

2022

Annual Comprehensive Financial Report  
Year Ended December 31, 2022

A Component Unit of the State of Ohio





HIGHWAY PATROL

2022

OHIO HIGHWAY PATROL RETIREMENT SYSTEM

**ANNUAL COMPREHENSIVE  
FINANCIAL REPORT**

For the year ended December 31, 2022

RETIREMENT SYSTEM



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## Disclaimer

**This audit report is subject to review and acceptance by the Auditor of State's office, and the requirements of Ohio Revised Code § 117.25 are not met until the Auditor of State certifies this report. This process takes approximately two weeks and reports are subject to change if the Auditor of State determines that modification of a report is necessary to comply with required accounting or auditing standards or the Uniform Guidance.**



# Introductory Section



Government Finance Officers Association

Certificate of  
Achievement  
for Excellence  
in Financial  
Reporting

Presented to

**Ohio State Highway Patrol Retirement System**

For its Annual Comprehensive  
Financial Report  
For the Fiscal Year Ended

December 31, 2021

*Christopher P. Morill*

Executive Director/CEO



## Introductory Section

### Board of Trustees and Senior Staff



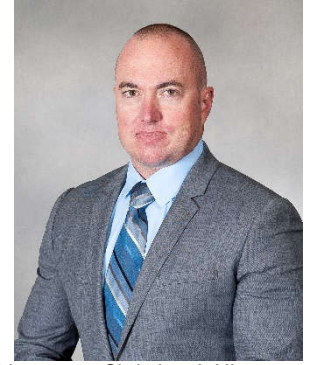
Captain Matthew L. Them  
*Employee Trustee / Chair*



