



## Houston Police Officers' Pension System

A Component Unit of  
The City of Houston, Texas  
Annual Comprehensive Financial Report  
for the years ended June 30, 2022 and June 30, 2021



The mission of the Houston Police Officers' Pension System is to responsibly manage the System in the best interests of the members and beneficiaries so that they may have peace of mind knowing their pension benefits are secure.

HOUSTON POLICE OFFICERS' PENSION SYSTEM  
Patrick S. Franey, Executive Director  
602 Sawyer, Suite 300  
Houston, TX 77007  
713.869.8734  
713.869.7657 Fax  
[www.hpops.org](http://www.hpops.org)

Report prepared by the staff of the Houston Police Officers' Pension System

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**HOUSTON POLICE OFFICERS’  
PENSION SYSTEM**



# HPOPS

FOR TODAY & TOMORROW



**INTRODUCTORY SECTION**

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December 13, 2022

The Membership  
Houston Police Officers' Pension System  
Houston, Texas

The Annual Comprehensive Financial Report (ACFR) of the Houston Police Officers' Pension System (the System) for the fiscal year ended June 30, 2022 is submitted herewith. Responsibility for both the accuracy of the data, and the completeness and fairness of the presentation, rests with the management of the System. We trust that you will find this ACFR helpful in understanding your retirement system, a system that strives to provide responsible stewardship of assets contributed by the members and the City of Houston (the City). This ACFR is divided into five sections:

**PENSION BOARD**  
*Dwayne Ready*  
CHAIRMAN  
*Terry A. Bratton*  
VICE CHAIRMAN  
*David Trey Coleman*  
SECRETARY  
*George Guerrero*  
TRUSTEE  
*Steven D. Le*  
TRUSTEE  
*Melissa Dubowski*  
DIRECTOR OF  
FINANCE, DESIGNEE  
*Don A. Sanders*  
MAYOR'S  
REPRESENTATIVE

- **Introductory Section** – This section contains the administrative organization, the letter of transmittal and Chairman's report.
- **Financial Section** – This section contains the report of the Independent Auditor, Management's Discussion and Analysis, the financial statements of the System and certain required supplementary information.
- **Investment Section** – This section contains a report on investment activity, investment policies, investment results, and various investment schedules.
- **Actuarial Section** – This section contains the Actuary's Certification Letter and summary results of the annual actuarial valuation.
- **Statistical Section** – This section includes historical financial and benefits related data pertaining to the System.

**EXECUTIVE DIRECTOR**  
*Patrick S. Franey*

The financial statements and related information included in the *Financial Section* of this report are the responsibility of the Board of Trustees and management of the System. The financial statements have been prepared in accordance with generally accepted accounting principles (GAAP) and presented in accordance with guidance provided by applicable statements issued by the Governmental Accounting Standards Board (GASB). The System's independent auditor, BDO, conducted an independent audit of the basic financial statements in accordance with U.S. generally accepted auditing standards. This audit is described in the *Independent Auditors' Report* found in the *Financial Section*. Management has provided the external auditors with full and unrestricted access to the System's staff to discuss their audit and related findings to facilitate independent validation of the integrity of the System's financial reporting.

The *Financial Section* also contains *Management's Discussion and Analysis*, which serves as an introduction to and an overview of the financial statements. The System is considered a component unit of the City of Houston for financial reporting purposes and, as such, the financial statements in this report are also included in the *City of Houston's Annual Comprehensive Financial Report*.

In developing and evaluating the System's accounting system, the adequacy of internal accounting controls is a primary concern. The System's controls are designed to provide reasonable assurance regarding the safekeeping of assets and the reliability of financial records. These controls include strategic design of the System's business and accounting systems, the appropriate segregation of duties and responsibilities, sound practices in the performance of those duties, capable personnel, and the structure of the organization. There are limits to internal control, such as the cost to mitigate some risks may outweigh the risk itself, internal controls may be overridden, or collusion may thwart control design. We believe the System's internal controls are adequate and are working as designed.

**Houston  
Police Officers'  
Pension System**  
602 Sawyer, Suite 300  
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(713) 869-7657 fax  
www.hpops.org

The System was established in 1947, funded by a \$100,000 Treasury note, and offered retiring members a pension of \$75 per month. Today, the System has investments of \$6.8 billion and offers a variety of pension benefits to members and their beneficiaries. Members have the option to defer their benefits or retire under a regular service retirement. Members also may access a disability retirement, either duty or non-duty connected.

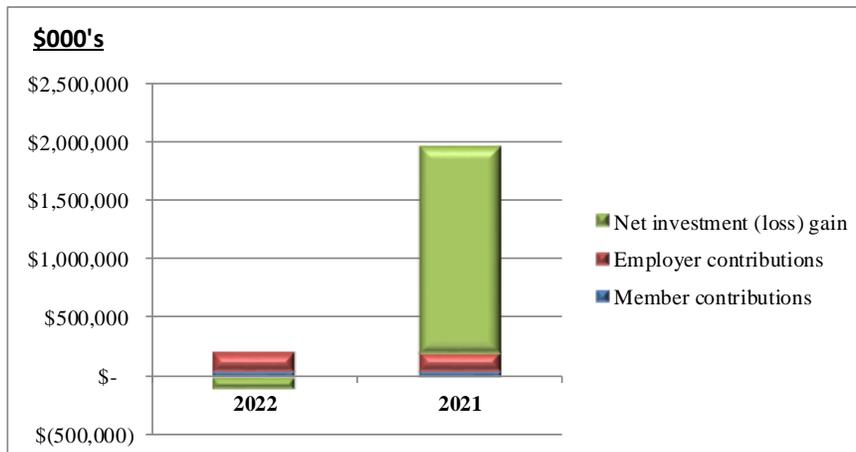
### Additions to Plan Net Position

The System relies on the contributions of members and the City of Houston, as well as income generated from investments, to provide funds needed to finance retirement and disability benefits. Pursuant to the Governing Statute, all members are required to contribute 10.50% of pensionable pay. Contributions are made on a pre-tax basis. 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) subject to a statutory risk sharing mechanism as of June 30, 2016, which was completed September 25, 2017. For fiscal year 2021, the City’s contribution rate equaled 31.84% of compensation, and for fiscal year 2022 the City’s contribution rate is 31.92% of compensation. The City’s contribution rate for the coming fiscal year 2023 is 31.98%.

The number of active members decreased in fiscal year 2022 compared to 2021 as the number of retirements and terminations outpaced new hires to the Houston Police Department (HPD). Contributions from members increased in fiscal year 2022 over fiscal year 2021 mainly due to compensation increases. The System experienced a negative time-weighted investment return of (1.4)% in 2022, following a positive return of 32.2% in 2021. The investment returns for fiscal 2022 and 2021 can be explained by the impact of rising inflation pressures and geo-political risks around Russia and Ukraine, in addition to the lingering effects of the COVID lockdowns and continued tensions with China.

	2022	2021	Increase (Decrease)
Active members:			
Fully vested	1,466	1,590	(124)
Nonvested:			
Hired or rehired before October 9, 2004	161	290	(129)
Hired or rehired after October 9, 2004	3,535	3,364	171
	<u>5,162</u>	<u>5,244</u>	<u>(82)</u>

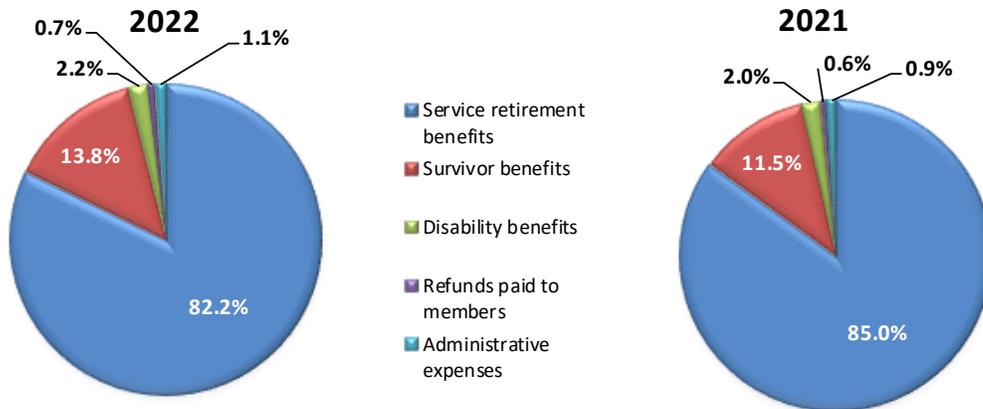
	\$000's		Increase (Decrease) Amount	Increase (Decrease) Percentage
	2022	2021		
Member contributions	\$ 50,028	\$ 49,749	\$ 279	0.6%
Employer contributions	152,375	151,094	1,281	0.8%
Net investment (loss) gain	(98,537)	1,764,927	(1,863,464)	(105.6%)
Total	<u>\$ 103,866</u>	<u>\$ 1,965,770</u>	<u>\$(1,861,904)</u>	<u>(94.7%)</u>



## Deductions from Plan Net Position

The System was created to provide retirement benefits to retired Houston police officers and their dependents. Although this is still the primary purpose of the System, over the course of 75 years the System has also added survivor and disability benefits. The cost of these programs includes benefit payments and refunds of contributions to terminated employees. The cost of administering the System is also paid from System assets.

	\$000's		Increase (Decrease) Amount	Increase (Decrease) Percentage
	2022	2021		
Service retirement benefits	\$ 311,679	\$ 340,887	\$ (29,208)	(8.6%)
Survivor benefits	52,430	46,121	6,309	13.7%
Disability benefits	8,173	7,885	288	3.7%
Refunds paid to members	2,645	2,433	212	8.7%
Administrative expenses	4,202	3,724	478	12.8%
<b>Total</b>	<b>\$ 379,129</b>	<b>\$ 401,050</b>	<b>\$ (21,921)</b>	<b>(5.5%)</b>



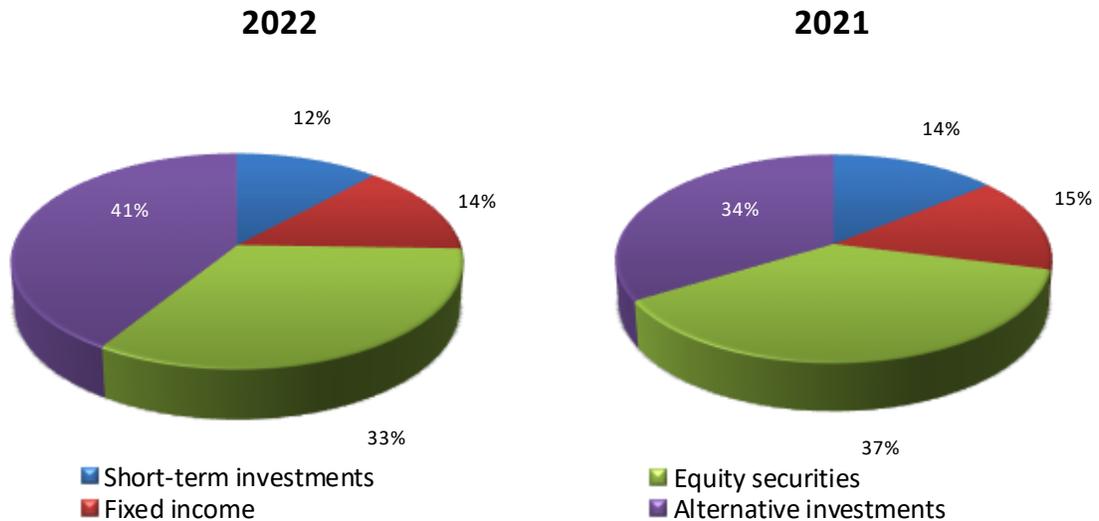
Total benefits paid, which include lump sum payments, decreased in 2022 as compared to 2021 due mainly to a decrease in lump sum benefits. Administrative expenses increased mainly due to expenses for increased personnel costs, the quadrennial cost of an actuarial experience study, and the write-off of architectural and engineering costs for a proposed office building project. For further information regarding the System's financial condition, refer to Management's Discussion and Analysis in the Financial Section of this report.

## Investments

The System invests funds entrusted to it exclusively for the benefit of its members. It avows an investment rule commonly known as the “prudent expert” rule, whereby from a procedural as well as substantive standpoint, it acts with the care, skill, prudence and diligence that a “prudent expert” acting in a similar capacity would act under similar circumstances.

The Board of Trustees believes that the System’s assets should be managed in a way that reflects the uniqueness of the System, and that the System’s assets should be diversified over a spectrum of investment vehicles. The determination of the appropriate asset mix is based on capital market assumptions that incorporate both historical and projected returns, volatility, liquidity and correlations of various asset classes.

	\$000's		Increase (Decrease) Amount	Increase (Decrease) Percentage
	2022	2021		
Short-term investments	\$ 809,816	\$ 1,007,642	\$ (197,826)	(19.6%)
Fixed income	933,212	1,048,217	(115,005)	(11.0%)
Equity securities	2,285,609	2,667,020	(381,411)	(14.3%)
Alternative investments	2,809,366	2,394,957	414,409	17.3%
Foreign currency contracts	1,632	-	1,632	-
<b>Total</b>	<b>\$ 6,839,635</b>	<b>\$ 7,117,836</b>	<b>\$ (278,201)</b>	<b>(3.9%)</b>



Fiscal year 2022 began with markets continuing to benefit from post-pandemic stimulus fueled spending and better than expected corporate earnings. However, mid-way through the year, supply chain constraints, continued tensions with China and geo-political risks around Russia and Ukraine led to inflation rising to levels not seen in decades. To address rising inflation, the Federal Reserve began a series of aggressive interest rate hikes increasing interest rates by 150 basis points. This created recession fears in both equity and fixed income markets resulting in losses in excess of 20% in the second half of the fiscal year.

The System returned a negative (1.4)% during 2022, outperforming its benchmark rate of return by 4.4%, primarily due to the put-spread collar, private credit and private equity allocations. The System's domestic equity allocation returned a negative (10.8)%, outperforming its benchmark by 3.1% while the System's international equity allocation returned a negative (18.5)%, outperforming its benchmark rate of return by 0.9%. The System's fixed income allocation returned a negative (5.9)%, outperforming its benchmark by 4.4%. The System's alternative investments in private equity returned 18.5%, outperforming its benchmark by 6.9% while the System's real estate allocation returned 30.0%, outperforming its benchmark by 8.2%.

The Board firmly believes that by maintaining a disciplined investment approach and with reasonable diversification, the System will enhance the likelihood of meeting its long-term investment goals. Further details regarding the System's investments are included in the Investment Section of this report.

## **Funding**

It is the System's objective to have enough funds in reserve to provide members with promised benefits upon their retirement. The System's actuary conducts a periodic valuation to determine the adequacy of the current employer contribution rates, to describe the current financial condition of the System, and to analyze changes in the System's condition. An actuarial accrued liability is the liability for service already rendered by former and current employees. An actuarial accrued surplus is the excess of the System's actuarial value of assets over the actuarial accrued liability. Any liability or surplus is amortized using a level percentage of payroll and a 30 year closed ladder base methodology.

The most recent actuarial valuation shows the funded position of the System increased from 85.4% at July 1, 2021 to 87.5% at July 1, 2022. The actuarial accrued liability increased \$260.3 million and the actuarial value of assets increased \$377.1 million. As a result, the System's Unfunded Actuarial Accrued Liability decreased \$116.8 million to \$921.9 million as of July 1, 2022. The decrease in the Unfunded Actuarial Accrued Liability is due to a combination of factors including actuarial investment returns greater than target and City contributions in excess of the required amount which were partially offset by COLA and DROP rates being greater than assumed. Further details regarding the System's actuarial liability are included in the Actuarial Section of this report.

## **Major Initiatives**

The System continues to provide a high level of service to our members. The Financial Planning and Estate Planning services allow members to meet one on one with System professional staff to discuss financial issues and work to prepare different legal documents in order to protect the member's estate. These services are free of charge and continue to be highly valued by System members.

Given the volatile financial markets in the second half of the fiscal year, the primary focus of the investment staff was managing and safeguarding the System's assets. Other initiatives of the System included the completion of the experience study, a combined effort between staff and HPOPS' actuary, the results of which have been implemented in the 2022 valuation. Additionally, a cyber-security upgrade project was initiated and is anticipated to be completed during fiscal year 2023. Other endeavors included Trustee and staff training programs, as well as preparation for the System's triennial investment and performance audit as mandated by Texas Government Code.

## Professional Services

The Board of Trustees engages professional consultants to perform services that are considered essential for the operation of the System. The independent auditor's report, issued by BDO USA, LLP, is included on page 17 of this report. The Actuary's Certification Letter and summary results of the annual actuarial valuation, certified by Gabriel Roeder Smith & Company, is included on page 75. Professional service providers who provided services to the System during the year are listed below.

<b>Actuarial</b>	Gabriel Roeder Smith & Company	<b>Election Services</b>	Election Services Company
<b>Auditing</b>	BDO USA, LLP	<b>Legal Service</b>	IceMiller LLP
<b>Consulting</b>	Franklin Park Associates, LLC Mercer Investment Consulting Inc.	<b>Legal Service/ Lobbyists</b>	HillCo Partners, LLC Locke Lord LLP
<b>Custodian</b>	The Northern Trust Company	<b>Money Management</b>	See Schedule of Investment Managers on page 69 in the Investment Section

## Certificate of Achievement

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Houston Police Officers' Pension System for its annual comprehensive financial report for the fiscal year ended June 30, 2021. This was the 28th consecutive year that the System has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized annual comprehensive financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current annual comprehensive financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

## Acknowledgements

The compilation of this report reflects the combined effort of the System's staff under the guidance of the Board of Trustees. Its goal is to provide complete and reliable information as a basis for management decisions and compliance with legal provisions as well as responsible stewardship of funds contributed by its members and the City of Houston.

We would like to take this opportunity to express our gratitude to the staff, System advisors, and to the many other people who have contributed to the successful operation of the System.

Sincerely,



Board of Trustees



December 13, 2022

To the Members  
Houston Police Officers' Pension System  
Houston, Texas

**PENSION BOARD**

*Dwayne Ready*  
CHAIRMAN

*Terry A. Bratton*  
VICE CHAIRMAN

*David Trey Coleman*  
SECRETARY

*George Guerrero*  
TRUSTEE

*Steven D. Le*  
TRUSTEE

*Melissa Dubowski*  
DIRECTOR OF  
FINANCE, DESIGNEE

*Don A. Sanders*  
MAYOR'S  
REPRESENTATIVE

**EXECUTIVE DIRECTOR**

*Patrick S. Franey*

The Houston Police Officers' Pension System (HPOPS) is pleased to bring you the fiscal year 2022 Annual Comprehensive Financial Report (ACFR). The ACFR provides a comprehensive picture of HPOPS' finances for the fiscal year ending June 30, 2022, an overview of the year's highlights, and a substantial amount of historical information.

This past year saw the highest inflation the country had seen in forty years with HPOPS achieving a negative return of (1.4)%. Although the year began with markets continuing to rally as COVID-19 concerns abated, supply chain constraints, continued tensions with China and geo-political risks around Russia and Ukraine all led to rising inflation pressures. Those pressures and other factors moved the Federal Reserve to embark on a series of aggressive interest rate hikes, increasing interest rates by 150 basis points through the end of the fiscal year with equity markets retracing by more than twenty percent on recession fears.

HPOPS worked diligently throughout the year monitoring market developments with a focus on attaining long-term goals and will continue to maintain that perspective with an ever vigilant eye on opportunities and risks in the coming year. Past experience and the Trustees' stewardship allow us to fulfill our mission to responsibly manage HPOPS in the best interests of the members and beneficiaries so that you may have peace of mind knowing your pension benefits are secure. I wish to express appreciation to the Board of Trustees, office staff, and professional consultants who work tirelessly and effectively to ensure continued operational success of HPOPS.

We at HPOPS plan for the future of all of our current members as well as those members to come. I encourage you to read on to learn more about HPOPS.

Sincerely,

  
Dwayne Ready  
Chairman

**Houston  
Police Officers'  
Pension System**

602 Sawyer, Suite 300  
Houston, Texas 77007  
(713) 869-8734 phone  
(713) 869-7657 fax  
[www.hpops.org](http://www.hpops.org)

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**BOARD OF TRUSTEES AND ADMINISTRATIVE STAFF**

**TRUSTEES ELECTED BY ACTIVE, INACTIVE AND RETIRED POLICE OFFICERS**

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**DWAYNE READY**  
*Chairman*



**TERRY BRATTON**  
*Vice-Chairman*



**DAVID TREY COLEMAN**  
*Secretary*



**GEORGE GUERRERO**  
*Trustee*



**STEVEN D. LE**  
*Trustee*

**TRUSTEES BY STATE STATUTE**

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**MELISSA DUBOWSKI**  
*City Treasurer*



**DON A. SANDERS**  
*Mayor's Representative*

**POLICE PENSION OFFICE PERSONNEL**

---

**PATRICK S. FRANEY**  
*Executive Director*

**TIFFANY WILLIAMSON**  
*Administrative Assistant*

**MICHELLE HARTSFIELD**  
*Receptionist*

**CLARK OLINGER**  
*Benefits Director*

**SHERYL BAINES**  
*Benefits Specialist*

**MIRANDA SILVA**  
*Benefits Specialist*

**REGINA WARD**  
*Benefits Manager*

**BEVERLY LOCKETT**  
*Benefits Specialist*

**RICHARD GABLE**  
*Financial Planner*

**STACEY GALO**  
*Chief Investment Officer*

**NEAL WALLACH**  
*Investment Analyst/Strategist*

**ANDREW RISKEN**  
*Investment Analyst*

**KEVIN T. O'TOOLE**  
*Accounting Director*

**LAJUANA WINTERS**  
*Accountant*

**ROXANNA OLIVER**  
*Investments Accountant & Administrator*

**GREG SIMEON**  
*IT Director*

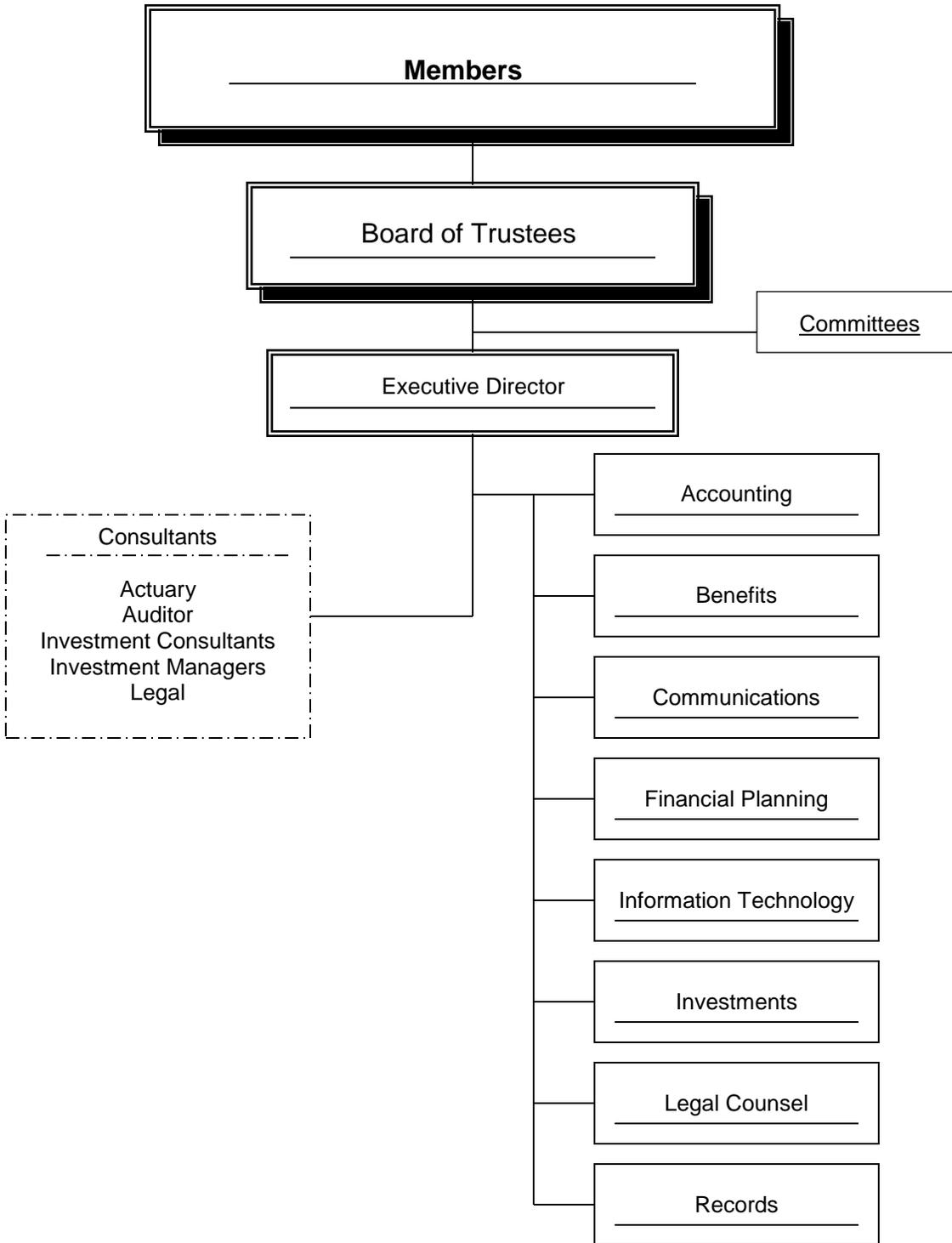
**CHRISTOPHER SAUCEDA**  
*IT Systems Administrator*

**STEPHANIE SEGURA**  
*Records Manager*

**NICK DANG**  
*General Counsel*

**CHRISTOPHER FLORES**  
*Attorney*

**ORGANIZATION CHART**



For a list of Consultants, see the Summary of Investment and Professional Services on page 55 of the financial section, pages 60-65 of the investment section and the Schedule of Investment Managers on page 69 of the investment section.



