City of Fresno Fire and Police Retirement System

Actuarial Valuation and Review as of June 30, 2013

Segal Consulting

Segal Consulting

100 MONTGOMERY STREET, SUITE 500 SAN FRANCISCO, CA 94104
T 415.263.8200 F 415.263.8290 www.segalco.com

December 4, 2013

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, 2013. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal year 2014-2015 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.

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.

By:

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

ST/hy

SECTION 1

VALUATION SUMMARY

SECTION 2

VALUATION RESULTS

SECTION 3

SUPPLEMENTAL INFORMATION

SECTION 4

REPORTING INFORMATION

Purpose

This report has been prepared by The Segal Company to present a valuation of the City of Fresno Fire and Police Retirement System as of June 30, 2013. 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, 2013, provided by the Retirement System;
- The assets of the System as of June 30, 2013, 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, 2013, 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 106.4% of the actuarial accrued liability (and so is less than the required 110%), there is no actuarial surplus available to reduce the City's contributions and to fund new PRSB benefits. The determination of actuarial surplus as of June 30, 2012 and June 30, 2013 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. In this valuation, we have applied the funding policy adopted by the Board on November 7, 2012 to amortize 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 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. Any actuarial surplus (when the funded ratio is over 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 guidelines 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.[1]

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2014 through June 30, 2015.

Significant Issues in Valuation Year

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

Ref: Page 38

- The results in this valuation reflect changes in economic and non-economic assumptions adopted by the Board for the June 30, 2013 valuation. All of the actuarial assumptions recommended by Segal in the June 30, 2012 triennial Actuarial Experience Study and the June 30, 2013 Review of Economic Assumptions were adopted by the Board and have been applied in this valuation. The adopted changes are outlined in Section 4, Exhibit V of this report. There is a net increase in the employer's and employee's cost primarily due to the reduction in the investment return assumption from 8.00% to 7.50%.

  At the May 2013 Board meeting, the Board adopted a three-year phase-in of the impact of the changes in assumptions on the employer contribution rate starting with fiscal year 2014/2015. The employer should be aware that their contributions for 2015/2016 and 2016/2017 (that will be established in the June 30, 2014 and June 30, 2015 valuations) will increase again due to the further recognition of the cost impact of these changes in assumptions, including the interest cost associated with the phase-in. The employer contribution rates in this report include the impact of the three-year phase in.

---

[1] *It should be noted that the funded ratio of the Retirement System is currently below the 110% required before actuarial surplus can be distributed.*

Ref: Page 36

- In the June 30, 2012 valuation, the ratio of the valuation value of assets to actuarial accrued liabilities was 105.4%. In this June 30, 2013 valuation, the funding ratio has increased to 106.4%. The funding ratios as of June 30, 2012 and 2013 if measured using the market value of assets instead of the valuation value of assets are 102.1% and 108.5%, respectively.

Ref: Page 29

- The Retirement System's prefunded actuarial accrued liability (PAAL) as of June 30, 2012 was $51.1 million. In this year's valuation, the PAAL has increased to $63.6 million on a valuation value of assets basis. The Plan had a net actuarial experience gain of about $30.0 million offset by an increase in the actuarial accrued liabilities of about $20.0 million as a result of the changes in the actuarial assumptions. A reconciliation of the System's PAAL is provided in Section 3, Exhibit H.

Ref: Page 15

- The aggregate employer rate calculated in this valuation has increased from 20.19% of payroll as of June 30, 2012 to 20.83% of payroll as of June 30, 2013. This is a net result of: (i) changes in actuarial assumptions, after phasing in the employer's contribution rate impact over three years, (ii) difference between the actual and the expected 2013/2014 plan year contribution[2], and (iii) changes in membership demographics. A reconciliation of the Retirement System's aggregate employer rate is provided in Section 2, Subsection D (see Chart 14). It should be noted that the employer's rate determined in the 2013 valuation would have increased from 20.83% to 22.82% without the three-year phase-in.

Ref: Page 16

- The aggregate member rate calculated in this valuation has increased from 8.88% of payroll to 8.90% of payroll. The change in the aggregate member rate is due to changes in actuarial assumptions used to set contribution rates for members in Tier 1. 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.

- For the June 30, 2013 valuation, the Board adopted an adjustment to the asset smoothing method that combines the net deferred losses of $31.2 million from the June 30, 2012 valuation into a single four-year smoothing "layer". Those net deferred losses are then recognized over the next four years from that date in four level amounts of approximately $7.8 million each year. This reduces the volatility associated with the pattern of deferred loss recognition and results in both more stable projected funded ratios (on an actuarial value basis) and more level employer contribution rates.

---

[2] *Note that an adjustment for this difference has been carried over from the prior valuations when there were adjustments made for this difference and also for the difference between the actual and the expected surplus available to offset the employer's contributions for the fiscal year commencing immediately following the date of the valuation. While we have continued the prior practice with this valuation, we will discuss whether the Board may or may not want to continue with this adjustment in future valuations when we present the results for the 2013 valuation.*

Ref: Page 6

- As indicated in Section 2, Subsection B (see Chart 7) of this report, the total unrecognized investment gain as of June 30, 2012 is $20.9 million (as compared to an unrecognized loss of $31.2 million in the June 30, 2012 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 $20.9 million represent 2% of the market value of assets. Unless offset by future investment losses or other unfavorable experience, the recognition of the $20.9 million market gains is expected to have an impact on the System's future funded ratio and the aggregate employer contributions. This potential impact may be illustrated as follows:
  - If the deferred gains were recognized immediately in the valuation value of assets, the funded percentage would increase from 106.4% to 108.5%.
  - If the deferred gains were recognized immediately in the valuation value of assets, the aggregate employer contribution rate would remain at 20.83% of payroll because the System would continue to have no actuarial surplus available to reduce the City's contribution rate.
- The actuarial valuation report as of June 30, 2013 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. It is important to note that the new GASB rules only redefine pension expense for financial reporting purposes, and do not apply to contribution amounts for actual pension funding purposes. Employers and plans can still develop and adopt funding policies under current practices. Because these new Statements are not effective until the fiscal year ending June 30, 2014 for Plan reporting and the fiscal year ending June 30, 2015 for employer reporting, the financial reporting information in this report continues to be in accordance with Statements 25 and 27.

