GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

HOUSTON POLICE OFFICERS' PENSION SYSTEM

ACTUARIAL VALUATION REPORT

FOR THE YEAR BEGINNING JULY 1, 2013

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries

5605 N. MacArthur Blvd.
Suite 870
Irving, TX 75038-2631

469.524.0000 phone
469.524.0003 fax
www.gabrielroeder.com

November 12, 2013

Board of Trustees
Houston Police Officers' Pension System
602 Sawyer
Suite 300
Houston, TX 77007

Subject: Actuarial Valuation Report as of July 1, 2013

Dear Members of the Board:

We are pleased to present our Report of the actuarial valuation of the Houston Police Officers' Pension System ("HPOPS" or "the System") for the plan year commencing July 1, 2013. This report describes the current actuarial condition of HPOPS, determines the calculated employer contribution rate (the actuarially required rate), and analyzes changes in this contribution rate from the prior year. Valuations are prepared annually, as of July 1st, the first day of the HPOPS' plan year.

Financing objectives and funding policy

Under the HPOPS statute, the employer contribution rate is determined actuarially, based on the Board's funding policy and HPOPS' governing law. The contribution rate determined by a given actuarial valuation and implemented by the Board becomes effective twelve months after the valuation date, i.e., the rates determined by this July 1, 2013 actuarial valuation will be used by the Board when determining the employer contribution rate for the year beginning July 1, 2014 and ending June 30, 2015.

Under the 2011 Meet & Confer Agreement between the Board and the City of Houston, a funding schedule was implemented resulting in a minimum $83 million employer contribution for the fiscal year ending June 30, 2012, increasing by $10 million each year thereafter until HPOPS' funded ratio reaches 100%. However, for FY2013, the City of Houston was allowed to contribute $8.5 million less than required bringing the total contribution receivable to $25.5 million which is to be financed at an annual interest rate of 8.5% and made up for in FY2015. A fixed payment of $103 million is to be made by the City for its fiscal year ending June 30, 2014. In addition, once the System reaches an 80% funded status (the ratio of the actuarial value of assets to the actuarial accrued liability), the City will make additional payments in the fiscal year following a determination that the System has fallen below this 80% threshold. Finally, once the System reaches the actuarially required rate, the City will pay the actuarially required rate, but not less than 16.0% of payroll.

Given the above schedule, the actual employer contribution amount for the fiscal year ending June 30, 2015 will not be set by this actuarial valuation as of July 1, 2013. Therefore, the actuarially calculated contribution rate determined by this valuation will not be contributed by the City of Houston. Based upon projected active member payroll of approximately $390 million for FY2014, the City's calculated contribution amount should be about $141 million. Instead, the City will only contribute $103 million for FY2014 under the terms of the above funding schedule, as detailed in the 2011 Meet & Confer Agreement.

The contribution rate and liabilities are computed using the Projected Unit Credit (PUC) actuarial cost method. The employer contribution rate is the sum of two pieces: the employer normal cost rate and the amortization rate. The normal cost rate is determined as a percentage of active member payroll, with the employer normal cost being the difference between the total normal cost and the weighted member contribution rate. The amortization rate is determined as a level percentage of active member payroll. It is the amount required to amortize the unfunded actuarial accrued liability (UAAL) over an open period (30 years as of July 1, 2013). The amortization period is set by statute, and was modified under the Meet and Confer Agreement.

Progress toward realization of financing objectives

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches 100%. The funded ratio as of July 1, 2013 is 81.3%. The funded ratio measured on the market value of assets drops to 75.3% as of July 1, 2013.

The calculated employer (City of Houston) contribution rate for FY 2015 is 36.01%. This rate is greater than the 34.50% rate calculated in the July 1, 2012 actuarial valuation report. This is primarily due to the asset loss in FY 2013 on an actuarial value basis (6.58% versus the 8.5% assumed annual rate-of-return), but it also stems from the calculated contribution rate not being consistently contributed to the System by the City of Houston. These losses were partially offset by liability gains driven primarily by salary increases being less than assumed, fewer retirements than expected, and the annual cost of living adjustment (COLA) being less than assumed. Please see Table 6 under Section III of our Report for a detailed analysis of the change in the calculated employer contribution rate from the prior year to this year.

As you know, the contribution rate is determined using an actuarial value of assets rather than market value. The actuarial value of assets recognizes 20% of the difference (typically referred to as "five year smoothing") between the market value of assets and the expected actuarial value of assets, based upon the assumed valuation rate of return of 8.50% per annum. There are currently $296.6 million in asset losses being deferred that will be recognized in the future and continue to drive decreases in the System's funded ratio and increases in the rate required to amortize the UAAL over 30 years unless offset by future gains. As can be seen in Table 7 of Section III, in the absence of any future gains or losses the employer contribution rate is expected to increase to more than 40% of payroll before beginning a slow decline as the System's estimated funded ratio also steadily declines over the next ten years. Our projections show the System not reaching a funded ratio of 80% again until approximately 2034 based upon the current $10 million annual increase contribution schedule.

Benefit provisions

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2013. There were no changes in the benefit provisions since the prior valuation. The benefit provisions are summarized in Appendix B of our Report.

Assumptions and methods

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the plan's actuary. The assumptions used in this valuation were adopted by the Board based on the recommendations from GRS during the Experience Investigation Study review following the July 1, 2009 actuarial valuation and there were no changes from those assumptions used in the prior valuation (July 1, 2012).

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations presented in our Report are intended to provide information for rational decision making.

The actuarial assumptions and methods used in this Report all comply with the parameters for financial disclosure that appear in Governmental Accounting Standards Board (GASB) Statement Number 25.

All assumptions and methods are described in Appendix A of our Report.

Data

Member data for retired, active and inactive members was supplied as of July 1, 2013 by the HPOPS staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us.

Asset and all financial information as of July 1, 2013 were supplied to us by the HPOPS staff, as well.

Plan Experience

As part of each valuation, we examine the System's experience relative to the assumptions. The aggregate results of these analyses are disclosed in Tables 5 & 6 under Section III of our Report.

Actuarial Certification

All of the tables contained in this actuarial valuation report and in the actuarial section of the HPOPS Comprehensive Annual Financial Report (CAFR) were prepared by Gabriel, Roeder, Smith & Company. Historical information for years prior to 2008 was prepared by the prior actuarial firm and was not subjected to our actuarial review. We certify that the information presented herein is accurate and fairly portrays the actuarial position of HPOPS as of July 1, 2013.

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of State law and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. All of the undersigned are Enrolled Actuaries, Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, all of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Mark R. Randall

Mark R. Randall, FCA, EA, MAAA
Executive Vice President

Joseph P. Newton, FSA, EA, MAAA
Senior Consultant

Bradley E. Stewart, ASA, EA, MAAA
Consultant

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SECTION I

EXECUTIVE SUMMARY

Executive Summary (dollar amounts are in millions)

Item	July 1, 2013	July 1, 2012
Membership		
• Number of:		
- Active members	5,364	5,326
- Retirees and beneficiaries	3,323	3,199
- Inactive members	26	31
- Total	8,713	8,556
• Annualized Payroll supplied by HPOPS	$ 378,702	$ 376,699
Calculated Contribution rates		
• Employer	36.01%	34.50%
• Member[1]	9.33%	9.29%
Assets ($000s)		
• Market value	$ 3,774,375	$ 3,566,968
• Actuarial value	4,070,951	3,888,504
• Estimation of return on market value	7.9%	2.8%
• Estimation of return on actuarial value	6.6%	6.3%
• Employer contribution	$ 93,392	$ 83,027
• Member contribution	$ 35,586	$ 35,151
• Ratio of actuarial value to market value	107.9%	109.0%
Actuarial Information		
• Employer normal cost %	20.83%	20.54%
• Unfunded actuarial accrued liability (UAAL)	$ 939,010	$ 858,669
• Amortization rate	15.18%	13.96%
• Funding period	30.0 years	30.0 years
• GASB funded ratio	81.3%	81.9%
Projected employer contribution based on calculated rate		
• Fiscal year ending June 30,	2014	2013
• Projected payroll (millions)	$ 392.0	$ 389.9
• Projected employer contribution (millions) (actual contribution rate set by Meet & Confer)	$ 141.1	$ 134.5

[1] Employee contribution rate is 9.00%. Members hired after October 9, 2004 contribute 10.25% of pay.

SECTION II

DISCUSSION

Contribution Requirements

- The above Executive Summary shows the calculated contribution rate for FY 2015 to be 36.01% of active member payroll
  - An increase from 34.50% of active member payroll for FY 2014
  - The most significant factors in the increase in the rate were the asset loss in FY 2013 on an actuarial value basis and the calculated contribution rate not being contributed to the System. These losses were partially offset by liability gains driven primarily by salary increases being less than assumed, fewer retirements than expected, and a COLA being granted that was less than assumed.
  - Moreover, due to the terms of the 2011 Meet & Confer Agreement, the City of Houston employer contribution rate continues to fall far short of the actuarially determined Annual Required Contribution (ARC), the "calculated contribution rate". As can be seen from the exhibit on page 24 under Section III of this Report (Table 16), the City's employer contribution rate has been in the low 20% range of active member payroll
  - Rates shown on the Executive Summary are calculated rates for the twelve-month period beginning July 1, 2014, based on current board policy
  - Table 6 under Section III of our Report reconciles the calculated contribution rate from the prior valuation date to the current valuation date
- There were no changes to the benefit provisions reflected in this actuarial valuation
- There were no changes to the actuarial assumptions reflected in this actuarial valuation
- The amortization payment is based upon the following assumptions:
  - 30-year open funding period beginning July 1, 2013
  - Dollar contribution amounts increase as a level percentage of payroll
  - Total payroll increases 3.50% per year
  - No future growth in the number of active members is taken into account

Calculation of Contribution Rates

The funds available to pay benefits come from two sources, contributions and investment income on those contributions (the majority of the funds available to pay benefits typically come from investment income). HPOPS receives contributions from two sources, employer contributions which are currently based on a fixed schedule and member contributions which are determined as a percentage of pay. As shown in Table 2 under Section III of our Report, the employer contribution rate has two components:

- The normal cost percentage (NC%)
- The amortization percentage (UAAL%)

The normal cost is the present value of the portion of projected benefits that is attributable to service accrued in the current year. The NC% is shown in Table 4 under Section III of our Report.