Major (ret.) Darryl L. Anderson  
*Retiree Trustee / Vice-Chair*



Trooper Derek L. Malone  
*Employee Trustee*



Lieutenant Christian J. Niemeyer  
*Employee Trustee*



Sergeant Brice A. Nihiser  
*Employee Trustee*



Trooper Cynthia D. Wilt  
*Employee Trustee*



Colonel Charles A. Jones  
*Statutory Member*



Sergeant (ret.) Michael P. Kasler  
*Retiree Trustee*



Major (ret.) JP Allen  
*Governor's Investment Expert Appointee*



Joseph H. Thomas  
*General Assembly's Investment Expert Appointee*



Craig A. Warnimont  
*Treasurer of State's Investment Designee*



Captain (ret.) Carl Roark, Ph.D.  
*Executive Director*



Michael D. Press  
*Chief Investment Officer / General Counsel*

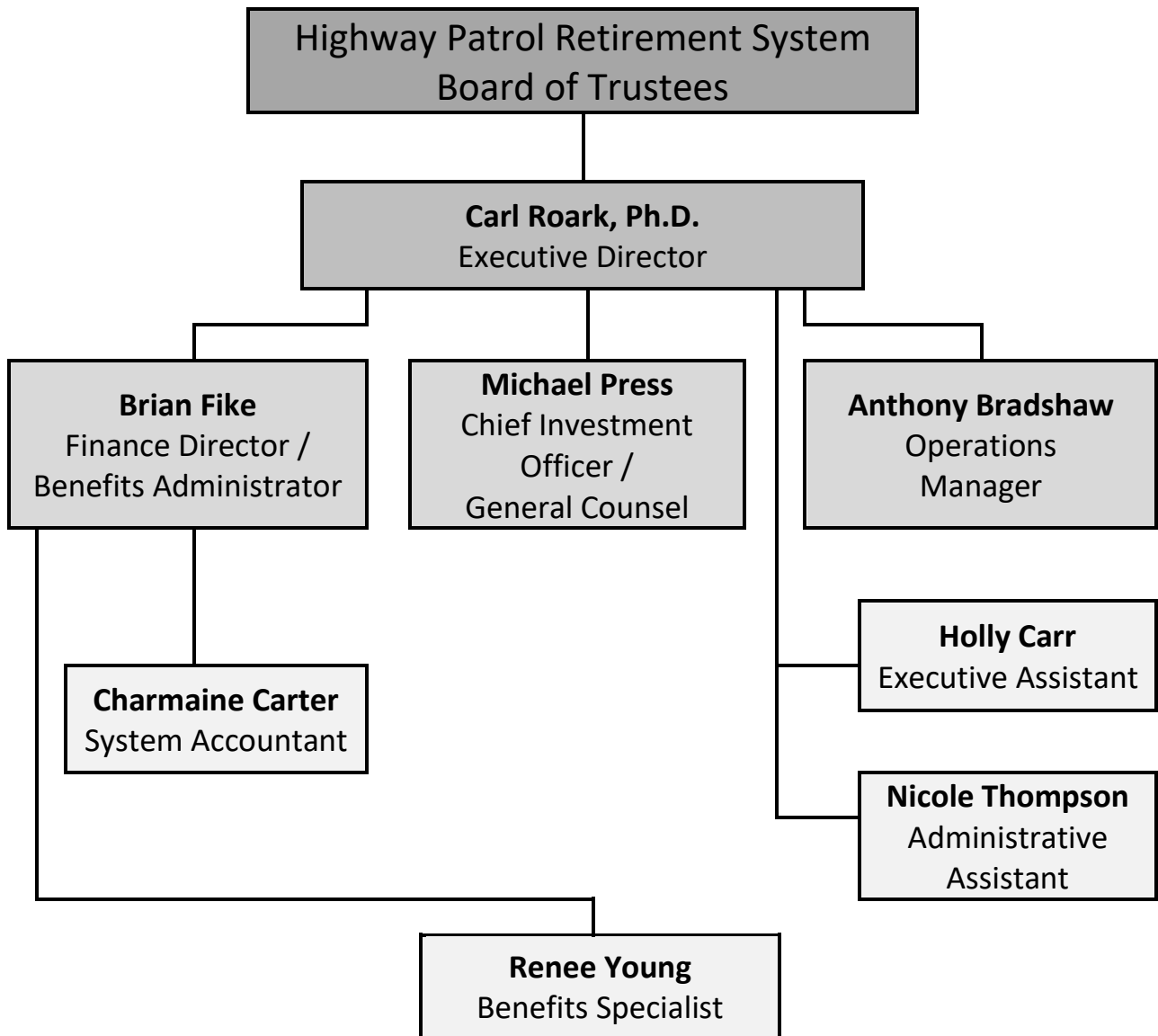


Brian C. Fike  
*Finance Director / Benefits Administrator*



Anthony C. Bradshaw  
*Operations Manager*

# Highway Patrol Retirement System Organizational Chart



See Page 9 for a list of consultants and investment managers.

## Introductory Section

### Consultants and Investment Managers

#### Consultants

<b>Medical Advisor</b> David A. Tanner, DO Columbus, Ohio	<b>Actuary</b> Foster & Foster Fort Myers, Florida	<b>Investment Consultant</b> Clearstead Cleveland, Ohio
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#### Investment Managers