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, 2013		June 30, 2012	
Employer Contribution Rates:	Total Rate	Estimated Annual Amount[1]	Total Rate	Estimated Annual Amount[1]
Tier 1 Normal Cost Rate	27.80%	$4,166	25.95%	
Tier 2 Normal Cost Rate	22.09%	19,769	18.91%	
All Categories Combined	22.91%	23,935	19.96%	$20,854
Surplus Offset	0.00%	0	0.00%	0
Contribution Shortfall from Prior Fiscal Year	-0.09%	-94	0.23%	240
Adjustment for Phase-In of Assumption Changes	-1.99%	-2,076	N/A	N/A
Required Contributions	20.83%	21,765	20.19%	21,094
Average Member Contribution Rates:	Total Rate	Estimated Annual Amount[2]	Total Rate	Estimated Annual Amount[2]
Tier 1	5.35%	$138	4.86%	$125
Tier 2	9.00%	7,907	9.00%	7,907
All Categories Combined	8.90%	8,045	8.88%	8,032
Funded Status:				
Actuarial Accrued Liability	$997,836		$952,866	
Market Value of Assets (MVA)[3]	$1,082,336		$972,760	
Valuation Value of Assets (VVA)	$1,061,399		$1,003,929	
Funded Percentage on VVA basis	106.4%		105.4%	
Prefunded Actuarial Accrued Liability on VVA basis	$63,563		$51,063	
Funded Percentage on MVA basis	108.5%		102.1%	
Prefunded Actuarial Accrued Liability on MVA basis	$84,500		$19,894	
Key Economic Assumptions:				
Interest Rate	7.50%		8.00%	
Inflation Rate	3.25%		3.50%	
Across-the-Board Salary Increase	0.50%		0.50%	

(1) *Based on projected fiscal year 2014-2015 annual payroll for active non-DROP and DROP members of $104,481.*

(2) *Based on projected fiscal year 2014-2015 annual payroll for members not in the DROP of $90,434.*

(3) *Excludes non-valuation reserves.*

Summary of Key Valuation Demographic and Financial Data

	June 30, 2013	June 30, 2012	Percentage Change
Active Members:			
Non-DROP			
Number of members	893	932	-4.2%
Average age	40.3	39.5	N/A
Average service	11.9	11.0	N/A
Projected total compensation[1]	$87,164,227	$87,461,980	-0.3%
Average projected compensation	$97,608	$93,843	4.0%
DROP			
Number of members	122	123	-0.8%
Average age	55.2	54.9	N/A
Average service	24.2	24.2	N/A
Projected total compensation[1]	$13,540,941	$13,133,740	3.1%
Average projected compensation	$110,991	$106,778	3.9%
Retired Member and Beneficiaries:			
Number of members:			
Service retired	355	361	-1.7%
Disability retired	359	354	1.4%
Beneficiaries	254	245	3.7%
Total	968	960	0.8%
Average age	66.6	66.5	N/A
Average monthly benefit[2]	$3,612	$3,632	-0.6%
Vested Terminated Members:			
Number of vested terminated members[3]	60	50	20.0%
Average age	40.8	40.9	N/A
Summary of Financial Data (dollar amounts in thousands):			
Market value of assets[4]	$1,193,054	$1,080,393	10.4%
Return on market value of assets	13.19%	-0.56%	N/A
Actuarial value of assets	$1,172,117	$1,111,562	5.4%
Return on actuarial value of assets	8.07%	0.97%	N/A
Valuation value of assets	$1,061,399	$1,003,929	5.7%
Return on valuation value of assets	7.57%	0.31%	N/A

(1) *June 30, 2012 payroll was projected payroll for plan year 2012-2013. June 30, 2013 payroll was projected payroll for plan year 2013-2014.*

(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.*

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: 2004 – 2013

Year Ended June 30	Active Members(1)	Vested Terminated Members(2)	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
2004	1,017	21	771	0.78
2005	1,065	31	797	0.78
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

(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 893 non-DROP active members with an average age of 40.3 years, average years of service of 11.9 and average compensation of $97,608. The 932 non-DROP active members in the prior valuation had an average age of 39.5 years, average years of service of 11.0 and average compensation of $93,843.

Inactive Members

In this year's valuation, there were 60 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 50 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, 2013

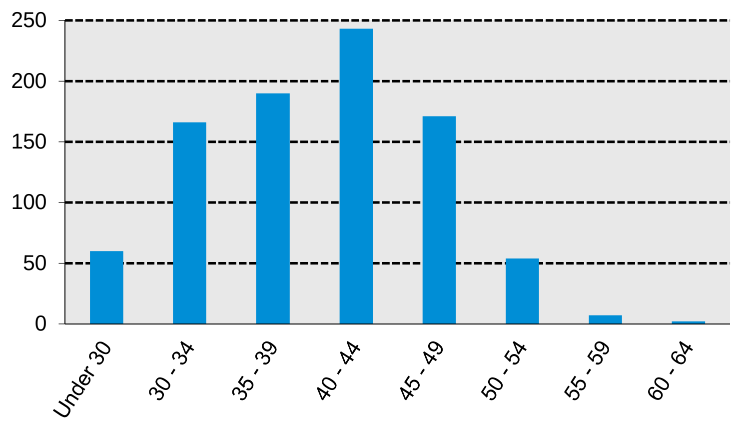
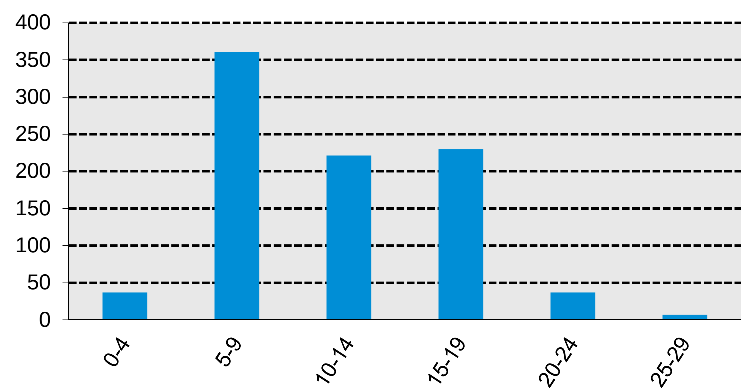


CHART 3

Distribution of Non-DROP Active Members by Years of Service as of June 30, 2013



DROP Active Members
In this year's valuation, there were 122 DROP active members with an average age of 55.2 years, average years of service of 24.2 and average compensation of $110,991. The 123 DROP active members in the prior valuation had an average age of 54.9 years, average years of service of 24.2 and average compensation of $106,778.

Retired Members and Beneficiaries
As of June 30, 2013, 714 retired members and 254 beneficiaries were receiving total monthly benefits of $3,496,894. For comparison, in the previous valuation, there were 715 retired members and 245 beneficiaries receiving monthly benefits of $3,486,768.