Members are required to make employee contributions and only the excess of the NC% over the member contribution rate is included in the employer contribution rate.

The actuarial accrued liability (AAL) is the difference between (i) the actuarial present value of all future benefits for the current participants of the fund, including active, inactive and retired members, and (ii) the actuarial present value of future normal costs. Thus the AAL represents the liability associated with past years. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and the actuarial value of assets (AVA). It is the shortfall/excess between the liability associated with prior years (the AAL) and the assets actually accumulated (the AVA). This shortfall/excess can arise from several sources, including actuarial gains and losses which are caused by differences between actual experience and the plan's assumptions, changes to the plan's actuarial assumptions, and amendments to the benefit provisions.

The UAAL% is the amount required to fund this difference. It is the amount, expressed as a level percentage of payroll, necessary to amortize the UAAL. The Meet & Confer Agreement has specified that this amortization should be over a period of 30 years beginning July 1, 2012. Item 11a of Table 2 in Section III of our Report shows the UAAL%.

The calculated rate is used in determining the contributions necessary to meet the GASB actuarially determined Annual Required Contribution (ARC) for the twelve-month period beginning July 1, 2014. Note, however, that under the terms of the 2011 Meet and Confer Agreement the FY 2015 contribution is already set at $113 million preceded by a City contribution of $103 million for FY2014. As detailed in this Report, these contribution levels continue to fall far short of the calculated ARC.

Our projections show that if the City continues to contribute less than the ARC, The System's contribution rates will continue to increase while the funded status will continue to deteriorate.

Financial Data and Experience

As of July 1, 2013, HPOPS has a total market value of about $3.77 billion. Financial information was gathered from the HPOPS staff.

Our Report includes a number of Exhibits related to plan assets. Table 8 under Section III of our Report shows how the total market value is distributed among the various classes of investments. Currently, 15.2% of invested assets are held in equities, compared with 19.7% last year and compared with a 33.5% investment policy target. 19.3% of invested assets are held in fixed income securities, compared with 22.9% last year and compared with a 28.5% investment policy target.

Table 9 under Section III of our Report shows a reconciliation of the market values between the beginning and end of FY2013.

During FY2013, the dollar-weighted total investment return on the market value of assets (MVA) was 7.88%, net of expenses, as shown in Table 11 under Section III of our Report. The Comprehensive Annual Financial Report (CAFR) states the time-weighted return for FY2013 was 7.9%.

In determining the contribution rates and funded status of the System, an actuarial value of assets (AVA) is used, rather than the market value of assets. The AVA recognizes 20% of the difference between the projected actuarial value (based on the annual assumed 8.50% investment return rate) and the market value at the valuation date. This is an approximation of five year smoothing and is intended to help reduce the volatility of the contribution rates from year to year.

The development of the AVA is shown in Table 10 under Section III of our Report. The AVA is $4.07 billion. The AVA is 107.9% of the MVA, compared to 109.0% last year.

In addition to the market return, Table 11 also shows the return on the actuarial value of assets for HPOPS. For FY2013, this return was 6.58%. Because this is less than the assumed 8.50% investment return, an actuarial loss occurred increasing the unfunded actuarial accrued liabilities of the System by $74 million. Table 13 shows a historical summary of market and actuarial return rates in recent years.

Member Data

Member data as of July 1, 2013 was supplied electronically by the HPOPS staff. While we did not audit this data, we did perform various tests to ensure that it was internally consistent, consistent with the prior year's data, and was reasonable overall.

Table 19 under Section III of our Report shows the number of members by category (active, inactive, retired, etc.). Tables 20a-d show active member statistics by Group. Tables 17 and 18 show summaries of certain historical data, including membership statistics.

The number of active and DROP members increased from 5,326 to 5,364 as of July 1, 2013, a 0.71% increase.

The total payroll shown on the statistical tables is the amount that was supplied by HPOPS, annualized, if necessary. For the cost calculations, the pay amounts were adjusted in accordance with the actuarial assumptions to reflect one year's salary increase.

Total active member payroll increased 0.53% last year, compared with a 0.38% increase the prior year.

The rate of payroll growth is significant because the methodology used in the valuation to amortize the unfunded actuarial accrued liability assumes a growing payroll into the future. If the payroll does not grow at the assumed 3.50% per year average, the current amortization payments may be understated and the funding position of the System will not strengthen over time.

Benefit Provisions

Appendix B of our Report includes a summary of the benefit provisions for HPOPS.

– *Normal Retirement Eligibility*

- Sworn Prior to October 9, 2004 – 20 years of service
- Sworn on or after October 9, 2004 – Age 55 with 10 years of service

– *Normal Retirement Benefit*

- Sworn Prior to October 9, 2004 – 2.75% of average direct pay for the first 20 years of service and 2% for each year after 20
- Sworn on or after October 9, 2004 – 2.25% for the first 20 years of service and 2% for each year after 20 up to a maximum of 80%

– *Normal Form of Payment* is a 100% Joint & Survivor Annuity for married retirees and Life Annuity for unmarried retirees

– *Employee Contributions* are required

- Sworn Prior to October 9, 2004 – 9.00% of pay.
- Sworn on or after October 9, 2004 – 10.25% of pay

– *Post-retirement Cost of Living Adjustments (COLA) are* granted each year on April 1 and is calculated at 80% of the change in the CPI (Consumer Price Index) for the previous calendar year. However, the COLA can never be less than 2.4% or greater than 8.0%. This COLA is applied to retirement, survivor and DROP benefits, and is included in the benefit payment made at the end of April.

– *Insurance Benefit* - Retired members and surviving spouses are entitled to receive an additional stipend of $150.00 per month to help offset the cost of medical insurance premiums

This valuation reflects all benefits offered to HPOPS members. There are no ancillary benefits that might be deemed a HPOPS liability if continued beyond the availability of funding by the current funding source. There were no changes in benefit provisions since the prior valuation.

Actuarial Methods and Assumptions

Appendix A of our Report includes a summary of the actuarial assumptions and methods used in this valuation. Costs are determined using the Projected Unit Credit (PUC) actuarial cost method. The assumed annual investment return rate is 8.50%.

Please see Appendix A of our Report for a complete description of these assumptions. For a detailed analysis of the actuarial assumptions of the System, please see our separate 2010 Experience Investigation Study Report, dated March 2010.

GASB 25 and Funding Progress

Governmental Accounting Standards Board Statement Number 25 (GASB 25) contains certain accounting requirements for HPOPS. In particular, it requires the inclusion of two special schedules in the HPOPS annual report:

1. Schedule of Funding Progress

2. Schedule of Employer Contributions

Information needed to prepare the Schedule of Funding Progress is included in Table 15 under Section III of our Report.

GASB 25 also requires that plans calculate an Annual Required Contribution (ARC), and, if actual contributions received are less than the ARC, this must be disclosed. For this disclosure, HPOPS treats the employer contribution rate established under the Meet & Confer Agreement as the ARC, as long as this produces a funding period of 30 years or less.

Under GASB 25, the ARC must be calculated in accordance with certain parameters. In particular, it must include a payment to amortize the unfunded actuarial accrued liability (UAAL). This amortization payment must be computed using a funding period no greater than 30 years. Further, the amortization payment included in the ARC may be computed as a level dollar amount, or it may be computed as an amount which increases with payroll (level-percentage-of-payroll). However, if payments are computed on a level-percentage-of-payroll approach, the payroll growth assumption may not anticipate future membership growth.

Since the recommended employer contribution rate is computed as a level-percentage-of-payroll using an amortization period of 30 years from the valuation date, the calculated rate meets the definition of an acceptable ARC.

