



# HPOPS

FOR TODAY & TOMORROW

---

Houston Police Officers' Pension System  
a Component Unit of the City of Houston, Texas  
Financial Statements  
As of and for the Years Ended June 30, 2018 and 2017

**Houston Police Officers' Pension System**  
a Component Unit of the City of Houston, Texas

---

**Financial Statements**  
**As of and for the Years Ended June 30, 2018 and 2017**

# Houston Police Officers' Pension System

## Contents

---

<b>Independent auditor's report</b>	2-3
<b>Management's discussion and analysis</b> (unaudited)	4-7
<b>Basic financial statements</b>	
Statements of fiduciary net position	8
Statements of changes in fiduciary net position	9
Notes to financial statements	10-33
<b>Required supplementary information</b> (unaudited)	
Schedule of changes in the system's net pension liability and related ratios	34
Schedule of employer contributions	35
Schedule of investment returns	36
<b>Supplemental schedules</b>	
Schedule I – Investment, professional and administrative expenses	37
Schedule II – Summary of investment and professional services	38



## **Independent Auditor's Report**

The Board of Trustees  
Houston Police Officers' Pension System  
Houston, Texas

### **Report on the Financial Statements**

We have audited the accompanying financial statements of Houston Police Officers' Pension System (the System), a component unit of the city of Houston, Texas, as of June 30, 2018 and 2017, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

#### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

#### ***Auditor's Responsibility***

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### ***Opinion***

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System as of June 30, 2018 and 2017, and the changes in its financial position for the years then ended, in accordance with accounting principles generally accepted in the United States of America.



Tel: 713-960-1706  
Fax: 713-960-9549  
www.bdo.com

2929 Allen Parkway, 20th Floor  
Houston, Texas 77019-7100

## ***Other Matters***

### ***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that “Management’s Discussion and Analysis” and the “Required Supplementary Information” listed on the Table of Contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to these required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management’s responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### ***Other Information***

Our audits were conducted for the purpose of forming an opinion on the basic financial statements as a whole. The accompanying supplemental schedules of “Investment, Professional and Administrative Expenses” and “Summary of Investments and Professional Services” are presented for the purpose of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of the System’s management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audits of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the basic financial statements as a whole.

*BDO USA, LLP*

Houston, Texas  
October 9, 2018

# Houston Police Officers' Pension System

## Management's Discussion and Analysis Fiscal Year Ended June 30, 2018

The discussion and analysis of the financial performance of the Houston Police Officers' Pension System (the System), provides an overall review of the System's financial activities for the fiscal years ended June 30, 2018, 2017 and 2016. The intent of this discussion and analysis is to look at the System's financial performance as a whole; readers should review the financial statements, notes to the financial statements, required supplementary information and other schedules, in order to enhance their understanding of the System's financial performance.

### Financial Statements

These financial statements consist of the Statements of Fiduciary Net Position, Statements of Changes in Fiduciary Net Position, Notes to Financial Statements, Schedules, and other unaudited required supplementary information. The System is a single employer contributory defined benefit pension plan. The System is a component unit of the City of Houston, Texas (the City) only to the extent the System receives contributions equal to a fixed amount or percentage of the pensionable pay of active members in accordance with Article 6243g-4, Vernon's Texas Civil Statutes (the Governing Statute), or contracts pursuant to Section 27 thereof, and as such, its reports are included in the Fiduciary Funds of the City as restricted assets.

### Financial Highlights

The System presents its financial statements solely on the accounts of the System. The accrual basis of accounting is used by the System, whereby revenues are recognized when they are earned and collection is reasonably assured, and expenses are recognized when the liability has been incurred. Investments are reported at fair value.

A summary of the Statements of Fiduciary Net Position for the System is as follows (\$000's):

As of June 30:	2018	2017	2016
<b>Assets</b>			
Investments at fair value	\$ 5,452,267	\$ 4,454,685	\$ 4,040,927
Invested securities lending collateral	109,070	25,778	24,211
Receivables	39,684	5,997	41,949
Cash	33	104	304
<b>Total Assets</b>	<b>5,601,054</b>	<b>4,486,564</b>	<b>4,107,391</b>
<b>Liabilities</b>			
Due for purchase of investments	3,502	2,018	894
Securities lending collateral	109,070	25,778	24,211
Accrued investment and professional fees	1,399	1,127	1,172
Other liabilities	469	463	654
<b>Total Liabilities</b>	<b>114,440</b>	<b>29,386</b>	<b>26,931</b>
<b>Net position restricted for pensions</b>	<b>\$ 5,486,614</b>	<b>\$ 4,457,178</b>	<b>\$ 4,080,460</b>

The System's net position increased by approximately \$1,029,436 thousand in fiscal year 2018 over 2017 after an increase by approximately \$376,718 thousand in fiscal year 2017 over 2016. The increase in fiscal year 2018 was attributable to the System receiving \$750,000 thousand from the City through the issuance of pension obligation bonds (POB) in December, 2017, and investment returns. The markets in fiscal year 2018 continued the strong growth from the previous year with evidence of sustained global growth and better than expected economic data in the U.S. and

# Houston Police Officers' Pension System

## Management's Discussion and Analysis Fiscal Year Ended June 30, 2018

positive corporate earnings through the fall despite increasing tensions with North Korea and a particularly destructive hurricane season. The second half of the year began strong as markets remained euphoric with improving global economic growth, favorable corporate earnings and enthusiasm over recent U.S. tax cuts. However, the remainder of the year saw market growth slow due to rising and falling concerns regarding fears of trade wars, faster inflation and higher interest rates. Fiscal year 2017 began strong with positive U.S. economic developments and less-negative-than-expected international news. The uncertainty of the U.S. presidential election slowed growth, but U.S. equity markets reached all-time highs after the election while international markets were driven by solid economic data. Positive investor sentiment fueled by improving U.S. economic data and decreasing political risk helped global markets perform in line with US markets for the first time since the financial crisis, which allowed the System to experience positive returns each month throughout the year.

The System experienced a positive time-weighted investment return of 10.2% in 2018 as opposed to a positive return of 16.8% in 2017 and a negative return of (3.1)% in 2016. These rates of return calculations were prepared using a time-weighted rate of return in accordance with The CFA Institute's Global Investment Performance Standards and, as such, cannot be recalculated from the information provided herein. Changes in receivables are primarily a result of the timing of investment transactions.

A summary of the Statements of Changes in Fiduciary Net Position for the System is as follows (\$000's):

Years ended June 30:	2018	2017	2016
<b>Additions:</b>			
<b>Contributions:</b>			
City	\$ 887,143	\$ 133,805	\$ 137,392
Members	45,254	40,104	39,017
<b>Total contributions</b>	<b>932,397</b>	<b>173,909</b>	<b>176,409</b>
Net income (loss) from investing activities	462,801	667,171	(136,018)
Net income from securities lending activities	279	305	185
<b>Total additions</b>	<b>1,395,477</b>	<b>841,385</b>	<b>40,576</b>
<b>Deductions:</b>			
Benefits paid to members	361,033	458,733	259,076
Refunds to members	1,329	1,696	978
Professional and administrative expenses	3,679	4,238	4,585
<b>Total deductions</b>	<b>366,041</b>	<b>464,667</b>	<b>264,639</b>
<b>Net increase/(decrease)</b>	<b>1,029,436</b>	<b>376,718</b>	<b>(224,063)</b>
<b>Net position restricted for pensions</b>			
Beginning of period	4,457,178	4,080,460	4,304,523
<b>End of period</b>	<b>\$ 5,486,614</b>	<b>\$ 4,457,178</b>	<b>\$ 4,080,460</b>

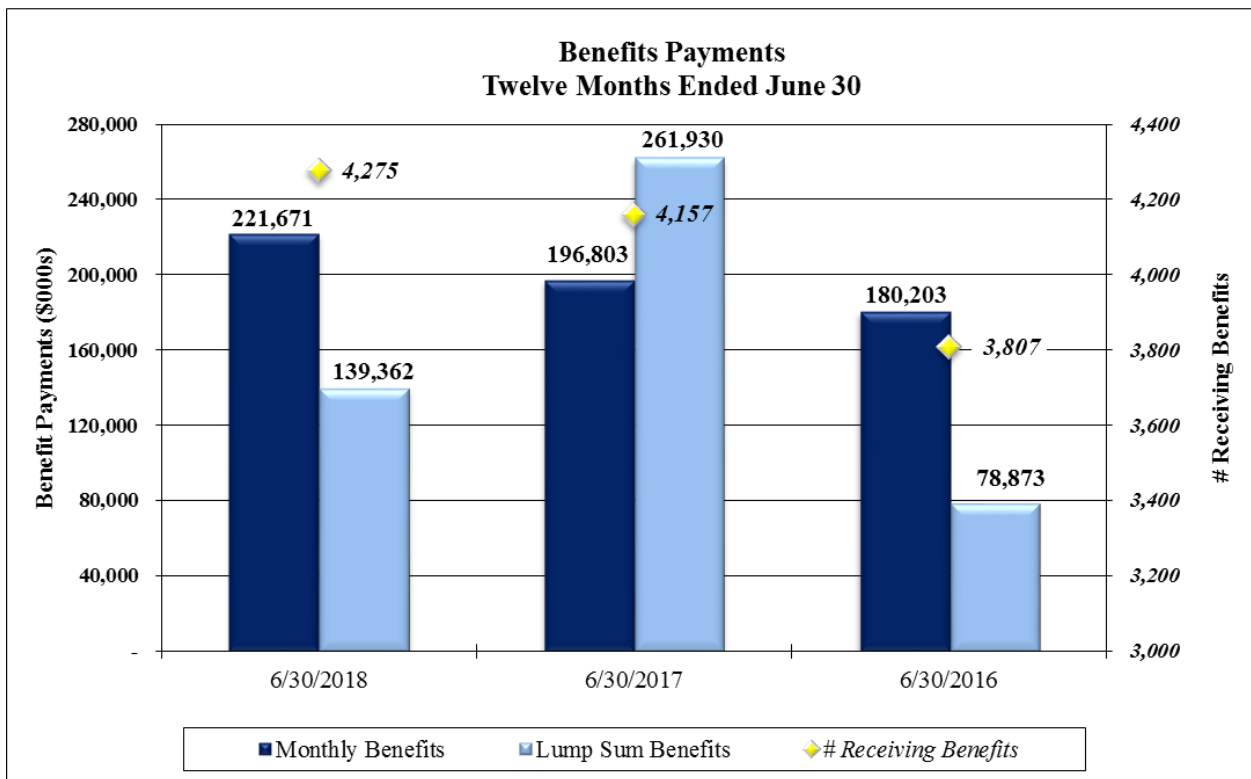
The Governing Statute as amended on July 1, 2017, requires contribution payments for fiscal year 2018 equal to 31.77% of payroll, resulting in contributions of \$137,143. In addition, the Governing Statute required the City to provide \$750,000 thousand through the issuance of pension obligation bonds (POB), which accounts for the increase in City contributions for the year ended June 30, 2018. For fiscal years 2017 and 2016, the June 30, 2011 Agreement with the City contractually required contribution payments in fixed amounts of \$133,000 thousand and \$123,000 thousand respectively. These contractual provisions account for the increase in City contributions for the years ended

# Houston Police Officers' Pension System

## Management's Discussion and Analysis Fiscal Year Ended June 30, 2018

June 30, 2017 and June 30, 2016. As discussed in Note 2 to the financial statements, the contributions for fiscal year 2018 were paid from both the City budget and POB. The contributions were paid in their entirety from the City budget in fiscal years 2017 and 2016.