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, 2013

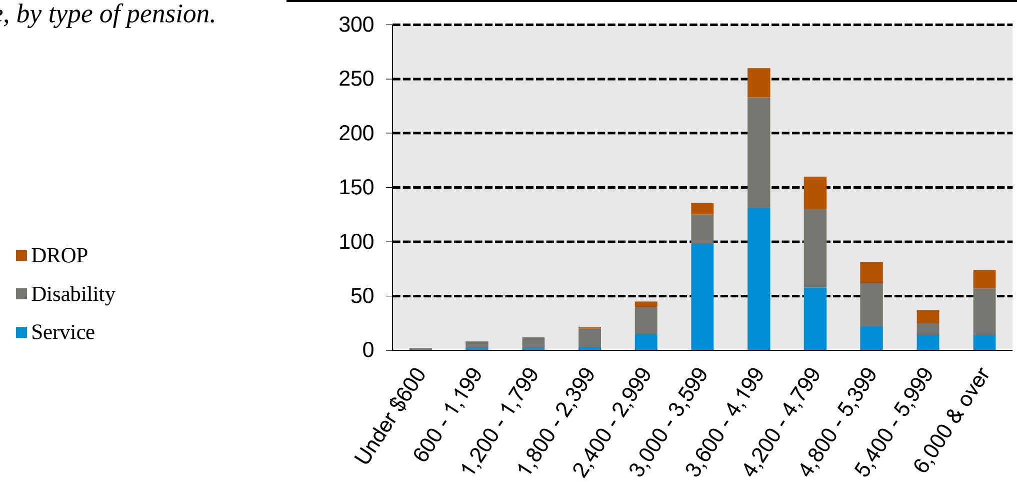
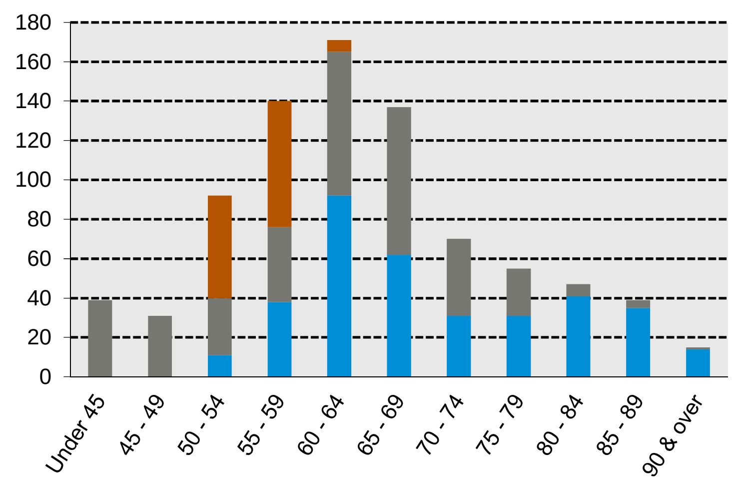


CHART 5

Distribution of Retired Members (Excl. Beneficiaries) by Type and by Age as of June 30, 2013



B. FINANCIAL INFORMATION

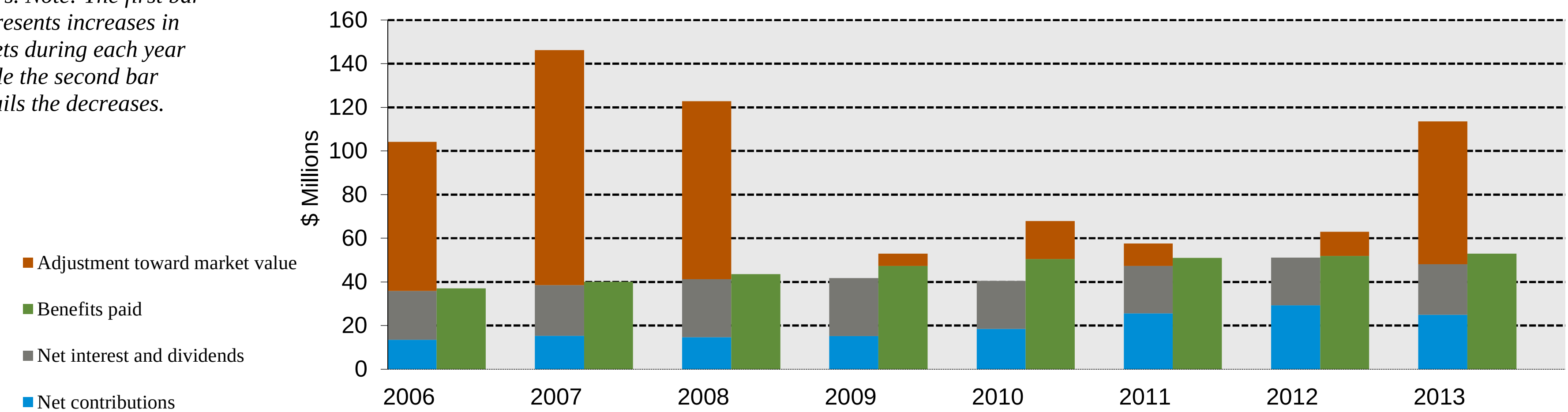
Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments.

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 eight 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, 2006-2013



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 Value of Assets is provided on the following page.

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

CHART 7

Determination of Actuarial and Valuation Value of Assets for Year Ended June 30, 2013

Plan Year Ending June 30	Total Actual Market Return	Expected Return	Investment Gain/(Loss)**	Deferred Factor	Deferred Return
2012*			$(31,168,873)	0.75	$(23,376,656)
2013	$140,701,338	$85,309,840	55,391,498	0.8	44,313,198

1.	Total Deferred Return	$20,936,542
2.	Net Market Value	1,193,053,930
3.	Actuarial Value of Assets (Item 2 – Item 1)	$1,172,117,388
4.	Ratio of Actuarial Value to Market Value	98.2%
5.	Non-Valuation Reserves and Other Adjustments	
	a. DROP Reserve	110,829,000
	b. PRSB Reserve	67,000
	c. City Surplus Reserve***	(178,000)
	d. Total	110,718,000
6.	Valuation Value of Assets (Item 3 – Item 5d)	$1,061,399,388

* *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.*

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

*** *The negative City Surplus Reserve is treated as an asset; it represents the City's prior contribution shortfall due to the difference between the actual versus the projected surplus prior to June 30, 2013. This difference is taken into account in developing the contribution rate requirement for 2014-2015. See Step (4) in Table 2 of Appendix B for details.*

Deferred return as of June 30, 2013 recognized in each of the next four years:

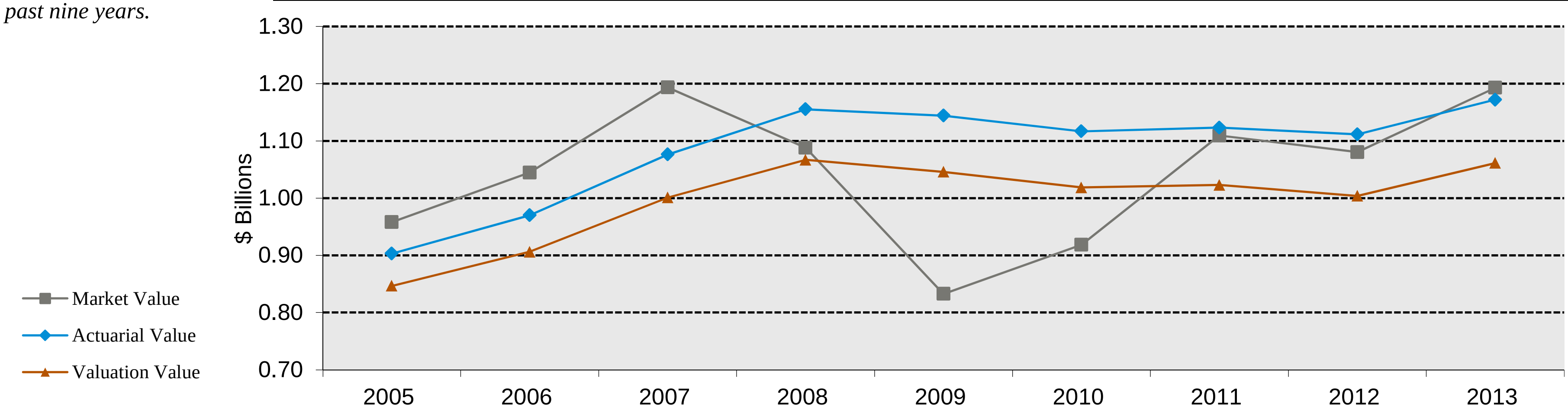
6/30/2014	$3,286,081
6/30/2015	3,286,081
6/30/2016	3,286,081
6/30/2017	11,078,299
	$20,936,542

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 prefunded 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 nine years.

