Gabriel Roeder Smith & Company
Consultants & Actuaries

HOUSTON MUNICIPAL EMPLOYEES 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

February 27, 2014

Board of Trustees
Houston Municipal Employees Pension System
1201 Louisiana
Suite 900
Houston, TX 77002

Subject: Actuarial Valuation as of July 1, 2013

Dear Members of the Board:

This report describes the current actuarial condition of the Houston Municipal Employees Pension System (HMEPS), determines the calculated employer contribution rate, and analyzes changes in this contribution rate. Valuations are prepared annually, as of July 1, the first day of the HMEPS plan year.

Under the HMEPS statute, the employer contribution rate is determined actuarially, based on the Board's funding policy and HMEPS' 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 Amended and Restated Meet & Confer Agreement between the Board and the City of Houston, the City will contribute the greater of the 2013 fiscal year contribution increased by $10 million or 23.36% of payroll in fiscal year 2014. Contributions in future fiscal years will increase by the greater of the prior fiscal year's contribution amount increased by $10 million or 2% of payroll until such time that the City's contribution rate equals the actuarially determined contribution rate. As part of the agreement the Board's funding policy has been modified to use an open 30-year rolling amortization period until such time that the City's actual contribution rate is equal to the actuarially determined contribution rate, at which point the funding period will be closed.

The employer contribution amounts for FY 2013 and FY 2014 were not set by actuarial valuations. Therefore, the calculated contribution rates from those valuations are not being contributed. Instead, employer contributions of 21.36% of payroll for FY 2013 were made and the greater of the 2013 fiscal year contribution increased by $10 million or 23.36% of payroll for FY 2014 are being made under the terms of the Amended and Restated Meet & Confer Agreement.

Under the terms of the Amended and Restated Meet & Confer Agreement and based on an estimated payroll of $546.1 million, the estimated City contribution for FY 2014 is $127.6 million (23.36% of pay) and based on an estimated payroll of $562.5 million, the estimated City contribution for FY 2015 is $142.6 million (25.36% of pay).

Financing objectives and funding policy

The amortization period is set by statute, and was modified under the Amended and Restated Meet & Confer Agreement. The contribution rate and liabilities are computed using the Entry Age Normal actuarial cost method. The employer contribution rate is the sum of two pieces: the employer normal cost rate and the amortization rate. Both the normal cost rate and the amortization rate are determined as a level percentage of pay. The amortization rate is the amount required to amortize the unfunded actuarial accrued liability over an open 30-year period. The amortization rate is adjusted for the one-year deferral in contribution rates. The amortization period will remain open until the actual employer contribution rate is equal to the actuarially determined employer contribution rate.

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 57.7%. This is a decrease from the 59.1% funded ratio from the prior year's valuation.

The calculated employer contribution rate for FY 2015 is 27.5%. This rate is more than the 26.10% rated calculated in the 2012 valuation. This increase is mostly due to the impact of the continued recognition of the net deferred investment losses, projected payroll growing slower than expected, and the City contributing less than the actuarially determined rate. Please see Table 6 for a detailed analysis of the change in the calculated employer contribution rate from the prior year to this year.

Like most large public pension plans, HMEPS was significantly impacted by the substantial decline in the investment markets during FY 2009. The 2013 return was good but there are still some investment losses being deferred due to the smoothing methodology used in the valuation. The amount of deferred losses decreased from approximately $320 million at the prior valuation to $186 million in this valuation. In the absence of future investment gains, the contribution rate needed to amortize the UAAL will increase over the next few valuation cycles. Future decreases in covered payroll could also increase the percentage of pay contribution rate needed to amortize the UAAL.

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. This past fiscal year the

System had a total liability gain of approximately $1.0 million. Relative to the total liabilities of the System we do not consider this liability gain significant.

Benefit provisions

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2013. The Fourth Amendment to the Meet and Confer Agreement between the City and the Board changed the benefit provisions substantially, effective January 1, 2008. Under the Fourth Amendment, the benefits for employees hired prior to January 1, 2008 were not modified, but the benefits for employees newly hired on or after January 1, 2008 were modified substantially, including the elimination of member contributions. There have been no changes in the benefit provisions since the prior valuation date that have a material financial impact on HMEPS.

The benefit provisions are summarized in Appendix B.

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 effective with the July 1, 2010 actuarial valuation based on recommendations from an Experience Study conducted by GRS in the spring of 2010.

The results of the actuarial valuation are dependent on 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 are intended to provide information for rational decision making.

The actuarial assumptions and methods used in this report comply with the parameters for disclosure that appear in GASB 25.

All assumptions and methods are described in Appendix A.

Data

Member data for retired, active and inactive members was supplied as of July 1, 2013 by the HMEPS 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.

Asset information as of July 1, 2013 was taken from the Comprehensive Annual Financial Report (CAFR) for the Year Ended June 30, 2013.

Certification

We were asked to determine if an unanticipated actuarial cost occurred in the administration of the Deferred Retirement Option Plan (DROP). It is our opinion that the administration of the (DROP) had no material unanticipated actuarial costs during the prior fiscal year.

All of the tables contained in this actuarial valuation report were prepared by Gabriel, Roeder, Smith & Company. The trend data schedules shown in the Notes section of the HMEPS CAFR are based on our valuation reports, but were prepared by HMEPS staff. We certify that the information presented herein is accurate and fairly portrays the actuarial position of HMEPS as of July 1, 2013.

All of our work conforms with generally accepted actuarial principles and practices, and 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, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. Mr. Newton is an Enrolled Actuary and also a Member of the American Academy of Actuaries, and meets the Qualification Standards of the American Academy of Actuaries. Both of the undersigned are experienced in performing valuations for large public retirement systems.

Sincerely,
Gabriel, Roeder, Smith & Company

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

Lewis Ward

Lewis Ward
Consultant

Val\2013_HMEPS.doc

TABLE OF CONTENTS

Page

Executive Summary

Item	July 1, 2013	July 1, 2012
Membership		
• Number of:		
- Active members	11,781	11,670
- Retirees and beneficiaries	9,427	9,078
- Inactive members	5,555	5,671
- Total	26,763	26,419
• Annualized Payroll supplied by HMEPS	$ 549,971	$ 534,394
Calculated Contribution rates		
• Employer	27.50%	26.10%
Assets		
• Market value	$ 2,196,615	$ 2,024,235
• Actuarial value	2,382,585	2,344,128
• Estimation of return on market value	13.0%	-0.9%
• Estimation of return on actuarial value	5.4%	4.5%
• Employer contribution	$ 111,859	$ 97,162
• Member contribution	$ 17,041	$ 18,473
• Ratio of actuarial value to market value	108.5%	115.8%
• External cash flow as % of market value assets	-4.2%	-4.6%
Actuarial Information		
• Employer normal cost %	5.86%	5.83%
• Unfunded actuarial accrued liability (UAAL)	$ 1,746,998	$ 1,622,736
• Amortization rate	21.64%	20.27%
• Funding period	30.0 years	30.0 years
• GASB funded ratio	57.7%	59.1%

Note: Dollar amounts in $000, unless otherwise noted

[1] Employee contribution rate is 5%. Members newly hired after January 1, 2008 are noncontributory.

Contribution Requirements

- The Executive Summary shows the new, calculated contribution rate
- Rates shown on the Executive Summary are calculated rates for the twelve-month period beginning one year after the valuation date, based on current board policy
- Table 6 reconciles the calculated contribution rate from the prior valuation to the current valuation
- No changes to the benefit provisions were reflected in this valuation
- No changes in the actuarial assumptions were reflected in this valuation
- Amortization payment is based on
  - 30-year open funding period beginning July 1, 2013
  - Contributions are determined as a level percentage of pay, with expected increases in the projected payroll (and contribution dollar amounts) of 3.00% per year
  - No future growth in the number of active members is taken into account
- The Plan's funded ratio decreased from the prior year primarily due to the loss on the actuarial value of assets
- The Plan's contribution rate increased from the prior year primarily due to the loss on the actuarial value of assets, the slower than expected growth in projected payroll and the City contributing less than the actuarially determined rate
- The table below shows the estimated City contributions under the Amended and Restated Meet and Confer agreement for the current fiscal year and the following fiscal year assuming that the actual fiscal year payroll will increase by the payroll growth rate assumption (3%) each year

Projected employer contribution based on Meet and Confer Agreement		
Fiscal year ending June 30,	2015	2014
1. Projected payroll	$562,484,771	$546,101,720
2. Meet and Confer Contribution Rate	25.36%	23.36%
3. Projected employer contribution (1 x 2)*	$142,646,138	$127,569,362

*Employer contribution is at least equaal to the prior year dollar contribution plus $10 million.

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 come from investment income). HMEPS receives contributions from two sources, employer contributions which are determined as a percent of pay (unless otherwise specified under the Amended and Restated Meet and Confer Agreement), and in some cases by member contributions. As shown in Table 2, the actuarially determined employer contribution rate has two components:

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

The NC% is the theoretical amount which would be required to pay the members' benefits, based on the plan provisions for new employees, if this amount had been contributed from each member's entry date and if the fund's experience exactly followed the actuarial assumptions. This is the amount it should cost to provide the benefits for an average new member. The NC% is shown in Table 4.