Government Finance Officers Association

Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting

Presented to

**Houston Police Officers' Pension System  
Texas**

For its Annual Comprehensive  
Financial Report  
For the Fiscal Year Ended

June 30, 2021

*Christopher P. Morill*

Executive Director/CEO



SECTION TWO

FINANCIAL SECTION

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## Independent Auditor's Report

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

### *Opinion*

We have audited the financial statements of Houston Police Officers' Pension System (the "System"), a component unit of the city of Houston, Texas, as of and for the years ended June 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the financial position of the System as of June 30, 2022 and 2021, 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.

### *Basis for Opinion*

We conducted our audits in accordance with auditing standards generally accepted in the United States of America ("GAAS"). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### *Responsibilities of Management for the Financial Statements*

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for 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.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter. *Auditor's Responsibilities for the Audit of the Financial Statements*



Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit 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 System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

## **Other Matters**

### ***Adoption of New Accounting Principle***

As discussed in Note 3 to the financial statements, the System adopted the provisions of Governmental Accounting Standards Board Statement Number 87, *Leases*. Our opinion is not modified with respect to this matter.



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

Accounting principles generally accepted in the United States of America require that management's discussion and analysis and the schedules of changes in the system's net pension liability and related ratios, employer contributions, and investment returns be presented to supplement the basic financial statements. Such information is the responsibility of management and, 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 the 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 audit 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 Supplementary Information***

Our audit was conducted for the purpose of forming opinions on financial statements that collectively comprise the System's basic financial statements. The schedule of investment, professional and administrative expenses and summary of investments and professional services are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of 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 audit 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 schedule of investment, professional and administrative expenses and summary of investments and professional services are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

*BDO USA, LLP*

October 21, 2022

# Houston Police Officers' Pension System

## Management's Discussion and Analysis (Unaudited)

### Fiscal Year Ended June 30, 2022

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, 2022, 2021 and 2020. 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, Supplemental 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:	2022	2021	2020
<b>Assets</b>			
Cash	\$ 441	\$ 24	\$ 482
Investments at fair value	6,839,635	7,117,836	5,546,961
Invested securities lending collateral	237,338	125,217	34,741
Receivables	21,394	23,292	33,252
Land	5,322	5,322	-
Building	-	60	-
Right-to-use lease asset	438	740	1,013
<b>Total Assets</b>	<b>7,104,568</b>	<b>7,272,491</b>	<b>5,616,449</b>
<b>Liabilities</b>			
Due for purchase of investments	3,132	7,943	6,809
Securities lending collateral	237,338	125,217	34,741
Accrued investment and professional fees	1,348	1,008	1,148
Lease liability	438	740	1,013
Other liabilities	324	332	262
<b>Total Liabilities</b>	<b>242,580</b>	<b>135,240</b>	<b>43,973</b>
<b>Net position restricted for pensions</b>	<b>\$ 6,861,988</b>	<b>\$ 7,137,251</b>	<b>\$ 5,572,476</b>

The System's year over year net position decreased by approximately \$(275,263) thousand in fiscal year 2022 after an increase of approximately \$1,564,775 thousand in fiscal year 2021 over 2020. Markets continued to rally in the first half of fiscal year 2022 driven by strong consumer spending and better than expected corporate earnings. Mid-way through the year, consumer sentiment began to shift on news of rising inflation pressures and geo-political risks around Russia and Ukraine, in addition to continued tensions with China. The second half of fiscal year saw the Fed's most aggressive rate hikes since 1994 in an effort to battle the highest inflation the country had seen in forty years. By the end of the fiscal year, the Fed had increased interest rates by 150 basis points and equity markets had retracted by over twenty percent on recession fears.

# Houston Police Officers' Pension System

## Management's Discussion and Analysis (Unaudited)

### Fiscal Year Ended June 30, 2022

Fiscal year 2021 began on an optimistic note, with strong economic growth due to ongoing stimulus and abating government lockdowns due to COVID-19 concerns. Sentiment was bolstered by the approval of the \$1.9 trillion American Rescue Plan Act, a relatively positive macroeconomic backdrop and progress with the vaccine roll-out. More of the world economies gradually reopened during the final two months, and markets responded positively. However, along with the continuation of the global economic rebound, we saw supply chain constraints and inflationary pressures. Pressure on supply chains increased as the spread of COVID -19 disrupted transport and manufacturing, especially in countries where the vaccination roll-out is lagging behind.

The System experienced a negative time-weighted investment return of (1.4)% in 2022, following positive returns of 32.2% in 2021 and 1.1% in 2020. 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.

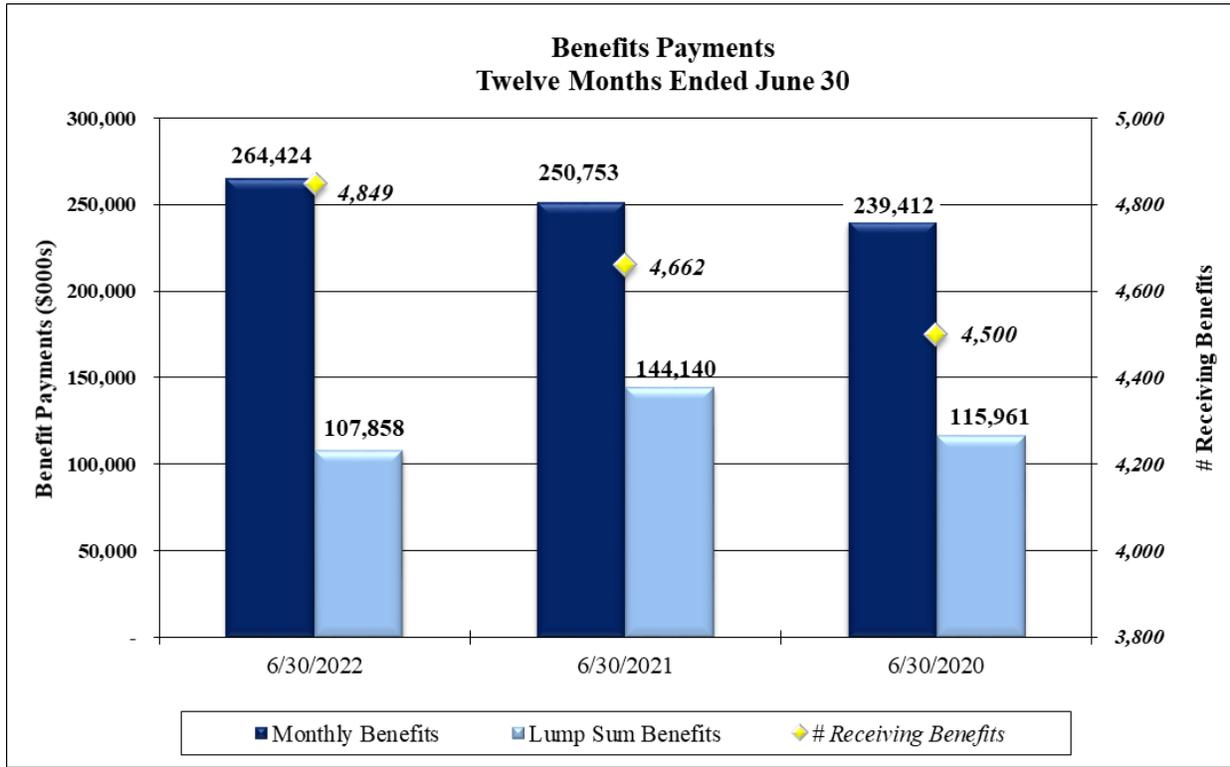
A summary of the Statements of Changes in Fiduciary Net Position for the System is as follows (\$000's):

Years ended June 30:	2022	2021	2020
<b>Additions:</b>			
<b>Contributions:</b>			
City	\$ 152,375	\$ 151,094	\$ 149,078
Members	50,028	49,749	49,062
<b>Total contributions</b>	<b>202,403</b>	<b>200,843</b>	<b>198,140</b>
Net income (loss) from investing activities	(98,888)	1,764,836	61,007
Net income from securities lending activities	351	146	186
<b>Total additions</b>	<b>103,866</b>	<b>1,965,825</b>	<b>259,333</b>
<b>Deductions:</b>			
Benefits paid to members	372,282	394,893	355,373
Refunds to members	2,645	2,433	2,209
Professional and administrative expenses	3,900	3,451	3,922
Lease amortization expense	302	273	-
<b>Total deductions</b>	<b>379,129</b>	<b>401,050</b>	<b>361,504</b>
<b>Net increase (decrease)</b>	<b>(275,263)</b>	<b>1,564,775</b>	<b>(102,171)</b>
<b>Net position restricted for pensions</b>			
Beginning of period	7,137,251	5,572,476	5,674,647
<b>End of period</b>	<b>\$ 6,861,988</b>	<b>\$ 7,137,251</b>	<b>\$ 5,572,476</b>

The Governing Statute as amended on July 1, 2017, required contribution payments for fiscal year 2022 equal to 31.92% of payroll, resulting in contributions of \$152,375 thousand and required contribution payments for fiscal year 2021 equal to 31.84% of payroll, resulting in contributions of \$151,094 thousand, which accounts for the increase in City contributions for the year ended June 30, 2022. For fiscal year 2020, required contribution payments were equal to 31.82% of payroll, resulting in contributions of \$149,078 thousand. As discussed in Note 2 to the financial statements, the contributions were paid in their entirety from the City budget in fiscal years 2022, 2021, and 2020.

“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, 2022, 2021, and 2020.

**Houston Police Officers' Pension System**  
**Management's Discussion and Analysis (Unaudited)**  
**Fiscal Year Ended June 30, 2022**



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 2022 decreased from 2021 by approximately \$(22,611) thousand or (5.7)% compared to an increase of approximately \$39,520 thousand or 11.1% between 2020 and 2021. The decrease in 2022 is due to a \$(36,282) thousand decrease in lump sum benefits and a \$13,671 thousand increase in monthly benefits compared to a \$28,179 thousand increase in lump sum benefits and an \$11,341 thousand increase in monthly benefits in 2021. Average monthly benefit payments were \$22,035 thousand and \$20,896 thousand per month for 2022 and 2021 respectively. The increase of \$1,139 thousand or 5.5% in 2022 was slightly greater than the increase of \$945 thousand or 4.7% in 2021 while the number of members and survivors who are receiving benefits increased by 187 in 2022 and 162 in 2021.

There was an increase of \$449 thousand in professional and administrative expenses during 2022 as compared to 2021. This increase is mainly due to expenses for the terminated building project, the System had an actuarial experience study performed, and other expenses that returned to pre-COVID-19 levels. There was a decrease of \$253 thousand in professional and administrative expenses during 2021 as compared to 2020. This decrease is mainly due to one-time expenses relating to a Fraud Risk Assessment of the System and investment in technology that occurred in 2020 while other expenses, especially relating to travel, were less due to the impact of COVID-19.

**Houston Police Officers' Pension System**  
**Management's Discussion and Analysis (Unaudited)**  
**Fiscal Year Ended June 30, 2022**

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**System Highlights**

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The System's funded ratio pursuant to its most recent actuarial valuation dated July 1, 2022 was 87.5% representing an unfunded actuarial accrued liability of \$921,867 thousand. The System's funded ratio as of July 1, 2021 was 85.4% representing an unfunded actuarial accrued liability of \$1,038,643 thousand.

**Contacting the System's Management**

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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>2022</b>	2021
<b>Assets</b>		
<b>Cash</b>	<b>\$ 441</b>	\$ 24
<b>Investments, at fair value</b> (Note 3 and Note 4)		
Short term investments	<b>809,816</b>	1,007,642
Fixed income investments	<b>933,212</b>	1,048,217
Equity investments	<b>2,285,609</b>	2,667,020
Alternative investments	<b>2,809,366</b>	2,394,957
Foreign currency contracts	<b>1,632</b>	-
<b>Total Investments</b>	<b>6,839,635</b>	7,117,836
<b>Invested securities lending collateral</b> (Note 4)	<b>237,338</b>	125,217
<b>Receivables</b>		
City (Note 2)	<b>8,208</b>	7,797
Members	<b>2,693</b>	2,564
Investments	<b>9,550</b>	7,629
Due from sale of investments	<b>906</b>	5,226
Other receivables	<b>37</b>	76
<b>Total Receivables</b>	<b>21,394</b>	23,292
<b>Land (Note 5)</b>	<b>5,322</b>	5,322
<b>Building</b>	<b>-</b>	60
<b>Right-to-use lease asset (net) (Note 5)</b>	<b>438</b>	740
<b>Total Assets</b>	<b>\$ 7,104,568</b>	\$ 7,272,491
<b>Liabilities</b>		
<b>Payables</b>		
Due for purchase of investments	<b>3,132</b>	7,943
Securities lending collateral (Note 4)	<b>237,338</b>	125,217
Accrued investment and professional fees	<b>1,348</b>	1,008
Lease liability (Note 8)	<b>438</b>	740
Other liabilities	<b>324</b>	332
<b>Total Liabilities</b>	<b>242,580</b>	135,240
<b>Net position restricted for pensions</b>	<b>\$ 6,861,988</b>	\$ 7,137,251

*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>2022</b>	2021
<b>Additions</b>		
<b>Contributions</b> (Note 2 and Note 6)		
City	\$ 152,375	\$ 151,094
Members	50,028	49,749
<b>Total contributions</b>	<b>202,403</b>	200,843
<b>Investment income</b>		
Net (depreciation) appreciation in fair value of investments	(154,960)	1,712,466
Interest:		
Short-term investments	2,980	1,725
Fixed income investments	26,875	22,952
<b>Total interest income</b>	<b>29,855</b>	24,677
Dividends	43,663	34,722
Other income	-	26
<b>Total investment (loss) income</b>	<b>(81,442)</b>	1,771,891
Less: investment expense	(17,446)	(7,055)
<b>Net investment (loss) income</b>	<b>(98,888)</b>	1,764,836
<b>Securities lending activities</b> (Note 4)		
Securities lending income	468	195
Securities lending expense	(117)	(49)
<b>Net securities lending income</b>	<b>351</b>	146
<b>Total additions</b>	<b>103,866</b>	1,965,825
<b>Deductions</b>		
Benefits paid to members	372,282	394,893
Refunds to members (Note 1)	2,645	2,433
Professional and administrative expenses	3,900	3,451
Lease amortization expense	302	273
<b>Total deductions</b>	<b>379,129</b>	401,050
Net (decrease) increase in net position	(275,263)	1,564,775
<b>Net position restricted for pensions</b>		
Beginning of period	7,137,251	5,572,476
End of period	<b>\$ 6,861,988</b>	\$ 7,137,251

*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 System, including the direction of investment and oversight of the System'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 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 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,	2022	2021
Retirees and beneficiaries:		
Currently receiving benefits	4,849	4,662
Not yet receiving benefits	54	40
Active members:		
Fully vested	1,466	1,590
Nonvested:		
Hired or rehired before October 9, 2004	161	290
Hired or rehired after October 9, 2004	3,535	3,364
<b>Total members</b>	<b>10,065</b>	<b>9,946</b>

The following sections describe the benefit structure in effect for the plan year ending June 30, 2022. 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 made further changes to the System's benefits structure. Additional changes to the benefit structure and City payment schedule 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

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*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 contributed 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.

*Annual Adjustments* – 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. 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. 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. Disabled members who qualify for a Catastrophic Disability, as defined, receive a disability benefit equal to 100% of pensionable pay.

Members determined to be eligible for a non-duty connected disability benefit are entitled to a benefit equal to the greater of 27.5% of pensionable pay or the accrued service pension. 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 the accrued service pension.

*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 Houston Police Department (HPD) has the option of either a refund of member contributions, without interest, or a Delayed Retirement benefit. The Delayed Retirement 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 benefit 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.

*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.

# Houston Police Officers' Pension System

## Notes to Financial Statements

*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 –All members are required to contribute 10.50% of pensionable 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 2022, the estimated employer contribution rate was 29.22%, which is less than the corridor midpoint of 31.92%, thus the employer contribution rate was 31.92%. For fiscal year 2021, the estimated employer contribution rate was 29.61%, which is less than the corridor midpoint of 31.84%, thus the employer contribution rate was 31.84%. The Governing Statute provides for various adjustments to actuarial methods, actuarial assumptions, and to benefits based upon where the annual estimated employer contribution is in relation to various points on the corridor.

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.

Pursuant to the Governing Statute and based on the July 1, 2022 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, 2032.

(\$000's)

Years Ended June 30,	Compensation	Employer Contribution Rate *	Actuarially Determined Contribution (ADC)
2023	\$ 476,665	31.92 %	\$ 152,151
2024	491,460	32.03	157,415
2025	508,258	32.07	162,998
2026	526,001	32.10	168,846
2027	544,152	32.12	174,782
2028	562,471	32.13	180,722
2029	581,271	32.13	186,762
2030	601,486	32.13	193,257
2031	622,745	27.14	169,013
2032	644,573	27.14	174,937

\* The corridor midpoint is used for years 2024 – 2032.

# Houston Police Officers' Pension System

## Notes to Financial Statements

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### 3. Summary of Significant Accounting Policies

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*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* – Accounting principles generally accepted in the United States of America require System management to evaluate tax positions taken by the System and recognize a tax liability if the plan has taken an uncertain position that more likely than not would not be sustained upon examination. As of June 30, 2022 and 2021, no such tax liabilities have been recognized by System management. 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. The plan is subject to audit by taxing jurisdictions; however, there are currently no audits for any tax periods in progress.

*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.

*Reclassification* – Amounts previously reported as short term investment funds as of June 30, 2021 have been reclassified as fixed income commingled funds in the amount of \$71,167 thousand. This reclassification had no effect on net position restricted for pensions.

*Adoption of New Accounting Standard* – The System has adopted GASB Statement 87, *Leases*, (GASB 87). The primary objective of this statement is to increase the usefulness of governments' financial statements by requiring recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. Under this statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. The effective date of this standard was initially for reporting periods beginning after December 15, 2019. GASB Statement No. 95 postponed the effective date to fiscal years beginning after June 15, 2021. In accordance with implementation of GASB Statement 87 (GASB 87), *Leases*, amounts previously reported as professional and administrative expenses as of June 30, 2021, have been reclassified as lease amortization expense in the amount of \$273 thousand. This reclassification had no effect on net position restricted for pensions.

# Houston Police Officers' Pension System

## Notes to Financial Statements

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### 4. Investments

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*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 the Board. 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 margin, collateral, and liquidity purposes. The following was the Board’s adopted asset allocation policy as of June 30, 2022:

<u>Asset Class</u>	<u>Target Allocation</u>
Domestic equity	33.65 %
International equity	18.10
Fixed income	11.70
Credit	9.80
Alternative investments:	
Private equity	20.00
Real estate	10.00
Hedge funds	6.50
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 Statement 72, *Fair Value Measurement and Application* (GASB 72), 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 at fair value. In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy.

# Houston Police Officers' Pension System

## Notes to Financial Statements

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, 2022 and 2021.

### Investments Measured at Fair Value

(\$000's)

June 30, 2022	Total	Fair Value Measurements Using		
		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				
Short term investment funds	\$ 809,816	\$ -	\$ 809,816	\$ -
Fixed income				
Corporate bonds	111,186	-	111,186	-
High yield funds	178,887	-	178,887	-
Total fixed income	290,073	-	290,073	-
Equity securities				
Domestic equities	205,296	82,594	122,702	-
Alternative investments				
Private equity				
Leveraged buyouts	835,395	-	-	835,395
Energy	155,338	-	-	155,338
Special situations	156,298	-	-	156,298
Private equity secondaries	128,464	-	-	128,464
Venture capital	7,929	-	-	7,929
Other alternatives				
Real estate	729,841	-	-	729,841
Private Credit	427,998	-	-	427,998
Total alternative investments	2,441,263	-	-	2,441,263
Foreign currency contracts	1,632	1,632	-	-
Total investments by fair value level	\$ 3,748,080	\$ 84,226	\$ 1,222,591	\$ 2,441,263
<b>Investments measured at the net asset value (NAV)</b>				
Domestic equities commingled funds	\$ 1,684,763			
International equities commingled funds	395,550			
Global macro hedge funds	149,343			
Multi-strategy hedge funds	182,392			
Fixed income commingled funds	643,139			
Long/short credit hedge funds	4,072			
Long/short equity hedge funds	32,296			
Total investments measured at the NAV	3,091,555			
Total investments measured at fair value	\$ 6,839,635			

# Houston Police Officers' Pension System

## Notes to Financial Statements

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

June 30, 2021	Fair Value Measurements Using			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Investments by fair value level</b>				
Short term investments				
Short term investment funds	\$ 1,007,642	\$ -	\$ 1,007,642	\$ -
Fixed income				
Corporate bonds	79,548	-	79,548	-
High yield funds	302,068	-	302,068	-
Total fixed income	381,616	-	381,616	-
Equity securities				
Domestic equities	137,243	18	137,225	-
Alternative investments				
Private equity				
Leveraged buyouts	728,478	-	2,573	725,905
Energy	129,797	-	-	129,797
Special situations	161,880	-	-	161,880
Private equity secondaries	106,570	-	-	106,570
Venture capital	14,961	-	-	14,961
Other alternatives				
Real estate	564,338	-	(590)	564,928
Private Credit	381,541	-	-	381,541
Total alternative investments	2,087,565	-	1,983	2,085,582
Total investments by fair value level	\$ 3,614,066	\$ 18	\$ 1,528,466	\$ 2,085,582
<b>Investments measured at the net asset value (NAV)</b>				
Domestic equities commingled funds	\$ 1,981,011			
International equities commingled funds	548,766			
Global macro hedge funds	105,365			
Multi-strategy hedge funds	161,126			
Fixed income commingled funds	666,601			
Long/short credit hedge funds	3,937			
Long/short equity hedge funds	36,964			
Total investments measured at the NAV	3,503,770			
Total investments measured at fair value	\$ 7,117,836			

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, ETF's, and units of commingled fixed income funds consisting of US government and US government agency securities, and US corporate bonds.

Equity investments consist of ETF's and units in both US and non-US commingled equity funds.

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

# Houston Police Officers' Pension System

## Notes to Financial Statements

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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 as of June 30 of each fiscal year as opposed to a March 31 valuation date as is commonly used by many investors due to the time-lag in receiving such information from 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 each commingled fund.

# Houston Police Officers' Pension System

## Notes to Financial Statements

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, 2022 and 2021.

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

<u>June 30, 2022</u>	<u>Total</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency (If Currently Eligible)</u>	<u>Redemption Notice Period</u>
Domestic equities commingled funds <sup>(1)</sup>	\$ 1,684,763	\$ -	Daily	1 day
International equities commingled funds <sup>(1)</sup>	395,550	-	Daily	3 days
Global macro hedge funds <sup>(2)</sup>	149,343	-	Monthly	5 days
Multi-strategy hedge funds <sup>(3)</sup>	182,392	-	Various up to three years	60-90 days
Fixed income commingled funds <sup>(4)</sup>	643,139	-	Daily	2 days
Long/short credit hedge funds <sup>(5)</sup>	4,072	-	Various up to three years	60-90 days
Long/short equity hedge funds <sup>(6)</sup>	32,296	-	Annually	60-90 days
Total investments measured at the NAV	<u>\$ 3,091,555</u>	<u>\$ -</u>		

- Equities Commingled Funds* – This type invests in five funds, three that are invested in domestic equities and two 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 with a one to three day notice period.
- 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 with a five day notice period.
- Multi-Strategy Hedge Funds* - This type invests in four 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 fund has quarterly liquidity over four quarters. Three other funds are in various stages of liquidation, estimated at up to two years.
- Fixed Income Commingled Funds* – This type invests in four domestic bond funds. 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 with a two day notice period.
- 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 funds are in various stages of liquidation, estimated at up to three years.
- Long / Short Equity Hedge Funds* - This type includes an investment 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 has annual liquidity.

