

May 11, 2004

Houston Police Officers'
Pension System
Actuarial Valuation
as of July 1, 2003

MERCER
Human Resource Consulting

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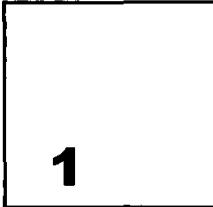
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Certification

Mercer Human Resource Consulting (“Mercer”) was retained by the Administration of the City of Houston (“City”) to independently determine the funded status of the Houston Police Officers’ Pension System (“HPOPS” or “Plan”). We have performed an actuarial valuation of the Plan as of July 1, 2003. The key results of the valuation are set forth in this report, which reflects the provisions of the Plan as amended and effective as of July 1, 2003.


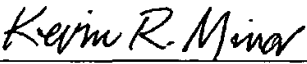
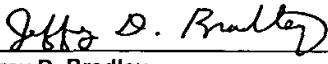
The valuation is based on employee and financial data provided by the City and by the HPOPS staff which is summarized in this report.

All costs, liabilities and other factors under the Plan were determined in accordance with generally accepted actuarial principles and procedures. In our opinion, the actuarial assumptions used for the July 1, 2003 actuarial valuation are reasonable and represent our best estimate of the anticipated experience under the Plan. This report fully and fairly discloses the actuarial position of the Plan on an ongoing basis.

The actuarial assumptions that have been used in our valuation have been changed from those used by Towers Perrin for the actuarial valuation of the Plan as of July 1, 2003. A description of those changes is incorporated in this report.

This report has been prepared exclusively for the City for purposes of verifying the current actuarial funded status of the Plan. Mercer is not responsible for consequences arising from the use of this report for any other purposes.

We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

	May 11, 2004
Stephen T. McElhaney Fellow of the Society of Actuaries Enrolled No. 02-2625	Date
	May 11, 2004
Kevin R. Minor Associate of the Society of Actuaries Enrolled No. 02-3831	Date
	May 11, 2004
Jeffrey D. Bradley Fellow of the Society of Actuaries Enrolled No. 02-5168	Date
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Summary of Key Results

Funded Status

(\$ in thousands)	July 1, 2003	Estimated* July 1, 2004
Actuarial Accrued Liability (AAL)	\$2,930,717	\$3,331,097
Actuarial Value of Assets (AVA)	\$2,394,411	\$2,484,892**
Unfunded Actuarial Accrued Liability	\$536,306	\$846,205
Funded Ratio (AVA/AAL)	82%	75%

Estimated Actuarial Contribution Rate***

(Percent of Payroll)	Fiscal Year Ending	
	June 30, 2005	June 30, 2006
Normal Cost (City Portion)	17.8%	17.8%
Amortization of Unfunded Actuarial Accrued Liability	10.7%	15.1%
Total	28.5%	32.9%

* Projected from July 1, 2003 actuarial valuation results using March 31, 2004 asset information provided by HPOPS staff.

** Estimated market value of assets on July 1, 2004, is \$2,425,487,000.

*** The July 1, 2003 actuarial valuation determines the actuarial contribution rate for fiscal year ending June 30, 2005. The July 1, 2004 actuarial valuation determines the actuarial contribution rate for fiscal year ending June 30, 2006.

Summary of Key Results *(continued)*

Actuarial Assumptions

Changes in actuarial assumptions used for the July 1, 2003 actuarial valuation include:

- Cost-of-living assumption was lowered from 4.0% to 3.0%. However, this assumption change has no effect on the current COLA due to the minimum COLA provision.
- Pensionable earnings should be adjusted to reflect the practice of many officers earning significant "extra pay" in the year prior to retirement. As the City intends to change its management policies to eliminate the "extra pay" practice, we do not believe it is necessary at this time to adjust pensionable earnings. If this practice persists, liabilities would be significantly higher.
- Estimated July 1, 2004 liabilities reflect the pay increase that went into effect March 27, 2004. Total pensionable earnings for the fiscal year ending June 30, 2005, is estimated to be \$336 million.

While we consider the investment return assumption of 8.5% per year (net of expenses) to be somewhat aggressive, it falls within a reasonable range of possible future investment returns and therefore we have recommended no change in this assumption. However, if long term future asset returns are less than 8.5%, this will cause an increase in the unfunded actuarial accrued liability.

A complete description of all the assumptions used by Mercer in this actuarial valuation is provided in Section 5.