The actuarial accrued liability (AAL) is the difference between (i) the actuarial present value of all future benefits for all 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 Amended and Restated Meet & Confer Agreement has specified that this amortization should be over an open 30-year period beginning July 1, 2013, then over a closed 30-year period once the City begins paying the actuarially determined employer contribution rate. Item 11a of Table 2 shows the UAAL%.

The calculated rate is used in determining the contributions necessary to meet the funding policy for the twelve-month period beginning July 1, 2014. Based on projected payroll, the FY 2015 actuarially determined employer contribution is estimated to be 27.72% of payroll or approximately $155.9 million. This compares with the anticipated contribution under the Meet and Confer Agreement for FY 2014 of $142.6 million.

Financial Data and Experience

As of July 1, 2013, HMEPS has a total market value of about $2.20 billion. Financial information was gathered from the 2013 HMEPS Comprehensive Annual Financial Report.

This report includes a number of exhibits related to plan assets. Table 8 shows how the total market value is distributed among the various classes of investments. Current investment policy allocates 52.5% of invested assets to equities, 15% of invested assets to fixed income, and 32.5% of invested assets to alternative investments and real estate.

Table 9 shows a reconciliation of the market values between the beginning and end of FY2013.

As shown on Table 11, the dollar-weighted return net of expenses for FY2013 was 13.02%.

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. This "smoothing method" is intended to help reduce the volatility of the contribution rates from year to year. The method used to compute the AVA takes the difference between the actual market value of assets and the expected actuarial value of assets (based on the assumed 8.5% investment return rate), and establishes a base each year which is equal to this difference less any unrecognized bases from prior years. If the current year's base is of opposite sign from the prior years' bases then it is offset dollar for dollar against the prior years' bases (oldest bases first) until either the prior years' bases or the current year's base is reduced to zero. Any remaining bases are then recognized over the remaining period for the base (5 less the number of years between the base year and the valuation year) in equal dollar amounts.

The development of the AVA is shown on Tables 10. The AVA is $2.38 billion. The AVA is 108.5% of the MVA, compared to 115.8 % last year.

In addition to the market return, Table 11 also shows the return on the actuarial value of assets for HMEPS. For FY2013, this return was 5.39%. Because this is less than the assumed 8.5% investment return, an actuarial loss occurred increasing the unfunded actuarial accrued liabilities of the plan. Table 12 shows a summary of market and actuarial return rates in recent years.

Member Data

Member data as of July 1, 2013 was supplied electronically by HMEPS 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 18 shows the number of members by category (active, inactive, retired, etc.). Tables 19(a-d) show the active member statistics by Group and in total. Tables 16 and 17 show summaries of certain historical data, including membership statistics.

The number of active members increased from 11,670 to 11,781, a 1.0 % increase.

The total covered payroll shown on Table 2 and on the statistical tables is the amount that was supplied by HMEPS, annualized or adjusted for number of hours reported if necessary. For the cost calculations, the pays were adjusted in accordance with the actuarial assumptions to reflect one year's salary increase. Total active member covered payroll increased 2.9% over last year, compared with a decrease of 1.9% the prior year.

We also show the projected payroll in Item 2 of Table 2. This is the payroll used for determining the expected amortization payments (amortization percentage) towards the unfunded actuarial accrued liability. The projected pay is determined by summing all pensionable pay for the just ended fiscal year for anyone who received pensionable pay during the year (actives, terminated members, retirees, etc.) and increasing this sum by the payroll growth rate. We believe this provides a better expectation of the upcoming year's actual payroll than the covered payroll described above.

The overall trend in payroll is significant because the methodology used in the valuation to amortize the unfunded liability assumes a growing payroll into the future. If the payroll does not grow at the assumed 3% a year on average, the amortization payments (as a percentage of pay) will need to increase in order to keep the contribution dollars that amortize the UAAL growing at 3%.

Benefit Provisions

Appendix B of our Report includes a summary of the benefit provisions for HMEPS. The following is summary of the benefit provisions for members hired after January 1, 2008 (Group D).

- *Normal Retirement Eligibility*
  - Age 62 with 5 years of service
- *Normal Retirement Benefit*
  - 1.80% of FAS for each of the first 25 years of Credited Service, and 1.00% of FAS for each year of Credited Service over 25. Maximum benefit is 90% of FAS for all future retirees.
- *Normal Form of Payment*
  - Life only to the retiree. Group D members may elect other options based on actuarial factors.
- *Employee Contributions* are not required
- *Post-retirement Cost of Living Adjustments (COLA)*
  - None.

The Amended and Restated Meet and Confer Agreement added an additional optional form of payment for retiring unmarried Group A and Group B members. These members may select an actuarially equivalent optional form of payment with a designated beneficiary (this option was already available for members of Group D). Because these optional forms are actuarially equivalent forms of payment this new benefit provision is not expected to have any impact on the financial condition of the System.

This valuation reflects all benefits offered to members. There are no ancillary benefits that might be deemed a liability if continued beyond the availability of funding by the current funding source.

There were no changes in the benefit provisions since the prior valuation.

Actuarial Methods and Assumptions

Appendix A includes a summary of the actuarial assumptions and methods used in this valuation. Costs are determined using the Entry Age Normal actuarial cost method. The assumed investment return rate is 8.50%. The Board adopted the actuarial assumptions used in this valuation in connection with the actuarial experience study performed by GRS in the spring of 2010. These assumptions were used beginning with the July 1, 2010 valuation.

Please see Appendix A of our Report for a complete description of these assumptions.

GASB 25 and Funding Progress

Governmental Accounting Standards Board Statement No. 25 (GASB 25) contains certain accounting requirements for HMEPS. In particular, it requires the inclusion of two special schedules in the HMEPS annual report:

1. Schedule of Funding Progress

2. Schedule of Employer Contributions

Tables 14 & 15 continue to show the GASB No. 25 information that has been provided in past years. However, because HMEPS Comprehensive Annual Financial Report shows information from one year prior, it is unlikely that this information will be needed.

The GASB has recently revised the disclosure requirements for Governmental pension plans and their sponsors. These new statements (No. 67 for plans & No. 68 for plan sponsors) will go into effect for HMEPS for the fiscal year ending June 30, 2014. The new disclosure requirements are not contained in this report, but will be provided separately after the end of the fiscal year.

The new GASB requirements will go into effect for the City of Houston for fiscal year 2015. The disclosure information the City will need for their fiscal year 2014 financial statements is contained in this report.

Summary of Cost Items

	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. Actives	11,781		11,670	
b. Retirees	7,258		7,031	
c. Disabled retirees	387		391	
d. Beneficiaries	1,782		1,656	
e. Inactive, deferred vested	3,298		3,237	
f. Inactive, nonvested	2,257		2,434	
g. Total	26,763		26,419	
2. Covered payroll	$ 549,971		$ 534,394	
3. Averages for active members				
a. Average age	46.9		46.8	
b. Average years of service	11.1		11.1	
c. Average pay ($)	$ 46,683		$ 45,792	
4. Present value of future pay	$ 3,725,145		$ 3,650,467	
5. Total normal cost rate	5.86%		5.83%	
6. Present value of future benefits	$ 4,449,932	809.1%	$ 4,286,755	802.2%
7. Present value of future normal costs	$ 320,349	58.2%	$ 319,891	59.9%
8. Actuarial accrued liability (6 - 7)	$ 4,129,583	750.9%	$ 3,966,864	742.3%
9. Present actuarial assets	$ 2,382,585	433.2%	$ 2,344,128	438.7%
10. Unfunded actuarial accrued liability (UAAL) (8 - 9)	$ 1,746,998	317.7%	$ 1,622,736	303.7%
11. Funding period	30 years		30 years	
12. Calculated employer contribution rate				
a. Normal cost	5.86%		5.83%	
b. Amortization charge	21.64%		20.27%	
c. Total	27.50%		26.10%	
13. Average estimated return				
a. Based on market value	13.02%		-0.89%	
b. Based on actuarial value	5.39%		4.46%	
14. GASB 25 funded ratio	57.7%		59.1%	

Note: Dollar amounts in $000

Calculation of Annual Required Contribution Rate

		July 1, 2013 (1)	July 1, 2012 (2)
1.	Covered payroll	$ 549,971	$ 534,394
2.	Projected payroll for upcoming fiscal year*	$ 546,102	$ 543,151
3.	Present value of future pay	$ 3,725,145	$ 3,650,467
4.	Employer normal cost rate	5.86%	5.83%
5.	Actuarial accrued liability for active members		
	a. Present value of future benefits for active members	$ 2,017,982	$ 1,974,207
	b. Less: present value of future employer normal costs	(205,568)	(200,904)
	c. Less: present value of future employee contributions	(114,781)	(118,987)
	d. Actuarial accrued liability	$ 1,697,633	$ 1,654,316
6.	Total actuarial accrued liability for:		
	a. Retirees and beneficiaries	$ 2,253,583	$ 2,144,460
	b. Inactive participants	$ 178,367	168,088
	c. Active members (Item 5d)	$ 1,697,633	1,654,316
	d. Total	$ 4,129,583	$ 3,966,864
7.	Actuarial value of assets	$ 2,382,585	$ 2,344,128
8.	Unfunded actuarial accrued liability (UAAL) (Item 6d - Item 7)	$ 1,746,998	$ 1,622,736
9.	Funding period	30 years	30 years
10.	Assumed payroll growth rate	3.00%	3.00%
11.	Employer Contribution requirement		
	a. UAAL amortization payment as % of projected pay	21.64%	20.27%
	b. Employer normal cost	5.86%	5.83%
	c. Contribution requirement (a + b)	27.50%	26.10%

Note: Dollar amounts in $000

* The projected payroll is the pay received for the just completed fiscal year. This pay (includes pay for any member who received pay during the year: i.e. active, terminated, retired, etc.) is then increased by the payroll growth rate.