<b>Alpine General Partner VIII, LLC</b> San Francisco, California <i>Private Equity</i>	<b>Harrison Street</b> Chicago, Illinois <i>Real Estate</i>	<b>Proterra Investment Partners</b> Minneapolis, Minnesota <i>Private Credit</i>
<b>Baillie Gifford Overseas Limited</b> Edinburgh <i>Global Equity - Growth</i>	<b>H.I.G. WhiteHorse</b> Miami, Florida <i>Fixed Income &amp; Private Equity</i>	<b>Quantum Energy Partners</b> Houston, Texas <i>Private Equity</i>
<b>Bain Capital Credit</b> Boston, Massachusetts <i>Distressed Credit</i>	<b>Invesco Trust Company</b> Atlanta, Georgia <i>International Equity</i>	<b>Silver Point Capital, L.P.</b> Greenwich, Connecticut <i>Fixed Income</i>
<b>Black Diamond Capital Management</b> Stamford, Connecticut <i>Private Equity</i>	<b>Johnson Institutional Management</b> Cincinnati, Ohio <i>Core Fixed Income</i>	<b>The Carlyle Group</b> Washington, D.C. <i>Private Equity</i>
<b>Blue Point Capital Partners</b> Cleveland, Ohio <i>Private Equity</i>	<b>Kayne Anderson Capital Advisors</b> Los Angeles, California <i>Energy/Mezzanine &amp; Private Equity</i>	<b>The Vanguard Group</b> Wayne, Pennsylvania <i>Domestic Equity</i>
<b>Carlson Capital</b> Dallas, Texas <i>Merger Arbitrage</i>	<b>Long Wharf Real Estate Partners</b> Boston, Massachusetts <i>High Yield Fixed Income</i>	<b>Westfield Capital Management</b> Boston, Massachusetts <i>Small Cap Growth Equity</i>
<b>Credit Suisse Asset Management</b> New York, New York <i>High Yield Fixed Income</i>	<b>Marathon Asset Management</b> New York, New York <i>Real Estate</i>	
<b>Dimensional Fund Advisors</b> Austin, Texas <i>Small Cap Blend / International Equity</i>	<b>MetLife Investment Management</b> Philadelphia, Pennsylvania <i>Emerging Markets</i>	
<b>Driehaus Capital Management</b> Chicago, Illinois <i>International Small Cap Growth Equity</i>	<b>Mondrian Investment Group (U.S.), Inc.</b> Wilmington, Delaware <i>Global Equity - Value</i>	
<b>DSC Meridian Capital</b> New York, New York <i>Credit Hedge Fund</i>	<b>Ninety One North America, Inc.</b> New York, New York <i>Global Equity - Core</i>	
<b>Evanston Capital Management</b> Evanston, Illinois <i>Fund of Hedge Funds</i>	<b>Oaktree Capital Management</b> New York, New York <i>Real Estate</i>	
<b>GCM Grosvenor</b> Chicago, Illinois <i>Private Equity</i>	<b>Pacific Investment Management Co.</b> Newport Beach, California <i>Real Estate</i>	
<b>Genstar Capital</b> San Francisco, California <i>Midmarket Buyout</i>	<b>Pantheon Ventures</b> San Francisco, California <i>Private Equity</i>	
<b>HarbourVest Partners</b> Boston, Massachusetts <i>Private Equity</i>	<b>Partners Group (USA)</b> New York, New York <i>Direct Infrastructure</i>	

See the Investment Section, Pages 80-82 for payments to investment managers and brokers.

## Introductory Section

### Legislative Summary

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There was no legislation passed in 2022 that impacts HPRS.



June 15, 2023

## **Letter of Transmittal**

Members of the Board of Trustees:

We are pleased to present to you the *Annual Comprehensive Financial Report (ACFR)* for the Highway Patrol Retirement System (HPRS) for the period ended December 31, 2022. This report is intended to provide financial, investment, actuarial, and statistical information in a single publication. Working with each HPRS staff member and various consultants employed by HPRS, HPRS management takes full responsibility for the accuracy and completeness of this report. The data presented in this report demonstrates the careful stewardship of the system's assets to enable the Board to provide excellent pension and health care benefits to our members.

HPRS was created by the Ohio Legislature in 1941 to provide pension benefits to the sworn officers and communications personnel of the Ohio State Highway Patrol (OSHP). Prior to this action of the Legislature, active-duty members of the OSHP contributed to the Ohio Public Employees Retirement System. Currently, only sworn officers, cadets in training to become sworn officers, and communications personnel hired prior to November 2, 1989 are permitted to be contributing members of HPRS. In 1974, the Legislature authorized HPRS to offer health care benefits to retired members if excess funds are available.

In addition to pension benefits, HPRS provides disability benefits to active-duty members, disabled both in the line of duty and not in the line of duty. Survivor and death benefits and health care coverage are provided for benefit recipients and eligible dependents. A full description of benefits provided by HPRS can be found in the *Summary of Plan Provisions* portion of the Actuarial Section.

### **Major Plan Initiatives and Changes in 2022**

The Board-approved Medicare exchange product with Willis Towers Watson (WTW) replaced the previous Aetna Medicare Advantage Plan beginning January 1, 2022. HPRS provides a Health Reimbursement Arrangement, or HRA for retirees to purchase Medicare plans on a closed exchange. The first year results shows HPRS experienced savings of approximately \$1.4 million when compared to 2021. In addition, members have had a very positive experience with the transition. The System's actuary Foster & Foster will complete their actuarial valuation of the health care fund in the second half of 2023 to determine the impact this transition has had to the solvency of the fund.