# Houston Police Officers' Pension System

## Notes to Financial Statements

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

<u>June 30, 2021</u>	<u>Total</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency (If Currently Eligible)</u>	<u>Redemption Notice Period</u>
Domestic equities commingled funds (1)	\$ 1,981,011	\$ -	Daily	1 day
International equities commingled funds (1)	548,766	-	Daily	3 days
Global macro hedge funds (2)	105,365	-	Monthly	5 days
Multi-strategy hedge funds (3)	161,126	-	Various up to three years	60-90 days
Fixed income commingled funds (4)	666,601	-	Daily	2 days
Long/short credit hedge funds (5)	3,937	-	Various up to three years	60-90 days
Long/short equity hedge funds (6)	36,964	-	Annually	60-90 days
Total investments measured at the NAV	<u>\$ 3,503,770</u>	<u>\$ -</u>		

1. *Equities Commingled Funds* – This type invests in six funds, four that are invested in domestic equities and two 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 with a one to three day notice period.
2. *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.
3. *Multi-Strategy Hedge Funds* - This type invests in four 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 fund has quarterly liquidity over four quarters. Three other funds are in various stages of liquidation, estimated at up to two years.
4. *Fixed Income Commingled Funds* – This type invests in four domestic bond funds. 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.
5. *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 funds are in various stages of liquidation, estimated at up to three years.
6. *Long / Short Equity Hedge Funds* - This type includes an investment 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 has annual liquidity.

*Concentrations* – As of both June 30, 2022 and 2021, 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, 2022, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was (1.4)%. For the year ended June 30, 2021, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 32.3%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

# Houston Police Officers' Pension System

## Notes to Financial Statements

*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, 2022 and 2021, the System had a balance of \$441 thousand and \$24 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, 2022, \$191 thousand of the System's bank balance of \$441 thousand was exposed to custodial credit risk. At June 30, 2022, 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, 2022 and 2021, the System's fixed income assets that are not U.S. government guaranteed represented 86.4% and 96.5%, 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, 2022 and 2021.

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

Fixed Income Security Type	Fair Value <b>June 30, 2022</b>	Percent of Total	Weighted Average Credit Quality
Corporate Bonds	\$ 258,660	17.2 %	B
Corporate Convertible Bonds	31,413	2.1	B
Mutual Bond Funds	406,109	27.0	Not Rated
Short Term Investment Funds	809,816	53.7	Not Rated
<b>Total</b>	<b>\$ 1,505,998</b>	<b>100.0</b>	

Fixed Income Security Type	Fair Value <b>June 30, 2021</b>	Percent of Total	Weighted Average Credit Quality
Corporate Bonds	\$ 252,011	12.7 %	B
Corporate Convertible Bonds	129,605	6.5	BB
Mutual Bond Funds	595,434	30.0	Not Rated
Short Term Investment Funds	1,007,642	50.8	Not Rated
<b>Total</b>	<b>\$ 1,984,692</b>	<b>100.0 %</b>	

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Ratings Dispersion Detail

(\$000's)

Credit Rating Level	Corporate Bonds	Corporate Convertible Bonds	Mutual Bond Funds	Short Term Investment Funds
<b>June 30, 2022</b>				
BBB	\$ 8,900	\$ -	\$ -	\$ -
BB	127,602	322	-	-
B	95,479	311	-	-
CCC	23,478	747	-	-
Not rated	3,201	30,033	406,109	809,816
<b>Total</b>	<b>\$ 258,660</b>	<b>\$ 31,413</b>	<b>\$ 406,109</b>	<b>\$ 809,816</b>

Credit Rating Level	Corporate Bonds	Corporate Convertible Bonds	Mutual Bond Funds	Short Term Investment Funds
<b>June 30, 2021</b>				
A	\$ -	\$ 3,279	\$ -	\$ -
BBB	8,777	5,630	-	-
BB	128,973	2,873	-	-
B	81,569	2,228	-	-
CCC	25,046	3,181	-	-
Not rated	7,646	112,414	595,434	1,007,642
<b>Total</b>	<b>\$ 252,011</b>	<b>\$ 129,605</b>	<b>\$ 595,434</b>	<b>\$ 1,007,642</b>

The System's investment policy allows investment managers full discretion in adopting investment strategies to deal with these risks. Specific guidelines governing risks and concentrations and portfolio quality are established in contracts with each manager and are monitored by System staff.

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 does not provide for specific limits on investment in any one single security, as this is governed by contracts with individual managers. As of June 30, 2022 and 2021, 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.

# Houston Police Officers' Pension System

## Notes to Financial Statements

The reporting of modified duration as of June 30, 2022 and 2021, 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	Fair Value	Percent of	Weighted Average
<b>June 30, 2022</b>	(\$000's)	Total	Modified Duration (years)
U.S. Treasuries	\$ 237,030	13.6 %	2.4
Corporate Bonds	258,660	14.8	3.6
Corporate Convertible Bonds	31,413	1.8	3.8
Mutual Bond Funds	406,109	23.3	5.0
Short Term Investment Funds	809,816	46.5	0.1
<b>Total</b>	<b>\$ 1,743,028</b>	<b>100.0 %</b>	

Security Type	Fair Value	Percent of	Weighted Average
<b>June 30, 2021</b>	(\$000's)	Total	Modified Duration (years)
U.S. Treasuries	\$ 71,167	3.5 %	2.6
Corporate Bonds	252,011	12.3	4.6
Corporate Convertible Bonds	129,605	6.3	4.9
Mutual Bond Funds	595,434	29.0	6.1
Short Term Investment Funds	1,007,642	48.9	0.1
<b>Total</b>	<b>\$ 2,055,859</b>	<b>100.0 %</b>	

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Modified Duration Analysis by Security Type (\$000's)

U.S. Treasuries	Fair Value June 30, 2022	Average Modified Duration	Contribution to Modified Duration
Less than 1 year	\$ 41,954	2.5	0.4
1 to 5 years maturities	195,076	2.5	2.0
<b>Total</b>	<b>\$ 237,030</b>		<b>2.4</b>
<b>Corporate Bonds</b>			
Less than 1 year	\$ 9,674	0.6	0.0
1 to 5 years maturities	175,946	2.9	2.0
5 to 10 years maturities	66,612	5.4	1.4
Greater than 10 years maturities	6,428	8.8	0.2
<b>Total</b>	<b>\$ 258,660</b>		<b>3.6</b>
<b>Corporate Convertible Bonds</b>			
Less than 1 year	\$ 1,091	0.8	0.0
1 to 5 years maturities	25,469	3.5	2.8
5 to 10 years maturities	4,582	5.4	0.8
Greater than 10 years maturities	271	26.2	0.2
<b>Total</b>	<b>\$ 31,413</b>		<b>3.8</b>
<b>Mutual Bond Funds</b>			
Less than 1 year	\$ 8,544	5.0	0.1
1 to 5 years maturities	164,907	5.0	2.0
5 to 10 years maturities	170,291	5.0	2.1
Greater than 10 years maturities	62,367	5.0	0.8
<b>Total</b>	<b>\$ 406,109</b>		<b>5.0</b>
<b>Short Term Investment Funds</b>			
Less than 1 year	\$ 763,627	0.1	0.1
1 to 5 years maturities	46,189	0.1	0.0
<b>Total</b>	<b>\$ 809,816</b>		<b>0.1</b>

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Modified Duration Analysis by Security Type

(\$000's)

U.S. Treasuries	Fair Value June 30, 2021	Average Modified Duration	Contribution to Modified Duration
Less than 1 year	\$ 10,903	2.7	0.4
1 to 5 years maturities	60,264	2.7	2.2
<b>Total</b>	<b>\$ 71,167</b>		<b>2.6</b>
<b>Corporate Bonds</b>			
Less than 1 year	\$ 5,267	0.6	0.0
1 to 5 years maturities	131,034	3.2	1.6
5 to 10 years maturities	100,779	5.7	2.3
Greater than 10 years maturities	14,931	11.2	0.7
<b>Total</b>	<b>\$ 252,011</b>		<b>4.6</b>
<b>Corporate Convertible Bonds</b>			
Less than 1 year	\$ 3,484	0.7	0.0
1 to 5 years maturities	90,444	3.8	2.6
5 to 10 years maturities	30,629	6.3	1.5
Greater than 10 years maturities	5,048	21.8	0.8
<b>Total</b>	<b>\$ 129,605</b>		<b>4.9</b>
<b>Mutual Bond Funds</b>			
Less than 1 year	\$ 13,604	6.1	0.1
1 to 5 years maturities	274,862	6.1	2.8
5 to 10 years maturities	227,893	6.1	2.4
Greater than 10 years maturities	79,075	6.1	0.8
<b>Total</b>	<b>\$ 595,434</b>		<b>6.1</b>
<b>Short Term Investment Funds</b>			
Less than 1 year	\$ 991,108	0.1	0.1
1 to 5 years maturities	16,534	0.1	0.0
<b>Total</b>	<b>\$ 1,007,642</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 System's investment policy states currency exposure of each investment manager and strategy, as well as the overall currency exposure of the System, will be based upon an active decision making process as opposed to accepting currency exposure as a default position of such manager or strategy. Fifty percent of the Euro, Yen, Pound and Yuan exposure in the System's developed non-US public equity allocation will be the target hedge ratio while Staff has the authority to tactically adjust this hedge with a 25% floor and a 75% ceiling. 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

# Houston Police Officers' Pension System

## Notes to Financial Statements

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, 2022 and 2021, are shown in the tables below and on the following page.

### Foreign Currency Exposure by Asset Class (\$000's)

June 30, 2022

Currency	Short Term Investments	Fixed Income	Equities	Alternative Investments	Foreign Currency Contracts	Total
Canadian dollar	\$ 30,664	\$ -	\$ 106,036	\$ -	\$ -	\$ 136,700
Euro	(86,931)	-	194,644	752	-	108,465
Japanese yen	(62,105)	-	140,117	-	-	78,012
Swiss franc	-	-	66,098	-	-	66,098
Australian dollar	-	-	49,475	7,740	-	57,215
British pound sterling	(43,916)	-	100,492	-	-	56,576
Chilean peso	-	-	47,486	-	-	47,486
HK offshore Chinese Yuan Renminbi	-	-	-	-	(31,068)	(31,068)
Swedish krona	-	-	21,245	-	-	21,245
Hong Kong dollar	-	-	21,003	-	-	21,003
South Korean won	-	-	19,452	-	-	19,452
Danish krone	-	-	17,372	-	-	17,372
Hungarian forint	-	-	17,037	-	-	17,037
South African rand	-	-	15,218	-	-	15,218
Singapore dollar	-	-	9,183	-	-	9,183
Norwegian krone	-	-	5,285	-	-	5,285
New Israeli shekel	-	-	4,798	-	-	4,798
Saudi riyal	-	-	4,752	-	-	4,752
Malaysian ringgit	-	-	2,844	-	-	2,844
New Taiwan dollar	-	-	2,547	-	-	2,547
Indian rupee	-	-	2,445	-	-	2,445
Kuwaiti dinar	-	-	1,960	-	-	1,960
Turkish lira	-	-	1,696	-	-	1,696
Polish zloty	-	-	1,386	-	-	1,386
New Zealand dollar	-	-	1,137	-	-	1,137
Indonesian rupiah	-	-	1,102	-	-	1,102
Peruvian nuevo sol	-	-	962	-	-	962
Philippine peso	-	-	808	-	-	808
Brazilian real	-	-	684	-	-	684
Thai baht	-	-	376	-	-	376
Egyptian pound	-	-	339	-	-	339
Mexican peso	-	-	294	-	-	294
Colombian peso	-	-	219	-	-	219
Chinese yuan renminbi	-	-	214	-	-	214
Czech koruna	-	-	88	-	-	88
<b>Total</b>	<b>\$ (162,288)</b>	<b>\$ -</b>	<b>\$ 858,794</b>	<b>\$ 8,492</b>	<b>\$ (31,068)</b>	<b>\$ 673,930</b>

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Foreign Currency Exposure by Asset Class (\$000's) June 30, 2021

Currency	Short Term		Equities	Alternative Investments	Total
	Investments	Fixed Income			
Canadian dollar	\$ 57,775	\$ -	\$ 99,400	\$ -	\$ 157,175
Chinese yuan renminbi	-	-	146,055	-	146,055
Euro	(152,020)	-	278,175	2,756	128,911
Japanese yen	(107,521)	-	202,478	-	94,957
Australian dollar	-	-	62,838	6,855	69,693
Swiss franc	-	-	65,191	-	65,191
Thai baht	-	-	60,596	-	60,596
New Taiwan dollar	-	-	42,344	-	42,344
Hong Kong dollar	-	-	35,038	-	35,038
Kuwaiti dinar	-	-	34,709	-	34,709
Swedish krona	-	-	28,363	-	28,363
Indonesian rupiah	-	-	27,892	-	27,892
South Korean won	-	-	25,657	-	25,657
Brazilian real	-	-	22,653	-	22,653
Danish krone	-	-	22,616	-	22,616
Singapore dollar	-	-	18,178	-	18,178
Indian rupee	-	-	17,587	-	17,587
New Zealand dollar	-	-	16,056	-	16,056
Saudi riyal	-	-	14,511	-	14,511
British pound sterling	(66,523)	-	79,949	-	13,426
Hungarian forint	-	-	10,510	-	10,510
Turkish lira	-	-	6,967	-	6,967
Pakistan rupee	-	-	6,709	-	6,709
Mexican peso	-	-	5,326	-	5,326
New Israeli shekel	-	-	5,236	-	5,236
Norwegian krone	-	-	4,179	-	4,179
South African rand	-	-	3,638	-	3,638
Russian ruble	-	-	2,746	-	2,746
Polish zloty	-	-	2,663	-	2,663
Qatari riyal	-	-	2,459	-	2,459
Malaysian ringgit	-	-	2,166	-	2,166
Chilean peso	-	-	1,894	-	1,894
United Arab Emirates dirham	-	-	1,015	-	1,015
Philippine peso	-	-	788	-	788
Colombian peso	-	-	633	-	633
Argentine austral	-	-	540	-	540
Czech koruna	-	-	446	-	446
Egyptian pound	-	-	280	-	280
Peruvian nuevo sol	-	-	80	-	80
<b>Total</b>	<b>\$ (268,289)</b>	<b>\$ -</b>	<b>\$ 1,358,560</b>	<b>\$ 9,611</b>	<b>\$ 1,099,882</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

# Houston Police Officers' Pension System

## Notes to Financial Statements

collateral. The System holds an undivided share of the collateral provided by the borrowers of the securities. At June 30, 2022 the weighted-average maturity of the collateral pool was 31 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, 2022 and 2021, was \$237,338 thousand and \$125,217 thousand, respectively. The System also had non-cash collateral at June 30, 2022 and 2021, of \$10,282 thousand and \$8,095 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, 2022 and 2021, was \$241,244 thousand and \$130,019 thousand, respectively. At June 30, 2022, the System had no credit risk exposure to borrowers because the amounts the System owes the borrowers, \$247,620 thousand, exceeds the amounts the borrowers owe the System, \$241,244 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. These investment derivatives are primarily classified in Level 1 of the fair value hierarchy as futures contracts are price base on market quotes.

The fair value balance of posted margin, collateral and notional amounts of derivative instruments outstanding at June 30, 2022 and 2021, classified by type, and the changes in fair value of such derivative instruments for the years 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, 2022			
	June 30, 2022	Posted	Collateral Held at	Collateral Held at	Notional
	Changes in Fair	Margin	Custodian Bank	Broker	Value
	Value				
Equity Futures	\$ (251,904)	\$ 32,932	\$ 549,747	\$ -	\$ 599,657
Currency Futures	40,839	(216)	110,350	-	(160,947)
Currency Forwards	(1,843)	-	-	-	(31,068)
Commodity Futures	(3,349)	(1,699)	34,876	3,474	36,444
Equity Options	64,604	-	89,604	-	1,000,000

	Year ending	As of June 30, 2021			
	June 30, 2021	Posted	Collateral Held at	Collateral Held at	Notional
	Changes in Fair	Margin	Custodian Bank	Broker	Value
	Value				
Equity Futures	\$ 368,793	\$ 82,417	\$ 782,721	\$ -	\$ 1,364,025
Currency Futures	(2,047)	1,150	67,708	-	(270,275)
Fixed Income Futures	(1,837)	(72)	10,422	-	40,122

Futures and options are used to obtain long and short market exposure, leverage portfolio positions and to take advantage of mis-pricing opportunities. When a position is taken in a futures contract, margin is posted and the contract is subject to daily mark-to-market adjustments. 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.

# Houston Police Officers' Pension System

## Notes to Financial Statements

- *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.
- *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 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, 2022 and 2021, is shown in the tables below and on the following page.

### Foreign Currency Exposure for Derivatives (\$000's) June 30, 2022

Currency	Equity Derivatives	Currency Derivatives	Total
Canadian dollar	\$ 30,291	\$ 32,012	\$ 62,303
Chilean peso	47,486	-	47,486
Swiss franc	29,403	-	29,403
Australian dollar	22,009	-	22,009
South Korean won	19,452	-	19,452
Hungarian forint	17,037	-	17,037
South African rand	15,218	-	15,218
Swedish krona	9,451	-	9,451
Hong Kong dollar	9,343	-	9,343
Danish krone	7,728	-	7,728
Saudi riyal	4,752	-	4,752
Singapore dollar	4,085	-	4,085
Malaysian ringgit	2,844	-	2,844
New Taiwan dollar	2,547	-	2,547
Indian rupee	2,445	-	2,445
Norwegian krone	2,351	-	2,351
New Israeli shekel	2,135	-	2,135
Kuwaiti dinar	1,960	-	1,960
Turkish lira	1,696	-	1,696
Polish zloty	1,386	-	1,386
Indonesian rupiah	1,102	-	1,102
Peruvian nuevo sol	962	-	962
Philippine peso	808	-	808
British pound sterling	44,704	(43,916)	788
Brazilian real	684	-	684
New Zealand dollar	506	-	506
Thai baht	376	-	376
Egyptian pound	339	-	339
Mexican peso	294	-	294
Euro	86,708	(86,939)	(231)
Japanese yen	62,330	(62,105)	225
Colombian peso	219	-	219
Chinese yuan renminbi	214	-	214
Czech koruna	88	-	88
<b>Total</b>	<b>\$ 432,953</b>	<b>\$ (160,948)</b>	<b>\$ 272,005</b>

# Houston Police Officers' Pension System

## Notes to Financial Statements

### Foreign Currency Exposure for Derivatives (\$000's)

June 30, 2021

Currency	Equity Derivatives	Currency Derivatives	Total
Canadian dollar	\$ 60,800	\$ 55,789	\$ 116,589
Chinese yuan renminbi	88,298	-	88,298
Swiss franc	52,454	-	52,454
Australian dollar	38,484	-	38,484
Thai baht	36,631	-	36,631
Kuwaiti dinar	34,709	-	34,709
Euro	178,742	(152,020)	26,722
Indonesian rupiah	25,994	-	25,994
Swedish krona	20,072	-	20,072
Hong Kong dollar	17,395	-	17,395
Japanese yen	124,016	(107,521)	16,495
Danish krone	13,863	-	13,863
Brazilian real	13,691	-	13,691
Singapore dollar	13,250	-	13,250
British pound sterling	78,747	(66,523)	12,224
Hungarian forint	10,125	-	10,125
New Taiwan dollar	9,188	-	9,188
Saudi riyal	8,770	-	8,770
Pakistan rupee	4,574	-	4,574
Turkish lira	4,207	-	4,207
Norwegian krone	3,372	-	3,372
Mexican peso	3,225	-	3,225
New Israeli shekel	3,211	-	3,211
South Korean won	2,954	-	2,954
Qatari riyal	1,828	-	1,828
Russian ruble	1,660	-	1,660
Polish zloty	1,610	-	1,610
New Zealand dollar	1,338	-	1,338
Malaysian ringgit	1,310	-	1,310
Chilean peso	1,148	-	1,148
United Arab Emirates dirham	614	-	614
Indian rupee	580	-	580
Philippine peso	475	-	475
Colombian peso	381	-	381
Argentine austral	326	-	326
Czech koruna	270	-	270
Egyptian pound	171	-	171
Peruvian nuevo sol	47	-	47
<b>Total</b>	<b>\$ 858,530</b>	<b>\$ (270,275)</b>	<b>\$ 588,255</b>

# Houston Police Officers' Pension System

## Notes to Financial Statements

*Alternative Investments* – As of June 30, 2022 and 2021, 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, 2022	June 30, 2021
<i>Private Equity</i>		
Leveraged Buyouts	\$ 835,395	\$ 728,478
Energy	155,338	129,797
Special Situations	156,298	161,880
Private Equity Secondaries	128,464	106,570
Venture Capital	7,929	14,961
<i>Other Alternatives</i>		
Real Estate	729,841	564,338
Private Credit	427,998	381,541
<i>Hedge Funds</i>		
Global macro hedge funds	149,343	105,365
Multi-strategy hedge funds	182,392	161,126
Long/short credit hedge funds	4,072	3,937
Long/short equity hedge funds	32,296	36,964
	<u>\$ 2,809,366</u>	<u>\$ 2,394,957</u>

Supplemental Information on investment and professional expenses included in Summary of Investment and Professional Services on page 40 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. Capital Assets

*Land* – In December of 2020, the System purchased land in Houston, Texas for \$5,322 thousand.

*Building* – In April of 2021, the System began the process of designing a single-tenant office building for use in its operations. The costs associated with the construction of the building were capitalized and classified as building in the Statements of Fiduciary Net Position. In November of 2021, the project was terminated and the previously capitalized costs were expensed in the current fiscal year.

*Lease* – The System has a lease for the office it occupies through October 31, 2023 with an on-going right to terminate the lease from and after November 1, 2022 upon at least six months prior written irrevocable notice to the landlord. As a result of implementing GASB 87, the System has recorded a right-to-use lease asset. The right-to-use lease asset is initially measured at an amount equal to the initial measurement of the related lease liability. The right-to-use lease asset is amortized on a straight-line basis over the life of the related lease, as detailed in the following chart (\$000's).

	June 30, 2022	June 30, 2021
Right-to-use lease asset - initial	\$ 740	\$ 1,013
Accumulated amortization expense	302	273
<u>Right-to-use lease asset</u>	<u>\$ 438</u>	<u>\$ 740</u>

# Houston Police Officers' Pension System

## Notes to Financial Statements

### 6. 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. Effective 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 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 July 1, 2017, the member's contributions were also credited to this notional DROP account.

Prior to July 1, 2017, employee contributions were also credited to the member's notional DROP account. For the period from October 9, 2004 through June 30, 2017, an eligible member contributed 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. Prior to October 9, 2004, 100% of a member's contributions were credited to his or her notional DROP account. The following tables page show the change in DROP accounts during the years ended June 30, 2022 and 2021.

#### DROP Activity

	DROP Accounts (\$000's)		DROP Participants
<b>Year ended June 30, 2022</b>			
Balance at June 30, 2021	\$ 778,780	Participants at June 30, 2021	1,571
Accumulations	136,476	Entrants	77
Transfers to PROP	(179,156)	Withdrawals	(244)
Distributions	(30,924)	Participants at June 30, 2022	1,404
Balance at June 30, 2022	<u>\$ 705,176</u>		
<b>Year ended June 30, 2021</b>			
Balance at June 30, 2020	\$ 824,325	Participants at June 30, 2020	1,673
Accumulations	126,324	Entrants	95
Transfers to PROP	(120,406)	Withdrawals	(197)
Distributions	(51,463)	Participants at June 30, 2021	1,571
Balance at June 30, 2021	<u>\$ 778,780</u>		

The Post Retirement Option Plan (PROP) prior to July 1, 2017, allowed retired members to have all or a portion of their monthly benefit 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. Effective July 1, 2017, retired members can no longer credit a portion of their monthly benefit to the PROP account. Surviving spouses can transfer a DROP or PROP balance to a PROP account of their own and are also 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 tables on the following page show the change in PROP accounts during the years ended June 30, 2022 and 2021.

# Houston Police Officers' Pension System

## Notes to Financial Statements

### PROP Activity

<b>Year ended June 30, 2022</b>	PROP Accounts (\$000's)		PROP Participants
Balance at June 30, 2021	\$ 1,213,558	Participants at June 30, 2021	2,054
Accumulations	59,662	Entrants	181
Transfers from DROP	179,156	Withdrawals	(27)
Distributions	(75,174)	Participants at June 30, 2022	<u>2,208</u>
Balance at June 30, 2022	<u>\$ 1,377,202</u>		

<b>Year ended June 30, 2021</b>	PROP Accounts (\$000's)		PROP Participants
Balance at June 30, 2020	\$ 1,155,794	Participants at June 30, 2020	1,975
Accumulations	28,552	Entrants	108
Transfers from DROP	120,406	Withdrawals	(29)
Distributions	(91,194)	Participants at June 30, 2021	<u>2,054</u>
Balance at June 30, 2021	<u>\$ 1,213,558</u>		

### 7. 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, 2022 and 2021 were as follows (\$000's):

	<u>6/30/2022</u>	<u>6/30/2021</u>
Total pension liability	\$ 7,585,734	\$ 7,343,837
Plan fiduciary net position	<u>6,861,988</u>	<u>7,137,251</u>
System's net pension liability	<u>\$ 723,746</u>	<u>\$ 206,586</u>
Plan fiduciary net position as a percentage of the total pension liability	90.46%	97.19%

*Actuarial assumptions* – The total pension liability was determined by an actuarial valuation as of July 1, 2022 and July 1, 2021, using the following actuarial assumptions, applied to all periods included in the measurement:

	<u>July 1, 2022</u>	<u>July 1, 2021</u>
Inflation	2.30%	2.30%
Salary Increases	0.00% to 20.00% , plus a 3.25% inflation and productivity component	0.00% to 20.00% , plus a 2.75% inflation and productivity component
Investment Rate of Return	7.00%, net of pension plan investment expense, including inflation	7.00%, net of pension plan investment expense, including inflation
Mortality	Healthy retirees - The Gender-distinct Pub-2010 Public Safety Healthy Mortality Tables for males and females. The rates are projected on a fully generational basis by the ultimate values of scale MP-20 to account for future mortality improvements.	Healthy retirees - The Gender-distinct RP-2014 Healthy Annuitant Mortality Tables with Blue Collar Adjustment for Males and no collar adjustment for Females. The rates are projected from the 2006 central rates to 2018 using scale MP-2017, and thereafter on a fully generational basis by the ultimate

# Houston Police Officers' Pension System

## Notes to Financial Statements

Disabled males and females - The Gender-Distinct Pub-2010 Public Safety Disabled Retiree Mortality Tables are used without adjustment. The rates are projected on a fully generational basis by the ultimate values of scale MP-20 to account for future mortality improvements.