“Benefits paid to members” consist of both lump sum payments and monthly payments of retirement, disability, and survivor benefits. The System’s benefit payment structure provides that members and survivors have the option to receive distributions from their lump sum accounts either on or after the date they begin receiving monthly benefit payments. Due to this ad hoc nature of lump sum distributions the summary results in the accompanying Statements of Changes in Fiduciary Net Position will not show any distinct trends in the “Benefits paid to members” category. The chart below compares the components of benefits paid to members for the years ended June 30, 2018, 2017, and 2016.



For each year, the annual cost of living adjustment (COLA) along with the increase in the number of benefit recipients accounts for the majority of the increase in benefit payments. Total benefits paid in 2018 decreased from 2017 by approximately \$(97,700) thousand or (21.3)% compared to an increase of approximately \$199,657 thousand or 77.1% between 2016 and 2017. The decrease in 2018 is due to an \$(122,569) thousand decrease in lump sum benefits offset by a \$24,869 thousand increase in monthly benefits compared to an \$183,057 thousand increase in lump sum benefits and a \$16,600 thousand increase in monthly benefits in 2017. Average monthly benefit payments were \$18,473 thousand and \$16,400 thousand per month for 2018 and 2017 respectively. The increase of \$2,073 thousand or 12.6% in 2018 was greater than the increase of \$1,383 thousand or 9.2% in 2017 while the number of members and survivors who are receiving benefits increased by 118 in 2018 and 350 in 2017.

There was a decrease of \$559 thousand in professional and administrative expenses during 2018 as compared to 2017. This decrease is due mainly to completion of negotiations with the City resulting in a decrease of \$364 thousand for actuarial services and the completion of enterprise system projects and maintenance resulting in a decrease of \$303



# Houston Police Officers' Pension System

## Management's Discussion and Analysis Fiscal Year Ended June 30, 2018

---

thousand for information technology. The decrease of \$347 thousand in professional and administrative expenses during 2017 as compared to 2016 was mainly due to the completion in the previous fiscal year of the upgrade project for the System's enterprise software system and website and an increase in actuarial services.

### **System Highlights**

---

The System's funded ratio pursuant to its most recent actuarial valuation dated July 1, 2017 was 78.3% representing an unfunded actuarial accrued liability of \$1,349,679 thousand. The System's funded ratio as of July 1, 2016 was 78.2% representing an unfunded actuarial accrued liability of \$1,323,313 thousand.

### **Contacting the System's Management**

---

This financial report is designed to provide members and other users with a general overview of the System's finances and to show the System's accountability for the funding it receives. If you have questions about this report, you may contact the System's Executive Director at 602 Sawyer, Suite 300, Houston, TX 77007 or by phone at 713-869-8734.

**Houston Police Officers' Pension System**  
**Statements of Fiduciary Net Position (\$000's)**

<i>June 30,</i>	<b>2018</b>	<b>2017</b>
<b>Assets</b>		
<b>Investments, at fair value</b> (Note 3 and Note 4)		
Short term investments	\$ 942,332	\$ 844,812
Fixed income investments	642,196	235,049
Equity securities	1,841,327	1,435,775
Alternative investments	2,026,412	1,939,049
<b>Total Investments</b>	<b>5,452,267</b>	<b>4,454,685</b>
<b>Invested securities lending collateral</b> (Note 4)	<b>109,070</b>	<b>25,778</b>
<b>Receivables</b>		
City (Note 2)	5,682	-
Members	1,876	1,516
Investments	6,466	3,196
Due from sale of investments	25,616	1,262
Other receivables	44	23
<b>Total Receivables</b>	<b>39,684</b>	<b>5,997</b>
<b>Cash</b>	<b>33</b>	<b>104</b>
<b>Total Assets</b>	<b>\$ 5,601,054</b>	<b>\$ 4,486,564</b>
<b>Liabilities</b>		
<b>Payables</b>		
Due for purchase of investments	3,502	2,018
Securities lending collateral (Note 4)	109,070	25,778
Accrued investment and professional fees	1,399	1,127
Other liabilities	469	463
<b>Total Liabilities (Note 8)</b>	<b>114,440</b>	<b>29,386</b>
<b>Net position restricted for pensions</b>	<b>\$ 5,486,614</b>	<b>\$ 4,457,178</b>

*See accompanying notes to financial statements.*

**Houston Police Officers' Pension System**  
**Statements of Changes in Fiduciary Net Position (\$000's)**

<i>Years ended June 30,</i>	<b>2018</b>	<b>2017</b>
<b>Additions</b>		
<b>Contributions</b> (Note 2 and Note 5)		
City	\$ 887,143	\$ 133,805
Members	45,254	40,104
<b>Total contributions</b>	<b>932,397</b>	<b>173,909</b>
<b>Investment income</b>		
Net appreciation in fair value of investments	413,755	632,552
Interest:		
Short-term investments	14,070	5,574
Fixed income investments	17,725	10,215
<b>Total interest income</b>	<b>31,795</b>	<b>15,789</b>
Dividends	31,590	32,923
<b>Total investment income</b>	<b>477,140</b>	<b>681,264</b>
Less: investment expense	(14,339)	(14,093)
<b>Net income from investing activities</b>	<b>462,801</b>	<b>667,171</b>
<b>Securities lending activities</b> (Note 4)		
Securities lending income	373	407
Securities lending expense	(94)	(102)
<b>Net income from securities lending activities</b>	<b>279</b>	<b>305</b>
<b>Total additions</b>	<b>1,395,477</b>	<b>841,385</b>
<b>Deductions</b>		
Benefits paid to members	361,033	458,733
Refunds to members (Note 1)	1,329	1,696
Professional and administrative expenses	3,679	4,238
<b>Total deductions</b>	<b>366,041</b>	<b>464,667</b>
Net increase in net position	1,029,436	376,718
<b>Net position restricted for pensions</b>		
Beginning of period	4,457,178	4,080,460
End of period	\$ 5,486,614	\$ 4,457,178

*See accompanying notes to financial statements.*

# Houston Police Officers' Pension System

## Notes to Financial Statements

### 1. Plan Description and Contribution Information

*General* – The Houston Police Officers' Pension System (the System) was created in 1947 by an act of the Fiftieth Legislature of the State of Texas, and is governed by Article 6243g-4, Vernon's Texas Civil Statutes (the Governing Statute) and contracts pursuant to Section 27 thereof. The System is a single employer contributory defined benefit pension plan covering police officers employed full time by the City of Houston (the City or the Employer) that provides for service, disability and death benefits for eligible members and their beneficiaries. The System is a local governmental plan and, therefore, is not subject to the Employee Retirement Income Security Act of 1974 (ERISA). The System is a component unit of the City only to the extent the System receives contributions equal to an amount or percentage of pay of active members in accordance with the Governing Statute.

The System's Board of Trustees in accordance with the Governing Statute is responsible for the general administration, management, and operation of the pension system, including the direction of investment and oversight of the fund's assets. The System's Board of Trustees is composed of seven members as follows: (1) the administrative head of the City or the administrative head's authorized representative; (2) three employees of the police department having membership in the pension system, elected by the active, inactive, and retired members of the pension system; (3) two retired members who are receiving pensions from the system and are not officers or employees of the City, elected by the active, inactive, and retired members of the pension system; and (4) the treasurer of the City or the person discharging the duties of the City treasurer.

At June 30, the System's membership consisted of the following:

June 30,	2018	2017
Retirees and beneficiaries:		
Currently receiving benefits	4,275	4,157
Not yet receiving benefits	26	27
Active members:		
Fully vested	1,808	1,814
Nonvested:		
Hired or rehired before October 9, 2004	613	772
Hired or rehired after October 9, 2004	2,826	2,585
<b>Total members</b>	<b>9,548</b>	<b>9,355</b>

The following sections describe the benefit structure in effect for the plan year ending June 30, 2018. On September 29, 2004, the System and the City entered into an agreement (the October 9, 2004 Agreement) that altered the benefit structure of the System. On June 30, 2011, the System and the City entered into an agreement (the June 30, 2011 Agreement) that altered the City payment schedule and extended the contract term which began on October 9, 2004, through June 30, 2023 and thereafter renews for one-year terms through June 30, 2040 unless either party terminates the agreement. Additional changes to the benefit structure became effective July 1, 2017 due to passage of Senate Bill 2190 by the 85th Legislature of Texas, Regular Session. The benefits described below include those for members hired or rehired on or before October 9, 2004 as well as benefits for members hired or rehired subsequent to October 9, 2004.

*Eligibility* – Members become eligible to receive a service pension upon retirement with 20 years of service. Members also have the option to select a Delayed Retirement, which allows for vesting after 10 years of service with a pension benefit payable at age 60. Members hired or rehired subsequent to October 9, 2004 are eligible to receive a service pension upon satisfying the Rule of 70 (age plus service equals 70). If a member separates with more than 10 years of service but has yet to satisfy the Rule of 70, the member may apply for a Delayed Retirement payable when age and service total 70.

*Benefits* – Retirement benefits are equal to 2.75% of the member's pensionable pay for each of the member's first 20 years of service plus 2.00% of pensionable pay for each year in excess of 20 years with no maximum percentage. Members hired or rehired subsequent to October 9, 2004 accrue benefits equal to 2.25% of the member's pensionable pay for each of the member's first 20 years of service plus 2.00% of the member's pensionable pay for each year in excess of 20 years subject to a maximum of 80%. Retired members and surviving spouses are entitled to receive an additional \$150 per month in order to defray group medical insurance costs.

# Houston Police Officers' Pension System

## Notes to Financial Statements

---

*Pensionable Pay* - Eligible members of the System will have their retirement or DROP benefit (see below) calculated on pensionable pay, which is referred to as Final Average Pay, and is defined as the average of all pay types received by a member over the three years prior to retirement or entrance into DROP exclusive of all categories of overtime. Clothing allowance, motorcycle allowance and mentor pay earned after June 30, 2017 is also excluded.

*Deferred Retirement Option Plan* – The Deferred Retirement Option Plan (DROP) provides for an optional method of accruing pension benefits. Generally, members with at least 20 years of service are eligible to participate in the DROP. Members hired or rehired subsequent to October 9, 2004 are not eligible to participate in DROP. Upon termination of employment participating members receive their pension benefit in the form of an annuity and a lump sum benefit. The annuity is the member's pension benefit at the time of enrollment in the DROP plus any subsequent cost of living adjustments received prior to July 1, 2017. The lump sum benefit is the accumulated balance in the member's notional DROP account which is equal to an amount calculated as if the member's annuity, employee contributions and an interest component had been deposited in a separate account in the member's name during the member's participation in DROP. Prior to October 9, 2004, 100% of a member's contributions were credited to his or her notional DROP account. Subsequent to that date, an eligible member contributes 9.00% of pensionable pay with 8.75% of pensionable pay credited to his or her notional DROP account and the additional 0.25% credited to the System's general fund. Effective July 1, 2017, member contributions are no longer credited to the DROP account.