Actuarial Present Value of Future Benefits

		July 1, 2013 (1)	July 1, 2012 (2)
1.	Active members		
	a. Retirement benefits	$ 1,806,173	$ 1,760,083
	b. Deferred termination benefits	111,344	114,955
	c. Refunds	14,109	14,425
	d. Death benefits	74,243	72,209
	e. Disability benefits	12,113	12,535
	f. Total	$ 2,017,982	$ 1,974,207
2.	Members in Pay Status		
	a. Service retirements	$ 2,007,808	$ 1,922,265
	b. Disability retirements	38,642	38,959
	c. Beneficiaries	207,133	183,236
	d. Total	$ 2,253,583	$ 2,144,460
4.	Inactive members		
	a. Vested terminations	$ 174,355	$ 163,341
	b. Nonvested terminations	4,012	4,747
	c. Total	$ 178,367	$ 168,088
5.	Total actuarial present value of future benefits	$ 4,449,932	$ 4,286,755

Note: Dollar amounts in $000

Analysis of Normal Cost

			July 1, 2013	July 1, 2012
			(1)	(2)
1.	Gross normal cost rate			
	a.	Retirement benefits	4.68%	4.65%
	b.	Deferred termination benefits	0.72%	0.72%
	c.	Refunds*	0.00%	0.00%
	d.	Disability benefits	0.07%	0.07%
	e.	Death benefits	0.39%	0.39%
	f.	Total	5.86%	5.83%

*Refund of employee contributions excluded due to use of replacement life normal cost method for ongoing plan. New members (Group D) do not contribute to the plan.

Calculation of Total Actuarial Gain or Loss

1.	Unfunded actuarial accrued liability (UAAL) as of July 1, 2012	$	1,622,736
2.	Employer normal cost for year*		30,910
3.	Employer Contributions during year ending June 30, 2013*		(111,859)
4.	Interest on UAAL for one year		137,933
5.	Interest on Item 2 and Item 3 for one-half year		(3,370)
6.	Expected UAAL as of July 1, 2013 (1+2+3+4+5)	$	1,676,350
7.	Actual UAAL as of July 1, 2013	$	1,746,998
8.	Actuarial gain/(loss) for the period (6 - 7)	$	(70,648)
	SOURCE OF GAINS/(LOSSES)		
9.	Asset gain/(loss) (See Table 12)	$	(71,689)
10.	Assumption changes		0
11.	Changes from Meet & Confer		0
12.	Total liability gain/(loss) for the period	$	1,041
13.	Actuarial gain/(loss) for the period	$	(70,648)

Note: Dollar amounts in $000

*Employee contributions excluded due to use of replacement life normal cost method for ongoing plan. New members (Group D) do not contribute to the plan.

Change in Calculated Contribution Rate Since the Prior Valuation

1.	Calculated Contribution Rate as of July 1, 2012			26.10%
2.	Change in Contribution Rate During Year			
	a.	Change in Employer Normal Cost	0.03%	
	b.	Recognition of prior years' asset losses	1.21%	
	c.	Actuarial gain from current year asset performance	(0.27%)	
	d.	Actuarial gain from liability sources	(0.01%)	
	e.	Impact of City contributing less than actuarially determined rate	0.23%	
	f.	Effect of projected payroll growing slower than expected	0.53%	
	g.	Effect of resetting amortization period to 30 years	(0.32%)	
	h.	Total Change		1.40%
3.	Calculated Contribution Rate as of July 1, 2013			27.50%

Near Term Outlook

Valuation as of July 1,	Unfunded Actuarial Accrued Liability (UAAL, in 000s)	Funded Ratio	Calculated Contribution Rate	Funding Period (Years)[1]	Market Value of Fund (in 000s)	For Fiscal Year Ending June 30,	Projected 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	$ 1,746,998	57.7%	27.50%	30.0	$ 2,196,615	2014	$ 546,102	$ 127,569	$ 17,173	$ 245,927	$ (101,185)
2014	1,866,871	56.3%	28.45%	30.0	2,277,930	2015	558,683	141,682	16,163	267,000	(109,154)
2015	1,986,323	54.9%	29.27%	30.0	2,357,855	2016	572,657	156,679	15,224	289,028	(117,126)
2016	2,074,351	54.2%	30.02%	29.0	2,436,271	2017	587,289	171,901	14,334	311,805	(125,570)
2017	2,113,985	54.4%	30.22%	28.0	2,512,556	2018	603,287	181,111	13,487	335,357	(140,759)
2018	2,149,913	54.6%	30.41%	27.0	2,579,504	2019	620,150	187,420	12,660	359,546	(159,467)
2019	2,181,728	54.7%	30.56%	26.0	2,632,656	2020	637,933	193,980	11,852	351,824	(145,992)
2020	2,209,807	55.0%	30.67%	25.0	2,704,361	2021	656,754	200,716	11,056	369,454	(157,683)
2021	2,233,827	55.4%	30.75%	24.0	2,769,984	2022	676,531	207,494	10,262	386,462	(168,706)
2022	2,254,231	55.7%	30.83%	23.0	2,829,703	2023	696,976	214,330	9,476	402,878	(179,072)
2023	2,270,851	55.9%	30.87%	22.0	2,883,701	2024	718,474	221,484	8,717	416,665	(186,463)

These projections are based on the Amended and Restated Meet and Confer agreement assuming that the benefit provisions that went into effect January 1, 2008 remain in effect throughout the projection. Beginning in FY2012, the employer contributions shown above are based on a negotiated amount of $98.5 million in FY2012 followed by increases in the following fiscal years equal to the greater of the prior year's dollar contribution increased by $10 million or the set contribution rate of 19.36% increased by 2% per year since FY 2012. This method of determining the contribution rate remains in place until the contribution rate reaches the actuarially determined contribution rate determined by the valuation of the year prior (i.e. the FY 2014 rate is set by the July 1, 2012 valuation). Any changes to future accruals or failure to contribute the calculated rate will change the results of this projection.

[1] The agreement between the City and HMEPS includes an open 30 year amortization period until the actual City contribution rate reaches the actuarially determined contribution rate.

Note: Dollar amounts in $000.

Statement of Plan Net Assets

		July 1, 2013		July 1, 2012
A. ASSETS		(1)		(2)
1. Current Assets				
a. Cash and short term investments				
1) Cash on hand	$	6,168	$	1,647
2) Short term investments		44,753		65,204
b. Accounts Receivable				
1) Sale of investments		12,395		9,935
2) Other		5,697		6,718
c. Total Current Assets	$	69,013	$	83,504
2. Long Term Investments				
a. US. Government securities	$	64,523	$	71,642
b. Corporate bonds		233,868		230,905
c. Capital stocks		891,290		810,010
d. Commingled Funds		279,271		255,302
e. LP's, real estate trusts, loans and mortgages		688,969		615,048
f. Total long term investments	$	2,157,921	$	1,982,907
3. Other Assets				
a Collateral on securities lending	$	161,317	$	261,195
b. Furniture, fixtures and equipment, net		248		325
c. Total other assets	$	161,565	$	261,520
4. Total Assets	$	2,388,499	$	2,327,931
B. LIABILITIES				
1. Current Liabilities				
a. Amounts due on asset purchases	$	25,490	$	37,809
b. Accrued liabilities		5,077		4,692
c. Collateral on securities lending		161,317		261,195
2. Total Liabilities		191,884		303,696
3. Net Assets Held in Trust	$	2,196,615	$	2,024,235
C. TARGET ASSET ALLOCATION FOR CASH & LONG TERM INVESTMENTS				
1. Cash		0.0%		0.0%
2. Fixed Income		15.0%		20.0%
3. Real Estate		10.0%		12.0%
4. Domestic Equities		N/A		20.0%
5. International Equities		N/A		20.0%
6. Global Equities		35.0%		N/A
7. Alternative Investments		40.0%		28.0%
8. Total		100.0%		100.0%