Active members - The Gender-Distinct Pub-2010 Below-Median Income Public Safety Mortality Tables are used without adjustment. The rates are projected on a fully generational basis by the ultimate values of scale MP-20 to account for future mortality improvements..

values of scale MP-2014 to account for future mortality improvements.

Disabled members - 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.

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..

The long-term expected rate of return on the System's investments was determined using historical and forecasted return, volatility and Sharpe ratios in combination with 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 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, 2021 (see the discussion of the pension plan's investment policy) are summarized in the following table:

<u>Asset Class</u>	<u>Long-Term Expected Real Rate of Return</u>
Domestic equity	3.90 %
International equity	5.10
Fixed income	(1.10)
Credit	3.40
Alternative investments:	
Private equity	7.40
Real estate	4.90
Hedge funds	3.20
Cash	(0.80)

*Discount rate* – A single discount rate of 7.00% was used to measure the total pension liability for the June 30, 2022 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 study. 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, 2021 measurement date, the single discount rate used was 7.00%.

# Houston Police Officers' Pension System

## Notes to Financial Statements

*Sensitivity of the net pension liability to changes in the discount rate* – The following table presents the net pension liability as of July 1, 2022, 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	1% Increase
	6.00%	Discount Rate 7.00%	8.00%
Net pension liability (asset)	\$ 1,512,300	\$ 723,746	\$ 76,295

### 8. Commitments and Contingencies

As described in Note 1, there are 3,696 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, 2022 and 2021, aggregate contributions from these members of the System were \$233,493 thousand and \$210,267 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, 2022 and 2021, the total accumulated lump sum benefit due to DROP members was \$705,176 thousand and \$778,780 thousand, respectively.

At June 30, 2022 and 2021, the total accumulated lump sum benefit due to PROP participants was \$1,377,202 thousand and \$1,213,558 thousand, respectively.

The System has outstanding investment commitments to various limited partnerships totaling \$1,482,267 thousand and \$1,161,854 thousand, as of June 30, 2022 and 2021, respectively. These outstanding commitment amounts include amounts that will come due for investments that were 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, 2023. The System has the on-going right to terminate the lease from and after November 1, 2022 upon at least six months prior written irrevocable notice to the landlord.

	June 30, 2022	June 30, 2021
Beginning lease liability	\$ 740	\$ 1,013
Additions	-	-
Deletions	302	273
<b>Ending lease liability</b>	<b>\$ 438</b>	<b>\$ 740</b>

The projected principal and interest payments on the outstanding lease commitment is as detailed in the following chart (\$000's).

Year Ending June 30	Principal Payments	Interest Payments	Total
2023	\$ 325	\$ 12	\$ 337
2024	113	1	114
	<b>\$ 438</b>	<b>\$ 13</b>	<b>\$ 451</b>

### 9. Subsequent Events

The System has evaluated subsequent events through October 21, 2022, the date the financial statements were available for issuance. The System has determined that no subsequent events require disclosure in these financial statements.

# Houston Police Officers' Pension System

## Required Supplementary Information (Unaudited)

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

Fiscal year ending June 30,	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability									
Service Cost	\$ 74,350	\$ 73,040	\$ 70,080	\$ 66,750	\$ 63,632	\$ 60,930	\$ 66,098	\$ 56,062	\$ 52,844
Interest	503,548	484,527	474,376	462,692	445,113	433,598	488,223	473,065	466,649
Benefit Changes <sup>(1)</sup>	-	-	-	-	-	(1,006,000)	-	-	-
Difference between Expected and Actual Experience	46,309	99,635	(23,461)	(16,454)	69,534	80,023	10,390	26,706	(41,034)
Assumption Changes	(7,383)	-	-	-	21,399	778,710	(676,151)	664,974	162,849
Benefit Payments	(372,282)	(394,893)	(355,373)	(335,600)	(361,033)	(458,733)	(259,076)	(225,656)	(211,690)
Refunds	(2,645)	(2,433)	(2,209)	(2,278)	(1,329)	(1,696)	(978)	(945)	(906)
Net Change in Total Pension Liability	241,897	259,876	163,413	175,110	237,316	(113,168)	(371,494)	994,206	428,712
Total Pension Liability - Beginning	7,343,837	7,083,961	6,920,548	6,745,438	6,508,122	6,621,290	6,992,784	5,998,578	5,569,866
Total Pension Liability - Ending (a)	<u>\$ 7,585,734</u>	<u>\$ 7,343,837</u>	<u>\$ 7,083,961</u>	<u>\$ 6,920,548</u>	<u>\$ 6,745,438</u>	<u>\$ 6,508,122</u>	<u>\$ 6,621,290</u>	<u>\$ 6,992,784</u>	<u>\$ 5,998,578</u>
Plan Fiduciary Net Position									
Employer Contributions	\$ 152,375	\$ 151,094	\$ 149,078	\$ 142,429	\$ 887,143	\$ 133,805	\$ 137,392	\$ 113,665	\$ 103,372
Employee Contributions	50,028	49,749	49,062	46,896	45,254	40,104	39,017	37,719	37,012
Pension Plan Net Investment Income	(98,537)	1,764,927	61,193	340,166	463,080	667,476	(135,833)	35,341	649,153
Benefit Payments	(372,282)	(394,893)	(355,373)	(335,600)	(361,033)	(458,733)	(259,076)	(225,656)	(211,690)
Refunds	(2,645)	(2,433)	(2,209)	(2,278)	(1,329)	(1,696)	(978)	(945)	(906)
Pension Plan Administrative Expense	(4,202)	(3,669)	(3,922)	(3,580)	(3,679)	(4,238)	(4,585)	(3,478)	(3,439)
Net Change in Plan Fiduciary Net Position	(275,263)	1,564,775	(102,171)	188,033	1,029,436	376,718	(224,063)	(43,354)	573,502
Plan Fiduciary Net Position - Beginning	7,137,251	5,572,476	5,674,647	5,486,614	4,457,178	4,080,460	4,304,523	4,347,877	3,774,375
Plan Fiduciary Net Position - Ending (b)	<u>\$ 6,861,988</u>	<u>\$ 7,137,251</u>	<u>\$ 5,572,476</u>	<u>\$ 5,674,647</u>	<u>\$ 5,486,614</u>	<u>\$ 4,457,178</u>	<u>\$ 4,080,460</u>	<u>\$ 4,304,523</u>	<u>\$ 4,347,877</u>
Net Pension Liability - Ending (a) - (b)	\$ 723,746	\$ 206,586	\$ 1,511,485	\$ 1,245,901	\$ 1,258,824	\$ 2,050,944	\$ 2,540,830	\$ 2,688,261	\$ 1,650,701
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	90.46%	97.19%	78.66%	82.00%	81.34%	68.49%	61.63%	61.56%	72.48%
Covered Payroll	\$ 476,453	\$ 473,801	\$ 464,301	\$ 444,871	\$ 412,786	\$ 424,300	\$ 407,058	\$ 395,360	\$ 388,756
Net Pension Liability as a Percentage of Covered Payroll	151.90%	43.60%	325.54%	280.06%	304.96%	483.37%	624.19%	679.95%	424.61%

(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, as a result of the amendment of the Governing Statute on July 1, 2017, which included 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)

Measurement Year Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
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
2019	141,202	142,429	(1,227)	444,871	32.02
2020	146,626	149,078	(2,452)	464,301	32.11
2021	140,292	151,094	(10,802)	473,801	31.89
2022	139,220	152,375	(13,155)	476,453	31.98

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:** The actuarially determined contribution for fiscal year ending June 30, 2022 was developed in the July 1, 2020 valuation.

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, 2022 HPOPS Valuation Report.

A new set of assumptions were adopted in the July 1, 2018 actuarial valuation and are 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	25 years as of July 1, 2022
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.
Inflation	2.30%
Salary Increases	0.00% to 20.00% , 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 Annuitant 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 members – 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 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)**

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**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 %
2019	6.3 %
2020	1.1 %
2021	32.3 %
2022	(1.4)%

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)**

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<i>Year ended June 30,</i>	2022	2021
<b>Investment services:</b>		
Custodial services	\$ 261	\$ 224
Money management services	15,515	5,206
Consulting services	837	837
Department operating expense	833	788
<b>Total investment services</b>	<b>17,446</b>	<b>7,055</b>
<b>Professional services:</b>		
Actuarial services	178	96
Auditing services	103	102
Election audit services	24	13
Legal services	40	21
Lobbyist services	384	379
<b>Total professional services</b>	<b>729</b>	<b>611</b>
<b>Administrative expenses:</b>		
Information technology	297	334
Education	38	12
Fiduciary insurance	115	111
Office rent	259	241
Other office costs	2,462	2,142
<b>Total administrative expenses</b>	<b>3,171</b>	<b>2,840</b>
	<b>\$ 21,346</b>	<b>\$ 10,506</b>

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

Investment Manager or Professional Service Provider	Official System Position	Year Ended June 30, 2022	Year Ended June 30, 2021	Nature of Services
Franklin Park Associates, LLC	Consultant	\$ 400	\$ 400	Consulting
Mercer	Consultant	437	437	Consulting
The Northern Trust Company	Custodian	261	224	Custodian
BlackRock Institutional Trust	Money Manager	373	382	Money Management
Blackstone Alternative Solutions LLC	Money Manager	10	11	Money Management
Bridgewater Associates, Inc.	Money Manager	11,298	1,909	Money Management
The Northern Trust Company	Money Manager	1,653	1,003	Money Management
Parametric	Money Manager	902	692	Money Management
Shenkman Capital Management, Inc.	Money Manager	1,279	1,209	Money Management
Gabriel Roeder Smith & Co.	Actuary	178	96	Actuarial
BDO USA, LLP	Auditors	103	102	Auditing
IceMiller LLP	Attorneys	34	17	Legal Service
HillCo Partners, LLC	Attorneys	170	157	Lobbyists
Locke Lord LLP	Attorneys	210	210	Lobbyists
Election Services Company	Consultant	24	13	Election Auditing
Other	Other	10	16	Other
<b>Total investment and professional services</b>		<b>\$ 17,342</b>	<b>\$ 6,878</b>	



SECTION THREE

INVESTMENT SECTION

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**HPOPS**<sup>®</sup>  
FOR TODAY & TOMORROW

602 Sawyer St.  
Houston, TX 77007  
[www.hpop.org](http://www.hpop.org)

**Patrick S. Franey**  
Executive Director

**Stacey A. Galo**  
Chief Investment Officer

December 13, 2022

Dear Members,

The primary long-term financial goal of the System is to earn the assumed actuarial investment rate of return, which is currently set at 7.0% net of all fees and expenses over a full market cycle. HPOPS' net fiscal year 2022 annualized rate of return was negative 1.4%, falling short of the actuarial required rate of return for the year. Relative to its composite benchmark and its peers, the System had strong performance. HPOPS outperformed its custom benchmark by 4.4% and placed in the top quartile of our custodian bank's universe for public funds with assets greater than \$1 billion. Investment valuations in this report are presented on a fair value basis as reported by the investment managers. The fair value of the underlying assets are calculated using a variety of methodologies such as market-to-market valuations through readily observable pricing sources, industry comparables, appraisals, and the cost or income approach.

In order to meet its objective, the System must take market risks which are correlated to the performance of underlying economies. In stark contrast to fiscal year 2021, when both global economies and markets rapidly recovered from Covid shutdowns, fiscal year 2022 felt the repercussions of excess spending and supply/demand imbalances in the form of decade's high inflation. The Fed shifted to a hawkish stance and began raising interest rates and tightening monetary policy in an effort to curtail inflation. These moves by the Fed sent fear and uncertainty into the markets causing public equities to lose over 30% in the second half of the fiscal year and bonds to lose approximately 20%.

The Board and Investment Staff recognize that avoiding large losses during periods of declining economic growth is a prudent component of our investment strategy. As such, the System manages a Risk Control Program that is designed to signal when market risks have become elevated and provide for the systematic reduction of risk. Market events during the fiscal year provided the opportunity for the Risk Control Program to demonstrate its effectiveness as it was one of the metrics used to determine when to reduce and/or remove the System's leverage in its public equity portfolio. These leverage adjustments added approximately 1.7% to the asset class's annual return during fiscal year 2022.

Preservation of capital continues to be our highest priority and as such, the System remains conservatively positioned heading into the new fiscal year. In addition to removing leverage, additional examples of tactical shifts implemented to provide downside protection include underweighting public equity, building cash reserves, increasing the System's allocation to inflation protected bonds, a value tilt within the US equity portfolio and the implementation of a put-spread collar.

I appreciate the opportunity to serve as the System's Chief Investment Officer and will continue to strive to deliver strong risk-adjusted performance for the members of the System.

Sincerely,

*Stacey A. Galo*

Stacey A. Galo  
Chief Investment Officer

### **Responsibilities of the Board of Trustees**

The primary fiduciary fiscal responsibility of the Board of Trustees is to ensure that the System's assets are responsibly managed in accordance with the actuarial needs of the System, and also with sound, generally accepted financial investment procedures. The determination of the appropriate asset mix is based on capital market assumptions that incorporate historical returns, volatility and correlation of various asset classes as well as the consideration of liquidity and current and forward-looking market expectations.

The Standard of Investment for the System in making investments is to exercise the judgment and care in the circumstances then prevailing which persons of prudence, discretion and intelligence exercise in the management of their own affairs. The Trustees' responsibility is to invest the System's funds solely in the interest of the membership and their beneficiaries, and for the exclusive purpose of providing benefits to the membership and their beneficiaries and defraying reasonable expenses of administering the System.

### **Investment Philosophy and Objectives**

The Board of Trustees believe that the System's assets should be managed in a manner that reflects the uniqueness of the System and that the System's assets should be diversified over a spectrum of investment strategies. Specifically, the Board recognizes and adheres to the following philosophical positions:

- Diversification should be based upon the prudent allocation of risk rather than solely the allocation of capital.
- Asset classes are priced to have long-term expected returns above cash and their return above cash is proportional to their risk (they have similar Sharpe Ratios). Since asset classes have similar expected Sharpe Ratios, they can be made competitive through the prudent use of leverage or leverage-like techniques.
- Over the long term, the risk of owning equities has been, and should continue to be, rewarded with a somewhat greater return than that available from fixed income investments.
- Fixed income investments provide the System with an investment strategy that contributes diversification, liquidity and a predictable stream of income; and that dampens volatility in investment returns.
- Diversification into alternative investments provides the System with an opportunity to enhance returns and to achieve broader diversification of the System's assets.

### **Investment Policy**

The Board of the Houston Police Officers' Pension System (HPOPS) has established an Investment Policy with the following broad guidelines and objectives.

- Establish overall financial objectives and set investment policy
- Select appropriate investment options
- Select qualified investment manager(s) and consultants
- Select a qualified custodian
- Communicate on a structured and ongoing basis with those responsible for investment results; and
- Monitor performance to assure that objectives are being met and that policy and guidelines are being followed.

This Investment Policy represents the formal document for HPOPS and is to be communicated to the appointed Investment Manager(s) and is their principal source for developing an appropriate investment strategy and, in addition, serves as the basis for these Managers' and the System's future performance evaluation.

Texas Government Code 802.103 requires public retirement systems to disclose direct and indirect fees paid for the sale, purchase and management of assets. In addition, profit sharing fees and fees paid for investment services are also required to be reported. For compliance purposes, a fee column and a portfolio expense column has been added to each asset class table. The fee column details the dollars paid to investment managers or consultants for their portfolio

management or advisory services. The portfolio expense column details the underlying costs incurred to run the mandate or the profit sharing fees, both accrued and paid during the fiscal year. Portfolio expenses are not explicitly paid by the System, but instead deducted from the assets by the managers. Footnotes have been added to the asset class tables to provide clarity on the expenses being reported. A summary report of the System’s fees and expenses, compliant with the Texas Pension Review Board’s reporting standards, can be found on page 60.

### Investment Strategy and Performance

The System’s asset allocation strategy is reviewed periodically by the Board and is changed in anticipation of or in response to changing market conditions. The current asset allocation targets and the actual asset allocation of the System at June 30, 2022 are as follows:

	<b>Target % of Fund<sup>1</sup></b>	<b>Current Actual % of Fund</b>	<b>Dollars Invested (000's)</b>
Domestic Equity	33.7%	30.0%	\$ 2,052,407
International Equity	18.1%	13.4%	920,637
<b>Total Equity</b>	<b>51.8%</b>	<b>43.4%</b>	<b>2,973,044</b>
Credit Strategies	9.8%	10.1%	691,378
Traditional Fixed Income	11.7%	9.8%	671,947
<b>Total Fixed Income</b>	<b>21.5%</b>	<b>19.9%</b>	<b>1,363,325</b>
Private Equity/Energy	20.0%	18.8%	1,284,963
Hedge Funds	6.5%	6.3%	428,096
Real Estate	10.0%	10.5%	717,745
<b>Total Alternatives</b>	<b>36.5%</b>	<b>35.5%</b>	<b>2,430,804</b>
<b>Total Cash</b>	<b>-9.8%</b>	<b>1.2%</b>	<b>81,224</b>
<b>Total Fund</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$ 6,848,397</b>

<sup>1</sup> See footnote 4 to the financial statements for disclosure of portfolio leverage.

The first half of fiscal year 2022 was strong as markets continued to benefit from post-pandemic stimulus fueled spending. Consumer sentiment became pessimistic in the second half of the year as inflation quickly rose to highs not seen in decades, forcing the Fed to shift policy. Subsequent rising interest rates and tightening monetary policy created concern around a potential recession causing both equity and fixed income markets to react violently, losing in excess of 20% in the second half of the fiscal year. The System returned negative 1.4% during fiscal year 2022 outperforming its benchmark by 4.4%.

The System’s outperformance versus the benchmark was due primarily to the put-spread collar, private credit and private equity allocations. During the second half of fiscal year 2022 the put-spread collar was implemented as a hedge against potential losses in the U.S. equity markets. The illiquid credit asset class benefited from the rising rate environment as it primarily has floating rate debt exposure, while private equity was bolstered by its valuation methodology and exposure to recession resistant sectors.

## INVESTMENT SECTION

### Domestic Equity

The U.S equity portfolio generated a negative 10.8% return, outperforming its benchmark, the Russell 3000, by 3.1%. The outperformance of the System's domestic equity portfolio versus the benchmark was primarily due to the System's implementation of a put-spread collar.

In recognition of macro-economic pressures, the U.S equity portfolio was defensively positioned. In addition to the collar, leverage was removed in the second half of the fiscal year and the value tilt was expanded.

Assets under management, annualized rates of return and fees paid to domestic equity managers for the fiscal year ending June 30, 2022 are as follows (dollars in 000's):

<b>Manager</b>	<b>Style</b>	<b>Assets</b>	<b>% Returns</b>	<b>Fees</b>	<b>Portfolio Expense<sup>2</sup></b>
BlackRock	S&P 500 Index	\$ 599,540	-11.3%	\$ 89	\$ 42
Northern Trust	Russell 3000 Index	732,423	-14.2%	118	83
Parametric <sup>1</sup>	Russell 3000 Futures	278,035	-24.6%	311	55
Parametric <sup>3</sup>	Put-Spread Collar	89,610	136.9%	11	28
Northern Trust	S&P 500 Value Index	352,799	-4.2%	15	63
		<u>\$ 2,052,407</u>		<u>\$ 544</u>	<u>\$ 271</u>

<sup>1</sup> See footnote 4 to the financial statements for disclosure of leverage in this strategy.

<sup>2</sup> Portfolio expenses include commissions, exchange fees and admin costs.

<sup>3</sup> Parametric put-spread collar funded March 2022, return not annualized

### International Equity

The international equity portfolio returned negative 18.5%, outperforming the return of the MSCI ACWI ex U.S. index by 0.9% for the fiscal year. The international equity mandate is passive, however leverage and currency hedges within the allocation may cause the portfolio to outperform or underperform its benchmark at times. As with the U.S. equity portfolio leverage, international equity leverage was removed during the year as the System shifted to a more defensive position. The currency hedge added approximately 3.8% to the performance of the asset class.

Assets under management, annualized rates of return and fees paid to international equity managers for the fiscal year ending June 30, 2022 are as follows (dollars in 000's):

<b>Manager</b>	<b>Style</b>	<b>Assets</b>	<b>% Returns</b>	<b>Fees</b>	<b>Portfolio Expense<sup>2</sup></b>
BlackRock	World Equity ex-US	\$ 221,859	-20.1%	\$ 166	\$ 119
Parametric	World Equity ex-US Futures <sup>1</sup>	449,869	-25.4%	364	197
Parametric	Currency Hedge	75,218	14.3%	163	63
Northern Trust	World Equity ex-US	173,691	-20.0%	112	40
		<u>\$ 920,637</u>		<u>\$ 805</u>	<u>\$ 419</u>

<sup>1</sup> See footnote 4 to the financial statements for disclosure of leverage in this strategy.

<sup>2</sup> Portfolio expenses include commissions, exchange fees and admin costs.

### Credit

HPOPS has a dedicated allocation to credit strategies designed to take advantage of perceived opportunities in the credit markets. Credit investments are segregated by HPOPS as a separate investment category with a target allocation of 9.8% of the System's total assets.

## INVESTMENT SECTION

While the asset class has seen immense growth in recent years, the opportunity set continues to appear attractive and is well suited for a rising rate environment due to its floating rate nature. We continue to believe that this asset class has the potential to outperform versus high yield bonds due to the illiquidity premium and the manager's potential to add alpha. In addition, these illiquid funds should be less volatile than high yield bonds, while at the same time distributing current income.

Assets under management, annualized rates of return and fees paid to credit-oriented managers for the fiscal year ending June 30, 2022 are as follows (dollars in 000's):

Manager	Style	Assets	% Returns	Fees	Portfolio Expense
MacKay Shields <sup>1</sup>	High Yield	\$ 17	NA	\$ -	\$ -
Shenkman	High Yield	162,063	-11.3%	682	-
Northern Trust HY <sup>4</sup>	High Yield	86,429	-12.8%	612	11
Golub BDC3 <sup>2,5</sup>	Opportunistic Credit	31,162	7.8%	543	305
GSO Capital Opps III <sup>2,5</sup>	Opportunistic Credit	11,025	4.8%	181	152
Mesa West IV <sup>2,5</sup>	Opportunistic Credit	6,827	3.5%	121	(40)
Sculptor RE Credit <sup>2,5</sup>	Opportunistic Credit	15,242	15.1%	107	814
SP Speciality Credit <sup>2,5</sup>	Opportunistic Credit	48,349	5.4%	200	758
SP Speciality Credit II <sup>2,5</sup>	Opportunistic Credit	39,703	2.5%	486	212
Ares SDL II <sup>2,5,6</sup>	Opportunistic Credit	9,842	4.8%	120	92
Golub X <sup>2,5</sup>	Opportunistic Credit	21,875	9.8%	756	520
Golub XII <sup>2,5</sup>	Opportunistic Credit	31,500	9.2%	979	626
Monroe Capital II <sup>2,5</sup>	Opportunistic Credit	8,082	6.3%	143	132
Monroe Capital III <sup>2,5</sup>	Opportunistic Credit	22,281	9.8%	-	370
Monroe Opportunistic <sup>2,5</sup>	Opportunistic Credit	14,317	14.1%	-	136
Anchorage Illiquid III <sup>2,5</sup>	Opportunistic Credit	368	44.5%	-	213
Anchorage Illiquid V <sup>2,5</sup>	Opportunistic Credit	38,533	-18.0%	506	(1,837)
Pathlight <sup>2,5</sup>	Opportunistic Credit	23,595	12.7%	86	350
Pathlight II <sup>2,5</sup>	Opportunistic Credit	30,554	7.4%	243	241
Whitehorse II <sup>2,5</sup>	Opportunistic Credit	17,929	10.6%	219	202
Whitehorse III <sup>2,5</sup>	Opportunistic Credit	16,110	11.3%	219	208
Post Road SOF II <sup>2,5</sup>	Opportunistic Credit	18,821	7.8%	281	169
HarbourVest COF II <sup>2,5</sup>	Opportunistic Credit	22,543	24.3%	254	86
H2 Special Opp V <sup>3,5</sup>	Opportunistic Credit	14,211	-15.0%	22	-
		<u>\$ 691,378</u>		<u>\$ 6,760</u>	<u>\$ 3,720</u>

<sup>1</sup> Terminated May 30, 2014.

