075</u>	
Net assets at valuation value		<u>\$993,640,520</u>		<u>\$933,722,075</u>	

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 System, 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	\$993,641
2. Present value of future member normal cost	50,253
3. Present value of future employer normal cost	85,938
4. Unfunded/(prefunded) actuarial accrued liability	-43,367
5. Total current and future assets	\$1,086,465
Liabilities	
6. Present value of benefits already granted, excludes current active DROP	\$497,909
7. Present value of benefits for current active DROP	159,023
8. Present value of benefits to be granted	429,533
9. Total liabilities	\$1,086,465

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EXHIBIT G

Summary of Reported Asset Information as of June 30, 2014

	Reserves \$(000)
Employer Advance/Retired Reserves	\$987,708
Active Member Reserves	98,490
DROP Reserve ⁽¹⁾	81,027
Reserve for PRSB ⁽¹⁾	-
Reserve for City Surplus ^{(1),(2)}	(68)
Net Assets Held in Trust for Benefits	\$1,167,157
Note: Results may not add due to rounding	

⁽¹⁾ Non-valuation reserve

(2) The negative 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 2013/2014. This difference is taken into account in developing the contribution rate requirement for 2015/2016.



EXHIBIT H

Development of Unfunded / (Prefunded) Actuarial Accrued Liability as of June 30, 2014

		(Dollar amounts in Thousands)
1	Unfunded/(prefunded) actuarial accrued liability at beginning of year	\$1,225
2	Gross Normal Cost at middle of year	23,206
3	Actual employer and member contributions	-19,386
4	Interest (whole year on (1) plus half year on $(2) + (3)$)	235
5	Expected unfunded/(prefunded) actuarial accrued liability at end of year	\$5,280
6	Actuarial (gain)/loss due to all changes:	
	Experience (gain)/loss	
	a. (Gain)/loss from investment	-\$13,714
	 b. Delayed recognition of lower than expected salary increases from 2011/2012 to 2012/2013 because salaries reported in the 6/30/2013 valuation had 27 pay periods 	-11,181
	c. Lower than expected salary increases from 2012/2013 to 2013/2014	-5,875
	d. Lower than expected COLA benefit increases for continuing retirees and DROP	-10,408
	d. Other experience (gain)/loss	-7,469
	e. Subtotal	-48,647
7	Actual unfunded/(prefunded) actuarial accrued liability at end of year (5) + (6e)	-\$43,367



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 noncompliance 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 2014 and 2015. 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)	<u>Investment return</u> — 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)	<u>Mortality rates</u> — 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)	<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.
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.	

SECTION 3: Supplemental Information for the City of Fresno Employees Retirement System

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 velocities was a	a do with assured to the fellowing date symplicity to use		
	ade with respect to the following data supplied to us:		
	of the valuation date (including 366 beneficiaries in pay status)		1,749
2. Members inactive du	ring year ended June 30, 2014 with vested rights		243
3. Members active duri	ng the year ended June 30, 2014		1,859
DROP member	5	347	
Fully vested no	n-DROP members	1,252	
Not vested		260	
The actuarial factors	as of the valuation date are as follows (amounts in 000s):		
Assets			
1. Valuation value of a and \$1,074,600 at ac	sets ($1,167,157$ at market value ⁽¹⁾ as reported by the Retirement System tuarial value ⁽¹⁾)		\$993,641
2. Present value of futu	re normal costs		
Employee		\$50,253	
Employer		<u>85,938</u>	
Total			\$136,191
B. Prefunded actuarial	accrued liability		-43,367
A. Present value of curr	ent and future assets		\$1,086,465
Liabilities			
5. Present value of futu	re benefits		
Retired membe	rs and beneficiaries	\$497,909	
Inactive member	rs with vested rights	37,829	
DROP member	3	159,023	
Active non-DR	OP members	391,704	
Total			\$1,086,465

(1) Includes non-valuation reserves.