Note: Dollar amounts in $000
Columns may not add due to rounding

Reconciliation of Plan Net Assets

			Year Ending	
			June 30, 2013	June 30, 2012
			(1)	(2)
1.	Market value of assets at beginning of year		$ 2,024,235	$ 2,129,441
2.	Revenue for the year			
	a.	Contributions		
		i. Member contributions	$ 17,041	$ 18,473
		ii. Employer contributions (see note)	111,859	97,162
		iii. Total	$ 128,900	$ 115,634
	b.	Net investment income		
		i. Interest	$ 20,253	$ 18,306
		ii. Dividends	21,245	20,446
		iii. Earnings from LP's and real estate trusts	8,400	14,449
		iv. Net appreciation (depreciation) on investments	221,050	(58,315)
		v. Net proceeds from lending securities	755	638
		vi. Less investment expenses	(7,812)	(7,487)
		vii. Other	1,246	654
	c.	Total revenue	$ 394,037	$ 104,325
3.	Expenditures for the year			
	a.	Refunds	$ 1,266	$ 2,206
	b.	Benefit payments	213,178	200,014
	c.	Administrative and miscellaneous expenses	7,213	7,312
	d.	Total expenditures	$ 221,657	$ 209,532
4.	Increase in net assets (Item 2c - Item 3d)		$ 172,380	$ (105,207)
5.	Market value of assets at end of year (Item 1 + Item 4)		$ 2,196,615	$ 2,024,235

Note: Dollar amounts in $000
Employer contribution does not include amounts contributed to the replacement benefit plan.
Columns may not add due to rounding

Development of Actuarial Value of Assets

		July 1, 2013
1. Actuarial value of assets at beginning of year	$	2,344,128
2. Net new investments		
a. Contributions	$	128,900
b. Benefits and refunds paid		(214,444)
c. Subtotal		(85,544)
3. Assumed investment return rate for fiscal year		8.50%
4. Assumed investment return rate for fiscal year (Item 1 + Item 2 / 2) x Item 3	$	195,690
5. Expected Actuarial Value at end of year (1+ 2 + 4)	$	2,454,274
6. Market value of assets at end of year	$	2,196,615
7. Difference (6 - 5)	$	(257,659)

8. Development of amounts to be recognized as of July 1, 2013:

Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income	Offsetting of Gains/(Losses)	Net Deferrals Remaining	Years Remaining	Recognized for this valuation	Remaining after this valuation
	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)	(6) = (3) - (5)
2009	$ 0	$ 0	$ 0	1	$ 0	$ 0
2010	0	0	0	2	0	0
2011	(149,522)	62,234	(87,288)	3	(29,096)	(58,192)
2012	(170,371)	0	(170,371)	4	(42,593)	(127,778)
2013	62,234	(62,234)	0	5	0	0
Total	$ (257,659)	$ 0	$ (257,659)		$ (71,689)	$ (185,970)

9. Final actuarial value of plan net assets, end of year (Item 6 - Item 8 Column 6)	$	2,382,585
10. Asset gain (loss) for year (Item 9 - Item 5)	$	(71,689)
11. Asset gain (loss) as % of actual actuarial assets		(3.01%)
12. Ratio of actuarial value to market value		108.5%

Notes: Remaining deferrals in Column (1) for prior years are from last year's report column (6) of Table 10A. The number in the current year is the difference between the remaining deferrals for prior years and the total Excess/(Shortfall) return shown in Item 7.
Column 2 is a direct offset of the current year's excess/(shortfall) return against prior years' excess/(shortfall) of the opposite type.

Estimation of Investment Return Yield (Net of Expenses)

Item	July 1, 2013	July 01, 2012
(1)	(2)	(3)
A. Market value yield		
1. Beginning of year net market assets	$ 2,024,235	$ 2,129,441
2. Net Investment income (net of all expenses)*	257,924	-18,622
3. End of year market assets	2,196,615	2,024,235
4. Estimated market value yield	13.02%	-0.89%
B. Actuarial value yield		
1. Beginning of year actuarial assets	$ 2,344,128	$ 2,328,804
2. Net Investment income (net of all expenses)*	124,001	101,910
3. End of year actuarial assets	2,382,585	2,344,128
4. Estimated actuarial value yield	5.39%	4.46%

*Net investment income is net of both investment and administrative expenses

Note: Dollar amounts in $000

History of Investment Returns

For Fiscal Year Ending	Market Value	Actuarial Value
(1)	(2)	(3)
June 30, 2002	(7.99%)	3.64%
June 30, 2003	2.34%	1.69%
June 30, 2004	18.10%	4.16%
June 30, 2005	12.85%	4.12%
June 30, 2006	16.41%	8.95%
June 30, 2007	17.85%	21.51%
June 30, 2008	(0.25%)	8.97%
June 30, 2009	(20.14%)	2.60%
June 30, 2010	11.21%	3.54%
June 30, 2011	21.56%	6.27%
June 30, 2012	(0.89%)	4.46%
June 30, 2013	13.02%	5.39%
Average Compound Return - last 5 years	3.87%	4.44%
Average Compound Return - last 10 years	8.23%	6.88%

Note: Investment returns are estimations made by the actuary and are dollar-weighted returns net of administrative and investment expenses. The market value returns for years 2009-2011 have been changed from those shown on the prior years' reports. The revised numbers reflect the same dollar-weighted methodology used on Table 11 for determining the estimated yields, and used in years prior to 2009.

Historical Solvency Test

	Aggregated Accrued Liabilities for				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, 1994	$ 32,410	$ 384,100	$ 470,189	$ 713,696	100.0%	100.0%	63%
July 1, 1995	31,130	420,830	511,752	770,189	100.0%	100.0%	62%
July 1, 1996	45,819	438,486	558,154	857,332	100.0%	100.0%	67%
July 1, 1998	34,781	502,335	703,025	1,095,617	100.0%	100.0%	79%
July 1, 1999	33,985	599,270	706,678	1,222,240	100.0%	100.0%	83%
July 1, 2000	38,292	646,611	824,470	1,376,020	100.0%	100.0%	84%
July 1, 2001	36,449	804,901	1,114,456	1,490,179	100.0%	100.0%	58%
July 1, 2002	35,888	893,568	1,585,733	1,519,717	100.0%	100.0%	37%
July 1, 2003	44,388	1,115,801	2,118,063	1,510,264	100.0%	100.0%	17%
July 1, 2004	62,062	1,355,157	1,216,599	1,501,235	100.0%	100.0%	7%
July 1, 2005	48,150	1,577,345	1,099,777	1,777,656	100.0%	100.0%	14%
July 1, 2006	58,043	1,729,863	1,106,389	1,867,293	100.0%	100.0%	7%
July 1, 2007	69,544	1,824,992	1,234,178	2,193,745	100.0%	100.0%	24%
July 1, 2008	81,182	1,904,333	1,310,855	2,310,384	100.0%	100.0%	25%
July 1, 2009	95,268	1,974,714	1,381,428	2,284,442	100.0%	100.0%	16%
July 1, 2010	107,421	2,058,813	1,466,236	2,273,142	100.0%	100.0%	7%
July 1, 2011	118,202	2,154,959	1,517,167	2,328,804	100.0%	100.0%	4%
July 1, 2012	124,848	2,312,548	1,529,468	2,344,128	100.0%	96.0%	0%
July 1, 2013	132,238	2,431,950	1,565,395	2,382,585	100.0%	92.5%	0%

Note: Dollar amounts in $000

[1] Column (3) included AAL for DROP participants until 2003, now in Column (4)

Schedule of Funding Progress

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, 1994	$ 713,696	$ 886,699	$ 173,003	80.5%	$ 366,561	47.2%
July 1, 1995	770,189	963,712	193,523	79.9%	378,511	51.1%
July 1, 1996	857,332	1,042,459	185,127	82.2%	367,610	50.4%
July 1, 1998	1,095,617	1,240,141	144,524	88.3%	397,698	36.3%
July 1, 1999	1,222,240	1,339,933	117,693	91.2%	407,733	28.9%
July 1, 2000	1,376,020	1,509,373	133,353	91.2%	432,604	30.8%
July 1, 2001	1,490,179	1,955,806	465,627	76.2%	418,234	111.3%
July 1, 2002	1,519,717	2,515,189	995,472	60.4%	399,794	249.0%
July 1, 2003	1,510,264	3,278,251	1,767,987	46.1%	390,314	453.0%
July 1, 2004	1,501,235	2,633,817	1,132,582	57.0%	366,190	309.3%
July 1, 2005	1,777,656	2,725,272	947,616	65.2%	404,565	234.2%
July 1, 2006	1,867,293	2,894,295	1,027,002	64.5%	422,496	243.1%
July 1, 2007	2,193,745	3,128,713	934,968	70.1%	448,925	208.3%
July 1, 2008	2,310,384	3,296,370	985,986	70.1%	483,815	203.8%
July 1, 2009	2,284,442	3,451,410	1,166,968	66.2%	539,023	216.5%
July 1, 2010	2,273,142	3,632,470	1,359,328	62.6%	550,709	246.8%
July 1, 2011	2,328,804	3,790,328	1,461,524	61.4%	544,665	268.3%
July 1, 2012	2,344,128	3,966,864	1,622,736	59.1%	534,394	303.7%
July 1, 2013	2,382,585	4,129,583	1,746,998	57.7%	549,971	317.7%