<sup>2</sup> Fees paid to Opportunistic Credit managers in this schedule are not explicitly paid by the System, but instead are deducted from assets by the managers. Thus, these fees are not included as a component of investment expense in the financial statements.

<sup>3</sup> Funded March 2022, return not annualized.

<sup>4</sup> Portfolio expense includes admin and commission costs.

<sup>5</sup> Portfolio expenses reflects carried interest accrued and paid during the fiscal year.

<sup>6</sup> Funded December 2021, return not annualized.

## INVESTMENT SECTION

### Fixed Income

During the fiscal year, the System rotated assets away from investment grade credit in favor of inflation protected bonds to hedge the risk of continued rising inflation. The fixed income portfolio returned negative 5.9%, outperforming the Barclays US Aggregate benchmark by 4.4%.

Assets under management, annualized rates of return and fees paid to fixed income managers for the fiscal year ending June 30, 2022 are listed on the following page (dollars in 000's):

Manager	Style	Assets	% Returns	Fees	Portfolio Expense
Blackrock <sup>1</sup>	BC US Aggregate	\$ 214,459	-10.3%	\$ 84	\$ 9
Shenkman	Short Duration High Yield	115,237	-5.0%	353	-
Northern Trust <sup>1</sup>	Investment Grade Debt	105,221	-9.0%	50	7
Blackrock <sup>1</sup>	TIPS SD Fund	237,030	0.7%	33	34
		<u>\$ 671,947</u>		<u>\$ 520</u>	<u>\$ 50</u>

<sup>1</sup> Portfolio expenses include commissions, exchange fees and admin costs.

### Alternative Investments

#### Private Equity

The System's alternative investment program consists of allocations to private equity, energy assets, real estate, and hedge funds. The private equity program is managed by Franklin Park, although the portfolio still contains funds recommended by Abbott Capital who managed the asset class from 1997 – 2008, as well as funds recommended by Mercer (formerly Hammond Associates) who served as the interim manager between Abbott Capital and Franklin Park. Although the private equity program is a relatively mature strategy, it remains underfunded by approximately 1.2% due primarily to target allocation increases during fiscal years 2016 and 2020, as well as distributions exceeding drawdowns in recent years. The System had investments in, or commitments to, 117 individual private equity and energy partnerships with 61 general partners as of June 30, 2022. The current allocation within this strategy is approximately 65% leveraged buyouts, 12% special situation funds, 1% venture capital, 10% secondary and 12% in energy funds. This program required \$256.0 million of additional funding during fiscal 2022 while at the same time generating distributions of \$346.1 million for the same period. The private equity program generated an 18.5% return for the 2022 fiscal year versus a return of 11.6% for its benchmark, the Cambridge Private Equity Index. The System's energy allocation returned 46.1%, outperforming its benchmark, the S&P 500 Energy Index by 6.2%.

\$Millions									
Strategy	# of Funds	Committed Capital	Contributed Capital	Unfunded Commitment	Distributed Capital	Fair Value	Exposure	TVPI	Since Inception IRR
Buyout	67	\$ 1,400	\$ 1,001	\$ 543	\$ 1,008	\$ 849	\$ 1,392	1.9	27.7%
Debt for Control	1	10	4	-	2	0	0	0.5	-25.4%
Distressed Debt	2	35	33	2	34	15	17	1.5	7.6%
Energy	16	260	260	21	190	155	176	1.3	13.9%
Growth Equity	8	148	73	75	80	34	108	1.5	4.8%
Multi-Strategy	12	286	227	78	217	157	235	1.7	22.1%
Special Assets	1	25	11	14	1	9	23	0.8	-9.2%
Structured Finance	2	45	54	7	46	41	49	1.6	16.7%
Turnaround	3	45	46	7	38	23	30	1.4	9.7%
Venture Capital	5	28	28	0	34	2	2	1.3	8.4%
	117	\$ 2,282	\$ 1,736	\$ 747	\$ 1,649	\$ 1,285	\$ 2,032	1.7	22.1%

- Fair Value is defined as the investor's June 30, 2022 value as reported by the fund's manager.
- Exposure is defined as the sum of an investor's Remaining Value plus Unfunded Commitment.
- TVPI is the ratio of Distributed Capital plus Remaining Value to Contributed Capital.
- Net IRR is defined as the annualized, compound rate of return using daily draws, distributions and Remaining Value as of the Report Date net of fees and expenses, including late closing interest.
- Results include fully liquidated investments (if applicable).
- Commitments made in a foreign currency have been converted into U.S. dollars using an exchange rate as of the Report Date.

Real Estate

As of June 30, 2022 the fair value of real estate assets comprised 10.5% of the System’s total assets. The asset class is 0.5% overweight versus its target allocation, primarily due to the drawdown in public markets during the last six months of the fiscal year. One component of the real estate portfolio is an allocation to an open-end fund that provides for quarterly liquidity should the System need to rebalance or redeem. The System had investments in, or commitments to, 45 individual real estate partnerships with 24 general partners as of June 30, 2022. This program required \$161.1 million of additional funding during fiscal 2022 while at the same time generating distributions of \$173.2 million for the same period. The System’s real estate portfolio returned 30.0% during fiscal year 2022, outperforming its benchmark the NCREIF Property Index by 8.2%.

SMillions											
Strategy	# of Funds	Committed Capital	Contributed Capital	Unfunded Commitment	Distributed Capital	Fair Value	Total Exposure	TVPI	Since Inception IRR		
European Diversified	1	\$ 27	\$ 23	\$ 4	\$ 17	\$ 16	\$ 21	1.5	12.2%		
Global Distressed	3	51	47	10	46	14	24	1.3	9.1%		
Global Diversified	14	330	207	165	148	150	315	1.4	17.0%		
Hospitality	1	35	30	5	1	33	37	1.1	3.9%		
Life Sciences	1	38	-	38	-	-	38	NA	NA		
US Diversified	14	424	396	122	183	394	515	1.5	17.4%		
US Healthcare	1	25	-	25	-	-	25	NA	NA		
US Multi-Family	4	114	62	51	58	40	91	1.6	34.3%		
US Logistics	1	36	29	17	14	22	39	1.2	37.0%		
US Office	1	10	14	1	14	0	1	1.0	1.6%		
US Real Estate Debt	3	70	79	-	65	34	34	1.3	7.8%		
Secondaries	1	25	18	10	7	17	26	1.3	28.2%		
	45	\$ 1,184	\$ 906	\$ 447	\$ 553	\$ 718	\$ 1,165	1.4	17.2%		

◦ Data on HPOPS' active Real Estate portfolio.  
 ◦ See private equity section for definitions.

Other Alternatives

The target hedge fund and market opportunities allocation remained at 6.5% during fiscal year 2022. The System had \$428.1 million invested as of June 30, 2022. This asset class generated fiscal year performance of approximately 14.0%, outperforming the HFR Fund of Funds Composite Index by 19.5%. The market opportunities component is a carve out of the hedge fund allocation designed to allow the System to strategically invest in pockets of dislocation or outsized opportunities, which typically arise due to market imbalances that will not persist. An allocation to commodities was made in the opportunities bucket, which detracted from the return of the asset class by 1.0%.

Assets under management, annualized rates of return and fees paid to alternative investment managers for the fiscal year ending June 30, 2022 are listed on the following page (dollars in 000's):

INVESTMENT SECTION

Manager	Style	Assets	% Returns	Base Fee	Portfolio Expense
Bridgewater <sup>1</sup>	Hedge Funds	\$ 149,343	41.8%	\$ 1,535	\$ 9,762
Mercer <sup>2</sup>	Hedge Funds	360	NA	-	-
Blackstone Opportunistic <sup>3</sup>	Hedge Funds	702	NA	10	-
Mercer <sup>4,5</sup>	Real Estate	717,745	30.0%	437	58,161
Franklin Park <sup>4,5</sup>	PE/Energy	1,284,963	21.4%	400	66,455
Elliott <sup>7</sup>	Hedge Funds	181,658	13.6%	2,602	4,343
King Street <sup>7,8</sup>	Hedge Funds	3,867	9.2%	57	-
Viking <sup>7</sup>	Hedge Funds	32,296	-12.6%	519	-
Shenkman	Convertible Bonds	23,207	-17.0%	245	-
Parametric <sup>5</sup>	Commodities	36,662	-8.6%	-	2
		<u>\$ 2,430,804</u>		<u>\$ 5,804</u>	<u>\$ 138,723</u>

<sup>1</sup> Includes the Pure Alpha and Pure Alpha Major Markets funds.

<sup>2</sup> Residual illiquid investments from hedge funds terminated between 2010 - 2016.

<sup>3</sup> Terminated 2016, residual illiquid holdings.

<sup>4</sup> Base fees consist of the annual consulting fee.

<sup>5</sup> Mandate funded in June 2022, return not annualized.

<sup>6</sup> Expenses include manager fees, paid and accrued carried interest.

<sup>7</sup> Management fees paid to Elliott, King Street and Viking are deducted directly from the assets of each fund and are not a component of investment expense in the financial statements.

<sup>8</sup> Terminated 2019, residual illiquid holdings.

Cash

The System has a cash securitization program which was initiated in order to more closely track our strategic asset allocation through the securitization of excess cash. During the second half of fiscal year 2022, the fixed income component of the program was suspended and the exposure transitioned to cash due to the rising interest rate environment. Cash remained invested at the System's custodial bank. The STIF account has an average quality rating of A1+.

Manager	Style	Assets (000's)	% Return	Base Fee (000's)	Portfolio Expense (000's) <sup>1</sup>
Northern Trust	STIF	\$ 81,224	NA	\$ 82	\$ 743

<sup>1</sup> Portfolio expenses include sweep fees.

*Securities Lending*

The System’s master custodian, Northern Trust, operates the Securities Lending program on behalf of HPOPS. Securities are loaned on a short-term basis to brokers in exchange for (generally) cash collateral. Northern Trust then invests this collateral and the investment income is divided between HPOPS and Northern Trust in accordance with agreed-upon percentages.

This program generates incremental income for HPOPS but is subject to certain risks. These risks include (1) the possibility that the borrower cannot return the securities and (2) that the investments in which Northern invests the collateral lose money. This first risk is controlled by strict guidelines on which borrowers will be approved to participate in the program and daily adjustment of the collateral for changes in the fair value of the securities that are out on loan. The second risk is controlled by strict quality and duration guidelines on the securities that the collateral can be invested in. In June 2008 the System switched to a “government only” collateral pool thus avoiding exposure to the liquidity issues experienced by many securities lending collateral pools during the GFC.

Vendors other than Northern Trust could be used for this program which could generate additional income but this is not likely without what has been determined to be an unacceptable increase in risk. Northern Trusts' participation in the Securities Lending program also allows for a reduction in custody fees.

Following is a chart of securities lending activity for the most recent three fiscal years (dollars in 000’s).

	<u>2022</u>	<u>2021</u>	<u>2020</u>
<b>Avg Securities on Loan</b>	\$ 167,634	\$ 61,590	\$ 62,207
<b>Avg Eligible Securities</b>	\$ 474,626	\$ 398,135	\$ 448,506
<b>% on Loan</b>	35.3%	15.5%	13.9%
<b>HPOPS Net Earnings</b>	\$ 351	\$ 148	\$ 186
<b>Duration of Collateral Pool (days)</b>	26	30	31

**Compounded Annualized Rates of Return (%)  
Periods Ended June 30, 2022**

Year	System Total	Composite Benchmark	Domestic Equity	Russell 3000	Int'l Equity	MSCI			FTSE HY		
						ACWI ex U.S.	Fixed Income	BC US Agg	Credit	Market TR	Alternative Investments
2	14.2	10.8	14.3	11.4	7.0	4.6	-2.4	-5.4	7.8	0.7	25.9
3	9.6	7.9	11.8	9.8	2.8	1.4	0.3	-0.9	5.9	0.1	16.1
5	9.1	7.9	12.3	10.6	2.8	2.5	1.5	0.9	6.3	2.0	13.6
10	8.4	8.5	13.4	12.6	4.7	4.8	NA	NA	7.1	4.2	10.2

\*The System did not have an allocation to fixed income during fiscal years 2015 – 2017 and only had a fixed income allocation for the final six months of fiscal 2018. For this reason, the 10 year annualized return is not available, as such return would be misleading.

**Rates of Return by Year (%)  
Years Ended June 30th**

These calculations were prepared using a time-weighted rate of return in accordance with The CFA Institute’s Global Investment Performance Standards. The System’s total rates of return are net of investment fees and expenses. Though these standards do not apply to plan sponsors per se, we have used them herein for purposes of presenting investment rates of return. The Composite Benchmark returns are calculated as if the System’s current asset allocation had been in place for all time periods.

Year	System Total	Composite Benchmark	Domestic Equity	Russell 3000	Int'l Equity	MSCI			FTSE		
						ACWI ex U.S.	Fixed Income	BC US Agg	Credit	Market TR	Alternative Investments
2013	7.9	12.1	21.5	21.5	11.9	13.6	0.6	-0.7	13.4	9.2	4.1
2014	17.4	18.7	24.9	25.2	20.5	21.8	6.5	4.4	13.5	11.3	18.5
2015	0.8	3.1	3.2	7.3	-2.5	-5.3	NA	NA	2.4	-0.9	1.9
2016	-3.1	-0.6	3.1	2.1	-13.4	-10.2	NA	NA	-1.5	0.9	-1.4
2017	16.8	14.1	22.2	18.5	22.0	20.5	NA	NA	12.7	12.3	12.6
2018	10.2	9.2	16.5	14.8	4.4	7.3	NA	NA	7.5	2.8	12.5
2019	6.4	7.1	9.9	9.0	1.7	1.3	6.0	8.7	7.3	7.2	7.5
2020	1.1	2.9	7.1	6.5	-5.0	-4.8	4.8	8.3	2.3	-1.1	-1.1
2021	32.2	31.7	46.4	44.2	40.7	35.7	1.3	-0.3	18.3	15.7	29.6
2022	-1.4	-5.8	-10.8	-13.9	-18.5	-19.4	-5.9	-10.3	-1.6	-12.4	22.3

\*See note on fixed income above.

**Schedule of Ten Largest Public Equity Holdings  
As of June 30, 2022<sup>1</sup>**

Shares	Description	Market Value	
		(\$000's)	% of Total Equity
12,598,666	Northern Trust Collective Russell 3000 Index Fund	\$ 732,423	24.6%
407,869	Blackrock Equity Index Fd	599,540	20.2%
4,638,373	NT Collective S&P 500 Citigroup/Value Index	352,799	11.9%
7,519,685	Blackrock ACWI Ex-Us Superfund A	221,859	7.5%
967,617	Northern Trust MSCI ACWI Ex-US Index Fund	173,691	5.8%
505,381	Vanguard Index Funds S&P 500 EFT SHSNEW	122,579	4.1%

<sup>1</sup>The HPOPS public equity portfolio is passive, no direct equity securities are held in HPOPS' name. All private equity holdings are immaterial, therefore only six material holdings have been listed.

*\*A complete list of all available holdings is available upon request.*

**Schedule of Ten Largest Public Fixed Income Holdings  
As of June 30, 2022**

Units	Description	Market	% of Total
		Value (\$000's)	Fixed Income
19,878,643	Blackrock 0-5 Year U.S. TIPS Fund	\$ 237,030	17.4%
2,963,725	Blackrock US Debt Index A FD	214,459	15.7%
914,089	NT COL 1-10 YR INT CR BD IDX FD NL TIER J	105,221	7.7%
2,418,279	NTGI COLTV Daily Hi Yield FXD Inc FD	86,429	6.3%
4,433,000	PVTPL Verscend Escrow Corp 9.75% 08-15-2026	4,311	0.3%
3,577,000	PVTPL Altice France S 144A 8.125% Due 02-01-2027	3,292	0.2%
2,901,000	El Dorado Resorts 6.25% Due 07-01-2025	2,796	0.2%
2,656,000	PVTPL Kar Auction Svcs Inc. 5.125% Due 06-01-2024	2,526	0.2%
2,576,000	PVTPL CCO Hldgs LLC/CCO Hldgs Cap Corp Bnds	2,513	0.2%
2,580,000	Change Healthcare 5.75% Due 03-01-2025	2,512	0.2%

*\*A complete list of all available holdings is available upon request.*

**Schedule of Investment Managers as of June 30, 2022**

<b>Manager Name</b>	<b>Location</b>	<b>Strategy</b>
Abacus Multi-Family Partners	New York, NY	Real Estate
Advent International	New York, NY	Private Equity
Altus Investment Group LLC	Concord, NH	Private Equity
Anchorage Capital Group	New York, NY	Illiquid Credit
Apollo Investment Management	New York, NY	Private Equity
Archer Capital Growth	Sydney, Australia	Private Equity
Ardian	Paris, France	Private Equity
Ares Management	Dallas, TX	Illiquid Credit
Atlas Holdings LLC	Greenwich, CT	Private Equity
Atlas Venture LP	Cambridge, MA	Private Equity
Bain Capital	Boston, MA	Real Estate
Beacon Capital Partners	Boston, MA	Real Estate
Blackrock	New York, NY	Public Equity and Fixed Income
Blackstone	New York, NY	Private Equity and Real Estate
Boston Ventures Investment Partners	New York, NY	Private Equity
Bridgewater Associates	Westport, CT	Hedge Funds
Brookfield	New York, NY	Real Estate
Canaan Partners	Westport, CT	Private Equity
Carlyle Realty Partners	Washington, DC	Real Estate
Carnelian Energy Capital	Houston, TX	Private Equity
Castlelake , L.P.	Minneapolis, MN	Private Equity
CBRE	Houston, TX	Real Estate
Charterhouse Capital Partners	London, United Kingdom	Private Equity
Clearlake Capital	Santa Monica, CA	Private Equity
Court Square Capital Partners	New York, NY	Private Equity
CVC European Equity Investors	St Helier, Jersey	Private Equity
Cypress Partners	New York, NY	Private Equity
DRA Advisors	New York, NY	Real Estate
DW Healthcare Partners	Park City, UT	Private Equity
EIF Management	Boston, MA	Private Equity
Elliott Management	New York, NY	Hedge Funds
EnCap Investments L.P.	Houston, TX	Private Equity
First Reserve	Houston, TX	Private Equity
Genstar Capital	San Francisco, CA	Private Equity
GLP Capital Partners	Santa Monica, CA	Real Estate
Golub Capital	New York, NY	Illiquid Credit
Great Hill Partners	Boston, MA	Private Equity
H2 Capital Partners	Stamford, CT	Real Estate
Hammes	Milwaukee, WI	Real Estate
HarbourVest Partners, LLC	Boston, MA	Illiquid Credit
JF Lehman & Company	New York, NY	Private Equity
Kelso	New York, NY	Private Equity
King Street Capital Management LLC	New York, NY	Hedge Funds
Levine Leichtman Capital Partners	Beverly Hills, CA	Private Equity
Lexington Capital Partners	New York, NY	Private Equity
LLR Equity Partners	Philadelphia, PA	Private Equity

**Schedule of Investment Managers as of June 30, 2022- Continued**

<b>Manager Name</b>	<b>Location</b>	<b>Strategy</b>
Lone Star Funds	New York, NY	Real Estate
Longpoint Realty Partners	Boston, MA	Real Estate
Longroad Asset Management	Old Greenwich, CT	Private Equity
Lovell Minnick Partners	New York, NY	Private Equity
LS Power	New York, NY	Energy
Madison Dearborn Partners	Chicago, IL	Private Equity
Mesa West Capital	Los Angeles, CA	Illiquid Credit
Monroe Capital LLC	Chicago, IL	Illiquid Credit
Montauk Triguard	Irvine, CA	Private Equity
Natural Gas Partners	Irving, TX	Private Equity
Neuberger Berman	New York, NY	Private Equity
New Enterprise Associates	Timonium, MD	Private Equity
Noble Hospitality Fund	Atlanta, GA	Real Estate
Northern Trust Wealth Management	Chicago, IL	Public Equity and Fixed Income
NovaCap	Quebec, Canada	Private Equity
Oak Hill Capital Partners	New York, NY	Private Equity
Oak Investment Partners	Norwalk, CT	Private Equity
Oaktree Capital Management	Los Angeles, CA	Private Equity and Real Estate
Odyssey Investment Partners	New York, NY	Private Equity
Parametric	Edina, MN	Public Equity and Alternatives
Pathlight Capital	Hingham, MA	Illiquid Credit
Post Road Group LP	Stamford, CT	Illiquid Credit
Quantum Energy Partners	Houston, TX	Private Equity
Resolute Fund	New York, NY	Private Equity
Revelstoke Capital Partners	Denver, CO	Private Equity
Riverside	New York, NY	Private Equity
Rockpoint Group	Boston, MA	Real Estate
Rubicon Technology Partners	Boulder, CO	Private Equity
Sculptor Capital Management	New York, NY	Illiquid Credit and Hedge Funds
Sentinel Capital Partners	New York, NY	Private Equity
Shenkman Capital	New York, NY	Fixed Income
Silver Point Capital, LP	Greenwich, CT	Illiquid Credit
Silverpeak Real Estate Partners	New York, NY	Real Estate
Stark Investments (Shepherd)	Milwaukee, WI	Hedge Funds
Starwood Capital	Greenwich, CT	Real Estate
Summit Partners	Boston, MA	Private Equity
Sycamore Partners	New York, NY	Private Equity
TA Associates Mgmt., L.P.	Boston, MA	Private Equity
The Energy and Minerals Group	Houston, TX	Private Equity
The Related Companies, LP	New York, NY	Real Estate
Thoma Bravo	San Francisco, CA	Private Equity
Thor Equities	New York, NY	Real Estate
Torchlight Investors	New York, NY	Real Estate
TPG Capital	New York, NY	Real Estate
Trident	San Mateo, CA	Private Equity
Veritas Capital	New York, NY	Private Equity
Vestar Capital Partners	New York, NY	Private Equity

**Schedule of Investment Managers as of June 30, 2022- Continued**

<b>Manager Name</b>	<b>Location</b>	<b>Strategy</b>
Viking Global Investors	Greenwich, CT	Hedge Funds
Vista Equity Partners	San Francisco, CA	Private Equity
W L Ross	New York, NY	Private Equity
Walton Street Capital	Chicago, IL	Real Estate
Warburg Pincus	New York, NY	Private Equity
Waud Capital	Chicago, IL	Private Equity
WCAS	New York, NY	Private Equity
Whitehorse Liquidity Partners, LP	Toronto, Ontario	Illiquid Credit
Wicks Group	New York, NY	Private Equity
WNG Aircraft Opportunities	Dallas, TX	Private Equity

## Texas Pension Review Board Expense Reporting Template

**Direct and Indirect Fees and Commissions**  
*Dollars in (000s)*

ASSET CLASS	MANAGEMENT FEES PAID FROM TRUST	MANAGEMENT FEES NETTED FROM RETURNS	TOTAL INVESTMENT MANAGEMENT FEES (Management Fees Netted from Returns + Management Fees Paid From Trust)	BROKERAGE FEES/COMMISSIONS	PROFIT SHARE/CARRIED INTEREST <sup>3</sup>	TOTAL DIRECT AND INDIRECT FEES AND COMMISSIONS (Management Fees + Brokerage Fees/Commissions + Profit Share)
Cash	\$ 825	\$ -	\$ 825	\$ -	\$ -	\$ 825
Public Equity	\$ 1,349		\$ 1,349	\$ 690	\$ -	\$ 2,039
Fixed Income <sup>1</sup>	\$ 2,059		\$ 2,059	\$ 61		\$ 2,120
Real Assets		\$ 437	\$ 437	\$ -	\$ 58,161	\$ 58,598
Alternative/Other <sup>2</sup>		\$ 10,588	\$ 10,588	\$ 2	\$ 84,269	\$ 94,859
<b>TOTAL</b>	<b>\$ 4,233</b>	<b>\$ 11,025</b>	<b>\$ 15,258</b>	<b>\$ 753</b>	<b>\$ 142,430</b>	<b>\$ 158,441</b>

<sup>1</sup> Fixed Income assets include convertible bonds, treasuries, high yield bonds, inflations protections bonds and investment grade debt securities.

<sup>2</sup> Alternative/Other asset classes include commodities, hedge funds, energy, private credit, private equity and real estate.

<sup>3</sup> Carried interest includes both crystallized carry and accrued carried interest.

**Total Investment Expenses (000s)**

<b>Total Direct and Indirect Fees and Commissions</b>	<b>\$ 158,441</b>
<b>Investment Services</b>	
Custodial	\$ 261
Research	\$ -
Investment Consulting	\$ 837
Legal	\$ -
<b>Total</b>	<b>\$ 1,099</b>
<b>Total Investment Expenses</b> (Total Direct and Indirect Fees and Commissions + Investment Services)	<b>\$ 159,540</b>

SECTION FOUR

**ACTUARIAL SECTION**

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All of the information and schedules contained in the actuarial section were prepared by the System's actuary, Gabriel, Roeder, Smith & Company.