EXHIBIT I (continued) Summary of Actuarial Valuation Results

Th	e determination of the recommended contribution is as follows (amounts in 000s):	Dollar Amount	% of Payroll $^{(1)}$
1.	Total normal cost	\$22,165	19.61%
2.	Expected employee contributions	<u>-8,138</u>	-7.20%
3.	Employer normal cost: $(1) + (2)$	\$14,027	12.41%
4.	Surplus offset	0	0%
5.	Adjustment for phase-in of assumption changes	-396	-0.35%
6.	Contribution (excess)/shortfall from prior year	<u>-18</u>	-0.02%
7.	Total recommended employer contributions: $(3) + (4) + (5)$	\$13,613	12.04%
8.	Projected payroll ⁽¹⁾	\$113,027	

⁽¹⁾ Based on projected fiscal year 2015 – 2016 annual payroll for active non-DROP and DROP members shown in (8).



EXHIBIT II

Schedule of Employer Contributions

Plan Year Ended June 30	Annual Required Contributions	Actual Contributions	Percentage Contributed
2009	\$1,345,274	\$1,345,274	100.0%
2010	3,267,115	3,267,115	100.0%
2011	8,214,569	8,214,569	100.0%
2012	11,373,870	11,373,870	100.0%
2013	13,329,655	13,329,655	100.0%
2014	11,439,981	11,439,981	100.0%



EXHIBIT III

Schedule of Funding Progress (Dollar Amounts in Thousands)

Actuarial Valuation Date	Valuation Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Prefunded/ (Unfunded) AAL/(UAAL) (a) – (b)	Funded Ratio (%) (a) / (b)	Covered Payroll (c)	Prefunded AAL/ (UAAL) as a Percentage of Covered Payroll (%) [(a) – (b)] / (c)
6/30/2009	\$958,032	\$715,250	\$242,782	133.9	\$139,274	174.3
6/30/2010	926,370	756,258	170,112	122.5	131,224	129.6
6/30/2011	920,217	791,105	129,112	116.3	117,577	109.8
6/30/2012	891,366	871,958	19,408	102.2	112,307	17.3
6/30/2013	933,722	934,947	(1,225)	99.9	111,854	(1.1)
6/30/2014	993,641	950,274	43,367	104.6	108,942	39.8



Valuation date	June 30, 2014
Actuarial cost method	Entry Age Actuarial Cost Method
Amortization method	Level percent of payroll for total Unfunded Actuarial Accrued Liability or Prefunded Actuarial Accrued Liability
Remaining amortization period	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.
Asset valuation method	The Actuarial Value of Assets is determined by phasing in any difference between actual and expected return on market value of assets 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. The Valuation Value of Assets is the Actuarial Value of Assets reduce by the value of the non-valuation reserves (i.e., DROP Reserve, PRSB Reserve and City Surplus
Actuarial assumptions:	
Investment rate of return	7.50%
Inflation rate	3.25%
Real across-the-board salary increase	0.50%
Projected salary increases (1)	4.25% to 11.75%
Cost of living adjustments	3.25% of retirement income
Plan membership:	
Retired members and beneficiaries receiving benefits	1,749
Terminated members entitled to, but not yet receiving benefits	243
DROP members	347
Active non-DROP members	<u>1,512</u>
Total	3,851

EXHIBIT IV

Supplementary Information Required by GASB

⁽¹⁾ Includes inflation at 3.25% plus real across-the-board salary increase of 0.50% plus merit and promotion increases. See Exhibit V for these increases.



EXHIBIT V

Actuarial Assumptions and Actuarial Cost Method

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 one year. RP-2000 Combined Healthy Mortality Table (separate tables for males and females) Disabled: projected with scale AA to 2021 set forward three years. The tables shown above were determined to contain sufficient provision 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 one year weighted 65% male and 35% female. For beneficiaries: RP-2000 Combined Healthy Mortality Table projected with scale AA to 2021 set back one year weighted 35% male and 65% female. For disabled members: RP-2000 Combined Healthy Mortality Table projected with scale AA to 2021 set forward three years weighted 65% male and 35% female.