Note: Dollar amounts in $000

Historical City Contribution Rates

Valuation Date	Calculated Contribution Rate[1]	Time Period for Contribution Rate	Actual Contribution Rate
(1)	(2)	(3)	(4)
July 1, 1987	5.83%	January 1, 1988 through December 31, 1988	5.15%
July 1, 1988	6.27	January 1, 1989 through December 31, 1989	5.15
July 1, 1989	6.88	January 1, 1990 through December 31, 1990	6.27
July 1, 1990	6.23	January 1, 1991 through December 31, 1991	6.27
July 1, 1991	8.77	January 1, 1992 through June 30, 1993	6.27
July 1, 1992	9.11	July 1, 1993 through June 30, 1994	9.11
July 1, 1993	9.30	July 1, 1994 through June 30, 1995	9.30
July 1, 1994	8.80	July 1, 1995 through June 30, 1996	8.80
July 1, 1995	9.20	July 1, 1996 through June 30, 1997	9.20
July 1, 1996	9.10	July 1, 1997 through June 30, 1998	9.10
		July 1, 1998 through June 30, 1999	9.10
July 1, 1998	9.30	July 1, 1999 through June 30, 2000	9.30
July 1, 1999	9.80	July 1, 2000 through June 30, 2001	10.00
July 1, 2000	9.50	July 1, 2001 through June 30, 2002	10.00
July 1, 2001	17.70	July 1, 2002 through June 30, 2003	10.00
July 1, 2002	31.80	July 1, 2003 through June 30, 2004	14.70
July 1, 2003	52.89	July 1, 2004 through June 30, 2005	92.55[2,3]
July 1, 2004	29.43	July 1, 2005 through June 30, 2006	15.49[3]
July 1, 2005	24.10	July 1, 2006 through June 30, 2007	15.89[3]
July 1, 2006	24.63	July 1, 2007 through June 30, 2008	15.52[4]
July 1, 2007	19.47	July 1, 2008 through June 30, 2009	14.63[4]
July 1, 2008	19.20	July 1, 2009 through June 30, 2010	14.65[4]
July 1, 2009	20.07	July 1, 2010 through June 30, 2011	16.30[4]
July 1, 2010	22.36	July 1, 2011 through June 30, 2012	17.74[5]
July 1, 2011	23.45	July 1, 2012 through June 30, 2013	21.10[5]
July 1, 2012	26.10	July 1, 2013 through June 30, 2014	N/A
July 1, 2013	27.50	July 1, 2014 through June 30, 2015	N/A

[1] Rate determined by the actuarial valuation is for the fiscal year beginning on the July 1st next following the valuation date.

[2] Includes $300 million note.

[3] As pursuant to the funding schedule from the 2004 Meet and Confer agreement.

[4] As pursuant to the funding schedule from the Fourth Amendment.

[5] As pursuant to the funding schedule from the Amended and Restated Meet and Confer agreement.

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	11,344	N/A	N/A	$227,900	$20,090	1.9%
1989	11,356	N/A	N/A	$235,400	$20,729	3.2%
1990	12,037	40.0	N/A	$258,556	$21,480	3.6%
1991	12,488	40.3	N/A	$284,914	$22,815	6.2%
1992	12,913	40.5	N/A	$314,686	$24,370	6.8%
1993	13,112	40.9	N/A	$340,249	$25,949	6.5%
1994	14,027	40.9	N/A	$366,561	$26,133	0.7%
1995	14,364	41.3	N/A	$378,511	$26,351	0.8%
1996	14,067	41.8	N/A	$367,610	$26,133	(0.8%)
1998 [1]	13,764	42.8	9.8	$394,919	$28,692	9.8%
1999 [1]	13,286	42.9	9.8	$396,617	$29,852	4.0%
2000 [1]	13,126	43.7	10.3	$421,591	$32,119	7.6%
2001 [1]	12,928	43.9	10.3	$413,021	$31,948	(0.5%)
2002	12,527	44.7	11.0	$399,794	$31,915	(0.1%)
2003	12,120	45.2	11.2	$390,314	$32,204	0.9%
2004	11,856	45.1	10.3	$366,190	$30,886	(4.1%)
2005 [2]	11,974	44.8	9.6	$404,565	$33,787	9.4%
2006	12,145	44.8	9.3	$422,496	$34,788	3.0%
2007	12,376	45.2	9.3	$448,925	$36,274	4.3%
2008	12,653	45.2	9.3	$483,815	$38,237	5.4%
2009	13,333	45.1	9.2	$539,023	$40,428	5.7%
2010	12,913	45.8	10.0	$550,709	$42,648	5.5%
2011	12,345	46.5	10.6	$544,665	$44,120	3.5%
2012	11,670	46.8	11.1	$534,394	$45,792	3.8%
2013	11,781	46.9	11.1	$549,971	$46,683	1.9%

Note: Dollar amounts in $000

[1] Excludes DROP participants

[2] Beginning with the 2005 valuation, a change in methodology now annualizes payroll for new entrants. If the methodology had not been changed, the covered payroll for 2005 would have been $376,208,345 and the average payroll would have been $31,419.

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)
1995	393	$ 3,044	220	$ 1,307	4,441	$ 36,482	7.4%	$ 8,215
1996	416	3,119	239	1,438	4,618	38,815	6.4%	8,405
1998	693	5,840	441	3,212	4,870	43,394	11.8%	8,910
1999	432	2,131	303	1,515	4,999	46,732	7.7%	9,348
2000	360	3,412	255	1,380	5,104	49,970	6.9%	9,790
2001	652	8,937	299	1,030	5,457	57,877	15.8%	10,606
2002	777	15,061	306	2,476	5,928	72,256	24.8%	12,189
2003	598	11,497	311	1,873	6,215	84,519	17.0%	13,599
2004	942	25,189	279	2,624	6,878	107,084	26.7%	15,569
2005	861	18,054	216	1,926	7,523	123,212	15.1%	16,378
2006	654	14,722	397	2,246	7,780	135,688	10.1%	17,441
2007	440	10,280	249	3,007	7,971	142,961	5.4%	17,935
2008	464	11,052	280	3,420	8,155	150,592	5.3%	18,466
2009	474	11,430	289	3,667	8,340	158,356	5.2%	18,988
2010	476	12,040	290	3,938	8,526	166,458	5.1%	19,524
2011	502	13,202	311	4,451	8,717	175,210	5.3%	20,100
2012	654	16,299	293	3,993	9,078	187,515	7.0%	20,656
2013	695	15,566	346	5,051	9,427	198,030	5.6%	21,007

Membership Data

	July 1, 2013 (1)	July 1, 2012 (2)	July 1, 2011 (3)
1. Active members			
a. Number	11,781	11,670	12,345
b. Number vested	8,627	8,158	8,108
c. Total payroll	$ 549,971,000	$ 534,394,000	$ 544,665,000
d. Average salary	46,683	45,792	44,120
e. Average age	46.9	46.8	46.5
f. Average service	11.1	11.1	10.6
2. Inactive participants			
a. Vested	3,298	3,237	3,178
b. Total annual benefits (deferred)	$ 22,775,947	$ 21,912,012	$ 20,507,195
c. Average annual benefit	6,906	6,769	6,453
d. NonVested	2,257	2,434	2,435
3. Service retirees			
a. Number	7,258	7,031	6,663
b. Total annual benefits	$ 170,255,078	$ 162,527,371	$ 151,805,680
c. Average annual benefit	23,458	23,116	22,783
d. Average age	68.3	68.0	67.4
4. Disabled retirees			
a. Number	387	391	398
b. Total annual benefits	$ 3,803,033	$ 3,814,351	$ 3,723,460
c. Average annual benefit	9,827	9,755	9,355
d. Average age	64.3	64.0	63.0
5. Beneficiaries and spouses			
a. Number	1,782	1,656	1,656
b. Total annual benefits	$ 23,971,844	$ 21,173,610	$ 19,680,539
c. Average annual benefit	13,452	12,786	11,884
d. Average age	69.6	69.5	68.0