SECTION III

SUPPORTING EXHIBITS

Summary of Cost Items ($000)

	Valuation as of July 1, 2013		Valuation as of July 1, 2012	
	Cost Item	Cost as % of Pay	Cost Item	Cost as % of Pay
	(1)	(2)	(3)	(4)
1. Participants				
a. Active participants, hired post 10/9/2004	1,806		1,613	
b. Active participants enrolled in DROP	1,871		1,751	
c. Other active participants	1,687		1,962	
d. Retirees	2,592		2,478	
e. Disabled retirees	146		147	
f. Beneficiaries	585		574	
g. Inactive, deferred vested	26		31	
h. Total	8,713		8,556	
2. Projected valuation payroll	$ 391,957		$ 389,884	
3. Averages for active members				
a. Average age	42.6		42.5	
b. Average years of service	15.7		15.7	
c. Average pay ($)	$ 73,072		$ 73,204	
4. Present value of future pay	$ 3,199,297		$ 3,200,730	
5. Total normal cost rate	30.16%		29.83%	
6. Present value of future benefits	$ 5,938,315	1515.0%	$ 5,683,405	1457.7%
7. Present value of future normal costs	$ 928,354	236.9%	$ 936,232	240.1%
8. Actuarial accrued liability (6 - 7)	$ 5,009,961	1278.2%	$ 4,747,173	1217.6%
9. Present actuarial assets	$ 4,070,951	1038.6%	$ 3,888,504	997.3%
10. Unfunded actuarial accrued liability (UAAL)	$ 939,010	239.6%	$ 858,669	220.2%
11. Funding period	30		30	
12. Employer contribution rate				
a. Normal cost	20.83%		20.54%	
b. Amortization charge	15.18%		13.96%	
c. Total	36.01%		34.50%	
13. Average estimated return				
a. Based on market value	7.88%		2.83%	
b. Based on actuarial value	6.58%		6.32%	
14. GASB 25 funded ratio	81.3%		81.9%	

Calculation of Annual Required Contribution Rate ($000)

		July 1, 2013 (1)	July 1, 2012 (2)
1.	Annualized payroll supplied by HPOPS	$ 378,702	$ 376,699
2.	Projected valuation payroll (adjusted for one-year's payroll growth)	$ 391,957	$ 389,884
3.	Present value of future pay	$ 3,199,297	$ 3,200,730
4.	Employer normal cost rate (Table 4)	20.83%	20.54%
5.	Actuarial accrued liability for active members		
	a. Present value of future benefits for active members	$ 3,436,570	$ 3,363,166
	b. Less: present value of future employer normal costs	(622,563)	(632,008)
	c. Less: present value of future employee contributions	(305,791)	(304,224)
	d. Actuarial accrued liability	$ 2,508,216	$ 2,426,934
6.	Total actuarial accrued liability for:		
	a. Retirees and beneficiaries	$ 2,497,575	$ 2,316,050
	b. Inactive participants	4,170	4,189
	c. Active members (Item 5d)	2,508,216	2,426,934
	d. Total	$ 5,009,961	$ 4,747,173
7.	Actuarial value of assets (Table 11)	$ 4,070,951	$ 3,888,504
8.	Unfunded actuarial accrued liability (UAAL) (Item 6d - Item 7)	$ 939,010	$ 858,669
9.	Funding period	30 years	30 years
10.	Assumed payroll growth rate	3.50%	3.50%
11.	Employer Contribution requirement		
	a. UAAL amortization payment as % of pay	15.18%	13.96%
	b. Employer normal cost	20.83%	20.54%
	c. Contribution requirement (a + b)	36.01%	34.50%

Actuarial Present Value of Future Benefits ($000)

		July 1, 2013 (1)	July 1, 2012 (2)
1.	Active members, hired post 10/9/2004		
	a. Retirement benefits	$ 232,425	$ 198,858
	b. Deferred termination benefits	0	0
	c. Refunds	10,308	9,312
	d. Death benefits	24,685	21,664
	e. Disability benefits	26,577	23,448
	f. Total	$ 293,995	$ 253,282
2.	Active members enrolled in DROP		
	a. Retirement benefits	$ 2,131,636	$ 1,982,626
	b. Deferred termination benefits	0	0
	c. Refunds	0	0
	d. Death benefits	35,324	32,678
	e. Disability benefits	0	0
	f. Total	$ 2,166,960	$ 2,015,304
3.	Other active members		
	a. Retirement benefits	$ 933,415	$ 1,045,622
	b. Deferred termination benefits	1,904	2,301
	c. Refunds	1,476	1,823
	d. Death benefits	29,564	33,631
	e. Disability benefits	9,256	11,203
	f. Total	$ 975,615	$ 1,094,580
4.	Members in Pay Status		
	a. Service retirements	$ 2,171,627	$ 2,001,198
	b. Disability retirements	88,450	85,159
	c. Beneficiaries	237,498	229,693
	d. Total	$ 2,497,575	$ 2,316,050
5.	Inactive members	$ 4,170	$ 4,189
6.	Total actuarial present value of future benefits	$ 5,938,315	$ 5,683,405

Analysis of Normal Cost Rate

		July 1, 2013 (1)	July 1, 2012 (2)
1.	Gross normal cost rate		
	a. Retirement benefits	27.96%	27.65%
	b. Deferred termination benefits	0.03%	0.04%
	c. Refunds	0.32%	0.31%
	d. Disability benefits	0.74%	0.73%
	e. Death benefits	1.11%	1.10%
	f. Total	30.16%	29.83%
2.	Less: weighted average of member contribution rate	9.33%	9.29%
3.	Employer normal cost rate (Item 1f - Item 2)	20.83%	20.54%

Calculation of Total Actuarial Gain or Loss

1.	Unfunded actuarial accrued liability (UAAL) as of July 1, 2012	$	858,669
2.	Total normal cost for year		116,302
3.	Actuarially calculated contribution requirement		(170,730)
4.	Interest on UAAL for one year		72,987
5.	Interest on Item 2 and Item 3 for one-half year		(2,266)
6.	Actuarially expected UAAL as of July 1, 2013 (1+2+3+4+5)	$	874,962
7.	Actual UAAL as of July 1, 2013		939,010
8.	Actuarial gain/(loss) for the period (6 - 7)	$	(64,048)
	SOURCE OF GAINS/(LOSSES)		
9.	Asset gain/(loss) (See Table 13)	$	(74,144)
10.	Impact of contributions less than actuarially required		(41,752)
11.	Changes to Asset Valuation Method		-
12.	Changes Due to Experience Study		-
13.	Total liability gain/(loss) for the period		51,848
14.	Actuarial gain/(loss) for the period	$	(64,048)

Note: Dollar amounts in $000

Change in Calculated Contribution Rate Since the Prior Valuation

1.	Calculated Contribution Rate as of July 1, 2012		34.50%
2.	Change in Contribution Rate During Year		
a.	Change in Employer Normal Cost	0.29%	
b.	Assumption changes	0.00%	
c.	Recognition of prior asset losses (gains)	1.02%	
d.	Actuarial (gain) loss from current year asset performance	0.16%	
e.	Actuarial (gain) loss from liability sources	(0.84%)	
f.	Impact of City contributing different than actuarially required	0.68%	
g.	Effect of Payroll growing slower than Payroll Growth Rate	0.44%	
h.	Effect of resetting amortization period to 30	(0.24%)	
i.	Total Change		1.51%
3.	Calculated Rate as of July 1, 2013		36.01%

Near Term Outlook

Valuation as of July 1,	Unfunded Actuarial Accrued Liability (UAAL, in 000s)	Funded Ratio	Calculated Contribution Rate	Funding Period (Years)[2]	Market Value of Fund (in 000s)	For Fiscal Year Ending June 30,	Covered Compensation	Employer Contributions	Employee Contributions	Benefit Payments and Refunds	Net External Cash Flow
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2013	$ 939,010	81.3%	36.01%	30.0	$ 3,774,375	2014	$ 391,957	$ 103,000	$ 36,570	$ 418,914	$ (279,344)
2014	1,058,564	79.3%	37.17%	30.0	3,803,981	2015	394,930	113,000	36,847	414,418	(264,571)
2015	1,167,801	77.7%	38.06%	30.0	3,851,503	2016	399,964	123,000	37,317	428,266	(267,949)
2016	1,267,171	76.4%	38.64%	30.0	3,899,544	2017	406,140	133,000	37,893	448,953	(278,061)
2017	1,356,693	75.2%	38.94%	30.0	3,941,127	2018	413,136	143,000	38,546	461,543	(279,997)
2018	1,436,189	74.2%	38.97%	30.0	3,984,226	2019	420,978	153,000	39,277	478,555	(286,278)
2019	1,505,365	73.4%	38.74%	30.0	4,024,440	2020	429,740	163,000	40,095	491,916	(288,821)
2020	1,563,840	72.8%	38.28%	30.0	4,065,422	2021	439,348	173,000	40,991	508,632	(294,641)
2021	1,611,128	72.3%	37.56%	30.0	4,103,819	2022	449,801	183,000	41,966	524,694	(299,728)
2022	1,646,598	71.9%	36.62%	30.0	4,140,178	2023	461,125	188,000	43,023	539,212	(308,189)
2023	1,674,690	71.7%	35.54%	30.0	4,170,806	2024	473,315	193,000	44,160	479,357	(242,197)

Statement of Plan Net Assets ($000)

		July 1, 2013 (1)		July 1, 2012 (2)
A. ASSETS				
1. Current Assets				
a. Cash and short term investments				
1) Cash on hand	$	234	$	309
2) Short term investments		564,835		234,171
b. Accounts Receivable				
1) Members		902		760
2) Investments		4,891		7,120
3) Due from Brokers		5,370		14,890
4) Other		24		280
c. Total Current Assets	$	576,256	$	257,530
2. Long Term Investments				
a. Fixed Income	$	725,732	$	815,920
b. Equity Securities		568,962		699,993
c. Alternative Investments		1,881,097		1,785,987
d. Foreign Currency Contracts		589		0
e. Total long term investments	$	3,176,380	$	3,301,900
3. Other Assets				
a Collateral on securities lending	$	190,616	$	113,063
b. Furniture, fixtures and equipment, net		0		0
c. City of Houston Contribution Receivable		25,500		17,000
d. Accrued interest on note receivable		0		0
e. Total other assets	$	216,116	$	130,063
4. Prepaid Management Fees	$	0	$	-
5. Total Assets	$	3,968,752	$	3,689,493
B. LIABILITIES				
1. Current Liabilities				
a. Foreign Currency Contracts	$	-	$	352
b. Due to Brokers		2,634		7,660
c. Securities Lending Collateral		190,616		113,063
d. Accrued Professional and Investment Fees		552		878
e. Other Liabilities		575		572
2. Total Liabilities		194,377		122,525
3. Net Assets Held in Trust	$	3,774,375	$	3,566,968
C. ASSET ALLOCATION FOR CASH & LONG TERM INVESTMENTS				
1. Current Assets		15.4%		7.2%
2. Fixed Income		19.3%		22.9%
3. Equity Securities		15.2%		19.7%
4. Alternative Investments		50.1%		50.2%
5. Total		100.0%		100.0%