# Houston Police Officers' Pension System

ACTUARIAL VALUATION REPORT FOR THE YEAR  
BEGINNING JULY 1, 2022





October 13, 2022

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

**Re: Risk Sharing Valuation Study as of July 1, 2022**

Dear Members of the Board:

We are pleased to present our Risk Sharing Valuation Study (RSVS, or sometimes referred to as the actuarial valuation in the report) of the Houston Police Officers' Pension System ("HPOPS" or "the System") for the plan year commencing July 1, 2022. This Report describes the current actuarial condition of HPOPS, determines the calculated employer contribution rate (the actuarially determined rate), and analyzes changes in this contribution rate from the prior year. Valuations are prepared annually, as of July 1st, the first day of the HPOPS plan year. This report was prepared at the request of the Board and is intended for use by the HPOPS staff and those designated or approved by the Board. This report may be provided to parties other than HPOPS staff only in its entirety and only with the permission of the Board, or as required by law.

**Financing objectives and funding policy**

Under the HPOPS statute, the employer contribution rate is determined actuarially, based on the Board's funding policy and the HPOPS governing law. The contribution rate determined by a given actuarial valuation and implemented by the Board becomes effective twelve months after the valuation date, i.e., the rates determined by this July 1, 2022 actuarial valuation will be used by the Board when determining the employer contribution rate for the year beginning July 1, 2023 and ending June 30, 2024.

While inside the RSVS Corridor, the actual City Contribution Rate will be the greater of the Estimated City Contribution Rate determined below and the Corridor Midpoint that was established in the June 30, 2016 RSVS. The Estimated City Contribution Rate (City of Houston) for FY 2024 is 26.77%, which is less than the Corridor Midpoint of 32.03%. Thus, the City Contribution rate for FY 2024 is 32.03%.

The Estimated City Contribution Rate and liabilities are computed using the Ultimate Entry Age Normal (UEAN) actuarial cost method. The Estimated City Contribution Rate is the sum of two pieces: the employer normal cost rate and the amortization rate. The normal cost rate is determined as a percentage of active member payroll, with the employer normal cost being the difference between the total normal cost and the member contribution rate. The amortization rate is determined as a level percentage of active member payroll. It is the amount required to amortize the unfunded actuarial accrued liability (UAAL) over a closed period using the process of "laddering".

The UAAL as of June 30, 2016, as restated in the “Final Risk Sharing Valuation Study as of June 30, 2016” (RSVS Study), which was dated September 28, 2017, is the initial base and is amortized over a closed 30-year period beginning FY2018. Each future valuation will establish either a liability gain layer or a liability loss layer. These layers will represent unexpected increases/decreases in the unfunded actuarial accrued liability (after subtracting out any remaining Legacy Liability or any remaining prior years’ liability layers). New loss bases will be amortized over a 30-year period, while new gain bases will be amortized over the remaining amortization period as of one year after the valuation date of the largest remaining loss base (will typically be the initial RSVS base). The amortization of all bases will begin one year after the valuation date using a level percentage of payroll amortization method.

Gains from assets returning 9.24% on a smoothed basis compared to the 7.00% assumed were partially offset by the COLA and DROP credit risk sharing provisions. Note that the calculation of the COLA (return on AVA less 5.0% with a minimum of 0.0% and max of 4.0%) means that gains due to asset performance will necessarily result in liability losses due to COLAs being greater than assumed, while asset losses will result in liability gains from COLAs being less than assumed. Please see Table 6 under Section IV of our Report for a detailed analysis of the change in the estimated City contribution rate from the prior year to this year.

The contribution rate is determined using an actuarial value of assets rather than market value. The actuarial value of assets recognizes 20% of the difference (typically referred to as “five-year smoothing”) between the market value of assets and the expected actuarial value of assets, based upon the assumed valuation rate of return of 7.00% per annum. There are currently \$0.403 billion in asset gains being deferred that will be recognized in the future and will provide tailwinds for the improvement in the funded status and provide a cushion against future asset losses.

#### **Progress toward realization of financing objectives**

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan’s funded status. In the absence of benefit improvements, it should increase over time, until it reaches 100%. The funded ratio as of July 1, 2022 is 87.5% which is up compared to last year’s funded ratio of 85.4%. The funded ratio measured on the market value of assets is higher at 93.0% as of July 1, 2022. The funded status alone may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

#### **Benefit provisions**

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2022. There were no changes in the benefit provisions since the prior valuation. The benefit provisions are summarized in Appendix B of our Report.



### **Assumptions and methods**

Actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the System's actuary. As part of the legislation enacting the 2016 RSVS benefit changes, the investment return assumption (7.0%) was set into statute (Article 6243g-4, Vernon's Texas Civil Statutes). This assumption is now considered a prescribed assumption under the actuarial standards of practice. The assumptions used in this valuation were adopted by the Board based on the recommendations from GRS following the 2022 Actuarial Experience Investigation Study. These assumptions were first used in the current actuarial valuation. Assumption changes from the experience study include updating the salary scale, DROP interest credit, mortality tables, and turnover rates.

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

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

The actuarial assumptions and methods used in this Report all comply with the actuarial standards of practice (ASOPs) and are described in Appendix A of our Report.

### **Data**

Member data for retired, active and inactive members was supplied as of July 1, 2022 by the HPOPS staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us.

Asset and all financial information as of July 1, 2022 were supplied to us by the HPOPS staff.

### **Plan Experience**

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



### **Actuarial Certification**

All of the tables contained in this actuarial valuation report and in the actuarial section of the HPOPS Annual Comprehensive Financial Report (ACFR) were prepared by Gabriel, Roeder, Smith & Company. Historical information for years prior to 2008 was prepared by the prior actuarial firm and was not subjected to our actuarial review. We certify that the information presented herein is accurate and fairly portrays the actuarial position of HPOPS as of July 1, 2022.

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

Respectfully submitted,  
**Gabriel, Roeder, Smith & Company**



Joseph P. Newton, FSA, EA, MAAA  
Pension Market Leader



Blake Orth, FSA, EA, MAAA  
Consultant & Actuary



## EXECUTIVE SUMMARY

Item	July 1, 2022	July 1, 2021
<b>Membership (dollar amounts in thousands)</b> <ul style="list-style-type: none"> <li>• Number of:               <ul style="list-style-type: none"> <li>- Active members</li> <li>- Retirees and beneficiaries</li> <li>- Inactive members</li> <li>- Total</li> </ul> </li> <li>• Total annualized salaries supplied by HPOPS</li> </ul>	 5,156 4,996 71 10,223 \$ 463,908	 5,238 4,786 55 10,079 \$ 465,722
<b>Contribution Rates</b> <ul style="list-style-type: none"> <li>• City Contribution Rate</li> <li>• Member</li> </ul>	 32.03% 10.50%	 31.98% 10.50%
<b>Assets (\$000s)</b> <ul style="list-style-type: none"> <li>• Market value</li> <li>• Actuarial value</li> <li>• Estimation of return on market value</li> <li>• Estimation of return on actuarial value</li> <li>• Employer contribution</li> <li>• Member contribution</li> <li>• Ratio of actuarial value to market value</li> </ul>	 \$ 6,861,988 6,459,373 -1.4% 9.2% \$ 152,375 \$ 50,028 94.1%	 \$ 7,137,251 6,082,317 32.3% 11.8% \$ 151,094 \$ 49,749 85.2%
<b>Actuarial Information (\$000s)</b> <ul style="list-style-type: none"> <li>• Employer normal cost %</li> <li>• Unfunded actuarial accrued liability (UAAL)</li> <li>• Amortization rate</li> <li>• Funding period</li> <li>• Funded ratio</li> </ul>	 14.40% \$ 921,867 12.37% 25.0 years 87.5%	 13.48% \$ 1,038,643 13.54% 26.0 years 85.4%
<b>Projected employer contribution</b> <ul style="list-style-type: none"> <li>• Fiscal year ending June 30,</li> <li>• Projected payroll (millions)</li> <li>• Projected employer contribution (millions)</li> </ul>	 2024 \$ 489.8 \$ 156.9	 2023 \$ 491.7 \$ 157.2



**HISTORICAL SOLVENCY TEST (\$'000)**  
**TABLE 14**

Valuation Date	Aggregated Accrued Liabilities for				Portions of Accrued Liabilities Covered by Reported Assets		
	Active Members Contributions	Retirees		Actuarial Value of Assets	(5)/(2)	[(5)-(2)-(3)]/ (4)	
		Beneficiaries and Vested Terminations	Members (City Financed Portion)			[(5)-(2)]/(3)	(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
July 1, 2003	153,634	838,090	1,883,014	2,394,411	100%	100%	74%
July 1, 2004	153,088	995,841	2,190,295	2,466,070	100%	100%	60%
July 1, 2005	249,804	1,259,243	1,883,927	2,508,794	100%	100%	53%
July 1, 2006	262,514	1,421,330	1,949,301	2,681,375	100%	100%	51%
July 1, 2007	275,990	1,575,900	2,005,790	3,004,927	100%	100%	57%
July 1, 2008	294,678	1,726,121	2,058,165	3,337,612	100%	100%	64%
July 1, 2009	312,489	1,872,226	2,183,786	3,430,946	100%	100%	57%
July 1, 2010	149,252	1,998,683	2,084,797	3,526,703	100%	100%	66%
July 1, 2011	160,828	2,146,222	2,181,093	3,718,052	100%	100%	65%
July 1, 2012	167,739	2,320,239	2,259,195	3,888,504	100%	100%	62%
July 1, 2013	163,660	2,501,745	2,344,556	4,070,951	100%	100%	60%
July 1, 2014	162,982	2,834,747	2,366,263	4,342,936	100%	100%	57%
July 1, 2015	157,344	3,131,654	2,417,132	4,550,620	100%	100%	52%
July 1, 2016	151,259	3,381,371	2,548,761	4,758,079	100%	100%	48%
July 1, 2017	158,648	3,812,704	2,246,942	4,868,614	100%	100%	40%
July 1, 2018	166,807	4,033,323	2,263,742	5,128,835	100%	100%	41%
July 1, 2019	179,254	4,198,909	2,276,980	5,434,933	100%	100%	46%
July 1, 2020	194,868	4,368,772	2,272,042	5,631,533	100%	100%	47%
July 1, 2021	210,110	4,685,333	2,225,517	6,082,317	100%	100%	53%
July 1, 2022	226,289	5,062,950	2,092,001	6,459,373	100%	100%	56%



## SCHEDULE OF FUNDING PROGRESS (\$000)

### TABLE 15

Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
July 1, 2003	2,394,411	2,874,738	480,327	83.3%	300,405	159.9%
July 1, 2004	2,466,070	3,339,224	873,154	73.9%	329,840	264.7%
July 1, 2005	2,508,794	3,392,974	884,180	73.9%	321,057	275.4%
July 1, 2006	2,681,375	3,633,145	951,770	73.8%	327,080	291.0%
July 1, 2007	3,004,927	3,857,680	852,753	77.9%	336,029	253.8%
July 1, 2008	3,337,612	4,078,963	741,351	81.8%	351,525	210.9%
July 1, 2009	3,430,946	4,368,501	937,556	78.5%	366,924	255.5%
July 1, 2010*	3,526,703	4,232,732	706,029	83.3%	377,779	186.9%
July 1, 2011	3,718,052	4,488,142	770,090	82.8%	388,409	198.3%
July 1, 2012	3,888,504	4,747,173	858,669	81.9%	389,884	220.2%
July 1, 2013	4,070,951	5,009,961	939,010	81.3%	391,957	239.6%
July 1, 2014	4,342,936	5,363,992	1,021,056	81.0%	399,447	255.6%
July 1, 2015	4,550,620	5,706,130	1,155,510	79.7%	406,233	284.4%
July 1, 2016**	4,758,079	6,081,392	1,323,313	78.2%	424,300	311.9%
July 1, 2017	4,868,614	6,218,293	1,349,679	78.3%	440,614	306.3%
July 1, 2018	5,128,835	6,463,872	1,335,037	79.3%	438,396	304.5%
July 1, 2019	5,434,933	6,655,143	1,220,210	81.7%	454,696	268.4%
July 1, 2020	5,631,533	6,835,682	1,204,149	82.4%	471,903	255.2%
July 1, 2021	6,082,317	7,120,960	1,038,643	85.4%	478,530	217.0%
July 1, 2022	6,459,373	7,381,240	921,867	87.5%	476,665	193.4%

\* Change to Projected Unit Credit cost method. Prior results were provided based on Entry Age Normal.

\*\* Change to Ultimate Entry Age Normal cost method and benefit changes to all groups.



## HISTORICAL ACTIVE PARTICIPANT DATA

### TABLE 17

Valuation Date (1)	Active Count (2)	Average Age (3)	Average Svc (4)	Covered Payroll (5)	Average Salary (6)	Percent Changes (7)
2003	5,387	41.3	N/A	\$300,405	\$55,765	4.3%
2004	5,225	41.7	N/A	329,840 <sup>(1)</sup>	63,127	13.2%
2005	4,867	42.0	N/A	321,057	65,966	4.5%
2006	4,785	42.3	N/A	327,080	68,355	3.6%
2007	4,879	42.1	N/A	336,029	68,873	0.8%
2008	5,065	42.0	15.7	351,525	69,403	0.8%
2009	5,245	41.8	15.4	366,924	69,957	0.8%
2010	5,347	41.9	15.3	377,779	70,652	1.0%
2011	5,312	42.3	15.7	388,409	73,119	3.5%
2012	5,326	42.5	15.7	389,884	73,204	0.1%
2013	5,364	42.6	15.7	391,957	73,072	-0.2%
2014	5,343	42.6	15.7	399,447	74,761	2.3%
2015	5,261	42.8	15.9	406,233	77,216	3.3%
2016	5,261	42.6	15.7	418,252	79,500	3.0%
2017	5,164	41.7	14.5	417,320	80,813	1.7%
2018	5,226	41.6	14.4	438,396	83,887	3.8%
2019	5,282	41.6	14.3	454,696	86,084	2.6%
2020	5,319	41.5	14.1	471,903	88,720	3.1%
2021	5,238	41.5	14.1	478,530	91,357	3.0%
2022	5,156	41.1	13.7	476,665	92,449	1.2%

<sup>(1)</sup> Beginning October 9, 2004, pensionable pay is the total of the last 26 pay periods, excluding CMEPP and SOSP.



**RETIREES, BENEFICIARIES, AND DISABLED PARTICIPANTS ADDED TO AND REMOVED FROM ROLLS (\$'000)**  
**TABLE 18**

Valuation July 1, (1)	Added to Rols		Removed from Rols		Rols-End of Year		% Increase in Annual Allowances (8)	Average Annual Allowances (9)
	Number (2)	Annual Allowances (3)	Number (4)	Annual Allowances (5)	Number (6)	Annual Allowances (7)		
2003	106	2,967	47	1,109	1,918	61,531	11.8%	32,081
2004	220	9,172	33	1,014	2,105	70,307	14.3%	33,400
2005	353	15,962	55	1,776	2,403	86,933	23.6%	36,177
2006	254	10,195	66	2,197	2,549	96,812	11.4%	37,980
2007	175	8,056	49	1,809	2,717	105,481	9.0%	38,823
2008	149	11,889	57	1,995	2,809	115,375	9.4%	41,073
2009	154	9,639	63	2,275	2,900	122,738	6.4%	42,324
2010	165	8,891	56	2,355	3,009	129,274	5.3%	42,963
2011	171	10,567	59	2,218	3,121	137,623	6.5%	44,096
2012	180	11,934	71	2,820	3,230	146,737	6.6%	45,429
2013	183	11,674	64	2,345	3,349	156,066	6.4%	46,601
2014	217	13,857	63	2,627	3,503	167,296	7.2%	47,758
2015	288	16,132	65	2,762	3,726	180,666	8.0%	48,488
2016	259	16,357	77	3,291	3,908	193,733	7.2%	49,573
2017	460	26,911	95	4,139	4,273	216,505	11.8%	50,668
2018	221	14,138	98	4,370	4,396	226,273	4.5%	51,473
2019	189	12,198	91	4,344	4,494	234,127	3.5%	52,098
2020	236	14,280	108	4,943	4,622	243,464	4.0%	52,675
2021	287	18,223	123	6,070	4,786	255,617	5.0%	53,409
2022	338	26,332	128	6,379	4,996	275,569	7.8%	55,158



## MEMBERSHIP DATA

### TABLE 19

	July 1, 2022 (1)	July 1, 2021 (2)	July 1, 2020 (3)
1. Active members			
a. Number	5,156	5,238	5,319
b. Number in DROP	1,404	1,571	1,673
c. Total payroll	\$ 476,665,438	\$ 478,529,570	\$ 471,903,477
Payroll in DROP	\$ 154,121,839	\$ 169,162,929	\$ 175,558,515
d. Average salary	92,449	91,357	88,720
e. Average age	41.1	41.5	41.5
f. Average service	13.7	14.1	14.1
2. Inactive participants			
a. Vested	71	55	49
b. Total annual benefits (deferred)	\$ 2,137,260	\$ 1,714,915	\$ 1,533,356
c. Average annual benefit	30,102	31,180	31,293
3. Service retirees			
a. Number	3,885	3,726	3,613
b. Total annual benefits	\$ 222,206,718	\$ 206,298,011	\$ 197,500,986
c. Average annual benefit	57,196	55,367	54,664
d. Average age	66.1	66.1	65.8
4. Disabled retirees			
a. Number	191	188	179
b. Total annual benefits	\$ 9,192,900	\$ 8,837,984	\$ 8,261,132
c. Average annual benefit	48,130	47,011	46,152
d. Average age	58.1	58.1	58.1
5. Beneficiaries and spouses			
a. Number	920	872	830
b. Total annual benefits	\$ 44,169,724	\$ 40,480,635	\$ 37,702,031
c. Average annual benefit	48,011	46,423	45,424
d. Average age	70.5	70.1	70.1



## SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

The following methods and assumptions were used in preparing the July 1, 2022 actuarial valuation report.

1. Valuation Date

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

2. Actuarial Cost Method

The Ultimate Entry Age Normal (UEAN) actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level percent of payroll necessary to fully fund the expected benefits to be earned over the career of each individual active member. Under UEAN, the normal cost calculation is done assuming all members earn benefits that would be applicable to a newly hired member so that the normal cost should remain fairly stable as the relative distribution of active employees in different benefit groups changes. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

An unfunded accrued liability exists in the amount equal to the excess of accrued liability over valuation assets. The amortization period of the System is the number of years required to fully amortize the unfunded accrued liability, on an actuarial value of asset basis, with the expected amount of employer contributions in excess of the employers' portion of the normal cost.

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

3. Actuarial Value of Assets

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



4. Economic Assumptions

- a. Investment return: 7.00% per year, compounded annually, composed of an assumed 2.30% inflation rate and a 4.70% net real rate of return. This rate represents the assumed return, net of all investment expenses.
- b. Cost of Living Adjustment (COLA): Monthly benefits for participants receiving payments are increased each April 1 by the five-year average investment return minus 5.00%, with a minimum of 0.00% and a maximum of 4.00%. For this valuation, the annual COLA is assumed to be 2.00%.
- c. Salary increase rate: A service-related component, plus a 3.25% component for inflation and productivity, as follows:

Years of Service	Service-related Component	Total Annual Rate of Increase Including 3.25% Inflation & Productivity Component
(1)	(2)	(3)
1	30.00%	33.25%
2	3.00%	6.25%
3	3.00%	6.25%
4	3.00%	6.25%
5	6.00%	9.25%
6	6.00%	9.25%
7	2.00%	5.25%
8	2.00%	5.25%
9	2.00%	5.25%
10	6.00%	9.25%
11	1.00%	4.25%
12	5.00%	8.25%
13	1.00%	4.25%
14	1.00%	4.25%
15	1.00%	4.25%
16	5.00%	8.25%
17	0.00%	3.25%
18 and Over	0.00%	3.25%

- d. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.75% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.



5. Demographic Assumptions

a. Retirement Rates

Age	Service		
	<25	25 - 29	30+
40-49	3.0%	3.0%	9.0%
50-54	4.0%	6.0%	10.0%
55-59	6.8%	10.2%	17.0%
60-64	9.6%	14.4%	24.0%
65 +	100.0%	100.0%	100.0%

For members hired after October 9, 2004, 3% per year the member's first retirement eligibility exceeds 45 is added to the retirement rate at first eligibility up to a maximum increase of 30% at age 55. For members in DROP as of July 1, 2016, retirement rates are multiplied by 110% to reflect that future employee contributions are no longer credited to the DROP balance.

b. DROP Participation

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

c. DROP Entry Date

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

d. DROP Interest Credit

Interest in the amount of 65% of the five-year average investment return, with a minimum of 2.50%, will be credited to existing DROP accounts on a monthly basis. For this actuarial valuation, the drop interest credit is assumed to be 5.40%.

e. Withdrawal of DROP and PROP Balances

Members are assumed to withdraw balances in equal annual installments over 10 years.



f. Mortality rates (for active and retired members)

- Healthy retirees - The Gender-Distinct Pub-2010 Public Safety Healthy Mortality Tables for males and females. The base rates were multiplied by 116% for males and 108% for females. The rates are projected on a fully generational basis by the ultimate values of scale MP-20 to account for future mortality improvements.
- Disabled males and females – The Gender-Distinct Pub-2010 Public Safety Disabled Retiree Mortality Tables are used without adjustment. The rates are projected on a fully generational basis by the ultimate values of scale MP-20 to account for future mortality improvements.
- Active members - The Gender-Distinct Pub-2010 Below-Median Income Public Safety Mortality Tables are used without adjustment. The rates are projected on a fully generational basis by the ultimate values of scale MP-20 to account for future mortality improvements.

Sample rates are shown below for 2022 (after multipliers):

Age	Healthy Retired Males	Healthy Retired Females	Disabled Males	Disabled Females	Healthy Active Males	Healthy Active Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)
25	0.04%	0.02%	0.09%	0.06%	0.04%	0.02%
30	0.04%	0.02%	0.10%	0.08%	0.05%	0.03%
35	0.05%	0.03%	0.12%	0.10%	0.05%	0.04%
40	0.06%	0.05%	0.15%	0.14%	0.07%	0.06%
45	0.12%	0.08%	0.21%	0.19%	0.09%	0.08%
50	0.19%	0.14%	0.30%	0.26%	0.14%	0.10%
55	0.30%	0.24%	0.41%	0.39%	0.20%	0.14%
60	0.50%	0.41%	0.62%	0.59%	0.30%	0.19%
65	0.87%	0.71%	1.01%	0.91%	0.47%	0.26%
70	1.57%	1.24%	1.64%	1.39%	0.88%	0.53%
75	2.85%	2.15%	2.81%	2.12%	1.65%	1.06%
80	5.18%	3.75%	4.90%	3.47%	3.11%	2.13%



g. Termination Rates and Disability Rates

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

Termination		
Service	Male	Female
1	3.26%	3.26%
3	2.56%	2.56%
5	2.02%	2.02%
7	1.59%	1.59%
9	1.25%	1.25%
11	0.98%	0.98%
13	0.77%	0.77%
15	0.61%	0.61%
17	0.48%	0.48%
19	0.38%	0.38%
20 +	0.10%	0.10%

Age Based Rates of Disability		
Age	Male	Female
20	0.1149%	0.1149%
25	0.1145%	0.1145%
30	0.1197%	0.1197%
35	0.1321%	0.1321%
40	0.1516%	0.1516%
45	0.1785%	0.1785%
50	0.2126%	0.2126%
55	0.2538%	0.2538%
60	0.3023%	0.3023%

1% is also added to the rates above during the period that members hired post-2004 would have been eligible to retire under pre-2004 retirement eligibilities, but are not yet eligible.



## 6. Other Assumptions

- a. Percent married: 90% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Valuation payroll: To determine the amortization rate, the payroll used is the amount budgeted by the City for the fiscal year following the valuation date increased by one year of payroll growth.
- c. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- d. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- e. Percent electing deferred termination benefit: 50% of vested terminating members are assumed to elect a refund rather than take a deferred benefit at age 60.
- f. There will be no recoveries once disabled.
- g. No surviving spouse will remarry.
- h. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available.
- i. Administrative expenses: Administrative expenses are accounted for as an explicit component on the normal cost rate.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- l. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- m. Decrement relativity: Decrement rates are converted to probabilities in order to account for multiple decrements.
- n. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in our Report, and the actual payroll payable at the time contributions are made.
- o. Benefit Service: All members are assumed to accrue one year of service each year. Exact fractional service is used to determine the amount of benefit payable.



## 7. Participant Data

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

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

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

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

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

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



## SUMMARY OF PLAN PROVISIONS

### Covered Members

All police officers sworn before September 1, 1975 are covered under Plan 1, except those who elected by December 31, 1981 to participate in Plan 3.

All police officers sworn on or after September 1, 1975, but before September 1, 1981 are covered under Plan 2, except those who elected by December 31, 1981 to participate in Plan 3 and those Plan 1.

All other police officers are covered by Plan 3, except those from Police Cadet Classes 70 and 71 who elected to pay additional contributions and transfer to Plan 1.

### Final Compensation

Prior to November 28, 1998

Monthly base salary paid to the participant in his/her last month of service. For any participant from a position held for less than 3 years, final compensation is the average monthly base salary for the 3 years prior to retirement.

After November 28, 1998 but prior to July 1, 2001

Monthly total direct pay less overtime paid to the participant in his/her last month of service. For any participant from a position held for less than 3 years, final compensation is the average monthly base pay for the 3 years prior to retirement plus the other current components of total direct pay.

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

Highest biweekly pay period (excluding overtime) during the last 26 pay periods annualized. Amounts not paid on a biweekly basis are deducted from period paid. Annual amounts are divided by 26 and added to the highest pay period, including motorcycle allowances.