In 2023, the Board approved a similar HRA system, also with WTW for the pre-Medicare population, currently being served by Medical Mutual of Ohio. This arrangement is on schedule to launch January 1, 2024.

For 2022, the employee contribution rate remained at 14% of payroll. The Board approved a 3.00% COLA for eligible beneficiaries. The Board also approved an additional 3.00% COLA for 2023 to help protect our members' purchasing power.

## **Investments**

The primary objective of the Highway Patrol Retirement System is to provide eligible members and beneficiaries with scheduled pension benefits. It is particularly important that the Board develops and implements an investment strategy that provides the funds necessary to maintain the security and safety of the plan. With benefit recipients living longer, health care costs rising at a rate of many times the actual rate of inflation, and the ever-present possibility of financial downturns, such as the recession of 2008, the investment strategy must be monitored and adjusted constantly.

Consistent with prudent standards for preservation of capital and maintenance of liquidity, the goal of the fund is to earn the highest possible rate of return consistent with HPRS's tolerance for risk as determined periodically by the Board in its role as a fiduciary. This objective should ensure adequate funds to meet scheduled benefits. Diversification of assets will ensure that adverse or unexpected results from a security class will not have a detrimental impact on the entire portfolio.

On the heels of the global COVID-19 pandemic and world governments' response, inflation surged to 40 year record highs, and the market experienced its first significant downturn in several years. The S&P slumped 18.11%, the Dow Jones Industrial Average was down 8.78%, and the tech-heavy Nasdaq was hardest hit, finishing the year with a 33.1% decline. Internationally, there was no relief, as the MSCI World Index was down 17.73% in 2022.

While The Federal Reserve kept rates near zero as the economy recovered in 2021, helping markets reach new highs, it reversed course in 2022. As the U.S. entered a hyper-inflationary environment as a result of stimulus efforts undertaken in 2020 and 2021, the Fed raised the target Fed Funds rate early and often. The Fed took the rate from 0.25% at the beginning of the year to 4.50% in December in its effort to battle raging inflation. The hikes have continued into 2023 as inflation has remained stubbornly high, although some easing looks to be on the agenda in the second half of the year.

HPRS' investment portfolio slightly beat its benchmark of -9.53% with a loss of 9.46%. All asset classes with the notable exceptions of the system's real estate holdings and alternatives ended the year in negative territory, while slightly edging or closely mirroring their individual benchmarks.

A more detailed report on investment operations and performance can be found in the *Management's Discussion and Analysis* section, beginning on page 20, and the Investment Section, beginning on page 69.

### **Internal Controls**

The management of HPRS has implemented and is responsible for a system of internal accounting controls, designed to provide reasonable assurance of the safeguarding of assets and the reliability of financial records. Again in 2022, the Summit County Internal Audit Department (SCIAD) was retained to perform internal auditing services, specifically an audit of HPRS' IT assets, and its retroactive pay process for union members. Although one minor recommendation for improvement was given, no material weaknesses were identified. In 2023, SCIAD will again provide internal audit services for HPRS.

Because the cost of a control should not exceed the benefits to be derived, the objective is to provide reasonable, rather than absolute assurance, that the financial statements are free of any material misstatements. The internal accounting controls in place are adequate to meet the purpose for which they were intended and are reviewed annually by an external auditor. Please see the Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with Government Auditing Standards on page 66. The financial statements, supporting schedules, and statistical tables are presented fairly in all material respects.

### **Funding**

The funding of pension and health care benefits of HPRS comes from a combination of employer and employee contributions and investment returns. Ohio law requires public pension plans to be able to amortize pension obligations within a 30-year period. At the close of 2009, HPRS was not able to amortize pension liabilities in 30 years or less. The funding status percentage dropped from 80.9% at the end of 2007 to 59.5% at the end of 2011. Due to changes that were enacted by the Board in 2013 and 2014, the amortization period no longer exceeds the 30-year limit. The funding status for the period ended December 31, 2021, as reflected in the annual actuarial valuation, was 72.5%, and the amortization period was 24 years. On the health care side, under intermediate actuarial assumptions regarding future health care cost trends, the fund is expected to be solvent until 2035, according to the December 31, 2021 actuarial report. The System's actuary, Foster & Foster will complete their valuation as of December 31, 2022, which will be issued around mid-year 2023.