Reconciliation of Plan Net Assets ($000)

			Year Ending	
			July 1, 2013	July 1, 2012
			(1)	(2)
1.	Market value of assets at beginning of year		$ 3,566,968	$ 3,530,617
2.	Revenue for the year			
	a.	Contributions		
		i. Member contributions	$ 35,586	$ 35,151
		ii. Employer contributions	93,392	83,027
		iii. Total	$ 128,978	$ 118,178
	b.	Net investment income		
		i. Dividends	$ 20,238	$ 19,200
		ii. Short Term Investments	865	387
		iii. Fixed Income	31,465	46,734
		iv. Net appreciation (depreciation) on investments	241,324	53,935
		v. Securties lending income	359	646
		vi. Securties lending expense	(90)	(161)
		vii. Less investment expenses	(14,718)	(19,296)
		viii. Other	2,550	1,135
	c.	Total revenue	$ 410,971	$ 220,758
3.	Expenditures for the year			
	a.	Refunds	$ 641	$ 704
	b.	Benefit payments	199,255	180,014
	c.	Administrative and miscellaneous expenses	3,668	3,689
	d.	Total expenditures	$ 203,564	$ 184,407
4.	Increase in net assets (Item 2c - Item 3d)		$ 207,407	$ 36,351
5.	Market value of assets at end of year (Item 1 + Item 4)		$ 3,774,375	$ 3,566,968

Development of Actuarial Value of Assets ($000)

		July 1, 2013 (1)	July 1, 2012 (2)
1.	Actuarial value of assets, at beginning of year	$ 3,888,504	$ 3,718,052
2.	Net new investments		
	a. Contributions	$ 128,978	$ 118,178
	b. Benefits paid	(199,255)	(180,014)
	c. Refunds	(641)	(704)
	d. Total	$ (70,918)	$ (62,540)
3.	Assumed investment return rate	8.50%	8.50%
4.	Expected return	$ 327,509	$ 313,376
5.	Expected value of assets at end of year	$ 4,145,095	$ 3,968,888
6.	Market value of assets at end of year	$ 3,774,375	$ 3,566,968
7.	Excess of market value over expected value (6)-(5)	$ (370,720)	$ (401,920)
8.	20% adjustment towards market value	$ (74,144)	$ (80,384)
9.	Actuarial value of assets at end of year: (5) + (8)	$ 4,070,951	$ 3,888,504

Estimation of Dollar-Weighted Investment Return ($000)

Item	Market Value	Actuarial Value
(1)	(2)	(3)
1. Assets as of July 1, 2012	$ 3,566,968	$ 3,888,504
2. Contributions during FY2013	128,978	128,978
3. Benefit payments made during FY2013	199,255	199,255
4. Refunds of contributions during FY2013	641	641
5. Investment return during FY2013	278,325	253,365
6. Assets as of July 1, 2013: (1 + 2 - 3 - 4 + 5)	3,774,375	4,070,951
7. Approximate rate of return on average invested assets		
a. Net investment income	278,325	253,365
b. Net investment return FY 2013	7.88%	6.58%

Investment Experience Gain or Loss ($000)

Item (1)		Valuation as of 6/30/2013 (2)		Valuation as of 6/30/2012 (3)
1. Actuarial assets, prior valuation	$	3,888,504	$	3,718,052
2. Total contributions since prior valuation	$	128,978	$	118,178
3. Benefits and refunds since prior valuation	$	(199,896)	$	(180,718)
4. Assumed net investment income at 8.5%				
a. Beginning assets	$	330,523	$	316,034
b. Contributions		5,482		4,920
c. Benefits and refunds paid		(8,496)		(7,524)
d. Total	$	327,509	$	313,430
5. Expected actuarial assets (Sum of Items 1 through 4)	$	4,145,095	$	3,968,942
6. Actual actuarial assets, this valuation	$	4,070,951	$	3,888,504
7. Asset gain (loss) since prior valuation (Item 6 - Item 5)	$	(74,144)	$	(80,438)

Note: Dollar amounts in $000

History of Investment Returns

For Fiscal Year Ending	Market Value [1]	Actuarial Value	For Fiscal Year Ending	Market Value [1]	Actuarial Value
(1)	(2)	(3)	(4)	(5)	(6)
June 30, 1976 [2]	8.60%	N/A	June 30, 1995 [2]	12.12%	N/A
June 30, 1977 [2]	2.90%	N/A	June 30, 1996 [2]	17.44%	N/A
June 30, 1978 [2]	2.20%	N/A	June 30, 1997 [2]	17.15%	N/A
June 30, 1979 [2]	7.90%	N/A	June 30, 1998 [2]	14.26%	(0.46%)
June 30, 1980 [2]	7.80%	N/A	June 30, 1999 [2]	15.02%	15.37%
June 30, 1981 [2]	11.50%	N/A	June 30, 2000 [2]	14.80%	15.58%
June 30, 1982 [2]	0.30%	N/A	June 30, 2001 [2]	(3.96%)	11.02%
June 30, 1983 [2]	44.20%	N/A	June 30, 2002	(8.80%)	5.25%
June 30, 1984 [2]	(7.70%)	N/A	June 30, 2003 [2]	4.15%	2.80%
June 30, 1985 [2]	24.80%	N/A	June 30, 2004 [2]	21.68%	6.09%
June 30, 1986 [2]	26.70%	N/A	June 30, 2005	13.40%	3.63%
June 30, 1987 [2]	14.80%	N/A	June 30, 2006	11.20%	8.93%
June 30, 1988 [2]	(0.80%)	N/A	June 30, 2007	17.80%	13.93%
June 30, 1989 [2]	12.80%	N/A	June 30, 2008	0.24%	12.47%
June 30, 1990 [2]	13.80%	N/A	June 30, 2009	(18.55%)	4.15%
June 30, 1991 [2]	1.89%	N/A	June 30, 2010	13.47%	4.43%
June 30, 1992 [2]	11.19%	N/A	June 30, 2011	20.99%	7.16%
June 30, 1993 [2]	14.74%	N/A	June 30, 2012	2.83%	6.32%
June 30, 1994 [2]	2.61%	N/A	June 30, 2013	7.88%	6.58%
			Average Return - last 5	4.40%	5.72%
			Average Return - last 10	8.44%	7.32%
			Average Return - since 1976	9.27%	

[1] Dollar-weighted return.
[2] Gross return.

Historical Solvency Test ($000)

Valuation Date	Aggregated Accrued Liabilities for			Actuarial Value of Assets	by Reported Assets		
Valuation Date	Active Members Contributions	Retirees Beneficiaries and Vested Terminations[1]	Members (City Financed Portion)	Actuarial Value of Assets	(5)/(2)	[(5)-(2)]/(3)	[(5)-(2)-(3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
July 1, 1993	$ 114,279	$ 401,989	$ 468,227	$ 947,456	100.0%	100.0%	92%
July 1, 1994	123,471	416,053	460,899	1,038,256	100.0%	100.0%	100%
July 1, 1995	91,687	764,518	343,543	1,168,056	100.0%	100.0%	91%
July 1, 1996	95,615	812,498	350,104	1,329,570	100.0%	100.0%	100%
July 1, 1998	99,298	1,017,723	432,320	1,518,081	100.0%	100.0%	93%
July 1, 1999	107,008	1,157,882	508,939	1,746,312	100.0%	100.0%	95%
July 1, 2000	111,099	1,324,079	531,225	2,013,491	100.0%	100.0%	100%
July 1, 2001	138,248	707,152	1,461,027	2,226,307	100.0%	100.0%	95%
July 1, 2002	145,255	718,779	1,729,696	2,337,157	100.0%	100.0%	85%
July 1, 2003	153,634	838,090	1,883,014	2,394,411	100.0%	100.0%	74%
July 1, 2004	153,088	995,841	2,190,295	2,466,070	100.0%	100.0%	60%
July 1, 2005	249,804	1,259,243	1,883,927	2,508,794	100.0%	100.0%	53%
July 1, 2006	262,514	1,421,330	1,949,301	2,681,375	100.0%	100.0%	51%
July 1, 2007	275,990	1,575,900	2,005,790	3,004,927	100.0%	100.0%	57%
July 1, 2008	294,678	1,726,121	2,058,165	3,337,612	100.0%	100.0%	64%
July 1, 2009	312,489	1,872,226	2,183,786	3,430,946	100.0%	100.0%	57%
July 1, 2010	149,252	1,998,683	2,084,797	3,526,703	100.0%	100.0%	66%
July 1, 2011	160,828	2,146,222	2,181,093	3,718,052	100.0%	100.0%	65%
July 1, 2012	167,739	2,320,239	2,259,195	3,888,504	100.0%	100.0%	62%
July 1, 2013	163,660	2,501,745	2,344,556	4,070,951	100.0%	100.0%	60%

Note: Dollar amounts in $000

[1] Column (3) included AAL for DROP participants until 2000, now in Column (4)

Schedule of Funding Progress ($000)

Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
July 1, 1993	$ 947,456	$ 984,495	$ 37,039	96.2%	$ 162,143	22.8%
July 1, 1994	1,038,256	1,000,423	(37,833)	103.8%	174,761	(21.6%)
July 1, 1995	1,168,056	1,199,748	31,692	97.4%	182,251	17.4%
July 1, 1996	1,329,570	1,258,217	(71,353)	105.7%	187,134	(38.1%)
July 1, 1998	1,518,081	1,549,341	31,260	98.0%	196,364	15.9%
July 1, 1999 *	1,746,312	1,773,829	27,517	98.4%	246,569	11.2%
July 1, 2000	2,013,491	1,966,404	(47,087)	102.4%	250,691	(18.8%)
July 1, 2001	2,226,307	2,306,427	80,120	96.5%	264,226	30.3%
July 1, 2002	2,337,157	2,593,730	256,573	90.1%	286,150	89.7%
July 1, 2003	2,394,411	2,874,738	480,327	83.3%	300,405	159.9%
July 1, 2004	2,466,070	3,339,224	873,154	73.9%	329,840	264.7%
July 1, 2005	2,508,794	3,392,974	884,180	73.9%	321,057	275.4%
July 1, 2006	2,681,375	3,633,145	951,770	73.8%	327,080	291.0%
July 1, 2007	3,004,927	3,857,680	852,753	77.9%	336,029	253.8%
July 1, 2008	3,337,612	4,078,963	741,351	81.8%	351,525	210.9%
July 1, 2009	3,430,946	4,368,501	937,556	78.5%	366,924	255.5%
July 1, 2010**	3,526,703	4,232,732	706,029	83.3%	377,779	186.9%
July 1, 2011	3,718,052	4,488,142	770,090	82.8%	388,409	198.3%
July 1, 2012	3,888,504	4,747,173	858,669	81.9%	389,884	220.2%
July 1, 2013	4,070,951	5,009,961	939,010	81.3%	391,957	239.6%

* Definition of covered payroll changed from base pay to total direct pay less overtime
** Change to Projected Unit Credit cost method. Prior results were provided based on Entry Age Normal.

Historical City Contribution Rates

Valuation Date (1)	Calculated Contribution Rate (2)	Time Period for Contribution Rate (3)	Actual Contribution Rate (4)
July 1, 1990	14.20%	July 1, 1991 through June 30, 1993	14.3%
July 1, 1992	19.00	July 1, 1993 through June 30, 1994	19.0
July 1, 1993	18.00	July 1, 1994 through June 30, 1995	18.0
July 1, 1994	18.00	July 1, 1995 through June 30, 1996	18.0
July 1, 1995	17.40	July 1, 1996 through June 30, 1997	16.2
July 1, 1996	16.20	July 1, 1997 through June 30, 1998	16.2
July 1, 1997	16.80	July 1, 1998 through June 30, 1999	15.2
July 1, 1998	16.20	July 1, 1999 through June 30, 2000	12.4
July 1, 1999	16.30	July 1, 2000 through June 30, 2001	12.2
July 1, 2000	11.30	July 1, 2001 through June 30, 2002	12.4
July 1, 2001	20.50	July 1, 2002 through June 30, 2003	12.1
July 1, 2002	24.40	July 1, 2003 through June 30, 2004	12.2
July 1, 2003	28.50	July 1, 2004 through June 30, 2005	11.3
July 1, 2004	31.20	July 1, 2005 through June 30, 2006	16.5
July 1, 2005	34.00	July 1, 2006 through June 30, 2007	17.7
July 1, 2006	34.00	July 1, 2007 through June 30, 2008	18.7
July 1, 2007	32.10	July 1, 2008 through June 30, 2009	19.3
July 1, 2008	30.91	July 1, 2009 through June 30, 2010	19.9
July 1, 2009	31.73	July 1, 2010 through June 30, 2011	20.7
July 1, 2010	32.04	July 1, 2011 through June 30, 2012	21.4
July 1, 2011	32.68	July 1, 2012 through June 30, 2013	24.0
July 1, 2012	34.50	July 1, 2013 through June 30, 2014	N/A
July 1, 2013	36.01	July 1, 2014 through June 30, 2015	N/A

Historical Active Participant Data

Valuation Date	Active Count	Average Age	Average Svc	Covered Payroll	Average Salary	Percent Changes
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1988	4,239	35.0	N/A	$121,667	$28,702	1.6%
1989	4,105	35.7	N/A	$122,803	$29,915	4.2%
1990	4,073	36.2	N/A	$126,665(1)	$31,099	4.0%
1992	4,120	36.8	N/A	$143,020	$34,714	11.6%
1993	4,498	36.7	N/A	$159,321	$35,420	2.0%
1994	4,705	36.8	N/A	$162,143	$34,462	-2.7%
1995	4,921	36.9	N/A	$174,761	$35,513	3.0%
1996(2)	4,395	35.1	N/A	$150,903	$34,335	-3.3%
1997	4,282	35.5	N/A	$149,631	$34,944	1.8%
1998	4,247	35.9	N/A	$153,479	$36,138	3.4%
1999	4,253	36.3	N/A	$187,967(3)	$44,196(3)	22.3%(3)
2000	4,137	36.7	N/A	$179,415	$43,368	-1.9%
2001(4)	5,325	40.2	N/A	$264,226(5)	$49,620(5)	14.4%(5)
2002	5,352	40.7	N/A	$286,150	$53,466	7.8%
2003	5,387	41.3	N/A	$300,405	$55,765	4.3%
2004	5,225	41.7	N/A	$329,840	$63,127	13.2%
2005	4,867	42.0	N/A	$321,057(6)	$65,966(6)	4.5%(6)
2006	4,785	42.3	N/A	$327,080	$68,355	3.6%
2007	4,879	42.1	N/A	$336,029	$68,873	0.8%
2008	5,065	42.0	15.7	$351,525	$69,403	0.8%
2009	5,245	41.8	15.4	$366,924	$69,957	0.8%
2010	5,347	41.9	15.3	$377,779	$70,652	1.0%
2011	5,312	42.3	15.7	$388,409	$73,119	3.5%
2012	5,326	42.5	15.7	$389,884	$73,204	0.1%
2013	5,364	42.6	15.7	$391,957	$73,072	(0.2%)

(1) Reflects the November 1, 1990 pay increase.
(2) For the July 1, 1996 to July 1, 2000 valuations, includes those participants currently accruing benefits (i.e. excludes current DROP participants).
(3) Definition of covered payroll changed from base pay to total direct pay less overtime.
(4) Beginning July 1, 2001, includes active participants eligible for DROP.
(5) Beginning July 1, 2001, the definition of total direct pay changed from the average of the last 26 pay periods to the highest bi-weekly pay period.
(6) Beginning October 9, 2004, pensionable pay is the total of the last 26 pay periods, excluding CMEPP and SOSP.

Retirees, Beneficiaries, and Disabled Participants Added to and Removed from Rolls

	Added to Rolls		Removed from Rolls		Rolls-End of Year			
Valuation July 1,	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	% Increase in Annual Allowances	Average Annual Allowances
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1993	106	$ 2,172	64	$ 953	1,419	$ 27,286	7.1%	$ 19,229
1994	107	2,425	48	847	1,478	29,464	8.0%	19,935
1995	893	19,109	36	602	2,335	48,624	65.0%	20,824
1996 *	182	3,481	29	618	2,488	52,772	8.5%	21,211
1998	159	3,483	28	589	2,619	63,957	21.2%	24,420
1999	150	3,770	46	1,001	2,723	70,432	10.1%	25,866
2000	233	6,421	36	857	2,920	76,401	8.5%	26,165
2001 **	131	3,755	1,250	33,892	1,801	54,006	(29.3%)	29,987
2002	104	2,809	46	1,113	1,859	55,013	1.9%	29,593
2003	106	2,967	47	1,109	1,918	61,531	11.8%	32,081
2004	220	9,172	33	1,014	2,105	70,307	14.3%	33,400
2005	353	15,962	55	1,776	2,403	86,933	23.6%	36,177
2006	254	10,195	66	2,197	2,549	96,812	11.4%	37,980
2007	175	8,056	49	1,809	2,717	105,481	9.0%	38,823
2008	149	11,889	57	1,995	2,809	115,375	9.4%	41,073
2009	154	9,639	63	2,275	2,900	122,738	6.4%	42,324
2010	165	8,891	56	2,355	3,009	129,274	5.3%	42,963
2011	171	10,567	59	2,218	3,121	137,623	6.5%	44,096
2012	180	11,934	71	2,820	3,230	146,737	6.6%	45,429
2013	183	11,674	64	2,345	3,349	156,066	6.4%	46,601

* From June 30, 1996 through June 30, 2001 includes DROP participants.
** Beginning July 1, 2001 excludes active participants eligible for DROP.