SECTION 4:	Reporting Information for the Ci	ty of Fresno Employees Retirement System
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tion Rates Bel	ore Retirement: Rate (%)	
	Mortality	
Age	Male	Female
25	0.03	0.01
30	0.04	0.02
35	0.06	0.04
40	0.09	0.05
45	0.11	0.07
50	0.14	0.11
55	0.21	0.20
60	0.42	0.40
65	0.84	0.78

Termination Rates Before Retirement:

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

Rate (%) Disability		
Age	All Members	
20	0.00	
25	0.00	
30	0.01	
35	0.06	
40	0.16	
45	0.32	
50	0.49	
55	0.67	
60	1.20	
65	1.50	

All disabilities are assumed to be non-service connected.



Termination Rates Before Retirement (Continued):

Total Termination (Less than 5 years of service)		
<u>Service</u>	<u>Rate (%)</u>	
0 - 1	12.00	
1 - 2	8.00	
2 - 3	6.00	
3 - 4	5.00	
4 – 5	3.50	

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

Total Termination (5 or more years of service)

Age	<u>Rate (%)</u>
20	7.50
25	7.50
30	6.90
35	6.05
40	5.30
45	4.70
50	0.00

40% of members are assumed to elect a withdrawal of contributions. The remaining members are assumed to elect a deferred vested benefit. No vested termination is assumed after a member is assumed to retire. **Retirement Rates:**

Age	<u>Rate (%)</u>
50	2.00
51	2.00
52	3.00
53	3.00
54	5.00
55	6.00
56	6.00
57	6.00
58	6.00
59	6.00
60	8.00
61	10.00
62	10.00
63	11.00
64	18.00
65	20.00
66	20.00
67	25.00
68	40.00
69	50.00
70	100.00
DROP Assumptions:	Male and Female (after attaining age 55)
First Year Eligible	30%
Second Year Eligible	15%
Third Year Eligible	10%
Fourth Year Eligible	10%
Fifth Year Eligible	10%
Thereafter	0%
Members are assumed to remain	in in DROP for 6 years.



Retirement Age and Benefit for Deferred Vested Members	For current deferred vested members, the retirement assumption is age 56.
	We assume that no future deferred vested members will continue to work for a reciprocal employer.
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 specified, members are assumed to be male.	
Inclusion of Deferred Vested Members:	All deferred vested members are included in the valuation.
Percent Married:	80% of male members; 55% of female members.
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 3.25% per year, retiree COLA increases due to CPI are limited to maximum at 3.25% per year.

Salary Increases:	Annual Rate of	f Compensation Increase			
	Inflation: 3.25% per year; plus 0.50% across-the-board salary increase; plus the following Merit and Promotion increases based on completed years of service.				
	Years of Service	Annual Increase			
	0	8.00%			
	1	6.25%			
	2	4.75%			
	3	3.75%			
	4	3.15%			
	5	2.15%			
	6	1.20%			
	7	1.00%			
	8	0.90%			
	9+	0.50%			
Actuarial Cost Method:	Normal Cost and Actuation are based on costs allo	ost Method. Entry age is the age at the member's hire date. arial Accrued Liability are calculated on an individual basis and cated as a level percentage of compensation, as if the current always been in effect (i.e., "replacement life").			
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:	There have been no ch actuarial valuation.	anges in actuarial assumptions or methods since the previous			

EXHIBIT VI

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:	Permanent full-time employees except sworn Fire and Police personnel.
Final Compensation for Benefit Determination:	Highest average consecutive thirty-six months of compensation earnable calculated using the rate of pay in effect at the time of the retirement (§3-501).
Service:	Years of service (Yrs).
Service Retirement Eligibility:	Age 50 with 5 years of service (§3-540).