Distribution of Group A Active Members by Age and by Years of Service

Attained Age	0 No. & Avg. Comp.	1 No. & Avg. Comp.	2 No. & Avg. Comp.	3 No. & Avg. Comp.	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						4							4
						$36,603							$36,603
25-29	6	1	1		6	142	2						158
	$28,787	$42,182	$27,269		$32,490	$33,662	$39,947						$33,525
30-34	9	10	5	1	9	407	62	2					505
	$39,529	$30,430	$32,614	$85,322	$31,822	$43,122	$39,621	$30,067					$42,104
35-39	12	10	1	2	8	380	122	26					561
	$37,561	$34,382	$34,882	$27,841	$44,047	$44,661	$46,553	$44,146					$44,628
40-44	13	7	4	5	6	440	203	113	51	1			843
	$45,149	$29,471	$35,022	$55,066	$50,461	$47,571	$46,473	$51,827	$50,663	$52,083			$47,888
45-49	8	16	4	3	6	419	207	158	156	48	1		1,026
	$42,825	$30,863	$46,077	$47,188	$61,443	$46,728	$47,578	$54,586	$54,079	$47,865	$48,464		$49,089
50-54	9	14	1	3	13	443	252	219	212	122	88	2	1,378
	$58,067	$40,767	$48,064	$71,677	$47,526	$47,644	$47,023	$52,336	$53,538	$55,099	$53,922	$38,896	$50,281
55-59	4	7	1	2	5	365	203	205	191	91	71	11	1,156
	$36,213	$60,807	$34,466	$92,300	$35,302	$46,691	$45,559	$51,360	$60,187	$58,606	$59,527	$77,280	$51,636
60-64	3	5	2		4	270	151	138	114	57	27	9	780
	$34,667	$57,782	$141,180		$55,895	$48,258	$49,573	$56,790	$56,087	$64,388	$54,523	$69,007	$53,087
65 & Over			2	2	1	131	79	68	44	22	9	8	366
			$64,938	$112,632	$27,331	$51,293	$53,983	$55,660	$67,241	$68,363	$69,449	$89,778	$57,260
Total	64	70	21	18	58	3,001	1,281	929	768	341	196	30	6,777
	$41,878	$38,225	$49,733	$65,711	$43,972	$45,937	$47,109	$53,069	$56,274	$57,416	$56,720	$75,572	$49,258

Average:			Number of participants:				
	Age:	49.56		Fully vested:	6,546	Males:	3,691
	Service:	13.16		Not Vested:	231	Females:	3,086

Note: A former Group A employee who is rehired on or after January 1, 2008 is still a Group A employee.

Distribution of Group B Active Members by Age and by Years of Service

Attained Age	0 No. & Avg. Comp.	1 No. & Avg. Comp.	2 No. & Avg. Comp.	3 No. & Avg. Comp.	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						1							1
						$22,298							$22,298
25-29						9							9
						$38,979							$38,979
30-34						5	4	2					11
						$30,168	$47,617	$41,767					$38,622
35-39	1	2			3	6	20	45					77
	$99,258	$30,451			$35,637	$50,842	$38,854	$39,451					$40,578
40-44	3		2		8	3	33	124	37				210
	$48,630		$35,235		$40,269	$32,621	$39,530	$43,726	$45,428				$43,066
45-49	5	7	2	1	7	5	30	146	133	29	1		366
	$32,448	$65,710	$66,415	$90,168	$56,472	$35,514	$39,340	$42,819	$46,899	$44,221	$57,262		$44,883
50-54	7	6	1		9	3	29	116	125	51	32		379
	$53,322	$39,998	$57,221		$44,482	$41,233	$41,347	$41,752	$44,023	$42,118	$41,070		$42,749
55-59	2	4			3	6	27	113	108	35	24	4	326
	$39,271	$46,582			$64,321	$58,871	$47,664	$44,238	$46,412	$50,124	$53,388	$49,369	$47,063
60-64	2	2	1		2	3	22	78	69	20	11	2	212
	$42,775	$38,959	$65,458		$49,608	$91,991	$49,253	$42,611	$43,105	$49,542	$39,550	$84,594	$45,192
65 & Over			1			2	4	28	28	8	4		75
			$119,496			$61,932	$50,648	$49,672	$47,774	$67,922	$51,875		$52,337
Total	20	21	7	1	32	43	169	652	500	143	72	6	1,666
	$47,237	$48,815	$63,639	$90,168	$47,403	$46,074	$42,748	$43,081	$45,492	$46,986	$45,769	$61,110	$44,684

Average:	Age:	51.62	Number of participants:	Fully vested:	1,585	Males:	802
	Service:	19.22		Not Vested:	81	Females:	864

Note: A former Group B employee who is rehired on or after January 1, 2008 is still a Group B employee.

Distribution of Group D Active Members by Age and by Years of Service

Attained Age	0 No. & Avg. Comp.	1 No. & Avg. Comp.	2 No. & Avg. Comp.	3 No. & Avg. Comp.	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	113	45	16	12	18	10							214
	$28,936	$28,386	$26,936	$31,120	$30,182	$33,174							$29,096
25-29	191	136	44	44	120	65							600
	$33,705	$36,030	$37,537	$38,994	$34,233	$33,272							$34,960
30-34	181	102	48	47	151	91							620
	$37,471	$39,989	$39,983	$41,785	$40,701	$38,281							$39,312
35-39	108	67	33	33	96	75							412
	$42,456	$41,299	$50,096	$53,126	$45,458	$44,990							$44,895
40-44	101	64	40	39	108	60							412
	$46,992	$42,517	$42,093	$46,764	$47,078	$40,736							$44,911
45-49	86	53	39	42	71	65							356
	$41,399	$49,425	$47,995	$56,345	$48,230	$42,580							$46,658
50-54	75	44	20	25	67	47							278
	$45,487	$49,304	$48,068	$54,914	$45,324	$47,411							$47,411
55-59	72	23	14	22	69	40							240
	$51,571	$55,776	$73,691	$54,184	$48,108	$47,244							$51,787
60-64	28	17	7	16	38	36							142
	$52,562	$55,379	$56,152	$80,984	$49,480	$51,779							$55,256
65 & Over	8	6	2	12	18	7							53
	$46,686	$64,279	$29,307	$58,805	$50,119	$46,256							$51,875
Total	969	562	263	292	756	496							3,338
	$39,747	$41,452	$44,316	$49,873	$43,397	$42,077							$42,453

Average:	Age:	39.14	Number of participants:	Fully vested:	496	Males:	1,871
	Service:	2.68		Not Vested:	2,842	Females:	1,467

Distribution of All Active Members by Age and by Years of Service All Employees

Attained Age	0 No. & Avg. Comp.	1 No. & Avg. Comp.	2 No. & Avg. Comp.	3 No. & Avg. Comp.	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	113	45	16	12	18	15							219
	$28,936	$28,386	$26,936	$31,120	$30,182	$33,363							$29,202
25-29	197	137	45	44	126	216	2						767
	$33,556	$36,075	$37,309	$38,994	$34,150	$33,766	$39,947						$34,711
30-34	190	112	53	48	160	503	66	4					1,136
	$37,568	$39,136	$39,288	$42,692	$40,202	$42,118	$40,106	$35,917					$40,546
35-39	121	79	34	35	107	461	142	71					1,050
	$42,440	$40,149	$49,649	$51,681	$45,077	$44,795	$45,468	$41,170					$44,436
40-44	117	71	46	44	122	503	236	237	88	1			1,465
	$46,829	$41,231	$41,180	$47,708	$46,798	$46,667	$45,502	$47,589	$48,462	$52,083			$46,359
45-49	99	76	45	46	84	489	237	304	289	77	2		1,748
	$41,062	$47,017	$48,643	$56,483	$49,860	$46,062	$46,535	$48,935	$50,775	$46,493	$52,863		$47,713
50-54	91	64	22	28	89	493	281	335	337	173	120	2	2,035
	$47,334	$46,564	$48,484	$56,710	$45,561	$47,582	$46,438	$48,671	$50,009	$51,272	$50,495	$38,896	$48,486
55-59	78	34	15	24	77	411	230	318	299	126	95	15	1,722
	$50,468	$55,730	$71,076	$57,360	$47,908	$46,923	$45,806	$48,829	$55,212	$56,250	$57,976	$69,837	$50,791
60-64	33	24	10	16	44	309	173	216	183	77	38	11	1,134
	$50,342	$54,512	$74,088	$80,984	$50,069	$49,093	$49,532	$51,670	$51,192	$60,532	$50,189	$71,841	$51,883
65 & Over	8	6	5	14	19	140	83	96	72	30	13	8	494
	$46,686	$64,279	$61,597	$66,495	$48,919	$51,193	$53,822	$53,913	$59,671	$68,246	$64,042	$89,778	$55,935
Total	1,053	653	291	311	846	3,540	1,450	1,581	1,268	484	268	36	11,781
	$40,019	$41,343	$45,172	$50,919	$43,588	$45,398	$46,601	$48,950	$52,022	$54,334	$53,778	$73,162	$46,683

Average:	Age:	46.90	Number of participants:	Fully vested:	8,627	Males:	6,364
	Service:	11.05		Not Vested:	3,154	Females:	5,417

Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the July 1, 2013, actuarial valuation. These assumptions were adopted by the Board effective for the July 1, 2010 valuation.

1. Valuation Date

   The valuation date is July 1st 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 Entry Age Normal 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 liability.

   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 8.5 percent), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex 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 on account of 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 Plan on account of the present group of participants and beneficiaries.