Note: Dollar amounts in $000

Membership Data

	July 1, 2013 (1)	July 1, 2012 (2)	July 1, 2011 (3)
1. Active members			
a. Number	5,364	5,326	5,312
b. Number in DROP	1,871	1,751	1,728
c. Total payroll ($000)	$ 391,957,035	$ 389,883,887	$ 388,409,256
Payroll in DROP ($000)	$ 160,525,437	$ 150,041,249	$147,732,433
d. Average salary	73,072	73,204	73,119
e. Average age	42.6	42.5	42.3
f. Average service	15.7	15.7	15.7
2. Inactive participants			
a. Vested	26	31	33
b. Total annual benefits (deferred)	$ 700,082	$ 842,031	$ 898,045
c. Average annual benefit	26,926	27,162	27,213
3. Service retirees			
a. Number	2,592	2,478	2,378
b. Total annual benefits	$ 124,620,427	$ 116,585,404	$ 108,763,539
c. Average annual benefit	48,079	47,048	45,737
d. Average age	64.0	63.6	63.3
4. Disabled retirees			
a. Number	146	147	144
b. Total annual benefits	$ 6,308,203	$ 6,039,796	$ 5,774,687
c. Average annual benefit	43,207	41,087	40,102
d. Average age	54.3	53.6	53.3
5. Beneficiaries and spouses			
a. Number	585	574	566
b. Total annual benefits	$ 24,437,628	$ 23,269,735	$ 22,186,944
c. Average annual benefit	41,774	40,540	39,200
d. Average age	69.3	68.9	68.3

Distribution of Active Members by Age and by Years of Service

Active Members Sworn Prior to October 9, 2004

Attained Age	0-4 No. & Avg. Comp.	5-9 No. & Avg. Comp.	10-14 No. & Avg. Comp.	15-19 No. & Avg. Comp.	20-24 No. & Avg. Comp.	25-29 No. & Avg. Comp.	30-34 No. & Avg. Comp.	35 & Over No. & Avg. Comp.	Total No. & Avg. Comp.
Under 25									
25-29									
30-34		22	40						62
		68,609	74,435						72,368
35-39		27	264	39					330
		67,424	75,649	81,693					75,691
40-44		11	211	481	1				704
		67,287	75,138	83,803	83,975				80,948
45-49		4	71	372	6				453
		69,742	74,463	82,345	86,625				81,055
50-54			7	102	3	1			113
			72,928	82,108	78,220	76,962			81,390
55-59			2	17		1	1		21
			78,025	81,944		75,122	92,199		81,735
60-64				4					4
				76,524					76,524
65 & Over									
Total		64	595	1,015	10	2	1		1,687
		67,953	$ 75,221	$ 82,957	$ 83,839	$ 76,042	92,199		$ 79,662

Average:

Age	42.9
Service	15.5
Salary	$79,662

Distribution of Active Members by Age and by Years of Service

Active Members Sworn Post October 9, 2004

Attained Age	0-4 No. & Avg. Comp.	5-9 No. & Avg. Comp.	10-14 No. & Avg. Comp.	15-19 No. & Avg. Comp.	20-24 No. & Avg. Comp.	25-29 No. & Avg. Comp.	30-34 No. & Avg. Comp.	35 & Over No. & Avg. Comp.	Total No. & Avg. Comp.
Under 25	100								100
	37,652								37,652
25-29	452	98							550
	49,025	57,433							50,524
30-34	290	302							592
	51,342	60,106							55,812
35-39	134	169							303
	53,156	60,424							57,210
40-44	96	95		1					192
	53,256	62,048		73,771					57,714
45-49	31	33							64
	53,218	62,665							58,089
50-54		5							5
		62,903							62,903
55-59									
60-64									
65 & Over									
Total	1,103	702		1					1,806
	$ 49,591	$ 60,212		73,771					$ 53,733

Average:

Age	32.4
Service	4.1
Salary	$53,733

Distribution of Active Members by Age and by Years of Service

DROP Members

Attained Age	0-4 No. & Avg. Comp.	5-9 No. & Avg. Comp.	10-14 No. & Avg. Comp.	15-19 No. & Avg. Comp.	20-24 No. & Avg. Comp.	25-29 No. & Avg. Comp.	30-34 No. & Avg. Comp.	35 & Over No. & Avg. Comp.	Total No. & Avg. Comp.
Under 25									
25-29									
30-34									
35-39					1				1
					76,701				76,701
40-44					93				93
					86,090				86,090
45-49					407	106	2		515
					85,426	84,655	77,671		85,236
50-54					123	398	173		694
					82,041	84,537	87,291		84,781
55-59					37	133	195	53	418
					82,640	83,344	88,969	94,267	87,291
60-64					5	33	50	37	125
					80,660	83,788	87,216	94,506	88,207
65 & Over						2	5	18	25
						77,523	97,676	86,135	87,754
Total					666	672	425	108	1,871
					$ 84,690	$ 84,262	$ 88,129	$ 92,993	$ 85,797

Average:	
Age	52.1
Service	27.1
Salary	$85,797

Distribution of Active Members by Age and by Years of Service

Total Active and DROP Members

Attained Age	0-4 No. & Avg. Comp.	5-9 No. & Avg. Comp.	10-14 No. & Avg. Comp.	15-19 No. & Avg. Comp.	20-24 No. & Avg. Comp.	25-29 No. & Avg. Comp.	30-34 No. & Avg. Comp.	35 & Over No. & Avg. Comp.	Total No. & Avg. Comp.
Under 25	100								100
	$ 37,652								$ 37,652
25-29	452	98							550
	$ 49,025	$ 57,433							$ 50,524
30-34	290	324	40						654
	$ 51,342	$ 60,683	$ 74,435						$ 57,382
35-39	134	196	264	39	1				634
	$ 53,156	$ 61,389	$ 75,649	$ 81,693	76,701				$ 66,860
40-44	96	106	211	482	94				989
	$ 53,256	$ 62,592	$ 75,138	$ 83,782	$ 86,068				$ 76,921
45-49	31	37	71	372	413	106	2		1,032
	$ 53,218	$ 63,430	$ 74,463	$ 82,345	$ 85,443	$ 84,655	77,671		$ 81,717
50-54		5	7	102	126	399	173		812
		62,903	$ 72,928	$ 82,108	$ 81,950	$ 84,518	$ 87,291		$ 84,174
55-59			2	17	37	134	196	53	439
			$ 78,025	$ 81,944	$ 82,640	$ 83,283	$ 88,985	$ 94,267	$ 87,025
60-64				4	5	33	50	37	129
				$ 76,524	$ 80,660	$ 83,788	$ 87,216	$ 94,506	$ 87,845
65 & Over						2	5	18	25
						77,523	$ 97,676	$ 86,135	$ 87,754
Total	1,103	766	595	1,016	676	674	426	108	5,364
	$ 49,591	$ 60,859	$ 75,221	$ 82,948	$ 84,677	$ 84,237	$ 88,138	$ 92,993	$ 73,072

Average:

Age	42.6
Service	15.7
Salary	$73,072

APPENDIX A

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the July 1, 2013 actuarial valuation report.

1. Valuation Date

   The valuation date is as of July 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

   The actuarial valuation uses the Projected Unit Credit (PUC) actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial accrued liability (UAAL).

   a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 8.50%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, gender and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the System on account of the present group of participants and beneficiaries.

   b. The employer contributions required to support the benefits of the System are determined using a level funding approach, and consist of a normal cost contribution and an accrued liability contribution.

   c. The normal cost is the present value of the portion of projected benefits that is attributable to service accrued in the current year. Under the PUC cost method, if actual plan experience is close to assumptions, the normal cost will increase each year for each employee as he or she approaches retirement age. However, if the age/service/gender characteristics of the active group remain relatively constant, the total normal cost can be expected to remain somewhat level as a percentage of payroll.

d. The accrued liability is the portion of the present value of projected benefits attributable to service credited prior to the valuation date. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

The contribution rate determined by this valuation will not be effective until one year later, but the determination of the rate does not reflect this deferral. It is assumed that there will be no change in the employer normal cost rate due to the deferral, and it is assumed that payments are made uniformly throughout the year.

3. Actuarial Value of Assets

The Actuarial Value of Assets recognizes 20% of the difference between the expected actuarial value based on the assumed rate of return and the market value at the valuation date. The returns are computed net of administrative and investment expenses.

4. Economic Assumptions

a. Investment return: 8.50% per year, compounded annually, composed of an assumed 3.00% inflation rate and a 5.50% net real rate of return. This rate represents the assumed return, net of all investment and administrative expenses.

b. Cost of Living Adjustment (COLA): Monthly benefits for participants receiving payments are increased each April 1 by 80% of the increase in the Consumer Price Index for All Urban Consumers (CPI-U) for the preceding year, with a minimum of 2.4% and a maximum of 8%. For this valuation, the annual COLA is assumed to be 2.80%.

c. Salary increase rate: A service-related component, plus a 2.50% inflation and productivity component, as follows:

Years of Service	Service-related Component	Total Annual Rate of Increase Including 2.50% Inflation & Productivity Component
(1)	(2)	(3)
1	12.00%	14.50%
2	9.00%	11.50%
3	7.25%	9.75%
4	6.00%	8.50%
5	5.50%	8.00%
6	5.00%	7.50%
7	4.25%	6.75%
8	4.00%	6.50%
9	3.50%	6.00%
10	3.25%	5.75%
11	3.00%	5.50%
12	2.75%	5.25%
13	2.50%	5.00%
14	2.25%	4.75%
15	2.00%	4.50%
16	1.75%	4.25%
17	1.50%	4.00%
18 and Over	0.00%	2.50%

d. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 3.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

5. Demographic Assumptions

a. Retirement Rates

	Service	
Age	<25	25+
40-49	3.0%	6.0%
50-54	5.0%	10.0%
55-59	12.0%	24.0%
60-64	15.0%	30.0%
65 +	100.0%	100.0%

For members hired after October 9, 2004, the retirement rate at age 55 is increased by 50% (adjusted rate is 18% if service <25 and 36% if service is 25+).

b. DROP Participation

100% of eligible active participants are assumed to elect the DROP.

c. DROP Entry Date

Active members (not already in DROP) are assumed to take advantage of the DROP and enter when first eligible. Participants are assumed to elect the maximum duration for the back DROP, up to 20 years.

d. DROP Interest Credit

A minimum of 3.00% interest will be credited to existing DROP accounts with a maximum of 7.00%. If the System's actuary certifies that past service costs are fully funded, the credit may be as high as 10.00%. For this actuarial valuation, the drop interest credit is assumed to be 7.00%

e. Mortality rates (for active and retired members)

- Healthy males – Based on the 1994 Group Annuity Mortality Table for males. Multiplied by 75% for Active members
- Healthy females - Based on the 1994 Group Annuity Mortality Table for females. Multiplied by 75% for Active members
- Disabled males and females – 1987 Commissioners Group Disabled Mortality Table.