### **Awards**

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Highway Patrol Retirement System for its Annual Comprehensive Financial Report for the fiscal year ended December 31, 2021. To be awarded a Certificate of Achievement, a government 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 ACFR 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.

### **Professional Services**

To aid in efficient and effective management, professional services are provided to the HPRS by consultants appointed by the Board. The system's actuarial services are provided by Foster & Foster of Ft. Myers, FL. The investment advisor to the Board is Clearstead of Cleveland, Ohio. Under contract with the Auditor of State of Ohio, Rea and Associates of Columbus, Ohio, audited the financial records of the system. The Summit County Internal Audit Department of Akron, Ohio, was retained to perform internal auditing services.

### **Acknowledgements**

The preparation of this report is only possible through the combined efforts of the system's staff under the direction of the Board of Trustees. It is intended to provide complete and reliable information as a basis for making management decisions, a means for determining compliance with legal provisions, and a means for determining responsible stewardship over the assets contributed by the members and their employer, the State of Ohio.

Upon publication of this report at [www.ohprs.org](http://www.ohprs.org), HPRS will notify interested parties of its availability, including all State Highway Patrol facilities, professional consultants, investment managers, ranking members of the appropriate Ohio House and Senate committees, the Ohio Retirement Study Council, and the Office of Budget and Management.

Submitted for your review,



Carl Roark, Ph.D.  
Executive Director



Brian C. Fike, CPA  
Finance Director





# Financial Section

## INDEPENDENT AUDITOR'S REPORT

To the Ohio Highway Patrol Retirement System Board  
Franklin County, Ohio  
1900 Polaris Parkway, Suite 201  
Columbus, Ohio 43240

### **Report on the Audit of the Financial Statements**

#### ***Opinion***

We have audited the financial statements of the Ohio Highway Patrol Retirement System (the HPRS), a component unit of the State of Ohio, as of and for the year ended December 31, 2022, and the related notes to the financial statements, which collectively comprise the HPRS'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 respective fiduciary net position of the Ohio Highway Patrol Retirement System as of December 31, 2022, and the respective changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

#### ***Basis for Opinion***

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States (*Government Auditing Standards*). 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 HPRS, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

#### ***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 HPRS'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 opinions. 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 and *Government Auditing Standards* 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 and *Government Auditing Standards*, 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 HPRS'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 HPRS'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.

***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and pension and other post-employment benefit schedules, as listed in the table of contents, 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 GAAS, 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.

***Supplementary Information***

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the HPRS' basic financial statements. The schedules of administrative expenses, investment expenses, and payments to consultants 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 GAAS. In our opinion, the schedules of administrative expenses, investment expenses, and payments to consultants are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

***Other Information***

Management is responsible for the other information included in the annual report. The other information comprises the introductory, investment, actuarial, and statistical sections but does not include the basic financial statements and our auditor's report thereon. Our opinion on the basic financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

**Other Reporting Required by *Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated June 15, 2023 on our consideration of the HPRS's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the HPRS's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering HPRS's internal control over financial reporting and compliance.

*Rea & Associates, Inc.*

Rea & Associates, Inc.  
Gahanna, Ohio  
June 15, 2023

#### **Financial Highlights**

- As of December 31, 2022, HPRS had a net position of \$976,278,286. All assets are held in trust for pension and health care benefits and are available to meet HPRS's ongoing obligations to plan participants and their beneficiaries.
- During 2022, HPRS's fiduciary net position decreased by \$154,166,230, or 13.6%.
- HPRS's funding objective is to meet long-term benefit obligations through contributions and investment income. At December 31, 2021, the date of the most recent actuarial valuation, HPRS assets equaled 72.5% of the present value of pension obligations.
- Additions to fiduciary net position for the year were (\$53,949,498), which includes member and employer contributions of \$50,223,834 and an investment loss of \$109,026,402.
- Deductions from fiduciary net position decreased 6.2% over the prior year. Of this amount, pension benefits decreased by 0.4%, health care expenses decreased by 38.8% and administrative expenses increased by 37.5%.