*Cost of Living Adjustments (COLA)* – Pension benefits for eligible members and survivors are adjusted each year at a rate equal to the most recent five fiscal years' smoothed return minus 500 basis points, subject to minimum and maximum increases of 0.0% and 4.0%, respectively. For years 2018, 2019, and 2020, only members and eligible survivors who are 70 years of age or older will receive a COLA. For COLAs beginning with year 2021, eligible members are retired members and eligible survivors age 55 and older as of April 1 of the applicable year, a member or survivor who received benefits before June 8, 1995, or a survivor of an active member who died in the line of duty.

*Disability Benefits* – Duty connected disability benefits are equal to the greater of 55% of pensionable pay or the accrued service pension. Disabled members who qualify for a Catastrophic Disability, as defined, receive a disability benefit equal to 100% of pensionable pay. Members hired or rehired subsequent to October 9, 2004 are eligible for a duty connected disability benefit equal to the greater of 45% of the member's pensionable pay or the accrued service pension.

Members determined to be eligible for a non-duty connected disability benefit are entitled to a benefit of either 27.5% of pensionable pay, if the member has 10 or fewer credited years of service, or 2.75% per year for credited service in excess of 10 years. Members hired or rehired subsequent to October 9, 2004 are eligible for a non-duty connected disability benefit equal to the greater of 22.5% of the member's pensionable pay or 2.25% per year for credited service equal to or in excess of 10 years up to 20 years and 2.00% per year for credited service equal to or in excess of 20 years.

*Death Benefits* – Death benefits are available to a surviving spouse, dependent children or a dependent parent in the event of the death of a member either after disability or service retirement, or prior to retirement.

*Refunds of Member Contributions* – A member with less than 20 years of credited pension service may elect to obtain a refund of member contributions upon termination of service with the Houston Police Department (HPD). This refund does not include interest. Members who terminate with at least 10 years of credited pension service but have not met the requirements for an immediate service retirement, have the option for a Delayed Retirement benefit in lieu of a refund.

*Delayed Retirement* – A member with at least 10 but less than 20 years of credited pension service at termination of employment with the HPD has the option of either a refund of member contributions, without interest, or a Delayed Retirement benefit. The Delayed benefit is payable at age 60 and is calculated at 2.75% of pensionable pay for each year of credited pension service. Members hired or rehired subsequent to October 9, 2004 with more than 10 years of service are eligible for a Delayed Retirement payable when the sum of his or her age and service total 70 (Rule of 70) calculated at 2.25% of pensionable pay for each year of credited pension service.

# Houston Police Officers' Pension System

## Notes to Financial Statements

---

*Supplemental Monthly Benefit* (13<sup>th</sup> check) – In years in which certain investment performance and actuarial funding requirements are met, the System issues a supplemental monthly benefit payment to retired members and a supplemental credit to DROP participants' accounts in an amount equal to their normal monthly benefit. This benefit is not available for any year in which the System's funded ratio is less than 120%. Members hired or rehired subsequent to October 9, 2004 are not eligible for this benefit.

*Lump Sum Benefit* – Members retiring with a service or disability benefit receive a one-time \$5,000 lump sum benefit. Members hired or rehired subsequent to October 9, 2004 are not eligible for this benefit.

*Post Retirement Option Plan* – The Post Retirement Option Plan (PROP) allows retired members and survivors to have all or a portion of their DROP lump sum credited to a notional account maintained by the System which accumulates interest and can be disbursed under certain options as designated by the System. Members hired or rehired subsequent to October 9, 2004 are not eligible for this benefit.

*Partial Lump Sum Option Plan* – The Partial Lump Sum Option Plan (PLOP) provides for an optional lump sum payment of a portion of a member's retirement benefit. A lump sum payment of not more than 20% of the actuarial value of the member's accrued pension at retirement shall be made available to persons who become active members of the System subsequent to October 9, 2004. The benefit shall be actuarially neutral. Thus, the value of the pension the member receives shall be reduced actuarially to reflect the lump sum payment.

### **2. Contributions and Reserves**

---

*Contributions* – On July 1, 2017, the Governing Statute was amended. For fiscal year 2018, all members are required to contribute 10.50% of pay. For fiscal year 2017, members hired prior to October 9, 2004 were required to contribute 9.00% of pay and members hired or rehired subsequent to October 9, 2004 were required to contribute 10.25% of pay. Contributions are made on a pre-tax basis pursuant to Governing Statutes.

Under the Governing Statute, the employer contribution rate is determined actuarially, based on a Risk Sharing Valuation Study (RSVS). The Governing Statute required a Final Risk Sharing Valuation Study (RSVS) as of June 30, 2016, which was completed September 25, 2017. This initial RSVS established a corridor midpoint for the employer contribution rate. While inside the RSVS Corridor, the actual employer contribution rate will be the greater of the estimated employer contribution rate and the corridor midpoint. For fiscal year 2018, the actual employer contribution rate equaled the corridor midpoint which was 31.77%, as established in the initial RSVS. Prior to fiscal year 2018 under the October 9, 2004 Agreement, it was agreed that in lieu of contributions to the System made pursuant to actuarial valuations, the City would make cash payments to the System in accordance with a payment schedule as provided for in such Agreement. In the June 30, 2011 Agreement, it was agreed that for fiscal year 2017 the amount to be contributed was a \$133,000 thousand fixed payment. For all subsequent fiscal years, the actual employer contribution rate will be the greater of the estimated employer contribution rate and the corridor midpoint.

In addition to the actuarially determined contributions, the Governing Statute required the City to fund \$750,000 thousand of the System's unfunded liability on or before December 31, 2017, through the issuance of pension obligation bonds (POB). On August 11, 2017, the System and the City entered into an agreement pursuant to the Governing Statute and allowed under Chapter 107, Texas Local Government Code, as amended (Chapter 107) for the City to fund \$750,000 thousand of the System's unfunded liability through the issuance of pension obligation bonds (POB). The proceeds of these pension obligation bonds were received on December 22, 2017.

City contributions in the Statements of Changes in Fiduciary Net Position may be greater than the statutorily required amounts, as members are allowed to contribute accumulated sick and vacation pay to the System upon retirement and such contributions are classified as City contributions.

# Houston Police Officers' Pension System

## Notes to Financial Statements

Pursuant to the Governing Statute and based on the July 1, 2017 actuarial valuation, the City contribution rates and the Actuarial Determined Contributions (ADC) are as shown in the table below for the ten years ending June 30, 2028.

(\$000's)

Years Ended June 30,	Compensation	Employer Contribution Rate *	Actuarially Determined Contribution (ADC)
2019	\$ 452,731	31.85 %	\$ 144,195
2020	465,181	31.82	148,021
2021	479,121	31.84	152,552
2022	493,310	31.92	157,465
2023	508,005	31.98	162,460
2024	522,862	32.03	167,473
2025	537,740	32.07	172,453
2026	553,136	32.10	177,557
2027	569,045	32.12	182,777
2028	585,482	32.13	188,115

\* The corridor midpoint is used for years 2020 – 2028.

### 3. Summary of Significant Accounting Policies

*Basis of Presentation* – As defined by generally accepted accounting principles established by the Governmental Accounting Standards Board (GASB), the accompanying financial statements include solely the accounts of the System, which include all programs, activities and functions relating to the accumulation and investment of the assets and related income necessary to provide the service, disability and death benefits required under the terms of the Governing Statutes and amendments thereto.

*Basis of Accounting* - Basis of accounting is the method by which revenues and expenses are recognized in the accounts and are reported in the financial statements. The accrual basis of accounting is used for the System. Under the accrual basis of accounting, revenues are recognized when they are earned and collection is reasonably assured, and expenses are recognized when the liability is incurred. Member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when due and the employer has made a legally required commitment to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of the Governing Statute. Dividend income is recorded on the ex-dividend date. Income from other investments is recorded when earned. Gains and losses on sales of securities are recognized on the trade date. The cost of investments sold is determined using the average cost method.

*Administrative Costs* – All administrative costs of the System are paid from the System's assets.

*Federal Income Tax* – A favorable determination that the System is qualified and exempt from Federal income taxes was received on September 24, 2014. The System's Board of Trustees believes that the System is designed and continues to operate in compliance with the applicable requirements of the Internal Revenue Code.

*Use of Estimates* – The preparation of the System's financial statements, in conformity with accounting principles generally accepted in the United States of America, requires management to make significant estimates and assumptions that affect the reported amounts and net plan assets at the date of the financial statements and the actuarial information included in the footnotes to the financial statements as of the benefit information date, the changes in the System's net position during the reporting period and, when applicable, disclosures of the contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

# Houston Police Officers' Pension System

## Notes to Financial Statements

---

### 4. Investments

---

*Investment Policy* – The System’s policy in regard to the allocation of invested assets is established and may be amended by the System’s Board of Trustees by a majority vote of its members. It is the policy of the System’s Board of Trustees to pursue an investment strategy with a view toward the long term that maximizes the return on the System’s assets with acceptable target levels of leverage, and loss of capital, liquidity and volatility risk through the prudent diversification of the portfolio across a broad selection of distinct asset classes. The System’s investment policy discourages the use of cash equivalents, except for liquidity purposes. The following was the Board’s adopted asset allocation policy as of June 30, 2018:

<u>Asset Class</u>	<u>Target Allocation</u>
Domestic equity	27.50 %
International equity	22.50
Fixed income	6.00
Credit	10.50
Alternative investments:	
Private equity	17.50
Real estate	10.00
Risk parity	7.25
Hedge funds	8.50
Cash	(9.75)
<u>Total</u>	<u>100.00 %</u>

*Investment Valuation* - Statutes of the State of Texas authorize the System to invest surplus funds in a manner provided by the Government Code, Title 8, Subtitle A, Subchapter C. These statutes stipulate that the governing body of the System is responsible for the management and administration of the funds of the System and shall determine the procedure it finds most efficient and beneficial for the management of the reserve fund of the System. The governing body may directly manage the investments of the System or may choose and contract for professional investment management services. Investments are reported at fair value in accordance with GASB 72, *Fair Value Measurement and Application*, which defines fair value, establishes a framework for measuring fair value, and establishes disclosures about fair value measurements.

GASB 72 establishes a hierarchal disclosure framework which prioritizes and ranks the level of market price observability used in measuring investments at fair value. Market price observability is impacted by a number of factors, including the type of investment and the specific characteristics of the investment. Fair value represents the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Investments with readily available actively quoted prices or for which fair value can be measured from actively quoted prices generally will have a higher degree of market price observability and lesser degree of judgment used in measuring fair value.

Investments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Investments traded in an active market with available quoted prices for identical assets as of the reporting date.

Level 2 – Investments not traded on an active market but for which observable market inputs are available for an asset, either directly or indirectly, as of the reporting date.

Level 3 – Investments not traded in an active market and for which no significant observable market inputs are available as of the reporting date.

The System has established a framework to consistently measure the fair value of the System’s assets and liabilities in accordance with applicable accounting, legal, and regulatory guidance. This framework has been provided by establishing valuation policy and procedures that will provide reasonable assurance that assets and liabilities are carried



# Houston Police Officers' Pension System

## Notes to Financial Statements

at fair value. In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, an investment's level within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement. The System's assessment of the significance of a particular input to the fair value measurement requires judgment and considers factors specific to the investment.