Sample rates are shown below:

Age	Healthy Retired Males	Healthy Retired Females	Disabled Males	Disabled Females	Healthy Active Males	Healthy Active Females
(1)	(2)	(3)	(4)	(5)	(7)	(8)
25	0.07%	0.03%	2.82%	2.82%	0.05%	0.02%
30	0.08%	0.04%	2.82%	2.82%	0.06%	0.03%
35	0.09%	0.05%	2.82%	2.82%	0.06%	0.04%
40	0.11%	0.07%	2.82%	2.82%	0.08%	0.05%
45	0.16%	0.10%	2.82%	2.82%	0.12%	0.07%
50	0.26%	0.14%	2.82%	2.82%	0.19%	0.11%
55	0.44%	0.23%	2.82%	2.82%	0.33%	0.17%
60	0.80%	0.44%	3.14%	3.14%	0.60%	0.33%
65	1.45%	0.86%	3.98%	3.98%	1.09%	0.65%
70	2.37%	1.37%	5.71%	5.71%	1.78%	1.03%
75	3.72%	2.27%	8.19%	8.19%	2.79%	1.70%
80	6.20%	3.94%	11.84%	11.84%	4.65%	2.95%

Mortality Improvement: To account for future mortality improvement, the tables for healthy retiree mortality selected above were chosen so that the assumed mortality rates are smaller than the rates observed in the last experience study, covering experience for FY 2005 – FY 2009.

f. Termination Rates and Disability Rates

Termination rates (for causes other than death, disability or retirement) are a function of the member's service and are not applied after a member becomes eligible for a retirement benefit. Disability rates are age-based and not applied for members in the DROP or those members eligible to back DROP. Rates at selected ages and service levels are shown below.

Service Based Rates of Termination		
Service	Male	Female
1	2.46%	2.46%
3	2.22%	2.22%
5	1.98%	1.98%
7	1.74%	1.74%
9	1.50%	1.50%
11	1.26%	1.26%
13	1.02%	1.02%
15	0.78%	0.78%
17	0.54%	0.54%
19	0.30%	0.30%
20 +	0.25%	0.25%

Age Based Rates of Disability		
Age	Male	Female
20	0.1622%	0.1893%
25	0.1616%	0.1886%
30	0.1690%	0.1971%
35	0.1865%	0.2176%
40	0.2141%	0.2498%
45	0.2520%	0.2940%
50	0.3001%	0.3501%
55	0.3583%	0.4180%
60	0.4268%	0.4980%

6. Other Assumptions

a. Percent married: 90% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)

b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.

d. Percent electing deferred termination benefit: 50% of vested terminating members are assumed to elect a refund rather than take a deferred benefit at age 60.

e. There will be no recoveries once disabled.

f. No surviving spouse will remarry.

g. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available.

h. Administrative expenses: The assumed investment return rate represents the anticipated net return after payment of all investment and administrative expenses.

i. Pay increase timing**:** Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

j. Decrement timing: Decrements of all types are assumed to occur mid-year.

k. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

l. Decrement relativity: Decrement rates are converted to probabilities in order to account for multiple decrements.

m. Incidence of Contributions**:** Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in our Report, and the actual payroll payable at the time contributions are made.

n. Benefit Service: All members are assumed to accrue one year of service each year. Exact fractional service is used to determine the amount of benefit payable.

7. Participant Data

Participant data was supplied in electronic files. There were separate files for (i) active members, (ii) inactive members, and (iii) members and beneficiaries receiving benefits.

The data for active members included birth date, gender, most recent hire date, salary paid during last fiscal year, hours worked by the employee, and employee contribution amounts. For retired members and beneficiaries, the data included date of birth, gender, amount of monthly benefit, and date of retirement. Also included was the member's Group and for members participating in DROP, their account balances and monthly DROP income.

All healthy and disabled retirees are assumed to have 100% joint and survivor annuities, prorated by the 90% marriage assumption and reflecting the three year spousal age differential described above. All beneficiaries are assumed to have life annuity only benefits.

Salary supplied for the current year was based on the earnings for the year preceding the valuation date. This salary was adjusted by the salary increase rate for one year.

In fiscal years when a 27th pay period occurs the individual pays for employees who were employed throughout the year will be adjusted by multiplying their reported pay by the ratio of 26/27. In years that have only 26 pay periods no adjustment would be needed.

Assumptions were made to correct for missing, bad, or inconsistent data. These had no material impact on the results presented.

APPENDIX B

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions

Covered Members	All police officers sworn before September 1, 1975 are covered under Plan 1, except those who elected by December 31, 1981 to participate in Plan 3. All police officers sworn on or after September 1, 1975, but before September 1, 1981 are covered under Plan 2, except those who elected by December 31, 1981 to participate in Plan 3 and those from Police Cadet Classes 70 and 71 who elected to transfer to Plan 1. All other police officers are covered by Plan 3, except those from Police Cadet Classes 70 and 71 who elected to pay additional contributions and transfer to Plan 1.
Final Compensation	
Prior to November 28, 1998	Monthly base salary paid to the participant in his/her last month of service. For any participant from a position held for less than 3 years, final compensation is the average monthly base salary for the 3 years prior to retirement.
After November 28, 1998 but prior to July 1, 2001	Monthly total direct pay less overtime paid to the participant in his/her last month of service. For any participant from a position held for less than 3 years, final compensation is the average monthly base pay for the 3 years prior to retirement plus the other current components of total direct pay.
After July 1, 2001 but prior to October 9, 2004	Highest biweekly pay period (excluding overtime) during the last 26 pay periods annualized. Amounts not paid on a biweekly basis are deducted from period paid. Annual amounts are divided by 26 and added to the highest pay period, including motorcycle allowances.
After October 9, 2004	Average of the last three years of compensation (excluding exempt time, overtime and strategic officer staffing pay). This average will be phased in beginning with the pay period ending after October 9, 2004 until the new definition is fully phased in after 78 pay periods.
Service Retirement	
Eligibility	
‣ Sworn prior to October 9, 2004	20 years of service.
‣ Sworn on or after October 9, 2004	Age 55 with 10 years of service.

Benefit

Prior to November 1, 1955	$75 per month plus $2 per month for each year of service in excess of 25 years.
After November 1, 1955 but prior to January 13, 1968	30% of final compensation plus 1 % of final compensation for each year of service in excess of 20 years.
After January 13, 1968 but prior to July 1, 1986	Plans 1 and 2: 30% of final compensation plus 2% of final compensation for each year of service in excess of 20 years. Plan 3: 2% of final compensation for each year of service up to 40 years, reduced 0.42% for each month benefit commencement precedes age 55.
After July 1, 1986 but prior to July 1, 1988	2% of final compensation for each year of service up to 40 years.
After July 1, 1988 but prior to September 1, 1997	45% of final compensation plus 2% of final compensation for each year of service in excess of 20 years; maximum 80% of final compensation. Benefit based on prior formula is payable until July 1, 1991 and recomputed benefit is payable thereafter.
After September 1, 1997 but prior to July 1, 2001	50% of final compensation plus 2% of final compensation for each year of service in excess of 20 years; maximum 80% of final compensation.
After July 1, 2001 but prior to October 9, 2004	55% of final compensation plus 2% of final compensation for service in excess of 20 years. The Pension System recomputed the benefit of each person who retired before July 1, 2001. The retiree's benefit was increased by the result of multiplying the difference between 55% and the percentage used at the time of retirement in computing the retiree's benefit for the first 20 years of service by the base salary of the retiree at the time of retirement. Retroactive cost-of-living increases were not applied to the increased benefit. This recomputed benefit is effective for all payments on or after July 1, 2001.

▸ After October 9, 2004	Participants sworn prior to October 9, 2004 will receive the highest of the following alternatives using Final Average Compensation effective after October 9, 2004, from October 9, 2004 through October 7, 2007: 1) 2.25% of Final Average Compensation for each of the first 20 years of service plus 2% of Final Average Compensation for each year of service in excess of 20 years, with a maximum of 80% of Final Average Compensation. 2) Benefit participant would have received had participant retired or entered the DROP immediately before October 9, 2004 3) Benefit calculated using a sliding average of the pay received for the pay periods elapsed since October 9, 2004. New participants after October 9, 2004: 2.25% of Final Average Compensation for each of the first 20 years of service plus 2% of Final Average Compensation for each year of service in excess of 20 years, with a maximum of 80% of Final Average Compensation.
Additional Benefits	An extra monthly benefit of $150.00 is payable for life. Effective November 28, 1998, a $5,000 lump sum is payable upon retirement for members sworn prior to October 9, 2004.
Terminated Vested Pension Benefit	
Eligibility	More than 10 but less than 20 years of service. Termination on or after November 28, 1998.
Benefit	2.75% of final compensation times years of service. This benefit commences at age 60 or at termination of service if later.
Deferred Retirement Option Plan (D R O P)	
Eligibility	20 years of service and sworn in prior to October 9, 2004.
Benefit	
▸ After September 1, 1995 but prior to September 1, 1997	Eligible participants may elect to participate in the DROP until they leave active service. The member’s retirement pension will be calculated based on service and earnings at the time the DROP is elected.