CHART 8

Market Value, Actuarial Value and Valuation Value of Assets as of June 30, 2005-2013



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 $30.0 million, including a loss of $4.3 million from investments (after smoothing) and a gain of $34.2 million from all other sources. The net experience variation from individual sources other than investments was 3.4% 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, 2013

1.	Net gain/(loss) from investments [1]	-$4,258,000
2.	Net gain/(loss) from other experience [2]	34,231,000
3.	Net experience gain/(loss): (1) + (2)	$29,973,000

[1] *Details in Chart 10.*

[2] *See Section 3, Items (6b) through (6d) 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 8.00% (based on the June 30, 2012 valuation). The actual rate of return on a valuation basis for the 2012/2013 plan year was 7.57%.

Since the actual return for the year was less than the assumed return, the Retirement System experienced an actuarial loss during the year ended June 30, 2013 with regard to its investments.

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

CHART 10

Investment Experience for Year Ended June 30, 2013 – Market Value, Actuarial Value and Valuation Value of Assets

	Market Value	Actuarial Value	Valuation Value
1. Actual return	$140,701,338	$88,595,923	$75,341,263
2. Average value of assets	$1,066,373,000	$1,097,541,873	$994,993,703
3. Actual rate of return: (1) ÷ (2)	13.19%	8.07%	7.57%
4. Assumed rate of return	8.00%	8.00%	8.00%
5. Expected return: (2) x (4)	$85,309,840	$87,803,350	$79,599,496
6. Actuarial gain/(loss): (1) – (5)	$55,391,498	$792,573	$(4,258,233)

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 nine years.

CHART 11

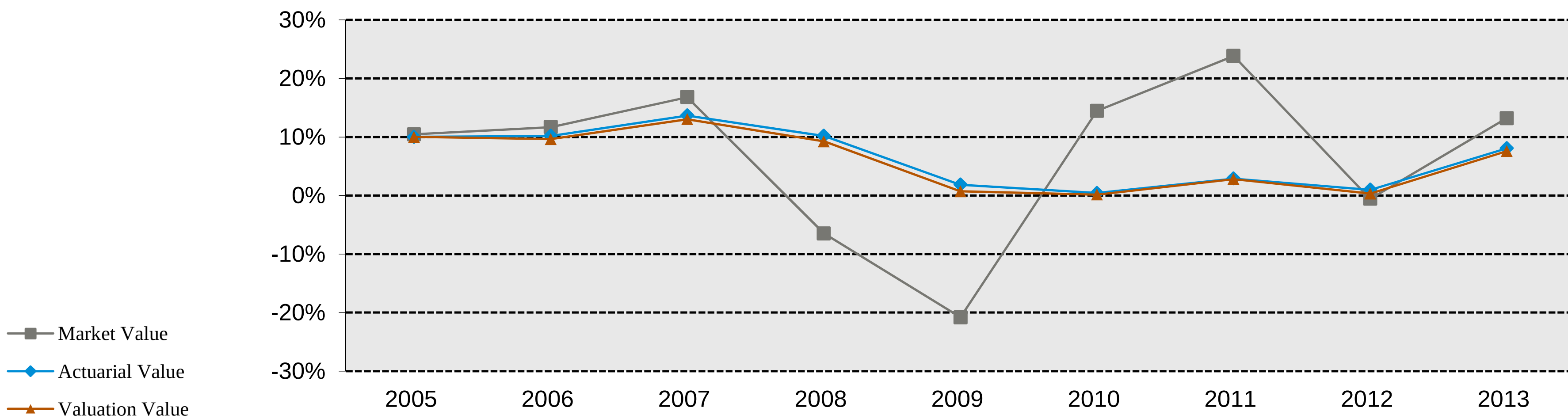
Investment Return – Market Value, Actuarial Value and Valuation Value: 2005 – 2013

	Market Value Investment Return		Actuarial Value Investment Return		Valuation Value Investment Return	
Year Ended June 30	**Amount**	**Percent**	**Amount**	**Percent**	**Amount**	**Percent**
2005	$91,761,097	10.45%	N/A	N/A	$73,717,200	10.02%
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%
Annualized Average Return		6.09%		5.92%		5.84%

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 – June 30, 2013



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, 2013 amounted to $34.2 million which is 3.4% 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, 2013		June 30, 2012	
Tier 1 Members	**Rate**	**Estimated Annual Amount***	**Rate**	**Estimated Annual Amount***
Normal Cost	27.80%	$4,166	25.95%	
Tier 2 Members				
Normal Cost	22.09%	$19,769	18.91%	
All Categories Combined				
Normal Cost	22.91%	$23,935	19.96%	$20,854
Surplus Offset	0.00%	0	0.00%	0
Contribution Shortfall from Prior Fiscal Year	-0.09%	-94	0.23%	240
Adjustment for Phase-In of Assumption Changes	-1.99%	-2,076	N/A	N/A
Total Contribution	20.83%	$21,765	20.19%	$21,094

* *Amounts are in thousands and are based on projected fiscal year 2014 – 2015 annual payroll for active non-DROP and DROP members (also in thousands).*

Tier 1	$14,986
Tier 2	89,495
Total	$104,481

The employer contribution rates as of June 30, 2013 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, 2012 to June 30, 2013 (Dollars in Thousands)

	Contribution Rate	Estimated Amount*
1. Recommended Contribution Rate as of June 30, 2012	20.19%	$21,094
a. 2012/2013 plan year contribution offset included in the above rate (payable 2013/2014)	0.23%	$240
b. Normal Cost Rate as of June 30, 2012	19.96%	$20,854
2. Effect of actuarial experience during 2012/2013 on Normal Cost Rate		
a. Effect of changes in membership demographics and other actuarial (gains)/losses	-0.03%	-$33
b. Effect of changes in actuarial assumptions	2.98%	$3,114
c. Normal Cost Rate as of June 30, 2013	22.91%	$23,935
3. Effect of changes in actuarial assumptions on UAAL rate**	0.00%	$0
4. Effect phasing in over three years the employer's contribution rate impact due to changes in actuarial assumptions	-1.99%	-$2,076
5. Effect of the difference between the actual and the expected 2013/2014 plan year contribution	-0.09%	-$94
6. Recommended Contribution Rate as of June 30, 2013	20.83%	$21,765