The following tables summarize the valuation of the System's investments in accordance with the above mentioned fair value hierarchy levels as of June 30, 2018 and 2017.

### Investments Measured at Fair Value (\$000's)

	Fair Value Measurements Using			
	6/30/2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Investments by fair value level</b>				
Short term investments				
US Treasury bills	\$ 99,298	\$ 99,298	\$ -	\$ -
Short term investment funds	843,034	-	843,034	-
Total short term investments	942,332	99,298	843,034	-
Fixed income				
Corporate bonds	151,843	-	151,843	-
ETF funds	71,032	-	71,032	-
High yield funds	61,874	-	61,874	-
Total fixed income	284,749	-	284,749	-
Equity securities				
Domestic equities	261,517	(987)	262,504	-
Total equity securities	261,517	(987)	262,504	-
Alternative investments				
Private equity				
Leveraged buyouts	376,218	-	-	376,218
Energy	154,462	-	-	154,462
Special situations	116,986	-	-	116,986
Private equity secondaries	80,499	-	-	80,499
Venture capital	23,965	142	-	23,823
Other alternatives				
Real estate	333,411	-	-	333,411
Credit	189,105	-	56,144	132,961
Total alternative investments	1,274,646	142	56,144	1,218,360
Total investments by fair value level	2,763,244	\$ 98,453	\$ 1,446,431	\$ 1,218,360
<b>Investments measured at the net asset value (NAV)</b>				
Domestic equities commingled funds	919,988			
International equities commingled funds	659,822			
Portable alpha hedge funds	358,400			
Global macro hedge funds	224,027			
Multi-strategy hedge funds	119,615			
Fixed income commingled funds	357,447			
Long/short credit hedge funds	24,439			
Long/short equity hedge funds	25,285			
Total investments measured at the NAV	2,689,023			
Total investments measured at fair value	\$ 5,452,267			

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Investments Measured at Fair Value (\$000's)

	Fair Value Measurements Using			
	6/30/2017	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Investments by fair value level</b>				
Short term investments				
US Treasury bills	\$ 90,017	\$ 90,017	\$ -	\$ -
Short term investment funds	754,795	-	754,795	-
Total short term investments	844,812	90,017	754,795	-
Fixed income				
Corporate bonds	124,099	-	124,099	-
High yield funds	59,640	-	59,640	-
Total fixed income	183,739	-	183,739	-
Equity securities				
Domestic equities	258,131	(365)	258,496	-
Total equity securities	258,131	(365)	258,496	-
Alternative investments				
Private equity				
Leveraged buyouts	291,414	-	-	291,414
Energy	126,410	-	-	126,410
Special situations	103,426	-	-	103,426
Private equity secondaries	52,308	-	-	52,308
Venture capital	27,234	-	-	27,234
Other alternatives				
Real estate	294,990	-	-	294,990
Credit	160,895	-	24,190	136,705
Hedge funds - long/short credit	22	-	22	-
Hedge funds - long/short Equity	616	-	616	-
Total alternative investments	1,057,315	-	24,828	1,032,487
Total investments by fair value level	2,343,997	\$ 89,652	\$ 1,221,858	\$ 1,032,487

### Investments measured at the net asset value (NAV)

Domestic equities commingled funds	659,358
International equities commingled funds	518,286
Portable alpha hedge funds	474,501
Global macro hedge funds	210,679
Multi-strategy hedge funds	126,611
Fixed income commingled funds	51,310
Long/short credit hedge funds	45,458
Long/short equity hedge funds	24,485
Total investments measured at the NAV	2,110,688
Total investments measured at fair value	\$ 4,454,685

# Houston Police Officers' Pension System

## Notes to Financial Statements

---

Short-term investments include funds held in short-term investment funds of the System's custodian and asset managers.

Fixed income investments include US corporate bonds, foreign securities such as dollar denominated and non-dollar denominated issues of private corporations, plus units of commingled fixed income funds of US government securities.

Equity securities consist of individual shares of equity securities plus units of commingled ETF funds of US entities.

Alternative investments consist of investments in hedge funds, real estate, and private equity. These investments are in various investment vehicles including limited partnerships and commingled funds.

The System's custodian bank provides security valuations for equity and fixed income securities utilizing vendor supplied pricing. Based upon the procedures described below, equity securities and short term investments that are valued based on quoted prices in active markets are generally classified as Level 1 while fixed income securities are generally considered to be Level 2 or Level 3 investments. Vendor supplied pricing data for equity securities is based upon the daily closing price from the primary exchange of each security while vendor supplied pricing data for fixed income securities is based upon a combination of market maker quotes, recent trade activity, and observed cash flows. To minimize the potential for inaccurate valuations, multiple price types are obtained from multiple providers and whenever possible prices are put through tolerance checks with exceptions researched and resolved on a same day basis as part of the pricing process. An integral part of the custodian's pricing process is to allow portfolio managers and interested third parties to challenge custodian provided prices which provides additional validation to the custodian's pricing. The evaluation process is handled by the custodian's internal pricing system, which automatically validates substantially all of the System's securities, leaving only exceptions and missing prices for human intervention. The rules this system applies are multi-dimensional and can be applied at a number of different levels, ranging from general to security specific in nature. Consistent with the System's valuation policy, the System's staff maintains and documents an understanding of the custodian's and underlying manager's valuation process and has implemented a program to review and evaluate the reconciliation process and the fair value estimates provided by the custodian and the investment manager.

The System's custodian values the System's investment in limited partnerships at the dollar value provided by the general partners. Based upon the procedures described below, these limited partnerships are generally considered to be Level 3 assets. The fair value of securities held by limited partnerships has been estimated by the general partners in the absence of readily ascertainable fair values. The general partners utilize valuation methods which rely on significant assumptions and inputs of the portfolio company's most recent financial information such as EBITDA and debt and the equity structure of the portfolio company. Valuations may be derived by reference to observable valuation measures for comparable companies and may be adjusted for differences between the investment and the referenced comparables. General partners also utilize relevant information such as discounted cash flow analysis, pending recent transactions and potential initial public offering values in the determination of fair value. Consistent with the System's valuation policy, the System's staff maintains and documents an understanding of the general partner's valuation process and has implemented a program to review and evaluate the fair value estimates provided by each partnership.

The System's custodian values commingled funds at the net asset value provided by the commingled fund's custodian or administrator, as is applicable. The unit values of commingled funds are calculated by the custodian or administrator by dividing the commingled fund's net asset value on the calculation date by the number of units of the commingled fund that are outstanding on the calculation date. The commingled fund's net asset value is calculated by the commingled fund's custodian or administrator by using Level 1, Level 2 or Level 3 prices, as appropriate, to value each security and/or other asset held by the commingled fund on the calculation date, pursuant to the commingled fund's valuation policy. In short, the net asset value of the commingled fund is calculated based on a compilation of primarily observable market information. The number of units of a commingled fund that are outstanding on the calculation date is derived from observable purchase and redemption activity in the commingled fund. Consistent with the System's valuation policy, the System's staff maintains and documents an understanding of the underlying fund's valuation process and has implemented a program to review and evaluate the fair value estimates provided by the commingled fund.

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the following tables as of June 30, 2018 and 2017.

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Investments Measured at the NAV (\$000's)

		<u>6/30/2018</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency (If Currently Eligible)</u>	<u>Redemption Notice Period</u>
Domestic equities commingled funds	(1)	\$ 919,988	\$ -	Daily	1 day
International equities commingled funds	(1)	659,822	-	Daily	4 days
Portable alpha hedge funds	(2)	358,400	-	Quarterly/Semi- Annually	60-90 days
Global macro hedge funds	(3)	224,027	-	Monthly/Quarterly	60-90 days
Multi-strategy hedge funds	(4)	119,615	13,500	Various up to two years	60-90 days
Fixed income commingled funds	(5)	357,447		Daily	2 days
Long/short credit hedge funds	(6)	24,439		Quarterly/Annually	60-90 days
Long/short equity hedge funds	(7)	25,285		Quarterly	60-90 days
Total investments measured at the NAV		<u>\$ 2,689,023</u>	<u>\$ 13,500</u>		

1. *Equities Commingled Funds* – This type invests in five funds, two that are invested in domestic equities and three that are invested in international equities. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. These funds have daily liquidity.
2. *Portable Alpha Funds* - This type invests in three funds that are invested in risk parity strategies and global macro or multi-strategy hedge fund strategies. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. These strategies generally have quarterly or semi-annual liquidity.
3. *Global Macro Hedge Funds* - This type invests in two hedge funds that take long and short positions in global equity, credit, interest rate, and currency markets. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. These funds have monthly or quarterly liquidity.
4. *Multi-Strategy Hedge Funds* - This type invests in seven hedge funds that pursue multiple strategies to diversify risks and reduce volatility. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. One of these funds has monthly liquidity, one fund has quarterly liquidity, three funds have annual liquidity, and two funds have liquidity every two years.
5. *Fixed Income Commingled Funds* – This type invests in domestic bonds. The fair value of the investment in this type has been determined using the NAV per share (or its equivalent) of the investments. These funds have daily liquidity.
6. *Long / Short Credit Hedge Funds* - This type includes investments in two hedge funds that invest both long and short primarily in U.S. credit instruments. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. These strategies have quarterly or annually liquidity.
7. *Long / Short Equity Hedge Funds* - This type includes investments in one hedge fund that invests both long and short primarily in U.S. common stocks. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. This fund generally has quarterly liquidity.

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Investments Measured at the NAV

(\$000's)

		<u>6/30/2017</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency (If Currently Eligible)</u>	<u>Redemption Notice Period</u>
Domestic equities commingled funds	(1)	\$ 659,358	\$ -	Daily	1 day
International equities commingled funds	(1)	518,286	-	Daily	4 days
Portable alpha hedge funds	(2)	474,501	-	Quarterly/Semi- Annually	60-90 days
Global macro hedge funds	(3)	210,679	-	Monthly/Quarterly	60-90 days
Multi-strategy hedge funds	(4)	126,611	-	Various up to two years	60-90 days
Fixed income commingled funds	(5)	51,310	-	Daily	2 days
Long/short credit hedge funds	(6)	45,458	-	Quarterly/Annually	60-90 days
Long/short equity hedge funds	(7)	24,485	-	Quarterly	60-90 days
Total investments measured at the NAV		<u>\$ 2,110,688</u>	<u>\$ -</u>		

1. *Equities Commingled Funds* – This type invests in two funds, one that is invested in domestic equities and one that is invested in international equities. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. These funds have daily liquidity.
2. *Portable Alpha Funds* - This type invests in three funds that are invested in risk parity strategies and global macro or multi-strategy hedge fund strategies. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. These strategies generally have quarterly or semi-annual liquidity.
3. *Global Macro Hedge Funds* - This type invests in two hedge funds that take long and short positions in global equity, credit, interest rate, and currency markets. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. These funds have monthly liquidity.
4. *Multi-Strategy Hedge Funds* - This type invests in seven hedge funds that pursue multiple strategies to diversify risks and reduce volatility. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. One of these funds has monthly liquidity, one fund has quarterly liquidity, three funds have annual liquidity, and two funds have liquidity every two years. One of these funds is in the process of liquidation.
5. *Fixed Income Commingled Funds* – This type invests in domestic bonds. The fair value of the investment in this type has been determined using the NAV per share (or its equivalent) of the investments. These funds have daily liquidity.
6. *Long / Short Credit Hedge Funds* - This type includes investments in three hedge funds that invest both long and short primarily in U.S. credit instruments. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. Two of these strategies have quarterly liquidity and one fund has annual liquidity. One of these funds is in the process of liquidation.
7. *Long / Short Equity Hedge Funds* - This type includes investments in one hedge fund that invests both long and short primarily in U.S. common stocks. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. This fund generally has quarterly liquidity and is in the process of liquidation.