A notional account will be maintained for each DROP participant. This account will be credited with the following amounts while the member is participant of the DROP:

- The member's monthly retirement pension, including applicable cost-of-living adjustments,
- The member's contribution to the Pension System, and
- Investment earnings/losses at the rate of the Pension System's earnings/losses averaged over a five-year period. Effective July 1, 2001, this rate is subject to a minimum of 0%.

A benefit equal to the DROP account balance is paid at the time the member leaves active service. The payment is made as a single lump sum.

If a DROP participant suffers an on-duty disability resulting in the inability to perform his/her usual and customary duties as a police officer or dies in the line of duty, he (or his survivors) are allowed to revoke the DROP election and to receive the more generous on-duty disability or death benefits.

- After September 1, 1997 but prior to December 1, 1998

  The Pension System recomputed the benefit of each person who entered the DROP before September 1, 1997. The benefit was increased in the same manner as the retiree's benefit.

- After December 1, 1998 but prior to July 1, 2001

  The Pension System recomputed the benefit of each person who entered the DROP before December 1, 1998. The benefit was recalculated based on Total Direct Pay less overtime upon entry to the DROP. This recomputed benefit is effective for all payments on or after December 1, 1998.

- After July 1, 2001 but prior to October 9, 2004

  The Pension System recomputed the benefit of each person who entered the DROP before July 1, 2001. The member's benefit was increased by the result of multiplying the difference between 55% and the percentage used at the time of DROP entry in computing the member's benefit for the first 20 years of service by the base salary of the member at the time of DROP entry. Retroactive cost-of-living increases were applied to the increased benefit. The account balance for each participant was recomputed as if this new benefit had been effective since DROP entry.

- After October 9, 2004

  A minimum of 3.00% interest will be credited to existing DROP accounts with a maximum of 7.00%. If the actuary certifies that past service costs are fully funded, the credit may be as high as 10.00%.

Benefit Recalculation	Effective July 1, 2001, monthly benefit at retirement will be recalculated to be the greater of (i) current monthly benefit, or (ii) monthly benefit based on service at DROP entry and Final Compensation at retirement date.
Back DROP Option	Effective on July 1, 2001, a back DROP option is available for all eligible participants. The DROP account is recalculated under the option based on what the account balance would have been had the participant elected the DROP earlier than he/she actually did. The initial DROP entry date cannot be backdated prior to September 1, 1995 or prior to 20 years of credited service, and must be on the first of the month selected.

Postretirement Option Plan (PROP)

Eligibility	Retired from DROP and sworn in prior to October 9, 2004.
Benefit	
▸ After November 28, 1998 but prior to July 1, 2001	A retired member is allowed to leave all or a portion of their DROP account in the System. These accounts are credited every calendar year with the 30-year Treasury bond rate as of June of the preceding year.
▸ After July 1, 2001	The interest rate earned on PROP accounts will be the same as the interest rate credited to DROP accounts, including a minimum credited rate of 0%.

Partial Lump Sum Optional Payment (PLOP)

Eligibility	Participant on or after October 9, 2004.
Benefit	
▸ After October 9, 2004	Up to 20% of the actuarial value of the accrued pension at retirement.

Disability Retirement

Eligibility	Effective July 1, 2001, participant partially or totally disabled is eligible for Disability Retirement as defined below: – Total: Disability is defined as "unable to perform his/her usual and customary duties as a police officer". – Partial: Disability is an impairment which renders the participant unable to work as a police officer and which is expected to last 12 months.

Benefit	
▸ Duty-connected	Total: The service retirement benefit accrued to date of disability (or 20 years, if greater). Partial: 35% of final compensation is payable for life or as long as he remains incapacitated.
▸ Not duty-connected	Total or partial: The disability benefit is 2.75% of final compensation times years of service up to 20, minimum 27.5% of final compensation.
Additional Benefits	For participants before October 9, 2004, an education allowance equal to 100% of final compensation less disability benefit is payable for up to four years for off-duty or duty-related disability. Proportionate members injured while on-duty as a municipal worker will receive immediate off-duty benefit upon Board approval.

Survivor Benefits

Eligibility	Surviving spouses and dependent children and parents of participants, including surviving spouses of retired or disabled participants who were not married at the time of retirement or disability, provided the spouse was married to the participant for at least 5 years at the time of death.
Benefit	
▸ Prior to September 1, 1997	If duty-connected: monthly lifetime benefit equal to 100% of final compensation at date of death. If not duty-connected: monthly lifetime benefit equal to 100% of the service retirement benefit the participant had accrued at the time of death. Spouse's benefit upon death after retirement: monthly lifetime benefit equal to actual benefit payable at time of death. Dependent children's benefit if no surviving spouse: the benefit that would have been payable to the spouse is divided equally among the dependent children. If there is a surviving spouse, the dependent children of Plan 1 and Plan 2 participants receive $25 per month. Dependent children include unmarried children who are under age 18, and for Plan 3, full-time students under age 22, or permanently disabled children.

	Dependent parent's income if no surviving spouse or children, but there is a dependent parent: the benefit that would have been payable to the spouse will be paid to the dependent parent.
▸ After September 1, 1997 but prior to July 1, 2001	The Pension System recomputed the benefit of each survivor whose original benefit was computed prior to September 1, 1997. The benefit was increased in the same manner as the retiree's benefit.
▸ After July 1, 2001	The Pension System recomputed the benefit of each survivor whose original benefit was computed prior to July 1, 2001. The benefit was increased in the same manner as the retiree's benefit.
Additional Benefits	Effective December 1, 1998, a $5,000 lump sum is paid upon the death of an active member who was sworn in prior to October 9, 2004. Effective July 1, 2001, an extra monthly benefit of $150.00 is payable for life. Children receiving equivalent of the spouse's benefit do not receive this additional benefit.

Benefit Adjustments

Cost-of-Living

▸ Prior to October 9, 2004	Monthly benefits for participants receiving payments are increased each April 1 by 2/3 of the increase in the Consumer Price Index for All Urban Consumers (CPI-U) for the preceding calendar year. Effective September 1, 1997 this increase is subject to a minimum of 3.0% per year compounded and a maximum increase of 8.0% per year compounded.
▸ After October 9, 2004	Monthly benefits for participants receiving payments are increased each April 1 by 80% of the increase in the Consumer Price Index for All Urban Consumers (CPI-U) for the preceding year, with a minimum of 2.4% and a maximum of 8%.
13th Benefit Check	Effective November 28, 1998, a 13th benefit check is paid to current retirees and DROP members when: – The assets on the fund equal or exceed the liabilities after the 13th benefit check is paid. – The return on investments for the preceding fiscal year exceeds 9.25%. – The payment of the benefit will not cause the City of Houston's contribution to the System to increase. – Effective October 9, 2004, the funded ratio of the plan must be at least 120% for the 13th check to be paid out.

Service Adjustments	Effective November 28, 1998, participants with previous service with the City in non-classified positions may use that service to satisfy the service requirement of 20 years for retirement purposes only. Effective July 1, 2001, participants who have service credit in more than one City of Houston Pension Plan may use their combined service to qualify for DROP participation. Effective July 1, 2001, participants involuntarily transferred to the System from the Houston Municipal Employees System will receive service under this plan for years worked while serving as a City Marshall, Airport Police or Park Police.

Contributions

Employee Contributions

▸ Prior to December 1, 1998	Each participant contributes 8.75% of base salary.
▸ After December 1, 1998 but before October 9, 2004	Each participant contributes 8.75% of average total direct pay less overtime.
▸ After October 9, 2004	
– Members sworn in prior to October 9, 2004	Each participant contributes 9.00% of pay. The additional 0.25% will be credited to the Plan's general fund.
– Others	Each participant contributes 10.25% of pay, which will be credited to the Plan's general fund.
Refunds	Refunds of contributions are made if (i) The participant dies before 10 years of service and the death is not duty-connected, (ii) The participant dies with no eligible survivor, (iii) A Plan 1 or 2 participant leaves service before eligibility for retirement after completing 5 years of service, or (iv) A Plan 3 participant leaves service with less than 20 years of service. Contributions are refunded without interest.

Employer Contribution — The City of Houston will follow the following contribution schedule:

Fiscal Year Ending (June 30th)	City Contribution Amount
2001	$ 30,645,000
2002	32,645,000
2003	34,645,000
2004	36,645,000
2005	36,645,000
2006	16% of total compensation, with a minimum of $53,000,000
2007-2011	$5,000,000 above the prior year's payment
2012	83,000,000 fixed payment with any shortfall not to exceed 17,000,000*
2013	93,000,000 fixed payment with any shortfall not to exceed 8,500,000*
2014	103,000,000 fixed payment

*Any shortfall shall be financed at 8.5% interest and paid in FYE 2015.

For all subsequent Fiscal Years, and until the Funded Ratio reaches 100%, City payments shall increase each City Fiscal Year by $10,000,000 until said 100% of funding is reached. Once the Funded Ratio has reached 100%, City payments each City Fiscal Year shall be in amounts equivalent to the greater of 16% of pay, as defined herein, or the ARC. The 2011 Meet & Confer Agreement is to remain in effect until June 30, 2023.

In addition, on the first day of City Fiscal Year 2012, once the Funded Ratio reaches 80%, if it should ever be subsequently determined that the Funded Ratio has declined below such 80%, then in the City Fiscal Year next following such determination, the City shall pay such additional amounts to the Houston Police Officers' Pension System as necessary to increase the Funded Ratio to 80%.

Changes in Plan Provisions from the Prior Valuation

There were no changes to the plan provisions from the prior actuarial valuation.