Service Retirement (Continued):

Benefit Formula Per Year of Service

2% times each of first 25 years of service plus 1% for any years of service in excess of 25, multiplied by the following factor at retirement age (§3-541):

Age	Factor	Age	<u>Factor</u>
55	1.00	61	1.14
56	1.02	62	1.18
57	1.04	63	1.22
58	1.06	64	1.26
59	1.08	65	1.30
60	1.10	65+	Add 0.01 each quarter year after age 65

Effective January 28, 2008, members may retire at age 50 with a reduced early retirement benefit. The reduced early retirement benefit is calculated to be actuarially equivalent to the service retirement benefit payable at age 55.

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. Members may participate in DROP for up to ten years (§3-566).



dinary or Service Connect	ed Disability:				
<i>Eligibility</i> Ten years of service (§3-546).					
Benefit Formula	Greater of 1.8% * FAS * Yrs, 33.33% of FAS, or Service Retirement benefit (§3-547).				
e-Retirement Death:					
<u>All Members</u>					
Eligibility	None.				
Benefit	Refund of employee contributions with interest, plus one month of final compensatio for each year of service, to a maximum of six month's compensation (§3-537).				
Vested Members					
A1. Eligibility	At least five years of service but ineligible for Service Retirement at death (§3-552).				
B1. Benefit	50% of Service Retirement Benefit as if the member were age 55 based on years of service at death ($3-552$).				
	OR				
A2. Eligibility	Eligible for Service Retirement.				
B2. Benefit	50% of Service Retirement Benefit based on benefit due on member's date of death (§3-552).				



Death After Retirement:	
<u>All Members</u>	
Service or	
Disability Retirement	50% of member's unmodified allowance continued to eligible spouse/domestic partner (§3-550).
Withdrawal Benefits:	
Less than Five Years of Service	Refund of accumulated employee contributions with interest.
Five or More Years of Service	If contributions left on deposit, entitled to earned benefits commencing at any time after eligible to retire (§3-535).
Post-retirement	
Cost-of-Living Benefits:	Future changes based on Consumer Price Index to a maximum of 5% per year (§3-553).



Member Contributions:	Please refer to Appendix A for specific rates.				
	Provide for an average annuity at age 55 equal to 1/150 of FAS for each of the first 25 years of service and 1/300 for each year in excess of 25 (§3-523).				
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):	PRSB may be paid to retired DROP participants, eligible retirees, and beneficiaries (§3-567). 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

Breakdown of member rate between basic and COLA calculated in the June 30, 2014 and June 30, 2013 valuation:

June 30, 2014 Actuarial Valuation				_		Jun	e 30, 2013 Ac	tuarial Va	luation							
	BA	ASIC		A, Before us Offset	Surplu	ıs Offset	ТС	DTAL	В	ASIC		A, Before us Offset	Surpl	us Offset	TC	DTAL
	Rate	Estimated Annual <u>Amt ⁽¹⁾</u>	Rate	Estimated Annual <u>Amt</u> ⁽¹⁾	Rate	Estimated Annual <u>Amt</u> ⁽¹⁾	Rate	Estimated Annual <u>Amt ⁽¹⁾</u>	Rate	Estimated Annual <u>Amt</u> ⁽¹⁾	Rate	Estimated Annual <u>Amt (1)</u>	Rate	Estimated Annual <u>Amt (1)</u>	Rate	Estimated Annual <u>Amt ⁽¹⁾</u>
All Members	5.92%	\$5,395	3.01%	\$2,743	0.00%	\$0	8.93%	\$8,138	5.91%	\$5,386	3.00%	\$2,734	0.00%	\$0	8.91%	\$8,120

(1) Amounts are in thousands and are based on the following projected fiscal year 2015 – 2016 annual payroll for members NOT in the DROP (also in thousands):

Payroll (excluding DROP members) \$91,136

Appendix A

Member Contribution Rates (Continued)