# Houston Police Officers' Pension System

## Notes to Financial Statements

*Concentrations* – As of both June 30, 2018 and 2017, the System did not have any single investment in any one organization which represented greater than 5% of plan net position.

*Rate of return* – For the year ended June 30, 2018, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 9.8%. For the year ended June 30, 2017, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 16.8%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

*Investment Risk* – The System's investments have been categorized to address deposit and investment risks related to custodial credit risk, credit risk, concentration of credit risk, interest rate risk, and foreign currency risk.

- *Custodial Credit Risk for Deposits and Investments* – Custodial credit risk for investments is the risk that in the event of a failure of the counterparty, the System will not be able to recover the value of the investment or collateral in possession of the counterparty. The System's policy regarding custodial credit risk requires counterparty exposures of each investment manager and strategy, as well as the overall counterparty exposure of the Fund, will be actively managed and monitored by investment managers and Staff. The System considers only demand deposits as cash. As of June 30, 2018 and June 30, 2017, the System had a balance of \$33 thousand and \$104 thousand, respectively, on deposit at a financial institution. The Federal Depository Insurance Corporation (FDIC) covered cash on deposit up to \$250 thousand at this financial institution. Therefore, as of June 30, 2018, none of the System's bank balance of \$33 thousand was exposed to custodial credit risk. At June 30, 2018, the System did not have any other investments with other financial institutions subject to custodial credit risk.
- *Credit Risk* – Credit risk is the risk that the counterparty will not fulfill its obligations. As of June 30, 2018 and 2017, the System's fixed income assets that are not U.S. government guaranteed represented 93.7% and 91.7%, respectively, of the System's fixed income plus short term investments portfolio. The tables below and on the following page summarize the System's fixed income portfolio and short term investment exposure levels and credit qualities as of June 30, 2018 and 2017.

### Average Credit Quality and Exposure Levels of Non-U.S. Government Guaranteed Securities (\$000's)

Fixed Income Security Type	Fair Value 6/30/2018	Percent of Total	Weighted Average Credit Quality
Corporate Bonds	\$ 151,843	10.2	B
Mutual Bond Funds	490,353	33.0	Not Rated
Short Term Investment Funds	843,034	56.8	Not Rated
<b>Total</b>	<b>\$ 1,485,230</b>	<b>100.0</b>	

Fixed Income Security Type	Fair Value 6/30/2017	Percent of Total	Weighted Average Credit Quality
Corporate Bonds	\$ 124,099	12.5	B
Mutual Bond Funds	110,950	11.2	BB
Short Term Investment Funds	754,795	76.3	Not Rated
<b>Total</b>	<b>\$ 989,844</b>	<b>100.0</b>	

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Ratings Dispersion Detail

(\$000's)

Credit Rating Level	Corporate	Mutual Bond	Short Term
			Investment
6/30/2018	Bonds	Funds	Funds
BBB	\$ 6,432	\$ -	\$ -
BB	68,537	-	-
B	66,618	-	-
CCC	8,423	-	-
CC	119	-	-
NR	1,714	490,353	843,034
<b>Total</b>	<b>\$ 151,843</b>	<b>\$ 490,353</b>	<b>\$ 843,034</b>

Credit Rating Level	Corporate	Mutual Bond	Short Term
			Investment
6/30/2017	Bonds	Funds	Funds
BBB	\$ 3,280	\$ -	\$ -
BB	49,877	59,640	-
B	57,324	-	-
CCC	11,657	-	-
NR	1,961	51,310	754,795
<b>Total</b>	<b>\$ 124,099</b>	<b>\$ 110,950</b>	<b>\$ 754,795</b>

The System's investment policy allows investment managers full discretion in adopting investment strategies to deal with these risks. Unless otherwise provided in the individual investment manager agreement, the average quality rating of each individual fixed income portfolio on a weighted value basis shall be A-rated or higher, and no issue should have a rating below investment grade (Baa or higher). Certain managers, such as high yield managers, may be exempted from these requirements as provided for in their contracts.

Credit risk for derivative instruments held by the System results from counterparty risk, which is essentially that the counterparty will be unable to fulfill its obligations, which are then assumed by the System. Information regarding the System's credit risk related to derivatives is found under the derivatives disclosures.

Policies regarding credit risk pertaining to credit risk associated with the System's securities lending program are found under the securities lending disclosures.

- *Concentration of Credit Risk* – Concentration of credit risk is the risk of loss attributable to the magnitude of the System's investment in a single issue. The System's investment policy for each specific portfolio limits investments in any one single equity issue to 15% of each portfolio at market value and for any one single equity issue to 5% of the issued and outstanding shares in the issuer corporation. As of both June 30, 2018 and 2017, the System did not have any single investment in any one organization which represented greater than 5% of plan net position.
- *Interest Rate Risk* – Interest rate risk is the risk that changes in interest rates will adversely affect the fair values of the System's financial instruments. This risk is managed within the portfolio using the modified duration methodology. It is widely used in the management of fixed income portfolios and estimates the sensitivity of a bond's price to interest rate changes. The System's investment policy delegates the management of interest rate risk to the individual investment managers in accordance with each manager's designated strategy. Investment managers have full discretion in adopting investment strategies to deal with these risks, and all of the System's fixed income portfolios are managed in accordance with guidelines that are specific as to the degree of interest rate risk taken. The reporting of modified duration as of June 30,

# Houston Police Officers' Pension System

## Notes to Financial Statements

2018 and 2017, found in the tables below and on the following page quantify the interest rate risk of the System's fixed income and short term investments. Interest rate risks associated with derivative instruments are found in the derivatives disclosures of these notes.

### Modified Duration by Security Type

(\$000's)

Security Type <b>6/30/2018</b>	Fair Value (\$000's)	Percent of Total	Weighted Average Modified Duration (years)
Corporate Bonds	\$ 151,843	9.6 %	4.3
Mutual Bond Funds	490,355	30.9	5.2
Short Term Investment Funds	942,332	59.5	0.1
<b>Total</b>	<b>\$ 1,584,530</b>	<b>100.0 %</b>	<b>2.3</b>

Security Type <b>6/30/2017</b>	Fair Value (\$000's)	Percent of Total	Weighted Average Modified Duration (years)
Corporate Bonds	\$ 124,099	11.5 %	4.9
Mutual Bond Funds	110,950	10.3	5.2
Short Term Investment Funds	844,812	78.2	0.1
<b>Total</b>	<b>\$ 1,079,861</b>	<b>100.0 %</b>	<b>1.2</b>

### Modified Duration Analysis by Security Type

(\$000's)

	Fair Value <b>6/30/2018</b>	Average Modified Duration	Contribution to Modified Duration
<b>Corporate Bonds</b>			
Less than 1 year	\$ 2,112	0.6	0.0
1 to 5 years maturities	91,089	3.3	2.0
5 to 10 years maturities	55,129	5.7	2.1
Greater than 10 years maturities	3,513	10.1	0.2
<b>Total</b>	<b>\$ 151,843</b>		<b>4.3</b>
<b>Mutual Bond Funds</b>			
Less than 1 year	\$ 10,245	5.2	0.1
1 to 5 years maturities	183,630	5.2	1.9
5 to 10 years maturities	214,103	5.2	2.3
Greater than 10 years maturities	82,377	5.2	0.9
<b>Total</b>	<b>\$ 490,355</b>		<b>5.2</b>
<b>Short Term Investment Funds</b>			
Less than 1 year	\$ 902,753	0.1	0.1
1 to 5 years maturities	39,579	0.1	0.0
<b>Total</b>	<b>\$ 942,332</b>		<b>0.1</b>



# Houston Police Officers' Pension System

## Notes to Financial Statements

### Modified Duration Analysis by Security Type

(\$000's)

	Fair Value 6/30/2017	Average Modified Duration	Contribution to Modified Duration
<b>Corporate Bonds</b>			
Less than 1 year	\$ 431	0.7	0.0
1 to 5 years maturities	39,825	3.3	1.1
5 to 10 years maturities	82,961	5.6	3.7
Greater than 10 years maturities	882	9.3	0.1
<b>Total</b>	<b>\$ 124,099</b>		<b>4.9</b>
<b>Mutual Bond Funds</b>			
Less than 1 year	\$ 4,512	5.2	0.2
1 to 5 years maturities	35,889	5.2	1.7
5 to 10 years maturities	55,748	5.2	2.6
Greater than 10 years maturities	14,801	5.2	0.7
<b>Total</b>	<b>\$ 110,950</b>		<b>5.2</b>
<b>Short Term Investment Funds</b>			
Less than 1 year	\$ 809,429	0.1	0.1
1 to 5 years maturities	35,383	0.1	0.0
<b>Total</b>	<b>\$ 844,812</b>		<b>0.1</b>

- Foreign Currency Risk* – Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. The books and records of the System are maintained in US dollars. Foreign currencies and non-US dollar denominated investments are translated into US dollars at the bid prices of such currencies against US dollars at each Statement of Net Position date. Realized and unrealized gains and losses on investments which result from changes in foreign currency exchange rates have been included in the net appreciation in fair value of investments. Net realized foreign currency gains and losses resulting from changes in exchange rates include foreign currency gains and losses between trade date and settlement date of investment securities transactions, foreign currency transactions and the difference between the amounts of interest and dividends recorded on the books of the System and the amount actually received. International and global managers have the permission to use currency forward and futures contracts to hedge currency against the U.S. dollar. Currency forwards and futures used for the purpose of hedging currency shall be subject to the following guidelines: 1) net forward and futures sales of any currency may not exceed total market value of the assets denominated in that currency. This limitation does not apply to global fixed income managers and currency overlay managers if provided for in their contracts, 2) foreign currency exchange contracts with a maturity exceeding 12 months are not permitted, 3) currency options may be entered into in lieu of or in conjunction with forwards sales of currencies with the same limitations as currency forwards and futures. Cross hedging, the selling of one foreign currency for another foreign currency, which may or may not be the base currency of the portfolio, is permitted. The System's exposure to foreign currency risk in U.S. dollars as of June 30, 2018 and 2017, are shown in the table on the following pages.