* *Based on projected fiscal year 2014 – 2015 annual payroll of $104,481 for active non-DROP and DROP members.*

** *If the System had not had a PAAL prior to the changes in actuarial assumptions, the UAAL rate would have increased by 1.20% of payroll.*

The member contribution rates as of June 30, 2013 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, 2012 to June 30, 2013 (Dollar Amounts in Thousands)

	Contribution Rate	Estimated Amount [1]
Average Contribution Rate as of June 30, 2012	8.88%	$8,032
Effect of changes in actuarial assumptions for members in Tier 1	0.02%	$13
Average Contribution Rate as of June 30, 2013	8.90%	$8,045

[1] *Based on projected fiscal year 2014 – 2015 annual payroll for members NOT in the DROP of $90,434.*

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, 2013	
	Tier 1	Tier 2
Service Retirement	20.81%	20.01%
Vested Deferred Retirement and Contribution Refunds	1.75%	1.16%
Death-In-Service	0.52%	0.63%
Disability	5.64%	9.12%
Total Normal Cost	28.72%	30.92%
Less		
Employee Contributions*	0.92%	8.83%
Equals		
Net Employer Normal Cost	27.80%	22.09%

** 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 2014-2015 annual payroll for all active members (non-DROP and DROP) of $104,481 instead of annual payroll for only active non-DROP members of $90,434.*

E. INFORMATION REQUIRED BY GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to GASB is the historical comparison of the GASB required contributions to the actual contributions. This comparison demonstrates whether a plan is being funded on an actuarially sound basis and in accordance with the GASB funding requirements. Chart 17 below presents a graphical representation of this information for the Plan.

The other 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 as calculated under GASB. 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 details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

These graphs show key GASB factors.

CHART 17

Required Versus Actual Contributions

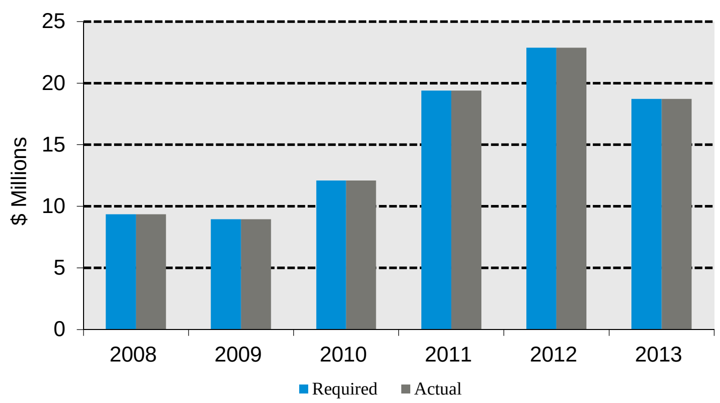
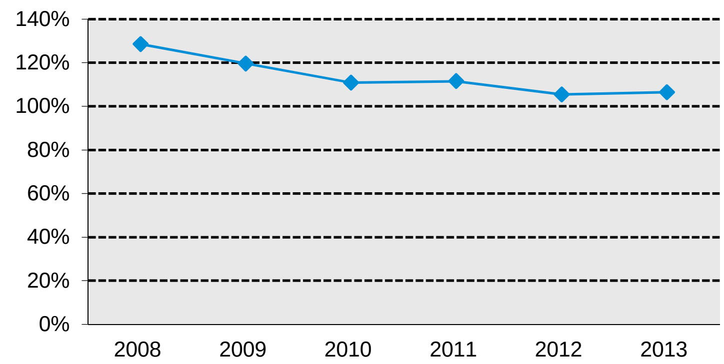


CHART 18

Funded Ratio



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 11.8. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 11.8% of one-year's payroll. Since the Retirement System amortizes actuarial gains and losses over a period of 15 years, there would be a 1.0% 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 9.9. This is about 16% 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, 2008 – 2013

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2008	11.0	8.4
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

EXHIBIT A

Table of Plan Coverage

i. Tier 1

Category	Year Ended June 30 2013	Year Ended June 30 2012	Change From Prior Year
Active members in valuation			
Non-DROP			
Number	21	26	-19.2%
Average age	48.6	47.9	N/A
Average service	24.3	23.6	N/A
Projected total compensation	$2,483,563	$2,898,946	-14.3%
Projected average compensation	$118,265	$111,498	6.1%
Member account balances	$4,812,325	$5,550,582	-13.3%
Total active vested members	21	26	-19.2%
DROP			
Number	106	113	-6.2%
Average age	55.0	54.7	N/A
Average service	25.1	25.0	N/A
Projected total compensation	$11,961,475	$12,150,881	-1.6%
Projected average compensation	$112,844	$107,530	4.9%
Vested terminated members			
Number	1	1	0.0%
Average age	49.8	48.8	N/A
Retired members			
Number in pay status	337	348	-3.2%
Average age	70.7	70.5	N/A
Average monthly benefit[1]	$4,357	$4,351	0.1%
Disabled members			
Number in pay status	275	281	-2.1%
Average age	65.6	64.8	N/A
Average monthly benefit[1]	$4,197	$4,183	0.3%
Beneficiaries			
Number in pay status	248	240	3.3%
Average age	70.3	70.3	N/A
Average monthly benefit[1]	$2,205	$2,197	0.4%

(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 2013	Year Ended June 30 2012	Change From Prior Year
Active members in valuation			
Non-DROP			
Number	872	906	-3.8%
Average age	40.1	39.2	N/A
Average service	11.6	10.7	N/A
Projected total compensation	$84,680,664	$84,563,034	0.1%
Projected average compensation	$97,111	$93,337	4.0%
Member account balances	$110,464,562	$101,587,263	8.7%
Total active vested members	835	826	1.1%
DROP			
Number	16	10	60.0%
Average age	56.6	57.2	N/A
Average service	17.8	15.3	N/A
Projected total compensation	$1,579,467	$982,859	60.7%
Projected average compensation	$98,717	$98,286	0.4%
Vested terminated members			
Number	59	49	20.4%
Average age	40.6	40.7	N/A
Retired members			
Number in pay status	18	13	38.5%
Average age	58.2	57.9	N/A
Average monthly benefit[1]	$1,868	$1,647	13.4%
Disabled members			
Number in pay status	84	73	15.1%
Average age	45.6	44.8	N/A
Average monthly benefit[1]	$3,434	$3,340	2.8%
Beneficiaries			
Number in pay status	6	5	20.0%
Average age	49.9	48.8	N/A
Average monthly benefit[1]	$919	$924	-0.5%

(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, 2013 – 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	20	- -	- -	- -	- -	14	6	- -	- -	- -
	$119,419	- -	- -	- -	- -	$106,342	$149,933	- -	- -	- -
50 - 54	1	- -	- -	- -	- -	1	- -	- -	- -	- -
	95,179	- -	- -	- -	- -	95,179	- -	- -	- -	- -
55 - 59	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
60 - 64	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
65 - 69	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	21	- -	- -	- -	- -	15	6	- -	- -	- -
	$118,265	- -	- -	- -	- -	$105,598	$149,933	- -	- -	- -