#### **Overview of the Financial Statements**

The financial statements consist of the following components:

1. Statement of Fiduciary Net Position
2. Statement of Changes in Fiduciary Net Position
3. Notes to the Financial Statements

This report also contains other supplementary information in addition to the basic financial statements themselves.

The Statement of Fiduciary Net Position provides a snapshot of account balances at year-end, indicating the assets available for future payments to benefit recipients, less any current liabilities of the system. The Statement of Changes in Fiduciary Net Position provides a summary of current-year additions and deductions to the plan.

The Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position report information about HPRS's activities and financial position. These statements reflect the full accrual basis of accounting, which is similar to the accounting method used by most private sector companies. All of the current year's revenues and expenses are taken into account regardless of when cash is received or paid. All investment gains and losses are shown at trade date rather than settlement date. Investments are shown at fair value, reflecting both realized and unrealized gains and losses. Each capital asset is depreciated over its expected useful life.

The difference between HPRS assets and liabilities is reported on these statements as the Net Position – Restricted for Pension and Post-Employment Health Care Benefits. Over time, increases and decreases in HPRS's net position are one indicator of whether the fund's financial health is improving or deteriorating. Other factors, such as market conditions, should be considered in measuring HPRS's overall health (see HPRS's financial statements on pages 24-25 of this report).

The Notes to the Financial Statements provide additional information that is essential to a full understanding of the data provided in the financial statements (see the *Notes to the Financial Statements* on pages 26-54 of this report).

**Other Information**

In addition to the financial statements and accompanying notes, this report presents certain required supplementary information concerning HPRS's progress in funding its obligations to provide pension benefits to members (see the *Required Supplementary Schedules* on pages 55-63 of this report).

The schedules of administrative expenses, investment expenses, and payments to consultants are presented immediately following the required supplementary information.

HPRS Activities

**Additions to Fiduciary Net Position**

Employer and member contributions, as well as income from investments, provide reserves needed to finance retirement benefits and health care. In 2022, total contributions and investment returns resulted in negative additions of \$53.9 million. Employer contributions increased by 9.2% and member contributions also increased by 9.2%.

<b>Additions to Fiduciary Net Position</b>				
<b>(in thousands)</b>				
	<b>2022</b>	<b>2021</b>	<b>\$ Change</b>	<b>% Change</b>
Net appreciation in fair value of investments	(119,413)	128,649	\$(248,062)	(192.8)
Interest and dividend income	18,976	34,887	(15,911)	(45.6)
Investment expenses	(8,590)	(8,944)	354	(4.0)
Employer contributions	32,862	30,090	2,772	9.2
Member contributions	17,361	15,896	1,465	9.2
Transfers from other Ohio systems	805	639	166	26.0
Health care premiums	2,416	4,204	(1,788)	(42.5)
Retiree drug subsidy	434	3,688	(3,254)	(88.2)
Prescription drug rebates	1,200	2,128	(928)	(43.6)
Total additions	<u>(\$53,949)</u>	<u>\$211,237</u>	<u>(\$265,186)</u>	<u>(125.5)</u>

The *Investment Section* of this report summarizes the result of investment activity for the year ended December 31, 2022.

**Deductions from Fiduciary Net Position**

HPRS was created to provide retirement, disability, and survivor benefits to qualified members and their beneficiaries. The costs of these programs include benefit payments by the plan, refunded contributions, and the administrative costs of the system. In 2022, total deductions from the fiduciary net position decreased 6.2%, health care expenses decreased by 38.8%, and administrative expenses increased by 37.6%. Refunds of member contributions increased by 5.2%, and transfers of contributions to other Ohio retirement systems increased by 252.2%.