Entry Age	Basic	COLA	Surplus Offset	Total
16	3.35%	1.70%	0.00%	5.05%
17	3.45%	1.75%	0.00%	5.20%
18	3.55%	1.81%	0.00%	5.36%
19	3.66%	1.86%	0.00%	5.52%
20	3.77%	1.92%	0.00%	5.69%
21	3.89%	1.98%	0.00%	5.87%
22	4.02%	2.04%	0.00%	6.06%
23	4.15%	2.11%	0.00%	6.26%
24	4.28%	2.18%	0.00%	6.46%
25	4.43%	2.25%	0.00%	6.68%
26	4.58%	2.33%	0.00%	6.91%
27	4.74%	2.41%	0.00%	7.15%
28	4.91%	2.50%	0.00%	7.41%
29	5.10%	2.59%	0.00%	7.69%
30	5.29%	2.69%	0.00%	7.98%
31	5.39%	2.74%	0.00%	8.13%
32	5.49%	2.79%	0.00%	8.28%
33	5.59%	2.84%	0.00%	8.43%
34	5.70%	2.90%	0.00%	8.60%
35	5.80%	2.95%	0.00%	8.75%
36	5.91%	3.01%	0.00%	8.92%
37	6.02%	3.06%	0.00%	9.08%
38	6.14%	3.12%	0.00%	9.26%
39	6.26%	3.18%	0.00%	9.44%
40	6.38%	3.24%	0.00%	9.62%

Members' Contribution Rates based on the June 30, 2014 Actuarial Valuation as a percentage of payroll

SECTION 4:	Reporting Information for the City of Fre	esno Employees Retirement System

Appendix A

Member Contribution	Rates	(Continued)
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Entry Age	Basic	COLA Surplus Offset		Total
41	6.51%	3.31%	0.00%	9.82%
42	6.64%	3.38%	0.00%	10.02%
43	6.78%	3.45%	0.00%	10.23%
44	6.93%	3.52%	0.00%	10.45%
45	7.08%	3.60%	0.00%	10.68%
46	7.23%	3.68%	0.00%	10.91%
47	7.38%	3.75%	0.00%	11.13%
48	7.54%	3.83%	0.00%	11.37%
49	7.65%	3.89%	0.00%	11.54%
50	7.71%	3.92%	0.00%	11.63%
51	7.76%	3.94%	0.00%	11.70%
52	7.76%	3.94%	0.00%	11.70%
53	7.69%	3.91%	0.00%	11.60%
54	7.54%	3.84%	0.00%	11.38%
iterest:		7.50% per annum		
fortality:			Healthy Mortality Table pr	ojected with scal

Salary Increase: COLA: Non-Refundability Factor: RP-2000 Combined Healthy Mortality Table projected with scale AA to 2021 set back one year weighted 65% male and 35% female See Exhibit V in Section 4 3.25% per annum 95.86%



Appendix B

Allocation of Actuarial Surplus

	Ju	ne 30
	2014	2013
Table 1: Calculation of Actuarial Surplus		
(1) Valuation Value of Assets	\$993,640,520	\$933,722,075
(2) Actuarial Accrued Liability	950,274,000	934,947,000
(3) Surplus: $(1) - (2)$, not less than zero	43,366,520	0
(4) Contingency Reserve: 10% of (2), not more	than (3) 43,366,520	0
(5) Actuarial Surplus: $(3) - (4)$	0	0

There is no Actuarial Surplus available for distribution in the June 30, 2014 or June 30, 2013 valuations.



Appendix B

Allocation of Actuarial Surplus (Continued)