* *Excludes 106 active members in DROP with projected average compensation of $112,844.*

EXHIBIT B

Members in Active Service and Projected Average Compensation
By Age, Years of Service as of June 30, 2013 – 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	2	2	- -	- -	- -	- -	- -	- -	- -
	$81,460	$81,460	- -	- -	- -	- -	- -	- -	- -
25 - 29	58	25	33	- -	- -	- -	- -	- -	- -
	84,118	77,167	$89,383	- -	- -	- -	- -	- -	- -
30 - 34	166	4	143	19	- -	- -	- -	- -	- -
	92,602	83,336	91,907	$99,781	- -	- -	- -	- -	- -
35 - 39	190	2	94	79	15	- -	- -	- -	- -
	94,772	81,365	91,248	97,851	$102,421	- -	- -	- -	- -
40 - 44	243	1	63	74	104	1	- -	- -	- -
	99,371	94,806	93,796	99,110	103,016	$95,346	- -	- -	- -
45 - 49	151	1	19	36	81	13	1	- -	- -
	103,403	88,234	96,674	95,768	105,952	120,249	$95,923	- -	- -
50 - 54	53	2	4	12	27	8	- -	- -	- -
	104,670	151,700	98,317	99,249	104,547	104,635	- -	- -	- -
55 - 59	7	- -	4	1	2	- -	- -	- -	- -
	106,779	- -	113,692	95,653	98,517	- -	- -	- -	- -
60 - 64	2	- -	1	- -	1	- -	- -	- -	- -
	102,224	- -	107,481	- -	96,966	- -	- -	- -	- -
65 – 69	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & Over	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	872	37	361	221	230	22	1	- -	- -
	$97,111	$83,098	$92,441	$98,165	$104,125	$113,439	$95,923	- -	- -

* *Excludes 16 active members in DROP with projected average compensation of $98,717.*

EXHIBIT C

Reconciliation of Member Data – June 30, 2012 to June 30, 2013

	Non-DROP Active Members	DROP Members	Vested Terminated Members	Pensioners	Disableds	Beneficiaries	Total
Number as of June 30, 2012	932[(1)]	123[(1)]	50	361	354	245	2,065
New members	1	0	0	0	0	0	1
Terminations – with vested rights	-12	0	12	0	0	0	0
Contributions Refunds	-3	0	-1	0	0	0	-4
DROP Entry	-13	13	0	0	0	0	0
Retirements	-2	-13	-1	16	0	0	0
New disabilities	-10	-1	-1	-6	18	0	0
Return to work	0	0	0	0	0	0	0
Died with or without beneficiary	0	0	0	-16	-13	9[(3)]	-20
Data adjustments	0	0	1	0	0	0	1
Number as of June 30, 2013	893[(2)]	122[(2)]	60	355	359	254	2,043

(1) There was a total of 1,055 actives (including non-DROP and DROP members) at the beginning of the plan year.

(2) There was a total of 1,015 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, 2013		Year Ended June 30, 2012	
Contribution income:				
Employer contributions	$18,724,714		$22,875,005	
Employee contributions	7,398,730		7,540,019	
Less administrative expenses	-1,182,391		- 1,117,953	
Net contribution income		$24,941,053		$29,297,071
Investment income:				
Interest, dividends and other income	$28,699,602		$27,048,759	
Adjustment toward market value	65,511,943		-11,088,793	
Less investment fees	-5,615,622		-5,136,539	
Net investment income		88,595,923		10,823,427
Total income available for benefits		$113,536,976		$40,120,498
Less benefit payments:				
Benefit payments	-$51,826,738		-$51,006,026	
Post retirement supplemental benefits	-184,751		-372,973	
Refunds of contributions	-970,380		-534,906	
Net benefits payments		-$52,981,869		-$51,913,905
Change in reserve for future benefits		$60,555,107		-$11,793,407

EXHIBIT E

Summary Statement of Assets

	Year Ended June 30, 2013		Year Ended June 30, 2012	
Cash equivalents		$1,183,828		$1,641,782
Accounts receivable:				
Receivables for investments sold	$11,470,395		$41,647,226	
Interest and dividends	4,738,321		3,950,800	
Others receivables	9,159,389		2,546,174	
Total accounts receivable		25,368,105		48,144,200
Investments:				
Domestic and international equity	$657,991,821		$574,346,771	
Government and corporate bonds	342,965,137		308,017,193	
Real estate	133,661,152		119,030,496	
Emerging market equity	41,933,390		40,355,432	
Collateral held for securities lent	174,087,118		132,221,856	
Other investments	28,572,014		34,108,801	
Total investments at market value		1,379,210,632		1,208,080,549
Total assets		$1,405,762,565		$1,257,866,531
Less accounts payable:				
Collateral held for securities lent	-$174,087,118		-$132,221,856	
Payable for investments and foreign currency purchased	-37,378,877		-44,096,397	
Other liabilities	-1,242,640		-1,154,870	
Total accounts payable		-$212,708,635		-$177,473,123
Net assets at market value		$1,193,053,930		$1,080,393,408
Net assets at actuarial value		$1,172,117,388		$1,111,562,281
Net assets at valuation value		$1,061,399,388		$1,003,929,281

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	$1,061,399
2. Present value of future member normal cost	67,827
3. Present value of future employer normal cost	203,039
4. Unfunded/(prefunded) actuarial accrued liability	-63,563
5. Total current and future assets	$1,268,702
Liabilities	
6. Present value of benefits already granted, excludes current active DROP	$570,855
7. Present value of benefits for current active DROP	133,109
8. Present value of benefits to be granted	564,738
9. Total liabilities	$1,268,702

EXHIBIT G

Summary of Reported Asset Information as of June 30, 2013

	Reserves $(000)
Employer Advance/Retired Reserves	$963,344
Active Member Reserves	118,992
DROP Reserve[1]	110,829
Reserve for PRSB[1]	67
Reserve for City Surplus[1],[2]	(178)
Net Assets Held in Trust for Benefits	$1,193,054

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 contribution shortfall due to the difference between the actual versus the projected surplus prior to June 30, 2013. This difference is taken into account in developing the contribution rate requirement for 2014-2015.*

EXHIBIT H

Development of Unfunded/(Prefunded) Actuarial Accrued Liability as of June 30, 2013

		(Dollar amounts in Thousands)
1	Unfunded/(prefunded) actuarial accrued liability at beginning of year	-$51,063
2	Gross Normal Cost at middle of year	27,943
3	Actual employer and member contributions	-26,123
4	Interest (whole year on (1) plus half year on (2) + (3))	-4,012
5	Expected unfunded/(prefunded) actuarial accrued liability at end of year	-$53,255
6	Actuarial (gain)/loss due to all changes:	
	Experience (gain)/loss	
	a. Loss from investment	$4,258
	b. Lower than expected COLA benefit increases from continuing retirees and DROP participants	-23,165
	c. Lower than expected salary increases	-811
	d. Other experience (gain)/loss[1]	-10,255
	e. Subtotal	-$29,973
	Other changes	
	f. Changes in actuarial assumptions	19,665
	g. Subtotal	$19,665
7	Actual unfunded/(prefunded) actuarial accrued liability at end of year (5) + (6e) + (6g)	-$63,563