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

   c. The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his behalf based on the benefits provisions for new employees hired on or after January 1, 2008.

d. The unfunded 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 and the determination of the rate reflects 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. <u>Actuarial Value of Assets</u>

The actuarial value of assets is equal to the market value of assets less a five-year phase in of the excess (shortfall) between expected investment return and actual income. The actual calculation is based on the difference between actual market value and the expected actuarial value of assets each year, and recognizes the cumulative excess return (or shortfall) over at a minimum rate of 20% per year. Each year a base is set up to reflect this difference. If the current year's base is of opposite sign to the deferred bases then it is offset dollar for dollar against the deferred bases. Any remaining bases are then recognized over the remaining period for the base (5 less the number of years between the bases year and the valuation year). This is intended to ensure the smoothed value of assets will converge towards the market value in a reasonable amount of time.

Expected earnings are determined using the assumed investment return rate and the beginning of year actuarial value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

4. <u>Economic Assumptions</u>

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. Salary increase rate: A service-related component, plus a 3.00% inflation component, plus a 0.0% general increase, as follows:

Years of Service	Service-related Component	Total Annual Rate of Increase Including 3.00% Inflation Component and 0.0% General Increase Rate
(1)	(2)	(3)
1	3.00%	6.00%
2	2.75	5.75
3	2.50	5.50
4	2.00	5.00
5-6	1.75	4.75
7	1.50	4.50
8-9	1.25	4.25
10-14	1.00	4.00
15-19	0.75	3.75
20-24	0.50	3.50
25+	0.00	3.00

c. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 3.00% 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

	Expected Retirements per 100 Lives			
	Group A & B Members		Group D Members	
Age	Males	Females	Males	Females
(1)	(2)	(3)	(4)	(5)
50-54	12	12	3	3
55	12	12	4	4
56	12	12	5	5
57	12	12	6	6
58	12	12	7	7
59	12	12	8	8
60	14	14	10	10
61	16	16	13	13
62	25	20	35	35
63	25	18	25	18
64	18	20	18	20
65	20	20	20	20
66-69	20	19	20	19
70-74	20	19	20	19
75+	100	100	100	100

b. DROP Participation

90% of eligible members are assumed to enter DROP at first eligibility.

c. DROP Entry Date

Active members (not already in DROP) are assumed to take advantage of the DROP and enter when first eligible. For members who have already entered DROP, the actual DROP entry date supplied in the data is used.

d. DROP Interest Credit

4.25% per year

e. DROP Payout

It is assumed members with DROP balances will take their DROP balance in 6 equal annual installments beginning the year after retirement. Members currently retired with DROP balances are assumed to take 6 equal annual installments from the valuation date.

f. Mortality rates (for active and retired members)

- Healthy males – Based on the Retired Pensioners 2000 Mortality Table (combined) for males. Rates are scaled by 110%.
- Healthy females - Based on the Retired Pensioners 2000 Mortality Table (combined) for females. Rates are scaled by 95%.
- Disabled males and females – 1965 Railroad Retirement Board Disabled Life Table. Rates are set-back two years for males and eight years for females.

Sample rates are shown below:

	Expected Deaths per 100 Lives			
Age	Healthy Males	Healthy Females	Disabled Males	Disabled Females
(1)	(2)	(3)	(4)	(5)
25	0.04	0.02	4.41	4.41
30	0.05	0.03	4.41	4.41
35	0.09	0.05	4.41	4.41
40	0.12	0.07	4.41	4.41
45	0.17	0.11	4.42	4.41
50	0.24	0.16	4.48	4.42
55	0.40	0.26	4.67	4.46
60	0.74	0.48	5.09	4.62
65	1.40	0.92	5.76	4.98
70	2.44	1.59	6.84	5.60
75	4.16	2.67	8.62	6.58
80	7.08	4.36	11.40	8.21

For pre-retirement mortality, 90% of the rates shown above are assumed to be for non-service related deaths and 10% for service related deaths.

Mortality Improvement: To account for future mortality improvement, the healthy mortality rates were chosen so that the assumed mortality rates are smaller than the rates observed in the most recent experience study (dated 5-25-2010). The margin at the time of the study was 22%-27% for non-disabled annuitants. No future mortality improvement after the measurement date is assumed except as described above.

g. Termination Rates and Disability Rates

Termination rates (for causes other than death, disability or retirement):

Termination rates are a function of the member's age and service. Termination rates are not applied after a member becomes eligible for a retirement benefit. Rates at selected ages are shown below.

Probability of Decrement Due to Withdrawal – Male Members

	Years of Service										
Age	0	1	2	3	4	5	6	7	8	9	10+
20	0.3244	0.2682	0.2300	0.2060	0.1926	0.1824	0.1617	0.1507	0.1400	0.1278	0.1639
30	0.2585	0.2146	0.1808	0.1563	0.1396	0.1275	0.1143	0.1057	0.0985	0.0919	0.0946
40	0.2003	0.1645	0.1351	0.1124	0.0954	0.0832	0.0750	0.0683	0.0634	0.0603	0.0427
50	0.1559	0.1258	0.1013	0.0824	0.0681	0.0577	0.0510	0.0454	0.0411	0.0383	0.0206
60	0.1341	0.1083	0.0887	0.0740	0.0634	0.0557	0.0469	0.0407	0.0344	0.0277	0.0199

Probability of Decrement Due to Withdrawal – Female Members

	Years of Service										
Age	0	1	2	3	4	5	6	7	8	9	10+
20	0.2811	0.2574	0.2344	0.2123	0.1912	0.1711	0.1506	0.1282	0.1040	0.0784	0.1385
30	0.2155	0.1943	0.1736	0.1539	0.1356	0.1188	0.1032	0.0879	0.0730	0.0585	0.0795
40	0.1688	0.1460	0.1250	0.1063	0.0903	0.0770	0.0664	0.0581	0.0517	0.0472	0.0367
50	0.1510	0.1223	0.0984	0.0791	0.0645	0.0544	0.0481	0.0452	0.0453	0.0481	0.0339
60	0.1794	0.1373	0.1049	0.0812	0.0653	0.0570	0.0540	0.0552	0.0601	0.0682	0.0339

Base Rates of Disability

Age	Males	Females
20	.00000	.00001
25	.00001	.00002
30	.00005	.00008
35	.00022	.00013
40	.00448	.00029
45	.00087	.00066
50	.00151	.00157
55	.00219	.00253
60	.00289	.00304

Rates of disability are reduced to zero once a member becomes eligible for retirement.

Rates of decrement due to Ordinary Disabilities are assumed to be 120% of the base rates shown above. Rates of decrement due to Service Related Disabilities are assumed to be 10% of the base rates shown above.

6. Other Assumptions

a. Percent married: 70% 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: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.

e. There will be no recoveries once disabled.

f. No surviving spouse will remarry and there will be no children's benefit.

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 used directly from the experience study, without adjustment for multiple decrement table effects.

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

n. Benefit Service: All members are assumed to accrue 1 year of service each year**.** Fractional service is used to determine the amount of benefit payable.

7. Participant Data

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

The data for active members included birth date, sex, 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, sex, 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, prorated by the 70% marriage assumption and reflecting the 3 year spousal age differential. All non-children beneficiaries are assumed to have life only benefits and all children beneficiaries' annuities are assumed to stop at age 21.

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. For members who worked less than 1900 hours but were not new entrants, the salary was annualized to 1900 hours.

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, or inconsistent data. These had no material impact on the results presented.

8. Group Transfers

We assume no current Group B members will transfer to Group A.

Changes in Assumptions Since Prior Year
None.

Summary of Plan Provisions

The provisions summarized in this section apply to persons who are members (active employees). Former members may have been covered under different plan provisions, depending on their dates of separation from service.

1. Covered Members

   Any person who is a participant of Group A, under the original act.

   Persons who became employees of the City of Houston after September 1, 1981 and prior to September 1, 1999, and elected officials of the City of Houston who assumed office after September 1, 1981 and prior to September 1, 1999, participate in Group B, but may make an irrevocable election to participate in Group A instead.

   Persons who become employees of the City and persons who are elected as City officials after September 1, 1999 and prior to January 1, 2008 become members of Group A. Certain persons who were or became a Director of a City Department, Chief Administrative Officer, or Executive Director of HMEPS on or after September 1, 1999 and prior to January 1, 2005 participate in Group C. Effective January 1, 2005, all Group C participation ceased and all Group C participants became Group A participants. Accruals earned by Group C participants prior to January 1, 2005 are retained, but all future accruals are based on the Group A formulas.

   All future references to Group C participants in this appendix are intended to reflect this change in the Group C status.

   Covered employees newly hired on or after January 1, 2008 will be members of Group D.

   A former employee who is rehired on or after January 1, 2008 is a member of the group in which such employee participated at the time of his/her immediately preceding separation from service.

2. Monthly Final Average Salary (FAS)

   The sum of the seventy-eight highest biweekly salaries paid to a member during his period of credited service, divided by thirty-six. Salary includes base pay, longevity pay, and any shift differential pay. If there are fewer than seventy-eight biweekly salaries, the FAS is determined by multiplying the average of all biweekly salaries paid to the member during the period of credited service by 26 and dividing the product by 12.

3. Credited Service

All services and work performed by an employee, including prior service. For members of Group A and former Group C, all services and work performed after September 1, 1943 must have been accompanied by corresponding contributions to HMEPS by the employee or legally authorized repayments must have been made.