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Foreign Currency Exposure by Asset Class (\$000's) June 30, 2018

Currency	Short Term		Equities	Alternative		Total
	Investments	Fixed Income		Investments		
Euro	\$ (66,751)	\$ 84	\$ 271,267	\$ 6,260	\$	210,860
Japanese yen	(48,965)	-	198,574	-		149,609
Chinese yuan renminbi	-	-	135,770	-		135,770
Canadian dollar	44,245	-	79,407	-		123,652
British pound sterling	(36,316)	-	148,524	-		112,208
Australian dollar	-	-	57,448	7,325		64,773
Swiss franc	-	-	64,424	-		64,424
South Korean won	-	-	60,539	-		60,539
New Taiwan dollar	-	-	48,293	-		48,293
Indian rupee	-	-	35,737	-		35,737
South African rand	-	5,926	26,296	-		32,222
Brazilian real	-	6,804	24,084	-		30,888
Hong Kong dollar	-	-	29,867	-		29,867
Swedish krona	-	-	21,265	-		21,265
Russian ruble	-	4,073	15,734	-		19,807
Mexican peso	-	7,390	12,054	-		19,444
Indonesian rupiah	-	6,632	7,922	-		14,553
Thai baht	-	4,784	9,031	-		13,814
Danish krone	-	-	13,703	-		13,703
Malaysian ringgit	-	2,958	9,700	-		12,658
Polish zloty	-	6,741	4,588	-		11,329
Singapore dollar	-	-	10,544	-		10,544
Chilean peso	-	2,167	4,611	-		6,779
Philippine peso	-	2,278	3,906	-		6,184
Norwegian krone	-	-	6,125	-		6,125
Colombian peso	-	4,077	1,989	-		6,066
Turkish lira	-	1,749	3,140	-		4,890
New Israeli shekel	-	-	4,333	-		4,333
Peruvian nuevo sol	-	2,262	1,715	-		3,977
Hungarian forint	-	2,439	1,124	-		3,563
Czech koruna	-	2,414	743	-		3,157
United Arab Emirates dirham	-	-	2,650	-		2,650
Qatari riyal	-	-	2,291	-		2,291
New Romanian Leu	-	2,287	-	-		2,287
Dominican peso	-	2,242	-	-		2,242
Uruguayan peso uruguayo	-	2,106	-	-		2,106
New Zealand dollar	-	-	1,755	-		1,755
Argentine austral	-	1,542	-	-		1,542
Egyptian pound	-	-	559	-		559
Pakistan rupee	-	-	279	-		279
<b>Total</b>	<b>\$ (107,787)</b>	<b>\$ 70,954</b>	<b>\$ 1,319,991</b>	<b>\$ 13,585</b>	<b>\$</b>	<b>1,296,743</b>

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Foreign Currency Exposure by Asset Class (\$000's) June 30, 2017

Currency	Short Term Investments	Equities	Alternative Investments	Total
Euro	\$ (109,510)	\$ 202,334	\$ 8,301	\$ 101,125
Canadian dollar	28,096	59,465	-	87,561
Japanese yen	(78,854)	149,295	-	70,441
British pound sterling	(59,261)	122,960	-	63,699
Australian dollar	-	45,207	14,095	59,302
Swiss franc	-	56,772	-	56,772
Chinese yuan renminbi	-	53,919	-	53,919
South Korean won	-	30,408	-	30,408
New Taiwan dollar	-	25,726	-	25,726
Hong Kong dollar	-	21,979	-	21,979
Swedish krona	-	18,911	-	18,911
Indian rupee	-	16,832	-	16,832
South African rand	-	14,779	-	14,779
Brazilian real	-	14,526	-	14,526
Danish krone	-	11,450	-	11,450
Singapore dollar	-	8,908	-	8,908
Mexican peso	-	8,414	-	8,414
Russian ruble	-	7,164	-	7,164
Malaysian ringgit	-	5,716	-	5,716
Indonesian rupiah	-	4,889	-	4,889
Thai baht	-	4,515	-	4,515
Norwegian krone	-	4,276	-	4,276
New Israeli shekel	-	3,500	-	3,500
Polish zloty	-	2,827	-	2,827
Turkish lira	-	2,698	-	2,698
Philippine peso	-	2,605	-	2,605
Chilean peso	-	2,417	-	2,417
Colombian peso	-	1,063	-	1,063
New Zealand dollar	-	957	-	957
Peruvian nuevo sol	-	791	-	791
United Arab Emirates dirham	-	738	-	738
Qatari riyal	-	655	-	655
Hungarian forint	-	545	-	545
Czech koruna	-	361	-	361
Egyptian pound	-	342	-	342
Pakistan rupee	-	130	-	130
<b>Total</b>	<b>\$ (219,529)</b>	<b>\$ 908,077</b>	<b>\$ 22,396</b>	<b>\$ 710,944</b>

*Securities Lending Program* – The System’s Board of Trustees’ policies permit the System to lend securities (domestic and international equities and fixed income) to securities firms on a temporary basis through its custodian bank. The System receives fees for all loans and retains the right to all interest and dividend payments while the securities are on loan. Cash, letters of credit or various government securities having market values equal to or exceeding 102% and 105% of the value of the loaned securities for domestic and international securities, respectively, collateralize all security loan agreements. Whenever the market value of the securities on loan changes, the borrower must adjust the collateral accordingly. The System’s bank pools all collateral received from securities lending transactions and invests any cash collateral. The System holds an undivided share of the collateral provided by the borrowers of the securities. At June 30, 2018 the weighted-average maturity of the collateral pool was 30 days. The relationship between the maturities of the collateral pool and the System’s loans has not been determined. Cash collateral invested in the custodian bank collateral pool at June 30, 2018 and 2017, was \$109,070 thousand and \$25,778 thousand, respectively. The System also

# Houston Police Officers' Pension System

## Notes to Financial Statements

had non-cash collateral at June 30, 2018 and 2017, of \$14,284 thousand and \$10,173 thousand respectively, consisting of treasury securities and letters of credit. The System cannot sell or pledge the collateral unless the borrower fails to return the securities borrowed.

The market value of securities on loan at June 30, 2018 and 2017 was \$120,404 thousand and \$35,189 thousand, respectively. At June 30, 2018, the System had no credit risk exposure to borrowers because the amounts the System owes the borrowers, \$123,354 thousand, exceeds the amounts the borrowers owe the System, \$120,404 thousand.

*Derivatives* – The System's investment managers may invest in derivatives if permitted by the manager's contract with the System's Board of Trustees. The System's staff monitors guidelines and compliance. From time to time the System's investment managers will invest in equity, fixed income and short term futures contracts along with foreign currency forward contracts. No derivatives are purchased with borrowed funds.

The fair value balance of posted margin and collateral and notional amounts of derivative instruments outstanding at June 30, 2018 and 2017, classified by type, and the changes in fair value of such derivative instruments for the year then ended is shown in the tables below. The Change in Fair Value figures are reported as a component of net appreciation (depreciation) in the Statements of Changes in Fiduciary Net Position.

### Derivative Investments by Type (\$000's)

	Year ending	As of June 30, 2018			
	June 30, 2018	Posted	Collateral Held at	Collateral Held at	Notional
	Changes in Fair	Margin	Custodian Bank	Broker	Value
	Value				
Equity Futures	\$ 77,436	\$ 66,351	\$ 707,144	\$ -	\$ 1,154,202
Currency Futures	(16,584)	(872)	27,856	-	(188,056)
Fixed Income Futures	810	-	2	-	-
Equity Options	14,434	-	19,815	39,504	(373,544)

	Year ending	As of June 30, 2017			
	June 30, 2017	Posted	Collateral Held at	Collateral Held at	Notional
	Changes in Fair	Margin	Custodian Bank	Broker	Value
	Value				
Equity Futures	\$ 147,599	\$ 54,388	\$ 603,968	\$ -	\$ 1,005,928
Currency Futures	11,794	6,969	35,263	-	(218,903)
Equity Options	11,081	-	16,177	29,857	(259,682)

Futures are used to obtain market exposure and to take advantage of mis-pricing opportunities. When a position is taken in a futures contract, a margin is posted and the contract is subject to daily mark-to-market adjustments. For options, no margin is posted. Instead, options are purchased at a premium, which is either forfeited or recouped, depending on the gain or loss on the contract. Foreign currency contracts are used to hedge against the currency risk in the System's investments in foreign equity and fixed income securities. To liquidate the contract prior to expiration an offsetting position in the same contract must be taken.

These derivative instruments are subject to the following risks:

- *Custodial Credit Risk* – Custodial credit risk for derivative instruments is the risk that, in the event of the failure of the counterparty to a transaction, the System will not be able to recover the value of the derivative instruments or collateral securities that are in the possession of an outside party. Consistent with the System's investment policy, the System's derivative instruments were held by the counterparty that was acting as the System's agent.
- *Credit Risk* – Credit risk is the risk that the counterparty will not fulfill its obligations. The System does not have an investment policy specifically regarding credit risk for derivative instruments and instead allows investment managers full discretion in adopting investment strategies to deal with this risk. The System's investment managers seek to control this risk through counterparty credit evaluations and approvals, counterparty credit limits, and exposure monitoring procedures.

# Houston Police Officers' Pension System

## Notes to Financial Statements

- *Interest Rate Risk* – Interest rate risk is the risk that changes in interest rates will adversely affect the fair values of the System's derivative instruments.
- *Foreign Currency Risk* – Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of derivative instruments. The System's exposure to foreign currency risk derives from its positions in foreign currency denominated international equity and fixed income investments as outlined in the following schedule. The System has a currency hedging program in place that hedges fifty percent of the exposure to the Euro, Pound, and Yen exposure in these investment programs. This hedging program is disclosed elsewhere in this footnote. The System's derivative instruments exposure to foreign currency risk in U.S. dollars as of June 30, 2018 and 2017, is shown in the tables below and on the following page.

### Foreign Currency Exposure for Derivatives (\$000's) June 30, 2018

Currency	Equity Derivatives	Currency Derivatives	Total
Canadian dollar	\$ 43,645	\$ 41,507	\$ 85,152
Euro	150,048	(66,751)	83,297
Japanese yen	110,000	(48,965)	61,035
Chinese yuan renminbi	52,184	-	52,184
British pound sterling	82,275	(36,316)	45,959
Swiss franc	35,688	-	35,688
Australian dollar	31,823	-	31,823
South Korean won	23,269	-	23,269
New Taiwan dollar	18,562	-	18,562
Hong Kong dollar	16,545	-	16,545
Indian rupee	13,736	-	13,736
Swedish krona	11,780	-	11,780
South African rand	10,107	-	10,107
Brazilian real	9,257	-	9,257
Danish krone	7,591	-	7,591
Singapore dollar	5,841	-	5,841
Russian ruble	5,623	-	5,623
Mexican peso	4,633	-	4,633
Malaysian ringgit	3,728	-	3,728
Thai baht	3,471	-	3,471
Norwegian krone	3,393	-	3,393
Indonesian rupiah	3,045	-	3,045
New Israeli shekel	2,400	-	2,400
Chilean peso	1,772	-	1,772
Polish zloty	1,763	-	1,763
Philippine peso	1,501	-	1,501
Qatari riyal	1,305	-	1,305
Turkish lira	1,207	-	1,207
United Arab Emirates dirham	1,018	-	1,018
New Zealand dollar	972	-	972
Colombian peso	764	-	764
Peruvian nuevo sol	659	-	659
Hungarian forint	432	-	432
Czech koruna	286	-	286
Egyptian pound	215	-	215
Pakistan rupee	107	-	107
<b>Total</b>	<b>\$ 660,646</b>	<b>\$ (110,525)</b>	<b>\$ 550,121</b>

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Foreign Currency Exposure for Derivatives (\$000's) June 30, 2017