Summary of Key Results *(continued)*

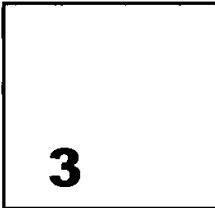
Reconciliation of Funded Status

The Unfunded Actuarial Accrued Liability is expected to increase from approximately \$480 million in the July 1, 2003 Towers Perrin actuarial valuation report to \$846 million as of July 1, 2004. A reconciliation of these increases is as follows:

(\$ in millions)	
Unfunded Actuarial Accrued Liability as of July 1, 2003 (per Towers Perrin)	\$480
Increase Due to:	
▪ Investment Return Less than Expected*	104
▪ Difference in Methodology**	56
▪ Pay Increase Greater Than Expected	143
▪ Contributions Less Than Actuarially Required	58
▪ Other Actuarial Loss	5
Estimated Unfunded Actuarial Accrued Liability as of July 1, 2004	\$846

* Based on Actuarial Value of Assets

** Difference in Methodology (less than 5% of the Actuarial Accrued Liability) in replicating Towers Perrin July 1, 2003 actuarial valuation results using actuarial assumptions and methods disclosed in the July 1, 2003 Towers Perrin actuarial valuation report. This difference is within typical tolerances for replicating the work of another actuarial firm.



Participant and Financial Data

Distribution of Active Participants*

Age	Years of Service as of July 1, 2003									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 20										
20 - 24	46 35,645									46 35,645
25 - 29	280 38,086	66 44,350								346 39,281
30 - 34	196 38,341	545 44,865	138 49,650							879 44,162
35 - 39	66 39,307	387 45,368	511 50,688	141 58,361	4 54,341					1,109 49,143
40 - 44	11 39,828	102 45,742	161 50,214	483 58,260	393 60,224	2 54,442				1,152 56,515
45 - 49	2 48,949	11 47,241	44 51,540	184 58,078	410 61,563	212 63,693	1 55,614			864 60,615
50 - 54	1 45,745	6 45,220	7 51,885	70 56,670	180 58,749	230 63,850	107 63,593	2 53,364		603 61,059
55 - 59			1 51,340	7 56,407	48 58,378	91 61,784	106 62,651	57 66,431		310 62,252
60 - 64				3 56,113		18 58,586	17 62,041	18 64,245	4 65,136	60 61,576
65 - 69							1 53,631	4 52,402	8 58,575	13 56,296
70 - 74									4 55,522	4 55,522
75+									1 53,014	1 53,014
TOTAL	602 38,197	1,117 45,114	862 50,487	888 58,091	1,035 60,390	553 63,245	232 62,972	81 64,930	17 59,073	5,387 53,247

* Average pay (reported valuation pay) and number of employees is shown in each cell.

Statistics for Inactive Participants

Inactive Participants as of July 1, 2003	Number		Amount of Monthly Benefit
Participants Receiving Benefits			
▪ Retired	1,396	\$	3,767,965
▪ Beneficiaries	444		1,080,161
▪ Disabled	68		167,633
Total	1,908	\$	5,015,759
Participants with Deferred Benefits			
▪ Vested terminated	7	\$	8,893
Total	7	\$	8,893

Asset Information (\$ in thousands)

Actuarial Gain/(Loss) on Assets	FYE 6/30/03	Estimated FYE 6/30/04		
Market Value of Assets on July 1	\$1,948,248	\$2,018,299		
Contributions				
▪ City	34,695	36,645		
▪ Employee	24,008	26,285		
Benefit Payments and Contribution Refunds	66,641	71,506		
Expected Asset Return at 8.5%	165,269	171,198		
Expected Market Value at June 30	2,105,529	2,180,921		
Actual Market Value on June 30	\$2,018,899	\$2,425,487		
Actuarial Asset Gain/(Loss)	(87,230)	244,566		
Amortization of Actuarial Gain/(Loss)				
Fiscal Year Ending	Initial Gain/(Loss)	Five-Year Amortization	Remaining July 1, 2003	Remaining July 1, 2004
June 30, 2004	244,566	48,913		195,653
June 30, 2003	(87,230)	(17,446)	(69,784)	(52,338)
June 30, 2002	(370,576)	(74,115)	(222,346)	(148,231)
June 30, 2001	(272,437)	(54,487)	(108,976)	(54,489)
June 30, 2000	124,966	24,993	24,994	0
			(376,112)	(59,405)
Actuarial Value of Assets			July 1, 2003	Estimated July 1, 2004
Market Value of Assets			\$2,018,299	\$2,425,487
Less: Unamortized Gain/(Loss)			(376,112)	(59,405)
Actuarial Value of Assets			\$2,394,411	\$2,484,892

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Plan Provisions

Following is a summary of the major Plan provisions used to determine the Plan's financial position. It should not be used in determining Plan benefits.