Credited service for former participants in Group C means the number of years of eligible service after the executive official's effective date of participation in Group C. A former Group C member receives two times the number of actual years of credited service in Group C solely for the purpose of fulfilling the eligibility requirements in Group C.

If former Group D and pre-1997 Group B members who forfeited their prior credited service are rehired they will regain a year of forfeited credited service for each year of service earned upon reemployment.

4. Normal Retirement

a. Eligibility Prior to January 1, 2005 (with 68 points as of January 1, 2005):

The earliest of:
age 62 and 5 years of Credited Service
5 years of Credited Service, and age plus years of Credited Service equal 70 or more
age 65 (Group C only)

On or after January 1, 2005 (less than 68 points as of January 1, 2005):

The earliest of:
age 62 and 5 years of Credited Service
5 years of Credited Service, and age plus years of Credited Service equal 75 or more with minimum age 50

For employees newly hired on or after January 1, 2008 (Group D):

Age 62 and 5 years of Credited Service

b. Benefit Prior to January 1, 2005:

Group A: 3.25% of FAS for each of the first 10 years of Credited Service plus 3.50% of FAS for Credited Service greater than 10 years but less than 20 years plus 4.25% of FAS for each year of Credited Service greater than 20 years (excludes period of DROP participation). Maximum benefit is 90% of FAS for all future retirees.

Group B: 1.75% of FAS for each of the first 10 years of Credited Service plus 2.00% of FAS for Credited Service greater than 10 years but less than 20 years, plus 2.75% of FAS for each year of Credited Service greater than 20 years. Maximum benefit is 90% of FAS for all future retirees.

Group C: Double the rate for Group A

All accruals after January 1, 2005:

All accruals under the prior multipliers were frozen as of January 1, 2005 and the following benefit multipliers apply to service on or after that date:

Group A: 2.50% of FAS for each of the first 20 years of Credited Service plus 3.25% of FAS for each year of Credited Service greater than 20 years. Maximum benefit is 90% of FAS for all future retirees.

Group B: 1.75% of FAS for each of the first 10 years of Credited Service plus 2.00% of FAS for Credited Service greater than 10 years but less than 20 years, plus 2.50% of FAS for each year of Credited Service greater than 20 years. Maximum benefit is 90% of FAS for all future retirees.

Group D: 1.80% of FAS for each of the first 25 years of Credited Service, plus 1.00% of FAS for each year of Credited Service greater than 25 years. Maximum benefit is 90% of FAS for all future retirees.

5. Vested Pension

   a. Eligibility 5 years of Credited Service.

   b. Benefit Group A and Group C: Either the accrued normal retirement benefit with payments beginning at the normal retirement eligibility date or a refund of employee contributions, if any, without interest.

   Group B and Group D: Accrued normal retirement benefit payable at the normal retirement eligibility date.

   If the actuarial present value of a pension is less than $20,000, a terminated participant who is not eligible to begin receiving a pension may request an early lump sum distribution of the pension. Such early lump sum distribution is irrevocable. Credited Service associated therewith can be reinstated after reemployment and pursuant to the rules of the plan.

6. Withdrawal Benefit

   If a nonvested member withdraws from service with less than 5 years, a refund of the member's contributions is made without interest, upon request.

7. Service-Connected Disability Retirement

   a. Eligibility Any age

   b. Benefit Group A: Accrued normal retirement benefit, but not less than 20% of final monthly salary at time of disability plus 1% of final monthly salary per year of Credited Service, to a maximum of 40% of final monthly salary.

   Group B and Group D: Accrued normal retirement benefit, but not less than 20% of final monthly salary at time of disability.

8. Non-service-Connected Disability Retirement

   a. Eligibility 5 years of Credited Service.

   b. Benefit Accrued normal retirement benefit payable immediately.

9. Pre-retirement Survivor Benefits

A. Service-connected

a. Eligibility Any age or Credited Service

b. Benefit If there is a surviving spouse, 100% of FAS payable to the spouse. 10% of FAS is payable to each qualifying dependent to a maximum of 20% for all dependents. Surviving spouse's benefit will be reduced by the amount of dependent benefits. If no surviving spouse, dependent benefits are 50% of the amount a surviving spouse would have received for each dependent to a maximum of 100% for all dependents in the aggregate.

B. Non service-connected

a. Eligibility 5 years of Credited Service

b. Benefit Benefits for survivorship of terminated vested Group D members after January 1, 2008:

If there is a surviving spouse, an amount equal to the 50% J&S benefit. No dependent benefits. If there is no surviving spouse, dependent benefits are 50% of the amount a surviving spouse would have received for each dependent to a maximum of 100% for all dependents in the aggregate (of the 20% J&S benefit).

For all other Groups on or after August 1, 2001:

If there is a surviving spouse, 100% of accrued normal retirement benefit payable to the spouse and 10% of accrued normal retirement benefit to each qualifying dependent to a maximum of 20% for all dependents in the aggregate. The surviving spouse's benefit will be reduced by dependent benefits, if any. If there is no surviving spouse, each dependent will receive 50% of the benefit a surviving spouse would have received subject to a maximum of 100% of a surviving spouse's benefit for all dependents in the aggregate.

10. Postretirement Survivor Benefits

All Groups except Option-Eligible Participants:

If there is a surviving spouse, 100% of the retirement benefit the deceased retiree was receiving at the time of death payable to the spouse and 10% of that retirement benefit payable to each qualifying dependent to a maximum of 20% for all dependents. The surviving spouse's benefit will be reduced by dependent benefits, if any. If there is no surviving spouse, each dependent will receive 50% of the benefit a surviving spouse would have received subject to 100% of a surviving spouse's benefit for all dependents in the aggregate.

Option-Eligible Participants:

Life only to the retiree. Option-Eligible Participants may elect other options based on actuarial factors.

All Group D members, Group A & B members who terminate after June 30, 2011 eligible for a normal retirement benefits and who are not married at their termination of service, and Group B members who terminated prior to September 1, 1997 and who are eligible for a normal retirement benefit are Option-Eligible Participants.

11. Benefit Adjustments

Each year, effective February 1, monthly benefits will be increased 3.0%, not compounded, for all retirees and survivors. This will affect all members currently in payment status and members who enter payment status in the future. For members hired on or after January 1, 2005 future increases will be 2.0%, not compounded. However, pre-2005 retirees who are rehired will receive a 3% COLA on their subsequent benefit instead.

Group D Members:

None assumed.

12. Contribution Rates.

a. Members 5% of salary only for Group A members. None for Group B or Group D members.

b. City Beginning in 1993, the rate required to fund the Retirement Fund on an actuarial reserve basis. However, effective September 1, 1999, the minimum contribution rate is equal to the greater of 10% of covered payroll or twice the contribution rate a Group A member is required to make by statute. Under the Amended and Restated Meet & Confer Agreement between the Board and the City of Houston, the City will contribute the greater of $108.5 million or 21.36% of payroll in fiscal year 2013. Contributions in future fiscal years will increase by the greater of $10 million or 2% of payroll until such time that the City's contribution rate equals the actuarially determined contribution rate.

13. Deferred Retirement Option

a. Eligibility Participants (other than Group D) who are eligible to retire but who have not retired and who remain in service with the City may participate in the DROP.

b. Monthly DROP Credit

An amount equal to the accrued normal retirement benefit as of the effective date of DROP participation. The Monthly DROP Credit is credited to a notional account (DROP Account) on the last calendar day each month.

c. DROP Credit Interest

Interest is credited to the DROP Account at the beginning of each day based on the DROP Account balance at the end of the previous day and posted monthly on the last calendar day of each month. Effective January 1, 2005, the annual interest rate effective beginning January 1 each year is half of HMEPS' investment return percentage for the prior fiscal year, not less than 2.5% and not greater than 7.5%.

d. DROP Credits-COLA

On or after January 1, 2005:

The Monthly DROP Credit for participants who entered the DROP effective on or before January 1 of the then current year will be increased effective February 1 each year by 3.0%, not compounded.

The Monthly DROP Credit for participants who were first hired on or after January 1, 2005 who entered the DROP effective on or before January 1 of the then current year will be increased effective February 1 each year by 2.0%, not compounded.

e. DROP Account Balance

The sum of a participant's Monthly DROP (DROP Benefit) Credits, Monthly DROP Credit Adjustments, applicable interest, and employee contributions as applicable.

14. DROP Benefit Pay-out — A terminated DROP participant may elect to:

a. Receive the entire DROP Account Balance in a lump sum.
b. Receive the DROP Account Balance in periodic payments as approved by the Pension Board.
c. Receive a portion of the DROP Account balance in a lump sum and the remainder in periodic payments as approved by the Pension Board.
d. Receive a partial payment of not less than $1,000, no more than once each ninety (90) days.
e. Defer election of a payout option until a future date.

15. Post DROP Retirement — The Final Pension is the accrued normal retirement benefit as of the effective date of DROP participation, increased with COLAs since DROP entry.

Changes in Plan Provisions Since Prior Year

No changes since the prior valuation.