[1] *About half due to liability gains on pensioner mortality.*

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 $205,000 for 2013 and $210,000 for 2014. 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 254 beneficiaries in pay status)		968
2.	Members inactive during year ended June 30, 2013 with vested rights		60
3.	Members active during the year ended June 30, 2013		1,015
	DROP members	122	
	Fully vested non-DROP members	856	
	Not vested	37	

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

	Assets		
1.	Valuation value of assets ($1,193,054 at market value[1] as reported by the Retirement System and $1,172,117 at actuarial value[1])		$1,061,399
2.	Present value of future normal costs		
	Employee	$67,827	
	Employer	203,039	
	Total		$270,866
3.	Prefunded actuarial accrued liability		-63,563
4.	Present value of current and future assets		$1,268,702
	Liabilities		
5.	Present value of future benefits		
	Retired members and beneficiaries	$570,855	
	Inactive members with vested rights	7,160	
	DROP members	133,109	
	Active non-DROP members	557,578	
	Total		$1,268,702

(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	$31,980	30.60%
2. Expected employee contributions	-8,045	-7.69%
3. Employer normal cost: (1) + (2)	$23,935	22.91%
4. Adjustment for phase-in of assumption changes	-2,076	-1.99%
5. Contribution shortfall from prior year	-94	-0.09%
6. Total recommended employer contributions: (3) + (4) + (5)	$21,765	20.83%
7. Projected payroll[1]	$104,481	

[1] *Based on projected fiscal year 2014 – 2015 annual payroll for active non-DROP and DROP members shown in (7).*

EXHIBIT II

Supplementary Information Required by GASB – Schedule of Employer Contributions (Dollar Amounts in Thousands)

Plan Year Ended June 30	Annual Required Contributions	Actual Contributions	Percentage Contributed
2008	$9,363	$9,363	100.0%
2009	8,938	8,938	100.0%
2010	12,094	12,094	100.0%
2011	19,397	19,397	100.0%
2012	22,875	22,875	100.0%
2013	18,725	18,725	100.0%

EXHIBIT III

Supplementary Information Required by GASB – 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)
6/30/2008	$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

EXHIBIT IV
Supplementary Information Required by GASB

Valuation date	June 30, 2013
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 reduced 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*	3.75% to 12.25%
Cost of living adjustments	3.75% of Tier 1 retirement income and 3.00% of Tier 2 retirement income
Plan membership:	
Retired members and beneficiaries receiving benefits	968
Terminated members entitled to, but not yet receiving benefits	60
DROP members	122
Active non-DROP members	893
Total	2,043

* *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 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 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 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.

	<u>Cash-out Elements</u> 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 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, as if the current benefit formulas have 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.
Changes in Actuarial Assumptions:	Based on the Actuarial Experience Study and the Review of Economic Actuarial Assumptions, the following assumptions were changed. Previously, those assumptions were as follows:

Changes in Actuarial Assumptions – Prior Assumptions:

Post – Retirement Mortality Rates:

Healthy: RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set back three years.

Disabled: RP-2000 Combined Healthy Mortality Table (separate tables for males and females) set forward one year.

Termination Rates Before Retirement:

	Rate (%) Mortality	
	Tier 1 & Tier 2	
Age	**Male**	**Female**
25	0.04	0.02
30	0.04	0.02
35	0.06	0.04
40	0.09	0.06
45	0.12	0.09
50	0.17	0.13
55	0.27	0.20
60	0.47	0.35
65	0.88	0.67

All pre-retirement deaths are assumed to be duty.

Changes in Actuarial Assumptions – Prior Assumptions (Continued):

Termination Rates Before Retirement (Continued):

Rate (%)

Withdrawal (Refund of Contributions)

	0-1 Yrs		1-2 Yrs		2-3 Yrs		3-4 Yrs		4-10 Yrs		10+ Yrs	
Age	**Tier1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**	**Tier 1**	**Tier 2**
20	4.47	9.00	4.47	3.50	4.47	2.50	4.47	2.00	2.87	2.00	2.87	2.00
25	4.47	9.00	4.47	3.50	4.47	2.50	4.47	2.00	2.87	2.00	2.87	2.00
30	4.47	9.00	4.47	3.50	4.47	2.50	4.47	2.00	1.95	1.40	1.77	1.40
35	4.47	9.00	4.47	3.50	4.47	2.50	4.47	2.00	0.83	0.82	0.58	0.82
40	4.47	9.00	4.47	3.50	4.47	2.50	4.47	2.00	0.38	0.46	0.20	0.46
45	4.47	9.00	4.47	3.50	4.47	2.50	4.47	2.00	0.20	0.18	0.03	0.18
50	4.47	9.00	4.47	3.50	4.47	2.50	4.47	2.00	0.00	0.00	0.00	0.00
55	4.47	9.00	4.47	3.50	4.47	2.50	4.47	2.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Changes in Actuarial Assumptions – Prior Assumptions (Continued):

Termination Rates Before Retirement (Continued):

Rate (%)

Vested Termination (Deferred Vested Benefit)

Age	Tier 1	Tier 2
20	0.70	1.60
25	0.70	1.35
30	0.70	1.10
35	0.70	0.88
40	0.70	0.68
45	0.60	0.42
50	0.00	0.00
55	0.00	0.00
60	0.00	0.00

Changes in Actuarial Assumptions – Prior Assumptions (Continued):

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	14.28
54	5.09	16.74
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	100.00

DROP Assumptions:	**Tier 1**	**Tier 2**
First Year Eligible	100%	50%
Second Year Eligible	0%	25%
Third Year Eligible	0%	10%
Thereafter	0%	0%

Members are assumed to remain in DROP for 7 years.

Changes in Actuarial Assumptions – Prior Assumptions (Continued):

Retirement Age and Benefit for Deferred Vested Members	For current deferred vested members, the retirement assumption is age 50. It is assumed that 50% of future deferred vested members will continue to work for a reciprocal employer. For those that continue to work for a reciprocal employer, a 4.30% compensation increase per annum is assumed.
Age of Spouse:	Wives are 4 years younger than their husbands.
Net Investment Return:	8.00%, net of administration and investment expenses.
Employee Contribution Crediting Rate:	8.00%, assumed in the valuation.
Consumer Price Index:	Increase of 4.00% per year, retiree COLA increases due to CPI are limited to maximum at 4.00% per year for Tier 1 and 3.00% for Tier 2.