On or after October 9, 2004

Average of the last three years of compensation (excluding exempt time, overtime and strategic officer staffing pay). This average will be phased in beginning with the pay period ending after October 9, 2004 until the new definition is fully phased in after 78 pay periods.

### Service Retirement

#### Eligibility

- ▶ Sworn prior to October 9, 2004
- ▶ Sworn on or after October 9, 2004

20 years of service.

The age at which the sum of age and years of service is at least 70 (Rule of 70).



## Benefit

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



▶ After October 9, 2004 Participants sworn prior to October 9, 2004 will receive the highest of the following alternatives using Final Average Compensation effective after October 9, 2004, from October 9, 2004 through October 7, 2007:

- 1) 2.75% of Final Average Compensation for each of the first 20 years of service plus 2% of Final Average Compensation for each year of service in excess of 20 years, with a maximum of 80% of Final Average Compensation.
- 2) Benefit participant would have received had participant retired or entered the DROP immediately before October 9, 2004
- 3) Benefit calculated using a sliding average of the pay received for the pay periods elapsed since October 9, 2004.

New participants after October 9, 2004:

2.25% of Final Average Compensation for each of the first 20 years of service plus 2% of Final Average Compensation for each year of service in excess of 20 years, with a maximum of 80% of Final Average Compensation.

#### Additional Benefits

An extra monthly benefit of \$150.00 is payable for life. Effective November 28, 1998, a \$5,000 lump sum is payable upon retirement for members sworn prior to October 9, 2004.

#### Terminated Vested Pension Benefit

##### Eligibility

Sworn in before October 9, 2004 and more than 10 but less than 20 years of service. Termination on or after November 28, 1998.

##### Benefit

▶ Sworn prior to October 9, 2004

2.75% of final average compensation times years of service. This benefit commences at age 60 or at termination of service if later.

▶ Sworn on or after October 9, 2004

2.25% of final average compensation times years of service. This benefit commences at the age at which the sum of age and years of service is at least 70 (Rule of 70) or at termination of service if later.

#### Deferred Retirement Option Plan ( DROP)

##### Eligibility

20 years of service and sworn in prior to October 9, 2004.

##### Benefit

▶ After September 1, 1995 but prior to September 1, 1997 Eligible participants may elect to participate in the DROP until they leave active service. The member's retirement pension will be calculated based on service and earnings at the time the DROP is elected.



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

- The member’s monthly retirement pension, including applicable cost-of-living adjustments,
- The member’s contribution to the Pension System, limited to 8.75% of pay, and
- Investment earnings/losses at the rate of the Pension System’s earnings/losses averaged over a five-year period. Effective July 1, 2001, this rate is subject to a minimum of 0%.

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

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

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

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

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

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

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

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

After October 9, 2004

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

After July 1, 2016

Participants may participate in the DROP for a maximum of 20 years. Cost of living adjustments will not be granted while still active, and the member’s contributions to the Pension System will no longer be credited to the DROP account. DROP accounts will be credited with interest equal 65% of the five-year average investment return, with a minimum of 2.50%.



Benefit Recalculation	Effective July 1, 2001, monthly benefit at retirement will be recalculated to be the greater of (i) current monthly benefit, or (ii) monthly benefit based on service at DROP entry and Final Compensation at retirement date. The recalculation provision was discontinued effective July 1, 2016.
Back DROP Option	Effective on July 1, 2001, a back DROP option is available for all eligible participants. The DROP account is recalculated under the option based on what the account balance would have been had the participant elected the DROP earlier than he/she actually did. The initial DROP entry date cannot be backdated prior to September 1, 1995 or prior to 20 years of credited service, and must be on the first of the month selected. The Back DROP provision was discontinued effective July 1, 2016.

**Postretirement  
Option Plan ( PROP)**

Eligibility	Retired from DROP and sworn in prior to October 9, 2004.
-------------	--

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

**Partial Lump Sum  
Optional Payment ( PLOP)**

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

**Disability Retirement**

Eligibility	Effective July 1, 2001, a disabled participant is eligible for Disability Retirement as defined below:
	– Disability is defined as “unable to perform his/her usual and customary duties as a police officer”.



Benefit

▶ Duty-connected

The service retirement benefit accrued to date of disability. For participants before October 9, 2004, the disability benefit is 2.75% of final average pay times years of service with a minimum of 55% of final average pay. For participants after October 9, 2004, the disability benefit is 2.25% of final average pay times years of service with a minimum of 45% of final average pay.

Additional Benefits

For participants before October 9, 2004, an education allowance equal to 100% of final compensation less disability benefit is payable for up to four years for off-duty or duty-related disability. Proportionate members injured while on-duty as a municipal worker will receive immediate off-duty benefit upon Board approval.

**Survivor Benefits**

Eligibility

Surviving spouses and dependent children and parents of participants, including surviving spouses of retired or disabled participants who were not married at the time of retirement or disability, provided the spouse was married to the participant for at least 5 years at the time of death.

Benefit

▶ Prior to September 1, 1997

If duty-connected: monthly lifetime benefit equal to 100% of final compensation at date of death.

If not duty-connected: monthly lifetime benefit equal to 100% of the service retirement benefit the participant had accrued at the time of death.

Spouse's benefit upon death after retirement: monthly lifetime benefit equal to actual benefit payable at time of death.

Dependent children's benefit if no surviving spouse: the benefit that would have been payable to the spouse is divided equally among the dependent children.

If there is a surviving spouse, the dependent children of Plan 1 and Plan 2 participants receive \$25 per month. Dependent children include unmarried children who are under age 18, and for Plan 3, full-time students under age 22, or permanently disabled children.



Dependent parent's income if no surviving spouse or children, but there is a dependent parent: the benefit that would have been payable to the spouse will be paid to the dependent parent.

- ▶ After September 1, 1997 but prior to July 1, 2001
- ▶ After July 1, 2001

The Pension System recomputed the benefit of each survivor whose original benefit was computed prior to September 1, 1997. The benefit was increased in the same manner as the retiree's benefit.

The Pension System recomputed the benefit of each survivor whose original benefit was computed prior to July 1, 2001. The benefit was increased in the same manner as the retiree's benefit.

#### Additional Benefits

Effective December 1, 1998, a \$5,000 lump sum is paid upon the death of an active member who was sworn in prior to October 9, 2004.

Effective July 1, 2001, an extra monthly benefit of \$150.00 is payable for life. Children receiving equivalent of the spouse's benefit do not receive this additional benefit.

#### Benefit Adjustments

##### Cost-of-Living

- ▶ Prior to October 9, 2004
- ▶ Between October 9, 2004 and July 1, 2016
- ▶ After July 1, 2016

Monthly benefits for participants receiving payments are increased each April 1 by 2/3 of the increase in the Consumer Price Index for All Urban Consumers (CPI-U) for the preceding calendar year. Effective September 1, 1997 this increase is subject to a minimum of 3.0% per year compounded and a maximum increase of 8.0% per year compounded.

Monthly benefits for participants receiving payments are increased each April 1 by 80% of the increase in the Consumer Price Index for All Urban Consumers (CPI-U) for the preceding year, with a minimum of 2.4% and a maximum of 8%.

Monthly benefits for participants receiving payments are increased each April 1 by 100% of the five-year average investment return minus 5.00%, with a minimum of 0.00% and a maximum of 4.00%. Members will receive their COLA once they reach age 55.



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

**Contributions**

**Employee Contributions**

- ▶ Prior to December 1, 1998 Each participant contributes 8.75% of base salary.
- ▶ After December 1, 1998 but before October 9, 2004 Each participant contributes 8.75% of average total direct pay less overtime.
- After October 9, 2004
  - Members sworn in prior to October 9, 2004 Each participant contributes 9.00% of pay. The additional 0.25% will be credited to the Plan’s general fund. 8.75% of pay is used for purposes of crediting eligible DROP accounts
  - Others Each participant contributes 10.25% of pay, which will be credited to the Plan’s general fund.
- ▶ After July 1, 2016 Each participant contributes 10.50% of pay, which will be credited to the Plan’s general fund.

**Refunds** Contributions are refunded without interest.

**Employer Contribution** The City of Houston will contribute the City Contribution Rate which will consist of a normal cost contribution and a fixed layer closed amortization schedule, with each new loss layer having a 30-year period. Each layer will be assumed to begin with the fiscal year beginning 12 months after the valuation date.



## STATISTICAL SECTION

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## Summary

This section of the System's annual comprehensive financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about the System's overall financial health. All information presented was derived from the comprehensive annual financial reports for the relevant year and/or the System's benefits administration system.

### *Financial Trends*

The **Changes in Fiduciary Net Position** schedule shows the additions and deductions from plan net assets and the resulting changes in plan net assets for the ten years ending June 30, 2022. Contributions from members and the City have grown steadily, increasing 57% during this ten year period. At the same time, deductions from plan net assets, which are primarily for benefits paid to members, have increased 86% during this period. The System's investment income during this ten year period, even with a losses in several years, provided 62% of additions to plan net assets.

City and member contributions to the System are external sources of additions to plan net assets. The **Contribution Rates** schedule shows what percent the City's and the members' contributions are of payroll for the ten years ending June 30, 2022. The accompanying chart of **Contributions and Benefits Paid** compares the total contributions made and the benefits paid for the ten years ending June 30, 2022. While the growth in benefits paid exceeds the growth in contributions, under the July 1, 2017 amendment to the System's governing statute, the System received \$750 million from pension obligation bonds in fiscal year 2018 and changes were made to the member and City contributions, COLAs, and benefits with the purpose of addressing the System's unfunded liability through a risk sharing approach.

Contributions are not the only source from which benefits are paid. Earnings from the System's investments are the fund's internal source of and, in most years, the largest component of additions to plan net assets. The **Investment Income** schedule provides details of the System's net investment gain/loss for the ten years ending June 30, 2022.

**Deductions from Net Position for Benefits and Refunds by Type** presents a detailed view of the benefits and refunds paid to members for the ten years ending June 30, 2022, and the accompanying chart graphically represents this data. Service retirements have historically accounted for the majority of benefit payments, growing over the last ten years as the number of retirees has increased. Lump sum benefits are payments members and survivors receive at their discretion from their lump sum accounts either on or after the date they begin receiving monthly benefit payments, and therefore vary from year to year. Lump sum benefits decreased (25.2)% year over year in fiscal year 2022 to \$107,858 thousand after having increased 24.3% in fiscal year 2021. Service and disability retirements combined increased 5.5% year over year in fiscal year 2022 to \$264,424 thousand after having increased 4.7% in fiscal year 2021.

**Valuation of Assets as a Percent of Pension Liabilities** shows the percentage of the pension liability that is funded and **Net Assets Compared to Pension Liability** compares the actuarial value of the System's assets to the actuarial accrued liability. These charts graphically represent the funding progress of the System for the ten years ending June 30, 2022. The July 1, 2017 amendments to the System's governing statute addressed the System's unfunded liability through a risk sharing approach. With the \$750 million from pension obligation bonds in fiscal year 2018, the changes made to the member and City contributions, COLAs, and benefits, and adequate earnings and gains provided from investments, the System has a more sustainable funded status.

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## STATISTICAL SECTION

### *Participant Information*

The **Membership** schedule provides a breakdown of the System's membership for the ten years ending June 30, 2022. For fiscal year 2022, active members decreased by 82 to 5,162 and retired members and their beneficiaries increased by 187. During the past ten years, the number of active members has decreased by (3.8)% while the number of retired members and their beneficiaries increased by 45.8%.

### *Operating Information*

The **Pensions in Force** and **Pensions Awarded** schedules provide the number of pensions by type, age and payment amount for the year ended June 30, 2022.

The **Average Monthly Benefit Amounts by Years Credited Service** schedule presents the average final average salary and the number of retired members, in five-year increments of credited service, for the ten years ended June 30, 2022.

The **DROP and PROP Activity** schedules provide information about the total amount in DROP and PROP accounts and the total number of participants as well as the changes to those totals for the ten years ending June 30, 2022.



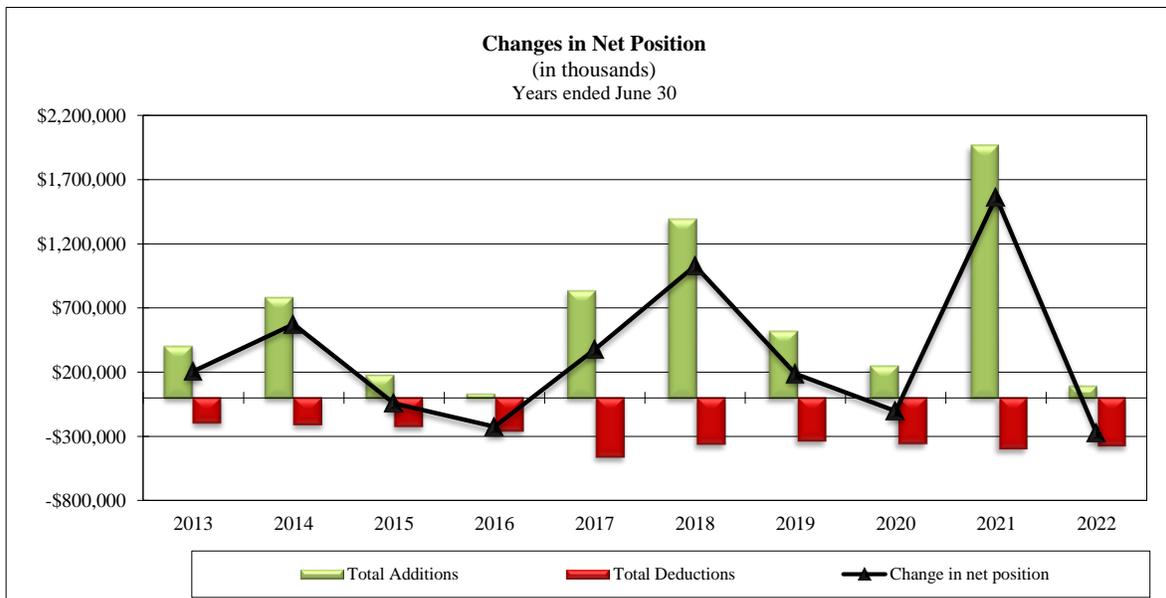
**STATISTICAL SECTION**

**Changes in Fiduciary Net Position  
Previous Ten Fiscal Years  
(\$000's)**

Fiscal Year	2013	2014	2015	2016	2017
<b>Additions</b>					
City contributions	\$ 93,392	\$ 103,372	\$ 113,665	\$ 137,392	\$ 133,805
Members contributions	35,586	37,012	37,719	39,017	40,104
Investment income (net of expenses)	281,724	649,022	35,249	(136,018)	667,171
Securities lending income (net of expenses)	269	131	92	185	305
<b>Total additions to plan net assets</b>	<b>410,971</b>	<b>789,537</b>	<b>186,725</b>	<b>40,576</b>	<b>841,385</b>
<b>Deductions:</b>					
Benefits paid to members	199,255	211,690	225,656	259,076	458,733
Refunds to members	641	906	945	978	1,696
Professional and administrative expense	3,668	3,439	3,478	4,585	4,238
<b>Total deductions from plan net assets</b>	<b>203,564</b>	<b>216,035</b>	<b>230,079</b>	<b>264,639</b>	<b>464,667</b>
<b>Change in net position</b>	<b>\$ 207,407</b>	<b>\$ 573,502</b>	<b>\$ (43,354)</b>	<b>\$ (224,063)</b>	<b>\$ 376,718</b>

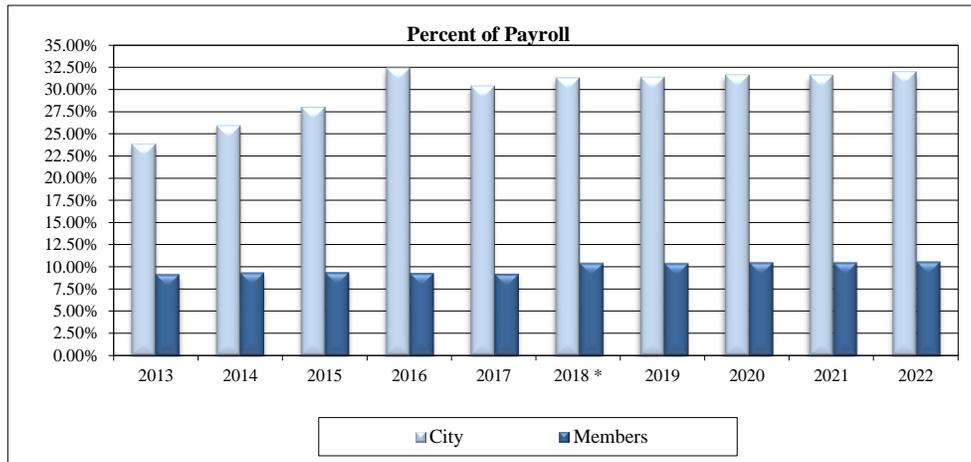
Fiscal Year	2018	2019	2020	2021	2022
<b>Additions</b>					
City contributions *	\$ 887,143	\$ 142,429	\$ 149,078	\$ 151,094	\$ 152,375
Members contributions	45,254	46,896	49,062	49,749	50,028
Investment income (net of expenses)	462,801	339,870	61,007	1,764,836	(98,888)
Securities lending income (net of expenses)	279	296	186	146	351
<b>Total additions to plan net assets</b>	<b>1,395,477</b>	<b>529,491</b>	<b>259,333</b>	<b>1,965,825</b>	<b>103,866</b>
<b>Deductions:</b>					
Benefits paid to members	361,033	335,600	355,373	394,893	372,282
Refunds to members	1,329	2,278	2,209	2,433	2,645
Professional and administrative expense	3,679	3,580	3,922	3,724	4,202
<b>Total deductions from plan net assets</b>	<b>366,041</b>	<b>341,458</b>	<b>361,504</b>	<b>401,050</b>	<b>379,129</b>
<b>Change in net position</b>	<b>\$ 1,029,436</b>	<b>\$ 188,033</b>	<b>\$ (102,171)</b>	<b>\$ 1,564,775</b>	<b>\$ (275,263)</b>

\* City contributions in FY 2018 include a one time \$750,000 thousand payment received from pension obligation bonds.

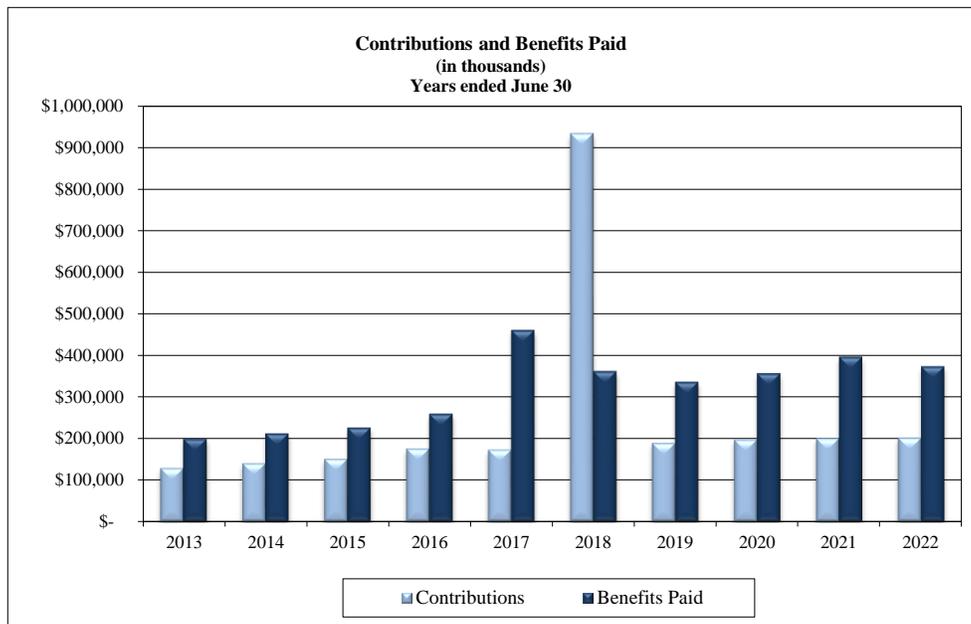


**STATISTICAL SECTION**  
**Contribution Rates**  
**Previous Ten Fiscal Years**

Fiscal Year	Percent of Payroll	
	City	Members
2013	23.83%	9.08%
2014	25.88%	9.27%
2015	27.98%	9.29%
2016	32.38%	9.20%
2017	30.37%	9.10%
2018 *	31.28%	10.32%
2019	31.32%	10.31%
2020	31.59%	10.40%
2021	31.57%	10.40%
2022	31.97%	10.50%



\* 2018 percent of payroll does not include the \$750,000,000 the City contributed through Pension Obligation Bonds. This amount is included in the contributions total in the table below.



STATISTICAL SECTION

**Investment Income**  
**Previous Ten Fiscal Years**  
**(\$000's)**

Fiscal Year	2013	2014	2015	2016	2017
<b>Investing activities</b>					
Net appreciation (depreciation) in fair value of investments	\$ 241,324	\$ 625,973	\$ 21,504	\$ (152,667)	\$ 632,552
Interest	32,330	25,288	16,156	12,322	15,789
Dividends	20,238	18,119	20,714	18,714	32,923
Other income *	2,550	2,167	-	-	-
<b>Total</b>	<b>296,442</b>	<b>671,547</b>	<b>58,374</b>	<b>(121,631)</b>	<b>681,264</b>
Less investment expense	(14,718)	(22,525)	(23,125)	(14,387)	(14,093)
<b>Net income (loss) from investing activities</b>	<b>281,724</b>	<b>649,022</b>	<b>35,249</b>	<b>(136,018)</b>	<b>667,171</b>
<b>Securities lending activities</b>					
Securities lending income	359	175	123	250	407
Securities lending expense	(90)	(44)	(31)	(65)	(102)
<b>Net income from securities lending activities</b>	<b>269</b>	<b>131</b>	<b>92</b>	<b>185</b>	<b>305</b>
<b>Total investment income (loss)</b>	<b>281,993</b>	<b>649,153</b>	<b>35,341</b>	<b>(135,833)</b>	<b>667,476</b>

Fiscal Year	2018	2019	2020	2021	2022
<b>Investing activities</b>					
Net appreciation (depreciation) in fair value of investments	\$ 413,755	\$ 278,112	\$ 3,478	\$ 1,712,466	\$ (154,960)
Interest	31,795	46,331	40,219	24,677	29,855
Dividends	31,590	28,926	25,197	34,722	43,663
Other income	-	-	23	26	-
<b>Total</b>	<b>477,140</b>	<b>353,369</b>	<b>68,917</b>	<b>1,771,891</b>	<b>(81,442)</b>
Less investment expense	(14,339)	(13,499)	(7,910)	(7,055)	(17,446)
<b>Net income (loss) from investing activities</b>	<b>462,801</b>	<b>339,870</b>	<b>61,007</b>	<b>1,764,836</b>	<b>(98,888)</b>
<b>Securities lending activities</b>					
Securities lending income	373	394	248	195	468
Securities lending expense	(94)	(98)	(62)	(49)	(117)
<b>Net income from securities lending activities</b>	<b>279</b>	<b>296</b>	<b>186</b>	<b>146</b>	<b>351</b>
<b>Total investment income (loss)</b>	<b>\$ 463,080</b>	<b>\$ 340,166</b>	<b>\$ 61,193</b>	<b>\$ 1,764,982</b>	<b>\$ (98,537)</b>

\* The June 30, 2011 Agreement with the City allowed for a shortfall in the City's fixed payment for contributions for fiscal years 2012 and 2013, for which the City started making quarterly interest payments of \$542 thousand in fiscal year 2013 and 2014. These payments are included in Other income.