Currency	Equity Derivatives	Currency Derivatives	Total
Canadian dollar	\$ 27,935	\$ 28,734	\$ 56,669
Chinese yuan renminbi	27,843	-	27,843
Swiss franc	25,178	-	25,178
Australian dollar	21,617	-	21,617
South Korean won	15,581	-	15,581
New Taiwan dollar	12,477	-	12,477
Hong Kong dollar	10,842	-	10,842
Euro	99,861	(109,510)	(9,649)
Swedish krona	8,864	-	8,864
Indian rupee	8,793	-	8,793
Japanese yen	70,793	(78,854)	(8,061)
Brazilian real	6,624	-	6,624
South African rand	6,509	-	6,509
British pound sterling	53,497	(59,273)	(5,776)
Danish krone	5,755	-	5,755
Singapore dollar	3,998	-	3,998
Mexican peso	3,684	-	3,684
Russian ruble	3,156	-	3,156
Indonesian rupiah	2,452	-	2,452
Malaysian ringgit	2,373	-	2,373
Thai baht	2,170	-	2,170
Norwegian krone	2,077	-	2,077
New Israeli shekel	1,435	-	1,435
Polish zloty	1,295	-	1,295
Philippine peso	1,180	-	1,180
Turkish lira	1,176	-	1,176
Chilean peso	1,136	-	1,136
United Arab Emirates dirham	738	-	738
Qatari riyal	655	-	655
New Zealand dollar	514	-	514
Colombian peso	449	-	449
Peruvian nuevo sol	368	-	368
Hungarian forint	325	-	325
Czech koruna	175	-	175
Pakistan rupee	130	-	130
Egyptian pound	129	-	129
<b>Total</b>	<b>\$ 431,783</b>	<b>\$ (218,903)</b>	<b>\$ 212,880</b>

# Houston Police Officers' Pension System

## Notes to Financial Statements

*Alternative Investments* – As of June 30, 2018 and 2017, the System was invested in various partnerships, separate accounts and commingled funds across various types of alternative investments as detailed in the table below.

Investment Type	Fair Value (\$000's)	
	June 30, 2018	June 30, 2017
<i>Private Equity</i>		
Leveraged Buyouts	\$ 376,217	\$ 291,414
Energy	154,462	126,410
Special Situations	116,986	103,426
Private Equity Secondaries	80,499	52,308
Venture Capital	23,966	27,234
<i>Other Alternatives</i>		
Real Estate	333,411	294,990
Credit	189,105	160,895
<i>Hedge Funds</i>		
Portable alpha hedge funds	358,400	474,501
Global macro hedge funds	224,027	210,679
Multi-strategy hedge funds	119,615	126,611
Long/short credit hedge funds	24,439	45,480
Long/short equity hedge funds	25,285	25,101
	<u>\$ 2,026,412</u>	<u>\$ 1,939,049</u>

Supplemental Information on investment and professional expenses included in Schedule II on page 39 herein does not include the investment management fees and performance fees embedded in the structure of the private equity and other limited partnership investments listed above. Rather, these fees are a component of the Net appreciation in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

### 5. Deferred Retirement Option Program (DROP) Balances

The Deferred Retirement Option Plan (DROP) is an optional method of accruing pension benefits under the System's benefit structure. Members with at least 20 years of service and who were hired prior to October 9, 2004, are eligible to participate in the DROP. The lump sum benefit is the accumulated balance in the member's notional DROP account which is equal to an amount calculated as if the member's annuity, employee contributions and an interest component had been deposited in a separate account in the member's name during the member's participation in DROP. Prior to October 9, 2004, 100% of a member's contributions were credited to his or her notional DROP account. Subsequent to that date, an eligible member contributes 9.00% of pensionable pay with 8.75% of pensionable pay credited to his or her notional DROP account and the additional 0.25% credited to the System's general fund. The tables on the following page shows the change in DROP accounts during the years ended June 30, 2018 and 2017.

# Houston Police Officers' Pension System

## Notes to Financial Statements

### DROP Activity

<b>Year ended June 30, 2017</b>	DROP Accounts (\$000's)		DROP Participants	
	Balance at June 30, 2016	\$ 957,323	Participants at June 30, 2016	2,058
Accumulations	155,058	Entrants	90	
Transfers to PROP	(228,259)	Withdrawals	(342)	
Distributions	(109,051)	Participants at June 30, 2017	1,806	
Balance at June 30, 2017	<u>\$ 775,071</u>			

<b>Year ended June 30, 2018</b>	DROP Accounts (\$000's)		DROP Participants	
	Balance at June 30, 2017	\$ 775,071	Participants at June 30, 2017	1,806
Accumulations	162,511	Entrants	137	
Transfers to PROP	(101,910)	Withdrawals	(149)	
Distributions	(40,187)	Participants at June 30, 2018	1,794	
Balance at June 30, 2018	<u>\$ 795,485</u>			

The Post Retirement Option Plan (PROP) allows retired members to have all or a portion of their monthly retirement and DROP lump sum credited to a notional account maintained by the System which accumulates interest and can be disbursed to the member under certain options as designated by the System. Surviving spouses can transfer a DROP or PROP balance to a PROP account of their own but are not eligible to credit all or a portion of their survivor benefit to a PROP account. Members hired or rehired subsequent to October 9, 2004 are not eligible for this benefit. The following tables shows the change in PROP accounts during the years ended June 30, 2018 and 2017.

### PROP Activity

<b>Year ended June 30, 2017</b>	PROP Accounts (\$000's)		PROP Participants	
	Balance at June 30, 2016	\$ 871,432	Participants at June 30, 2016	1,569
Accumulations	49,295	Entrants	208	
Transfers from DROP	228,259	Withdrawals	(17)	
Distributions	(152,781)	Participants at June 30, 2017	1,760	
Balance at June 30, 2017	<u>\$ 996,205</u>			

<b>Year ended June 30, 2018</b>	PROP Accounts (\$000's)		PROP Participants	
	Balance at June 30, 2017	\$ 996,205	Participants at June 30, 2017	1,760
Accumulations	42,894	Entrants	79	
Transfers from DROP	101,910	Withdrawals	(15)	
Distributions	(98,706)	Participants at June 30, 2018	1,824	
Balance at June 30, 2018	<u>\$ 1,042,303</u>			



# Houston Police Officers' Pension System

## Notes to Financial Statements

### 6. Net Pension Liability

The net pension liability is measured as the total pension liability, less the amount of the pension plan's fiduciary net position. The components of the net pension liability at June 30, 2018 and 2017 were as follows (\$000's):

	<u>6/30/2018</u>	<u>6/30/2017</u>
Total pension liability	\$ 6,745,438	\$ 6,508,122
Plan fiduciary net position	<u>5,486,613</u>	<u>4,457,178</u>
System's net pension liability	<u>\$ 1,258,825</u>	<u>\$ 2,050,944</u>
 Plan fiduciary net position as a percentage of the total pension liability	 81.34%	 68.49%

*Actuarial assumptions* – The total pension liability was determined by an actuarial valuation as of July 1, 2018 and July 1, 2017, using the following actuarial assumptions, applied to all periods included in the measurement:

	<u>July 1, 2018</u>	<u>July 1, 2017</u>
Inflation	2.75%	2.75%
Salary Increases	0.00% to 12.00% , plus a 2.75% inflation and productivity component	0.00% to 12.00% , plus a 2.75% inflation and productivity component
Investment Rate of Return	7.00%, net of pension plan investment expense, including inflation	8.00%, net of pension plan investment expense, including inflation
Mortality	<p>Healthy retirees - The Gender-distinct RP-2014 Combined Healthy Mortality Tables with Blue Collar Adjustment for Males and no collar adjustment for Females. The rates are projected on a fully generational basis by the ultimate values of scale MP-2014 to account for future mortality improvements.</p> <p>Disabled males and females – The gender-distinct RP-2014 Disabled Retiree Mortality Tables are used without adjustment. The rates are projected on a fully generational basis by the ultimate values of scale MP-2014 to account for future mortality improvements.</p> <p>Active members - The Gender-distinct RP-2014 Employee Mortality Tables with Blue Collar Adjustment. The rates are projected on a fully generational basis by the ultimate values of scale MP-2014 to account for future mortality improvements..</p>	<p>Healthy retirees - The Gender-distinct RP2000 Combined Healthy Mortality Tables with Blue Collar Adjustment are used with male rates multiplied by 109% and female rates multiplied by 103%. The rates are projected on a fully generational basis by scale BB to account for future mortality improvements.</p> <p>Disabled males and females – The gender-distinct RP2000 Disabled Retiree Mortality Tables are used without adjustment. The rates are projected on a fully generational basis by scale BB to account for future mortality improvements.</p> <p>Active members - The Gender-distinct RP2000 Combined Healthy Mortality Tables with Blue Collar Adjustment are used with male rates multiplied by 54% and female rates multiplied by 51%. The rates are projected on a fully generational basis by scale BB to account for future mortality improvements. An additive factor of .0003 is applied to all active mortality rates.</p>

The long-term expected rate of return on the System's investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term

# Houston Police Officers' Pension System

## Notes to Financial Statements

expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2018 (see the discussion of the pension plan's investment policy) are summarized in the table on the following page:

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	3.90 %
International equity	4.30
Fixed income	-
Credit	5.40
Alternative investments:	
Private equity	5.80
Real estate	5.00
Risk parity	8.30
Hedge funds	4.40
Cash	(1.25)

*Discount rate* – A single discount rate of 7.00% was used to measure the total pension liability for the June 30, 2018 measurement date. This single discount rate was based on the expected rate of return on pension plan investments of 7.00% and the current municipal bond rate was not applicable. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at the rate determined actuarially in the annual RSVS. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, a single discount rate of 7.00% was applied to all periods of projected benefit payments to determine the total pension liability. For the June 30, 2017 measurement date, the single discount rate used was 7.00%.

*Sensitivity of the net pension liability to changes in the discount rate* – The following table presents the net pension liability as of July 1, 2018, calculated using the discount rate of 7.00%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.00%) or 1-percentage-point higher (8.00%) than the current rate:

(\$000's)	1% Decrease	Current Discount Rate	1% Increase
	6.00%	7.00%	8.00%
Net pension liability	\$ 2,006,435	\$ 1,258,825	\$ 648,429

### 7. Litigation

In May 2015, HPOPS, along with hundreds of other entities, was named as a defendant in a bankruptcy adversary proceeding, Official Committee of Unsecured Creditors of Motors Liquidation Co. f/k/a/ General Motors Corp. v. JPMorgan Chase Bank, N.A., 09-00504 (Bankr. S.D.N.Y. 2009). In this litigation, the Unsecured Creditors' Committee for the General Motors (GM) bankruptcy is attempting to claw back funds used to pay off a piece of GM term debt that HPOPS held in 2009. A total of \$587,248 is potentially at stake, but if a clawback were ordered, JP Morgan admits that it would be obligated to reimburse HPOPS for all but \$15,948 of that amount. The litigation is ongoing.

# Houston Police Officers' Pension System

## Notes to Financial Statements

---

### 8. Commitments and Contingencies

---

As described in Note 1, there are 3,439 non-vested active members of the System who are entitled to refunds of their accumulated contributions, without interest, upon termination of employment with the City prior to being eligible for pension benefits. At June 30, 2018 and 2017, aggregate contributions from these members of the System were approximately \$168,949 thousand and \$160,034 thousand, respectively. The portion of these contributions that might be refunded to members who terminate prior to pension eligibility has not been determined.

At June 30, 2018 and 2017, the total accumulated lump sum benefit due to DROP members was approximately \$795,485 thousand and \$775,071 thousand, respectively.