Changes in Actuarial Assumptions – Prior Assumptions (Continued):

Salary Increases:

Annual Rate of Compensation Increase

Inflation: 3.50% 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	8.00%
1-2	7.00%
2-3	5.50%
3-4	5.00%
4-5	4.25%

More than 5 years of service:

Age	Annual Increase
25-29	1.60%
30-34	1.20%
35-39	1.00%
40-44	0.60%
45-49	0.50%
50-54	0.30%
55+	0.00%

There is an additional 0.75% increase at the time of service retirement to reflect the average leave time cash outs for management employees.

To reflect the conversion of sick leave to increase final average salary at retirement for non-management Fire and Police members, we have increased the normal cost and actuarial accrued liability for all active members by 7.0% to anticipate the conversion.

Changes in Actuarial Assumptions – Prior Assumptions (Continued):

To reflect the cashout of holiday leave to increase salary on an ongoing basis for Fire members, we have increased the salary for all active Fire members by 3.6%. Since the salary data provided by the System already reflects the ongoing cashout of holiday leave for Police members, no assumption for Police members is necessary.

To reflect the cashout of additional holiday leave balance to increase final average salary at retirement for Tier 2 Police members, we have increased the normal cost and actuarial accrued liability for all active Tier 2 Police management and non-management members by 7.8% and 5.0%, respectively.

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:	
	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 calculated using the rate of pay actually earned by the member in effect at the time 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. 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:

<u>*All Members*</u>	
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
<u>*Vested Members*</u>	
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:	
<u>*All Members*</u>	
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.
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 Contributions Rates

Comparison of member rates calculated in the June 30, 2013 and June 30, 2012 valuations:

	June 30, 2013 Actuarial Valuation		June 30, 2012 Actuarial Valuation	
	Rate	Estimated Annual Amount*	Rate	Estimated Annual Amount*
Tier 1 Members	5.35%	$138	4.86%	$125
Tier 2 Members	9.00%	$7,907	9.00%	$7,907
All Member Categories Combined	8.90%	$8,045	8.88%	$8,032

* *Amounts are in thousands and are based on the following projected fiscal year 2014 – 2015 annual payroll for members NOT in the DROP (also in thousands):*

	Excludes DROP Members
Tier 1	$ 2,577
Tier 2	87,857
Total	$90,434

Appendix A
Member Contribution Rates (Continued)

Tier 1 Members' Contribution Rates based on the June 30, 2013 Actuarial Valuation as a percentage of payroll

	Exact Age		¼ Age		½ Age		¾ Age	
Entry 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
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

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
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 V in Section 4

Appendix B
Allocation of Actuarial Surplus

	June 30	
	2013	**2012**
Table 1: Calculation of Actuarial Surplus		
(1) Valuation Value of Assets	$1,061,399,388	$1,003,929,281
(2) Actuarial Accrued Liability	997,836,000	952,866,000
(3) Surplus: (1) – (2)	63,563,388	51,063,281
(4) Contingency Reserve: 10% of (2), not more than (3)	63,563,388	51,063,281
(5) Actuarial Surplus: (3) – (4)	0	0

There is no Actuarial Surplus available for distribution in the June 30, 2013 and June 30, 2012 valuations.

Appendix B (continued)
Allocation of Actuarial Surplus

	Fiscal Year 2014-2015			Fiscal Year 2013-2014		
	Tier 1	Tier 2	Total	Tier 1	Tier 2	Total
Table 2: City Contribution Requirements:						
(1) City Normal Cost Rate	27.80%	22.09%	22.91%	25.95%	18.91%	19.96%
(2) Projected Annual Payroll	$14,986,688	$89,494,750	$104,481,438	$14,445,000	$86,260,000	$100,705,000
(3) City Allocation of Distributable Actuarial Surplus	0	0	0	0	0	0
(4) City Surplus Reserve Account (From Prior Years)	0	0	0	-33,261	-144,739	-178,000
(5) ½ Year Interest on (4)	0	0	0	-1,247	-5,428	-6,675
(6) Total Contribution Offsets (3) + (4) + (5)	0	0	0	-34,508	-150,167	-184,675
(7) Total Contribution Requirement (1) * (2)	4,166,299	19,769,390	23,935,690	3,748,478	16,311,766	20,060,244
(8) City Contribution Requirement Prior To Application of Prepaid Employer Contribution Account (7) – (6), not less than 0	4,166,299	19,769,390	23,935,690	3,782,986	16,461,933	20,244,919
(9) Contribution Rate Adopted by the City for Fiscal Year 2013-2014						20.19%
(10) Projected City Contributions Based on Rate Adopted by the City (9) * (2)				$2,916,446	$17,415,894	$20,332,340
(11) Net Additional City Contribution Before Application of Prepaid Employer Contribution Account (8) – (10)	4,166,299	19,769,390	23,935,690	866,540	-953,961	-87,421
(12) City's Prepaid Employer Contribution Account Balance (Negative Account Balance Represents Contribution Shortfall)			90,699			0
(13) ½ Year Interest on (12)			3,401			0
(14) City's Fiscal Year Contribution After Application of Prepaid Employer Contribution Account (11) – (12) – (13), not less than 0	4,149,920	19,691,669	23,841,589	0	0	0
(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			90,699

Note: Results may not total properly due to rounding.

Appendix B (continued)
Allocation of Actuarial Surplus

	June 30	
	2013	2012
Table 3: Calculation of PRSB and PRSB Reserve Account:		
(1) PRSB Allocation of Distributable Actuarial Surplus	$0	$0
(2) Distribution percentage	80%	80%
(3) Preliminary PRSB distribution: (1) x (2)	$0	$0
(4) Number of eligible participants (Retirees, Beneficiaries & DROP Participants)	992	990
(5) Preliminary Monthly PRSB Benefit: (3) / (4) / 12	$0.00	$0.00
(6) Monthly Retiree Medical Trust Premium for the calendar year that commences 6 months following the date of valuation	$1,084.00	$985.00
(7) Benefit Shortfall: (6) – (5)	$1,084.00	$985.00
(8) PRSB Reserve Account	$67,000	$262,000
(9) Estimated July 1 to December 31 PRSB Payments	$48,925	$159,548
(10) Net PRSB Reserve Account 6 months following the date of valuation	$18,075[1]	$102,452
(11) Draw from PRSB Reserve Account (lesser of (10) / (4) /12 or (7))	$1.52	$8.62
(12) Final monthly PRSB Benefit for next calendar year: (5) + (11)	$1.52	$8.62
(13) Estimated PRSB Reserve Account at the end of the next calendar year: (1) + (10) – [(12) * (4) * 12]	$0[2]	$46

(1) Provided by the Retirement System.

(2) It is our understanding following discussions with the Retirement System that an adjustment will be made to the monthly benefit payable from the PRSB towards the end of 2014 so that the PRSB Reserve Account will be exhausted at the end of 2014.

Appendix C
UAAL Amortization Schedule as of June 30, 2013 (Dollar Amounts in Thousands)

	Date Established	Source	Initial Amount	Outstanding Balance	Years Remaining	Annual Payment
	June 30, 2013	UAAL	N/A	N/A	N/A	N/A
Grand Total				N/A		N/A

5269093v1/09328.002