		Fisc	al Year 2015-	2016	Fisc	al Year 2014-	2015
Table	2: City Contribution Requirements	Basic	COLA	Total	Basic	COLA	Total
(1)	a. City Normal Cost Rate	9.66%	2.75%	12.41%	9.02%	3.01%	12.03%
	b. City UAAL Rate	0.00%	0.00%	0.00%	0.07%	0.00%	0.07%
	c. Adjustment for Phase-In of Assumption Changes	-0.35%	0.00%	-0.35%	-0.53%	0.00%	-0.53%
	d. City Contribution Rate after Adjustment for Phase-In of Assumption Changes	9.31%	2.75%	12.06%	8.56%	3.01%	11.57%
(2)	Projected Annual Payroll	\$113,027,000	\$113,027,000	\$113,027,000	\$108,942,000	\$108,942,000	\$108,942,000
(3)	City Allocation of Fiscal Year Distributable Actuarial Surplus	0	0	0	0	0	0
(4)	City Surplus Reserve Account (From Prior Years)	0	0	0	-68,000	0	-68,000
(5)	¹ / ₂ Year Interest on (4)	ů 0	0	0	-2,550	0	-2,550
(6)	Total Contribution Offsets Available $(3) + (4) + (5)$	0	0	0	-70,550	0	-70,550
(7)	Total Contribution Required (1d) x (2)	10,522,814	3,108,000	13,630,814	9,325,435	3,279,154	12,604,589
(8)	Unused Offset $(6) - (7)$, not less than 0	0	0	0	0	0	0
(9)	Offset Adjustments	0	0	0	0	0	0
(10)	Additional Offset Required $(7) - (6) - (9)$, not less than 0, from Prepaid Contribution Account	10,522,814	3,108,000	13,630,814	9,395,985	3,279,154	12,675,139
(11)	Contribution Rate Adopted by the City for FY 2013/2014	- 3- 3-	-))	- , , -		- 3 3 -	11.65%
(12)	Projected City Contributions Based on Rate Adopted by the City $(11) * (2)$				9,412,589	3,279,154	12,691,743
(13)	Net Additional City Contribution Before Application of Prepaid Employer Contribution Account $(10) - (12)$	10,522,814	3,108,000	13,630,814	-16,604	0	-16,604
(14)	City's Prepaid Employer Contribution Account Balance (Negative Account Balance Represents Contribution Shortfall)	17,226	0	17,226 ⁽¹⁾	0	0	0
(15)	¹ / ₂ Year Interest on (14)	646	0	646	0	0	0
()	City's Fiscal Year Contribution After Application of Prepaid Employer Contribution Account $(13) - (14) - (15)$, not less than 0	10,504,941	3,108,000	13,612,941	-16,604	0	-16,604
(17)	Projected Residual Prepaid Employer Contribution Account at Year End. $(14) + (15) - (13)$, Adjusted with ½ Year Interest (Negative Account Balance Represents Contribution Shortfall)	10,00.,01	2,100,000				,
	Controlution Shorthan)			0	17,226	0	17,226

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



Appendix B (continued)

Allocation of Actuarial Surplus

	June 30	
	2014	2013
able 3: Calculations for PRSB and PRSB Reserve Account:		
(1) PRSB Allocation of Distributable Actuarial Surplus	\$0	\$0
(2) PRSB Reserve Account (as of Valuation Date)	\$0	\$9,000
(3) Estimated July 1 to December 31 PRSB Payments	<u>\$1,450</u>	\$6,075
(4) Total amount available for PRSB $(1) + (2) - (3)$	\$0	\$2,925
(5) 95% x (4)	\$0	\$2,779
(6) Number of eligible participants (Retirees & Beneficiaries)	1,726	1,633
 (7) Monthly PRSB Benefit for next calendar year (5) / (6) / 12 	\$0.00	\$0.14
(8) Target Monthly Benefit	\$1,084.00	\$1,084.00
(9) Benefit Shortfall (8) – (7)	\$1,084.00	\$1,083.86
(10) Estimated PRSB Reserve Account as of end of next calendar year: (4) – (6) x (7) x 12	\$0	\$182

Under section 3-567(f)(4)(iii)(2) of the Municipal Code, we understand that the PRSB reserve shall be used to increase the PRSB benefit to the extent necessary to pay the monthly health insurance premium.

Appendix C

UAAL Amortization Schedule as of June 30, 2014 (Dollar Amounts in Thousands)

	Date Established	Source	Initial Amount	Outstanding Balance	Years Remaining	Annual Payment
Grand Total	June 30, 2014	UAAL	N/A	<u>N/A</u> <u>N/A</u>	N/A	<u>N/A</u> <u>N/A</u>

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