<b>Deductions from Fiduciary Net Position</b>				
<b>(in thousands)</b>				
	<b>2022</b>	<b>2021</b>	<b>\$ Change</b>	<b>% Change</b>
Pension benefits	\$78,389	\$78,729	(\$340)	(0.4)
DROP benefits	6,473	7,155	(682)	(9.5)
Refunds of member contributions	3,785	3,598	187	5.2
Health care expenses	9,900	16,181	(6,281)	(38.8)
Administrative expenses	1,509	1,097	412	37.6
Transfers to other Ohio systems	162	46	116	252.2
<b>Total deductions</b>	<b>\$100,218</b>	<b>\$106,806</b>	<b>(\$6,588)</b>	<b>(6.2)</b>

**Changes in Fiduciary Net Position**

In 2022, the Net Position – Restricted for Pension and Post-Employment Health Care Benefits decreased by \$154,166,231, or 13.6%. Investment income attributable to the decrease in fair values of investments, interest and dividend income equaled \$119,412,856. All assets are available to meet HPRS’s ongoing obligations to plan participants and their beneficiaries.

<b>Changes in Fiduciary Net Position</b>		
<b>(in thousands)</b>		
	<b>2022</b>	<b>2021</b>
Beginning balance	\$1,130,445	\$1,026,014
Ending balance	976,278	1,130,445
Total change	(\$154,166)	\$104,431
% change	(13.6)%	10.2%

**Capital Assets**

As of December 31, 2022, HPRS’s investment in capital assets totaled \$0 (net of accumulated depreciation). This investment in capital assets includes office equipment, software, and furniture for administrative use. All capital assets are fully depreciated as of December 31, 2022.



**Total Assets**

In 2022, total assets decreased by \$151,737,723, or 13.3%. The change in total assets was largely attributable to decreases in the fair value of investments.

<b>Assets</b> (in thousands)				
	<b>2022</b>	<b>2021</b>	<b>\$ Change</b>	<b>% Change</b>
Cash and short-term investments	\$53,703	\$44,357	\$9,346	21.1
Receivables	5,979	6,680	(701)	(10.5)
Investments, at fair value	930,429	1,090,912	(160,483)	(14.7)
Other assets	295	194	101	52.1
<b>Total assets</b>	<b>\$990,406</b>	<b>\$1,142,143</b>	<b>(\$151,737)</b>	<b>(13.3)</b>

**Total Liabilities**

In 2022, total liabilities increased by \$2,425,510, or 21.6%.

<b>Liabilities</b> (in thousands)				
	<b>2022</b>	<b>2021</b>	<b>\$ Change</b>	<b>% Change</b>
<b>Total liabilities</b>	<b>\$13,674</b>	<b>\$11,248</b>	<b>\$2,426</b>	<b>21.6</b>

**Requests for Information**

This financial report is designed to provide retirees, members, trustees, investment managers, and the public with a general overview of HPRS’s finances and to show accountability for the money it receives. Questions concerning any of the information provided in this report or requests for additional financial information can be directed to:

Brian C. Fike, CPA, *Finance Director*  
 State Highway Patrol Retirement System  
 1900 Polaris Parkway, Suite 201, Columbus, OH 43240-4037  
 Phone: 614.431.0781  
 Email: b.fike@ohprs.org