<i>Eligibility</i>	Sworn in as a classified Officer's of the City of Houston Police Department.
<i>Average Total Direct Pay</i>	Highest bi-weekly pay (excluding overtime) during the last 26 pay periods annualized. Amounts not paid on a bi-weekly basis are deducted from period paid. Annual amounts are divided by 26 and added to the highest pay period, including motorcycle allowances.
<i>Service Retirement</i>	
<ul style="list-style-type: none"> ▪ <i>Eligibility</i> ▪ <i>Benefit</i> ▪ <i>Additional Benefits</i> 	<p>After 20 years of service.</p> <p>55% of average total direct pay plus 2% of average total direct pay for service in excess of 20 years.</p> <p>An extra monthly benefit of \$150.00 is payable for life and a \$5,000 lump sum is payable upon retirement.</p>
<i>Terminated Vested Pension Benefit</i>	
<ul style="list-style-type: none"> ▪ <i>Eligibility</i> ▪ <i>Benefit</i> 	<p>Termination after more than 10 but less than 20 years of service.</p> <p>2.75% of average total direct pay times years of service. This benefit commences at age 60 or at termination of service if later.</p>
<i>Deferred Retirement Option Plan (DROP)</i>	
<ul style="list-style-type: none"> ▪ <i>Eligibility</i> 	Eligible after 20 years of service

- *Benefit*

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's 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.

The 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 average total direct pay at retirement date.

Back DROP Option 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* After retirement from DROP, a retired member is allowed to leave all or a portion of their DROP account in the System.
 - *Benefit* These accounts are credited every calendar year with the same as the interest rate credited to DROP accounts, including a minimum credited rate of 0%.

-
- Disability Retirement*
- *Eligibility* A 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's".
 - Partial: Disability is an impairment which renders the participant unable to work as a police Officer's 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 compensation is payable for life or as long as he remains incapacitated.
 - *Non 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* 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 member injured while on-duty as a municipal worker will receive immediate off-duty benefit upon Board approval.
An extra monthly benefit of \$150.00 is payable for life and a \$5,000 lump sum is payable upon retirement.

Postretirement Option Plan (PROP)

- *Eligibility* After retirement from DROP, a retired member is allowed to leave all or a portion of their DROP account in the System.
- *Benefit* These accounts are credited every calendar year with the same as the interest rate credited to DROP accounts, including a minimum credited rate of 0%.

Disability Retirement

- *Eligibility* A 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’s”.
 - Partial: Disability is an impairment which renders the participant unable to work as a police Officer’s 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 compensation is payable for life or as long as he remains incapacitated.
 - *Non 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.

- o *Additional benefits*

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 member injured while on-duty as a municipal worker will receive immediate off-duty benefit upon Board approval.

An extra monthly benefit of \$150.00 is payable for life and a \$5,000 lump sum is payable upon retirement.

Benefit Adjustments

Cost of Living 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. This increase is subject to a minimum of 3.0% per year compounded and a maximum increase of 8.0% per year compounded.

13th Benefit Check A 13th benefit check is paid to current retirees and DROP member when:

- The assets on the fund equal or exceed the liabilities after the 13th benefit check is paid
- The return on investment for the preceding fiscal year exceed 9.25%
- The payment of the benefit will not cause the City of Houston's contribution to the System to increase.

Service Adjustments 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.

Participants who have service credit in more than one City of Houston Pension Plan may use their combined service to qualify for DROP participation.

Participants involuntarily transferred to the System from the Houston Municipal Employees Pension System will receive service under this plan for years worked while serving as a City Marshall, Airport Police or Park Police.

Contributions

Employee Contributions 8.75% of average total direct pay less overtime.

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 participant leaves service before eligibility for retirement.

Contributions are refunded without interest.