At June 30, 2018 and 2017, the total accumulated lump sum benefit due to PROP participants was \$1,042,303 thousand and \$996,205 thousand, respectively.

The System has outstanding investment commitments to various limited partnerships totaling \$965,500 thousand and \$942,205 thousand, as of June 30, 2018 and 2017, respectively. These outstanding commitment amounts include amounts that are due for investments that may have been made on behalf of the limited partnerships prior to the Statement of Net Position dates.

The System has a lease for the office it occupies through October 31, 2020. The monthly base rental and outstanding lease commitment is as detailed in the following chart (\$000's).

<u>Period</u>	<u>Monthly Base Rent</u>	<u>Fiscal Year</u>	<u>Total Rent</u>
May 2017 - April 2018	\$ 21	2019	\$ 259
May 2018 - April 2019	22	2020	265
May 2019 - April 2020	22	2021	90
May 2020 - October 2020	23	Beyond 2021	-
			<u>\$ 614</u>

---

### 9. Subsequent Events

---

The System has evaluated subsequent events through October 9, 2018, the date the financial statements were available for issuance.

**Houston Police Officers' Pension System**  
**Required Supplementary Information (Unaudited)**

**Schedule of Changes in the Net Pension Liability and Related Ratios**  
**(\$000's)**

Fiscal year ending June 30,	2018	2017	2016	2015	2014
<b>Total Pension Liability</b>					
Service Cost	\$ 63,632	\$ 60,930	\$ 66,098	\$ 56,062	\$ 52,844
Interest	445,113	433,598	488,223	473,065	466,649
Benefit Changes <sup>(1)</sup>	-	(1,006,000)	-	-	-
Difference between Expected and Actual Experience	69,534	80,023	10,390	26,706	(41,034)
Assumption Changes	21,399	778,710	(676,151)	664,974	162,849
Benefit Payments	(361,033)	(458,733)	(259,076)	(225,656)	(211,690)
Refunds	(1,329)	(1,696)	(978)	(945)	(906)
<b>Net Change in Total Pension Liability</b>	<b>237,316</b>	<b>(113,168)</b>	<b>(371,494)</b>	<b>994,206</b>	<b>428,712</b>
<b>Total Pension Liability - Beginning</b>	<b>6,508,122</b>	<b>6,621,290</b>	<b>6,992,784</b>	<b>5,998,578</b>	<b>5,569,866</b>
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 6,745,438</b>	<b>\$ 6,508,122</b>	<b>\$ 6,621,290</b>	<b>\$ 6,992,784</b>	<b>\$ 5,998,578</b>
<b>Plan Fiduciary Net Position</b>					
Employer Contributions	\$ 887,143	\$ 133,805	\$ 137,392	\$ 113,665	\$ 103,372
Employee Contributions	45,254	40,104	39,017	37,719	37,012
Pension Plan Net Investment Income	463,080	667,476	(135,833)	35,341	649,153
Benefit Payments	(361,033)	(458,733)	(259,076)	(225,656)	(211,690)
Refunds	(1,329)	(1,696)	(978)	(945)	(906)
Pension Plan Administrative Expense	(3,679)	(4,238)	(4,585)	(3,478)	(3,439)
<b>Net Change in Plan Fiduciary Net Position</b>	<b>1,029,436</b>	<b>376,718</b>	<b>(224,063)</b>	<b>(43,354)</b>	<b>573,502</b>
<b>Plan Fiduciary Net Position - Beginning</b>	<b>4,457,178</b>	<b>4,080,460</b>	<b>4,304,523</b>	<b>4,347,877</b>	<b>3,774,375</b>
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>\$ 5,486,614</b>	<b>\$ 4,457,178</b>	<b>\$ 4,080,460</b>	<b>\$ 4,304,523</b>	<b>\$ 4,347,877</b>
<b>Net Pension Liability - Ending (a) - (b)</b>	<b>\$ 1,258,824</b>	<b>\$ 2,050,944</b>	<b>\$ 2,540,830</b>	<b>\$ 2,688,261</b>	<b>\$ 1,650,701</b>
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability Covered Payroll</b>	<b>81.34%</b>	<b>68.49%</b>	<b>61.63%</b>	<b>61.56%</b>	<b>72.48%</b>
<b>Net Pension Liability as a Percentage of Covered Employee Payroll</b>	<b>304.96%</b>	<b>483.37%</b>	<b>624.19%</b>	<b>679.95%</b>	<b>424.61%</b>

(1) The benefit changes in fiscal year 2017 are detailed in the "Final Risk Sharing Valuation Study as of June 30, 2016" dated September 25, 2017, include changes to normal retirement eligibility, normal retirement benefit, and post-retirement Cost of Living Adjustments (COLA).

(2) This schedule is intended to present information for 10 years. GASB Statement 67 established the requirement for this schedule and went into effect for fiscal year ending June 30, 2014. The statement allows that if retroactive information is not presented for the full 10 years, required supplementary information should be presented for as many years for which information measured in conformity with the requirements of this Statement is available in the transition year and until 10 years of such information is available.

**Houston Police Officers' Pension System**  
**Required Supplementary Information (Unaudited)**

**Schedule of Employer Contributions**  
**(\$000's)**

<b>Measurement Year Ending June 30,</b>	<b>Actuarially Determined Contribution</b>	<b>Actual Contribution</b>	<b>Contribution Deficiency (Excess)</b>	<b>Covered Payroll</b>	<b>Actual Contribution as a % of Covered Payroll</b>
2014	\$ 139,991	\$ 103,372	\$ 36,619	\$ 388,756	26.59 %
2015	150,949	113,665	37,284	395,360	28.75
2016	161,154	137,392	23,762	407,058	33.75
2017	167,980	133,805	34,175	424,300	31.54
2018	131,142	887,143	(756,001)	412,786	214.92

This schedule is intended to present information for 10 years. GASB Statement 67 established the requirement for this schedule and went into effect for fiscal year ending June 30, 2014. The statement allows that if retroactive information is not presented for the full 10 years, required supplementary information should be presented for as many years for which information measured in conformity with the requirements of this Statement is available in the transition year and until 10 years of such information is available.

**Notes to Schedule**

**Valuation Date:** July 1, 2018

Actuarially determined contribution rates, payable by the City, are determined in accordance with the 2016 Risk Sharing Valuation Study (RSVS) and become effective in the fiscal year beginning one year after the valuation date. Previously, actual contributions were based on the terms of the 2011 Meet and Confer Agreement. For more information regarding the actuarially determined contribution, refer to the July 1, 2018 HPOPS Valuation Report.

A new set of assumptions were adopted in the July 1, 2018 actuarial valuation and will be first reflected in the contribution rate determined for the fiscal year ending 2020.

**Methods and Assumptions Used to Determine Contribution Rates:**

Actuarial Cost Method	Ultimate Entry Age Normal
Amortization Method	Level Percentage of Payroll, 30 year closed laddered bases
Remaining Amortization Period	30 years
Asset Valuation Method	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 actuarial value of assets was set equal to the market value of assets as of July 1, 2016.
Inflation	2.75%
Salary Increases	0.00% to 12.00% , plus a 2.75% inflation and productivity component
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates based on age and years of service. The assumption was last updated in the July 1, 2018 valuation pursuant to an experience study of the five-year period ending June 30, 2017.
Mortality	<p>Healthy retirees - The Gender-distinct RP-2014 Combined Healthy Mortality Tables with Blue Collar Adjustment for males and no collar adjustment for females. The base rates were developed using the 2006 central rates, projected forward to 2018 using the MP-2017 projection scale. The rates are projected on a fully generational basis by ultimate values of scale MP-2014 to account for future mortality improvements.</p> <p>Disabled males and females – The gender-distinct RP-2014 Disabled Retiree Mortality Tables are used without adjustment. The rates are projected on a fully generational basis by the ultimate values of scale MP to account for future mortality improvements. (continued on next page)</p> <p>(continued from previous page)</p> <p>Active members - The Gender-distinct RP-2014 Combined Healthy Mortality Tables with Blue Collar Adjustment are used without adjustment. The rates are projected on a fully generational basis by the ultimate values of scale MP to account for future mortality improvements.</p>

**Houston Police Officers' Pension System**  
**Required Supplementary Information (Unaudited)**

---

**Schedule of Investment Returns**

<u>Fiscal Year Ended June 30,</u>	<u>Annual Money-weighted Rate of Return, net of Investment Expense</u>
2014	17.4 %
2015	0.8 %
2016	(3.2)%
2017	16.8 %
2018	9.8 %

This schedule is intended to present information for 10 years. GASB Statement 67 established the requirement for this schedule and went into effect for fiscal year ending June 30, 2014. The statement allows that if retroactive information is not presented for the full 10 years, required supplementary information should be presented for as many years for which information measured in conformity with the requirements of this Statement is available in the transition year and until 10 years of such information is available.

**Houston Police Officers' Pension System**  
**Investment, Professional and Administrative Expenses (\$000's)**

---

<i>Year ended June 30,</i>	2018	2017
<b>Investment services:</b>		
Custodial services	\$ 249	\$ 242
Money management services	12,680	12,480
Consulting services	812	800
Department operating expense	598	571
<b>Total investment services</b>	<b>14,339</b>	<b>14,093</b>
<b>Professional services:</b>		
Actuarial services	118	482
Auditing services	126	101
Election audit services	21	35
Legal services	66	96
Lobbyist services	372	393
<b>Total professional services</b>	<b>703</b>	<b>1,107</b>
<b>Administrative expenses:</b>		
Information technology	264	575
Education	29	36
Fiduciary insurance	93	91
Office rent	237	245
Other office costs	2,353	2,184
<b>Total administrative expenses</b>	<b>2,976</b>	<b>3,131</b>
	<b>\$ 18,018</b>	<b>\$ 18,331</b>

**Houston Police Officers' Pension System**  
**Summary of Investment and Professional Services (\$000's)**

<i>Twelve Months Ended June 30, 2018</i>	Official System Position	Expense	Nature of Services
Franklin Park Associates, LLC	Consultant	\$ 400	Consulting
Mercer Investment Consulting LLC	Consultant	412	Consulting
The Northern Trust Company	Custodian	249	Custodian
AQR Capital Management LLC	Money Manager	2,992	Money Management
BlackRock Institutional Trust	Money Manager	539	Money Management
Blackstone Alternative Solutions LLC	Money Manager	78	Money Management
Bridgewater Associates, Inc.	Money Manager	5,818	Money Management
The Northern Trust Company	Money Manager	1,093	Money Management
Parametric	Money Manager	1,631	Money Management
Shenkman Capital Management, Inc.	Money Manager	529	Money Management
Gabriel Roeder Smith & Co.	Actuary	118	Actuarial
BDO USA, LLP	Auditors	126	Auditing
Burford Perry LLP	Attorneys	54	Legal Service
IceMiller LLP	Attorneys	7	Legal Service
Kasowitz, Benson, Torres & Friedman LLP	Attorneys	1	Legal Service
HillCo Partners, LLC	Attorneys	157	Lobbyists
Locke Lord LLP	Attorneys	211	Lobbyists
Bickley Prescott & Co.	Consultant	21	Election Auditing
Other	Other	8	Other
<b>Total investment and professional services</b>		<b>\$ 14,444</b>	