STATISTICAL SECTION

**Deductions from Net Position for Benefits and Refunds by Type  
Previous Ten Fiscal Years  
(\$000's)**

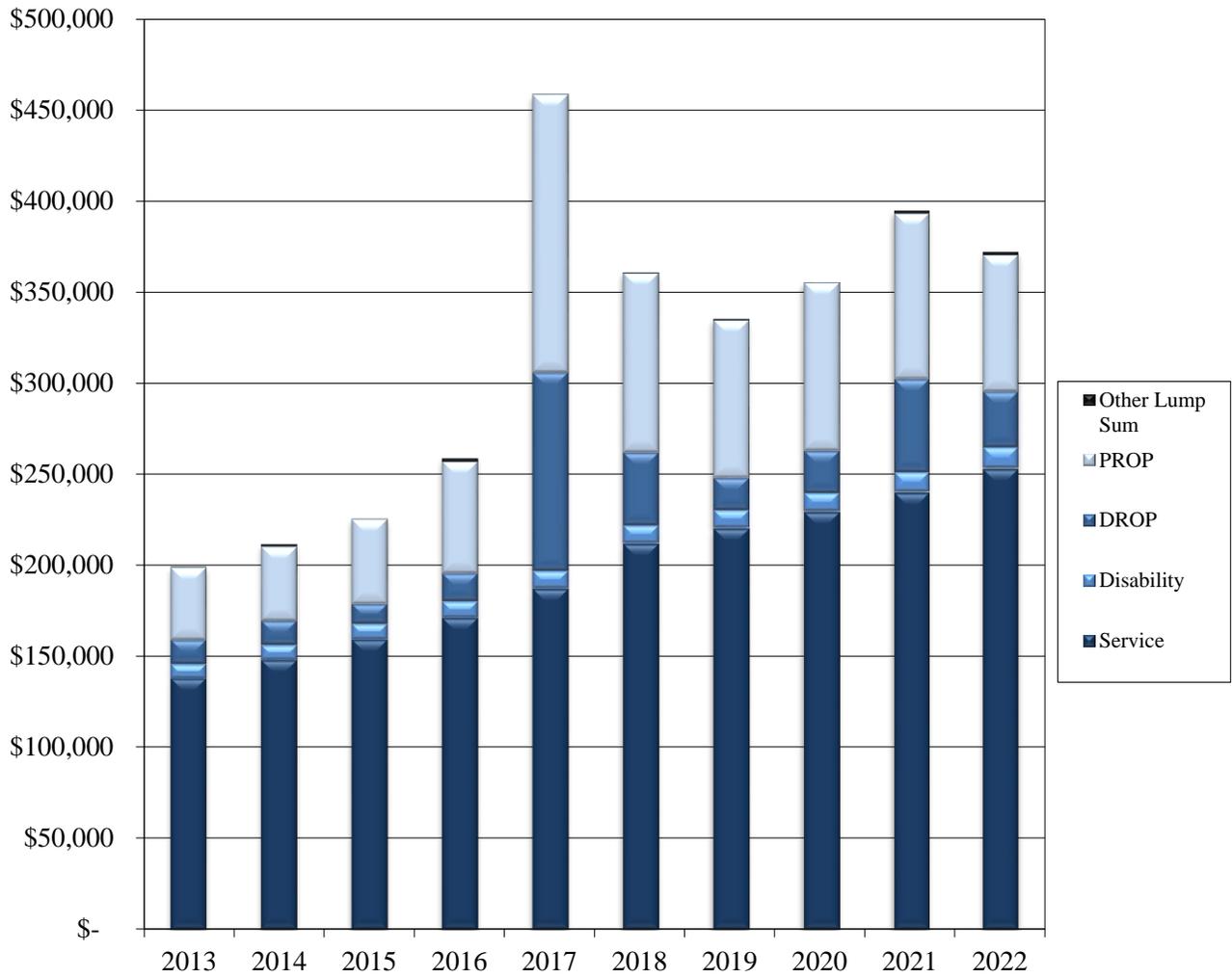
Fiscal Year	2013	2014	2015	2016	2017
<b>Type of Benefit</b>					
Service					
Retirees	\$ 116,217	\$ 125,616	\$ 135,705	\$ 145,866	\$ 159,686
Survivors	21,586	22,333	23,510	25,244	27,371
Disability					
Retirees - duty	5,378	5,517	5,678	6,119	6,398
Retirees - nonduty	546	598	626	629	950
Survivors	2,120	2,195	2,290	2,344	2,398
Lump Sum					
DROP distributions	13,334	13,526	11,054	15,431	109,051
PROP distributions	39,857	40,623	46,575	61,580	152,780
Other *	217	1,282	218	1,863	99
<b>Total benefits</b>	<b>\$ 199,255</b>	<b>\$ 211,690</b>	<b>\$ 225,656</b>	<b>\$ 259,076</b>	<b>\$ 458,733</b>
<b>Type of Refund</b>					
Death	\$ -	\$ -	\$ -	\$ -	\$ -
Separation	641	906	945	978	1,696
<b>Total refunds</b>	<b>\$ 641</b>	<b>\$ 906</b>	<b>\$ 945</b>	<b>\$ 978</b>	<b>\$ 1,696</b>

Fiscal Year	2018	2019	2020	2021	2022
<b>Type of Benefit</b>					
Service					
Retirees	\$ 182,932	\$ 189,982	\$ 197,083	\$ 205,982	\$ 216,320
Survivors	28,956	30,238	32,183	33,951	36,533
Disability					
Retirees - duty	6,598	6,779	6,890	7,182	7,448
Retirees - nonduty	724	692	701	703	725
Survivors	2,462	2,430	2,555	2,935	3,398
Lump Sum					
DROP distributions	40,187	17,818	23,365	51,462	30,924
PROP distributions	98,690	86,791	92,516	91,194	75,174
Other *	484	870	80	1,484	1,760
<b>Total benefits</b>	<b>\$ 361,033</b>	<b>\$ 335,600</b>	<b>\$ 355,373</b>	<b>\$ 394,893</b>	<b>\$ 372,282</b>
<b>Type of Refund</b>					
Death	\$ -	\$ -	\$ -	\$ -	\$ -
Separation	1,329	2,278	2,209	2,433	2,645
<b>Total refunds</b>	<b>\$ 1,329</b>	<b>\$ 2,278</b>	<b>\$ 2,209</b>	<b>\$ 2,433</b>	<b>\$ 2,645</b>

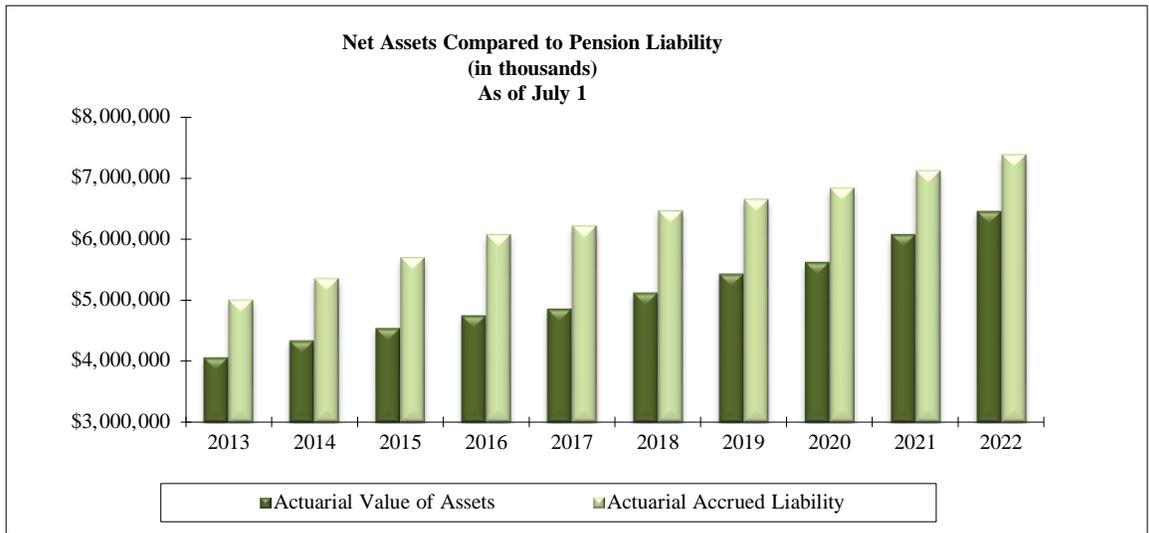
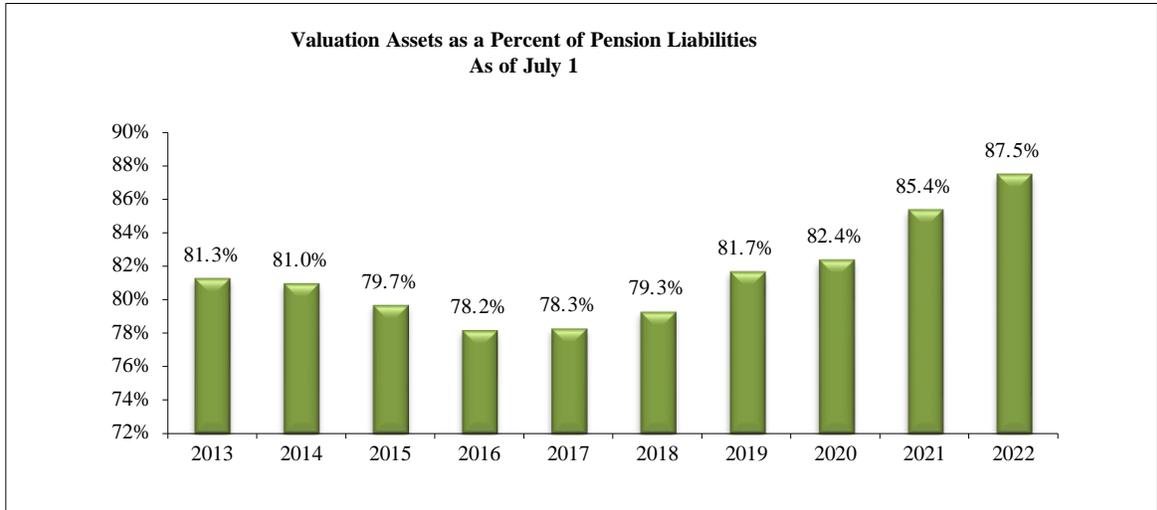
\* Lump Sum, Other: Under the provisions of Article 6243g-4, Vernon's Annotated Texas Statutes (VATS), Sec. 12(b) and Sec. 15(c) a member who retires, including a member who was a DROP participant, and begins to receive a monthly service pension shall receive a one-time lump sum payment of \$5,000. All one-time lump sum payments of \$5,000 are reported with the DROP distributions.

Article 6243g-4, Vernon's Annotated Texas Statutes (VATS), Sec. 15(h) provides for the payment of an additional monthly disability benefit in the form of a lump sum to assist members retired due to disability with the costs of an education or training program. Payment of the additional monthly disability benefit occurs only after the member successfully completes each semester.

**Total Benefit Payments by Type**  
 (in thousands)  
 Years ended June 30



**STATISTICAL SECTION**

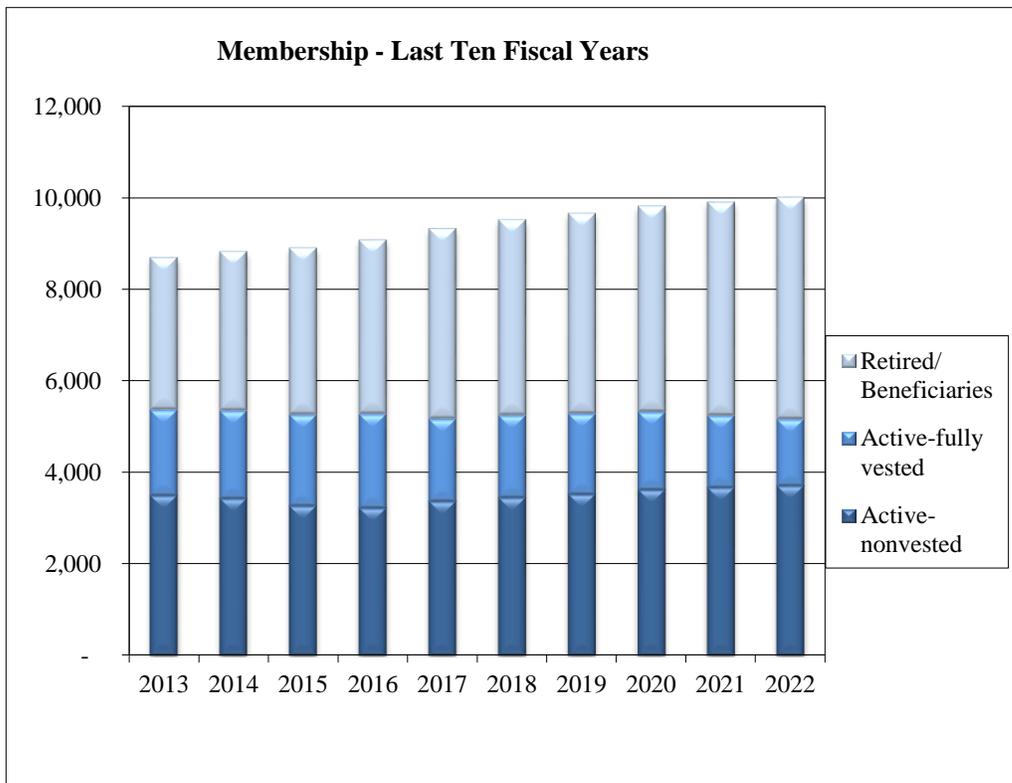


Charts through most recent actuarial valuation dated July 1, 2021.

**STATISTICAL SECTION**

**Membership  
Last Ten Fiscal Years**

Fiscal Year	Active		Retired/ Beneficiaries	Terminated Vested	Totals
	Nonvested	Fully Vested			
2013	3,481	1,885	3,326	24	8,716
2014	3,416	1,931	3,477	24	8,848
2015	3,255	2,007	3,647	22	8,931
2016	3,210	2,064	3,807	22	9,103
2017	3,357	1,814	4,157	27	9,355
2018	3,439	1,808	4,275	26	9,548
2019	3,509	1,773	4,376	31	9,689
2020	3,610	1,710	4,500	40	9,860
2021	3,654	1,590	4,662	40	9,946
2022	3,696	1,466	4,849	54	10,065



STATISTICAL SECTION

**Total Pensions in Force by Type and by Age  
Year Ended June 30, 2022**

Age on June 30,	Total	Type of Pension		
		Service	Disability	Survivor
Under 40	28	-	8	20
40-44	25	7	9	9
45-49	88	58	14	16
50-54	342	279	37	26
55-59	679	599	37	43
60-64	1,035	928	30	77
65-69	909	792	21	96
70-74	800	646	18	136
75-79	483	340	4	139
80-84	220	112	4	104
85 and over	240	130	-	110
<b>Total</b>	<b>4,849</b>	<b>3,891</b>	<b>182</b>	<b>776</b>

**Pensions Awarded in Current Year by Type and by Age  
Year Ended June 30, 2022**

Age on June 30,	Total	Type of Pension		
		Service	Disability	Survivor
Under 40	2	-	-	2
40-44	6	6	-	-
45-49	21	19	-	2
50-54	72	65	3	4
55-59	90	88	-	2
60-64	68	56	-	12
65-69	22	11	-	11
70-74	7	-	-	7
75-79	13	-	-	13
80-85	5	-	-	5
85 and over	5	-	-	5
<b>Total</b>	<b>311</b>	<b>245</b>	<b>3</b>	<b>63</b>

**Pensions Awarded in Current Year by Type and by Monthly Amount  
Year Ended June 30, 2022**

Monthly Amount	Total	Type of Pension		
		Service	Disability	Survivor
Under \$1000	-	-	-	-
\$1000-\$2000	2	-	-	2
\$2000-\$3000	9	4	-	5
\$3000-\$4000	113	90	-	23
\$4000-\$5000	132	114	3	15
\$5000-\$6000	41	34	-	7
\$6000 and over	14	3	-	11
<b>Total</b>	<b>311</b>	<b>245</b>	<b>3</b>	<b>63</b>

STATISTICAL SECTION

Average Monthly Benefit Amounts  
Previous Ten Fiscal Years

Member Retiring During Fiscal Years	Years Credited Service										All Members
	<5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	>45	
2013 Avg monthly benefit	\$ -	\$ -	\$ -	\$ -	\$ 3,900	\$ 4,024	\$ 4,167	\$ 4,076	\$ 3,983	\$ 5,535	\$ 4,068
Avg final Avg salary	\$ -	\$ -	\$ -	\$ -	\$ 6,728	\$ 6,554	\$ 7,171	\$ 7,208	\$ 6,113	\$ 7,236	\$ 6,860
Avg DROP Balance	\$ -	\$ -	\$ -	\$ -	\$ 59,940	\$ 514,240	\$ 775,272	\$ 1,161,766	\$ 1,318,435	\$ 1,674,363	\$ 653,105
Number of retirees	-	-	-	-	19	58	43	23	2	1	146
2014 Avg monthly benefit	\$ -	\$ -	\$ -	\$ 2,375	\$ 3,769	\$ 4,117	\$ 4,162	\$ 4,029	\$ 3,802	\$ -	\$ 4,073
Avg final Avg salary	\$ -	\$ -	\$ -	\$ 5,106	\$ 6,713	\$ 6,728	\$ 6,841	\$ 7,217	\$ 6,019	\$ -	\$ 6,834
Avg DROP Balance	\$ -	\$ -	\$ -	\$ 5,000	\$ 87,531	\$ 578,735	\$ 762,664	\$ 1,135,941	\$ 1,309,578	\$ -	\$ 689,150
Number of retirees	-	-	-	1	21	51	82	26	1	-	182
2015 Avg monthly benefit	\$ -	\$ 2,069	\$ 1,246	\$ 3,454	\$ 3,811	\$ 4,022	\$ 4,286	\$ 3,994	\$ 4,346	\$ -	\$ 4,092
Avg final Avg salary	\$ -	\$ 4,491	\$ 5,277	\$ 6,361	\$ 6,786	\$ 6,608	\$ 7,112	\$ 7,083	\$ 7,076	\$ -	\$ 6,929
Avg DROP Balance	\$ -	\$ -	\$ -	\$ 5,000	\$ 132,108	\$ 524,044	\$ 751,329	\$ 1,153,557	\$ 1,443,545	\$ -	\$ 685,507
Number of retirees	-	2	1	4	33	42	78	27	5	-	192
2016 Avg monthly benefit	\$ 2,042	\$ 1,744	\$ 3,258	\$ 2,578	\$ 3,864	\$ 3,928	\$ 4,405	\$ 4,345	\$ 4,584	\$ -	\$ 4,183
Avg final Avg salary	\$ 4,432	\$ 3,785	\$ 5,784	\$ 6,687	\$ 6,831	\$ 6,812	\$ 7,198	\$ 7,939	\$ 8,747	\$ -	\$ 7,199
Avg DROP Balance	\$ -	\$ -	\$ -	\$ 217,215	\$ 106,042	\$ 552,746	\$ 897,392	\$ 1,303,984	\$ 1,842,540	\$ -	\$ 779,406
Number of retirees	1	1	1	3	41	17	92	25	5	-	192
2017 Avg monthly benefit	\$ -	\$ 1,254	\$ 2,514	\$ 3,723	\$ 4,015	\$ 4,130	\$ 4,470	\$ 4,434	\$ 4,475	\$ 5,943	\$ 4,355
Avg final Avg salary	\$ -	\$ 5,574	\$ 6,531	\$ 6,769	\$ 7,315	\$ 7,282	\$ 7,374	\$ 7,809	\$ 7,954	\$ 8,400	\$ 7,476
Avg DROP Balance	\$ -	\$ -	\$ -	\$ 5,000	\$ 183,834	\$ 428,829	\$ 927,025	\$ 1,312,229	\$ 1,769,362	\$ 2,272,697	\$ 899,158
Number of retirees	-	2	1	1	64	28	187	77	23	4	387
2018 Avg monthly benefit	\$ -	\$ 2,500	\$ 2,800	\$ 3,333	\$ 4,098	\$ 4,235	\$ 4,540	\$ 4,465	\$ 4,134	\$ -	\$ 4,306
Avg final Avg salary	\$ -	\$ 5,555	\$ 6,223	\$ 6,389	\$ 6,915	\$ 6,661	\$ 6,031	\$ 5,347	\$ 4,417	\$ -	\$ 6,319
Avg DROP Balance	\$ -	\$ -	\$ -	\$ 46,065	\$ 162,600	\$ 435,687	\$ 982,032	\$ 1,231,062	\$ 1,690,871	\$ -	\$ 657,970
Number of retirees	-	2	1	2	39	36	68	13	1	-	162
2019 Avg monthly benefit	\$ 1,988	\$ 1,036	\$ -	\$ 4,020	\$ 4,037	\$ 4,097	\$ 4,524	\$ 4,428	\$ 4,226	\$ -	\$ 4,216
Avg final Avg salary	\$ 4,418	\$ 4,604	\$ -	\$ 6,861	\$ 7,125	\$ 6,547	\$ 6,136	\$ 5,490	\$ 4,520	\$ -	\$ 6,338
Avg DROP Balance	\$ -	\$ -	\$ -	\$ -	\$ 140,098	\$ 443,321	\$ 1,081,425	\$ 1,295,577	\$ 1,801,150	\$ -	\$ 695,091
Number of retirees	1	1	-	3	35	42	41	22	4	-	149
2020 Avg monthly benefit	\$ -	\$ -	\$ -	\$ -	\$ 4,093	\$ 4,162	\$ 4,516	\$ 4,374	\$ 4,234	\$ -	\$ 4,254
Avg final Avg salary	\$ -	\$ -	\$ -	\$ -	\$ 7,336	\$ 6,679	\$ 6,198	\$ 5,452	\$ 4,629	\$ -	\$ 6,476
Avg DROP Balance	\$ -	\$ -	\$ -	\$ -	\$ 182,909	\$ 500,779	\$ 1,117,025	\$ 1,348,515	\$ 1,634,064	\$ -	\$ 724,703
Number of retirees	-	-	-	-	42	55	33	29	5	-	165
2021 Avg monthly benefit	\$ 1,099	\$ -	\$ 4,913	\$ 4,367	\$ 4,254	\$ 4,156	\$ 4,175	\$ 4,640	\$ 3,788	\$ 3,428	\$ 4,274
Avg final Avg salary	\$ 4,886	\$ -	\$ 6,733	\$ 7,940	\$ 7,750	\$ 6,808	\$ 6,102	\$ 6,005	\$ 4,219	\$ 3,436	\$ 6,579
Avg DROP Balance	\$ -	\$ -	\$ -	\$ -	\$ 145,817	\$ 491,722	\$ 910,300	\$ 1,415,626	\$ 1,649,189	\$ 2,073,218	\$ 761,093
Number of retirees	1	-	4	1	38	73	36	47	6	1	207
2022 Avg monthly benefit	\$ -	\$ -	\$ 2,395	\$ -	\$ 4,322	\$ 4,136	\$ 4,291	\$ 4,656	\$ 4,293	\$ -	\$ 4,321
Avg final Avg salary	\$ -	\$ -	\$ 7,096	\$ -	\$ 7,940	\$ 6,985	\$ 6,650	\$ 6,132	\$ 4,978	\$ -	\$ 6,849
Avg DROP Balance	\$ -	\$ -	\$ -	\$ -	\$ 189,967	\$ 500,707	\$ 802,282	\$ 1,471,347	\$ 1,797,146	\$ -	\$ 785,370
Number of retirees	-	-	1	-	55	92	27	60	13	-	248
Ten Years Ended June 30, 2021											
Avg Monthly Benefit	\$ 1,710	\$ 1,803	\$ 3,541	\$ 3,383	\$ 4,048	\$ 4,113	\$ 4,375	\$ 4,402	\$ 4,309	\$ 5,456	\$ 4,233
Avg Final Avg Salary	\$ 4,579	\$ 4,953	\$ 6,427	\$ 6,579	\$ 7,233	\$ 6,766	\$ 6,886	\$ 6,713	\$ 6,400	\$ 7,379	\$ 6,871
Avg DROP Balance	\$ -	\$ -	\$ -	\$ 51,585	\$ 150,816	\$ 499,115	\$ 891,999	\$ 1,316,536	\$ 1,713,785	\$ 2,139,728	\$ 754,714
Number of Retirees	3	8	9	15	387	494	687	349	65	6	2,030

The above chart includes all Service, Proportionate and Disability retirements. It does not include Survivor benefits or pending Delayed Retirements. The DROP Balance includes \$5,000 lump sum benefit.

**DROP Activity**  
**(dollars in thousands)**  
**Years ended June 30**

Fiscal Year	Accumulations	DROP Accounts			DROP Participants		
		Transfers to PROP	Distributions	Total	Entrants	Withdrawals	Total
2013	\$ 150,662	\$ (89,028)	\$ (13,334)	\$ 868,267	253	(143)	1,872
2014	147,948	(114,777)	(13,526)	887,912	232	(183)	1,921
2015	172,993	(128,413)	(11,054)	921,438	256	(186)	1,991
2016	189,245	(137,929)	(15,431)	957,323	253	(186)	2,058
2017	155,058	(228,259)	(109,051)	775,071	90	(342)	1,806
2018	162,511	(101,910)	(40,187)	795,485	137	(149)	1,794
2019	141,082	(95,753)	(17,818)	822,996	95	(140)	1,749
2020	135,285	(110,321)	(23,635)	824,325	89	(165)	1,673
2021	126,324	(120,406)	(51,463)	778,780	95	(197)	1,571
2022	136,476	(179,156)	(30,924)	705,176	77	(244)	1,404

**PROP Activity**  
**(dollars in thousands)**  
**Years ended June 30**

Fiscal Year	Accumulations	PROP Accounts			PROP Participants		
		Transfers from DROP	Distributions	Total	Entrants	Withdrawals	Total
2013	\$ 25,364	\$ 89,028	\$ (39,857)	\$ 515,672	162	(33)	1,109
2014	29,541	114,777	(40,623)	619,367	176	(28)	1,257
2015	41,104	128,413	(46,575)	742,309	176	(11)	1,422
2016	52,774	137,929	(61,580)	871,432	158	(11)	1,569
2017	49,295	228,259	(152,781)	996,205	208	(17)	1,760
2018	42,894	101,910	(98,706)	1,042,303	79	(15)	1,824
2019	46,255	95,753	(86,791)	1,097,520	82	(17)	1,889
2020	40,469	110,321	(92,516)	1,155,794	105	(19)	1,975
2021	28,552	120,406	(91,194)	1,213,558	108	(29)	2,054
2022	59,662	179,156	(75,174)	1,377,202	181	(27)	2,208



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