Employer Contribution

The city will follow the following contribution schedule:

Fiscal Year Ending (June 30)	City Contribution Amount
2001	\$ 30,645,000
2002	32,645,000
2003	34,645,000
2004	36,645,000
2005	16% of pay

For fiscal years ending after June 30, 2005 the City will contribute the greater of:

- (i) 16% of pay
 - (ii) The actuarially determined rate
-

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Actuarial Assumptions

Actuarial Methods

<i>Actuarial Value of Assets</i>	Gains and losses in the market value of assets, based on the difference between the actual and the assumed rate of return, are recognized over five years.
<i>Actuarial Cost Method</i>	Entry Age Normal. The Unfunded Actuarial Accrued Liability, including effects of actuarial gains and losses, is amortized as a level percentage of pay over 30 years. The contribution is increased for interest for one-half of a year to reflect timing of payments.

Economic Assumptions

<i>Investment Return</i>	8.5% per year, net of expenses	
<i>Payroll Growth Rate</i>	4.0% per year	
<i>Inflation</i>	3.0% per year (4.0% assumed by Towers Perrin)	
<i>Individual Merit Increase Rate</i>	Age	Increase
	20	5.00%
	25	4.30
	30	1.80
	35	0.55
	40	0.25
	45	0.25
	Over 50	0.00
<i>Individual Pay Increase Rate</i>	Inflation plus merit	
<i>DROP Crediting Rate</i>	9.0% per year	

Demographic Assumptions

<i>Entry Age</i>	Date sworn																
<i>DROP Participation Rates</i>	100% of active participants are assumed to elect the back DROP. Participants are assumed to elect the maximum duration for the back DROP, up to 20 years.																
<i>Retirement Rates</i>	<table border="1"> <thead> <tr> <th>Years of Service</th> <th>Probability of Retiring Within One Year</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>15%</td> </tr> <tr> <td>21 – 22</td> <td>5</td> </tr> <tr> <td>23</td> <td>10</td> </tr> <tr> <td>24 – 25</td> <td>15</td> </tr> <tr> <td>26 – 28</td> <td>30</td> </tr> <tr> <td>29 – 40</td> <td>20</td> </tr> <tr> <td>Over 40</td> <td>100</td> </tr> </tbody> </table>	Years of Service	Probability of Retiring Within One Year	20	15%	21 – 22	5	23	10	24 – 25	15	26 – 28	30	29 – 40	20	Over 40	100
Years of Service	Probability of Retiring Within One Year																
20	15%																
21 – 22	5																
23	10																
24 – 25	15																
26 – 28	30																
29 – 40	20																
Over 40	100																
<i>Mortality Rates</i>																	
<i>Active participants and nondisabled retirees</i>	1994 Group Annuity Mortality Table (see table below for sample rates).																
<i>Disabled retirees</i>	1987 Commissioners Group Disabled Mortality Table (see table below for sample rates).																
<i>Disability Rates</i>	Graduated rates (see table below for sample rates).																
<i>Percentage of Deaths and Disabilities in the Line of Duty</i>	100%																
<i>Termination Rates and Terminated Vested Pension Benefit Election</i>	Graduated rates (see table below for sample rates). 50% of members eligible to receive a terminated vested pension are assumed to elect the pension at age 60 instead of a refund of contributions.																
<i>Marital Status at Benefit Eligibility</i>																	
<i>Percentage married</i>	90% (No beneficiaries other than the spouse assumed).																
<i>Age difference</i>	Husbands assumed to be three years older than wives.																
<i>Valuation Earnings</i>	Highest pay in the 26 pay periods preceding the valuation date, annualized and increased for one year of assumed pay increases.																
	Sample Rates per 100 Participants																

Table of Sample Rates

Age	Nondisabled Mortality		Disabled Mortality (Ultimate)	Termination	Disability	
	Male	Female	All	All	Male	Female
20	0.05	0.03	0.00	4.44	0.00	0.00
25	0.07	0.03	0.00	3.99	0.00	0.00
30	0.08	0.04	2.82	3.02	0.08	0.12
35	0.09	0.05	2.82	1.92	0.10	0.16
40	0.11	0.07	2.82	0.92	0.14	0.22
45	0.16	0.10	2.82	0.21	0.21	0.30
50	0.26	0.14	2.82	0.00	0.37	0.54
55	0.44	0.23	2.82	0.00	0.79	1.08
60	0.80	0.44	3.14	0.00	2.15	2.86