## Financial Section

### Basic Financial Statements

#### Statement of Fiduciary Net Position

December 31, 2022

	Pension	Post-Employment Health Care	Total
<b>Assets</b>			
Cash and Short-Term Investments	\$47,371,628	\$6,331,612	\$53,703,240
Receivables			
Employer Contributions Receivable	687,329	-	687,329
Member Contributions Receivable	1,695,180	-	1,695,180
Accrued Investment Income	2,787,392	372,558	3,159,950
Health Care Receivable	-	436,169	436,169
Total Receivables	5,169,901	808,727	5,978,628
Investments, at Measurement Value			
Domestic Equity	180,073,632	23,920,986	203,994,618
International Equity	48,224,814	6,405,751	54,630,565
Fixed Income	74,450,385	9,889,319	84,339,704
Real Estate	75,181,314	9,986,410	85,167,724
Private Equity	190,876,028	25,514,529	216,390,557
Hedge Funds	61,696,004	8,246,184	69,942,188
Direct Infrastructure	15,485,233	2,069,730	17,554,963
Global Equity	175,016,387	23,392,396	198,408,783
Total Investments	821,003,797	109,425,305	930,429,102
Other Assets			
Net Pension Asset	147,114	-	147,114
Net OPEB Asset	-	147,554	147,554
Total Other Assets	147,114	147,554	294,668
Total Assets	873,692,440	116,713,198	990,405,638
Deferred Outflows of Resources	196,537	1,683	198,220
Deferred Outflows – Pension/OPEB			
<b>Liabilities</b>			
Accounts Payable	211,498	28,268	239,766
Accrued Payroll Liabilities	299,905	40,085	339,990
Accrued Pension Liabilities	11,401,641	-	11,401,641
Accrued Health Care Liabilities	-	1,354,177	1,354,177
Net Pension Liability	338,359	-	338,359
Total Liabilities	12,251,403	1,422,530	13,673,933
Deferred Inflows of Resources			
Deferred Inflows – Pension/OPEB	495,083	156,556	651,639
<b>Net Position – Restricted for Pension and Post-Employment Health Care Benefits</b>	<b>\$861,142,491</b>	<b>\$115,135,795</b>	<b>\$976,278,286</b>

See the accompanying Notes to the Financial Statements, pages 26-54.

## Financial Section

### Basic Financial Statements

<b>Statement of Changes in Fiduciary Net Position</b>			
Year ended December 31, 2022			
	Pension	Post-Employment Health Care	Total
<b>Additions</b>			
Contributions			
Employer	\$28,972,464	\$3,890,000	\$32,862,464
Member	17,361,370	-	17,361,370
Transfers from Other Systems	804,605	-	804,605
Other income			
Health Care Premiums	-	2,415,723	2,415,723
Retiree Drug Subsidy	-	433,632	433,632
Prescription Drug Rebates	-	1,200,110	1,200,110
Total Contributions	<u>47,138,439</u>	<u>7,939,465</u>	<u>55,077,904</u>
Investment Activity			
Net Appreciation (Depreciation) in Fair Value of Investments	(105,334,077)	(14,078,779)	(119,412,856)
Interest and Dividend Income	16,738,823	2,237,283	18,976,106
	(88,595,254)	(11,841,496)	(100,436,750)
Less: Investment Expenses	<u>(7,576,932)</u>	<u>(1,012,720)</u>	<u>(8,589,652)</u>
Net Income from Investment Activity	<u>(96,172,186)</u>	<u>(12,854,216)</u>	<u>(109,026,402)</u>
Total Additions	<u>(49,033,747)</u>	<u>(4,914,751)</u>	<u>(53,948,498)</u>
<b>Deductions</b>			
Pension Benefits	78,388,679	-	78,388,679
DROP Benefits	6,472,669	-	6,472,669
Refunds of Member Contributions	3,785,126	-	3,785,126
Health Care Expenses	-	9,900,250	9,900,250
Administrative Expenses	1,331,254	177,934	1,509,188
Transfers to Other Systems	161,821	-	161,821
Total Deductions	<u>90,139,550</u>	<u>10,078,183</u>	<u>100,217,733</u>
Change in Fiduciary Net Position	(139,173,297)	(14,992,934)	(154,166,231)
<b>Net Position – Restricted for Pension and Post-Employment Health Care Benefits</b>			
Balance, December 31, 2021	<u>1,000,315,787</u>	<u>130,128,730</u>	<u>1,130,444,517</u>
Balance, December 31, 2022	\$861,142,491	\$115,135,795	\$976,278,286

See the accompanying Notes to the Financial Statements, pages 26-54.

Note 1 Summary of Significant Accounting Policies

**Basis of Accounting**

HPRS' financial statements are prepared using the accrual basis of accounting, under which expenses are recorded when incurred and revenues are recorded when earned and measurable. Member and employer contributions are recognized in the period in which the contributions are due. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan. Investment purchases and sales are recorded at the trade date. Administrative expenses are financed by investment income.

The accounting and reporting policies of HPRS conform to generally accepted accounting principles in the United States of America (GAAP). The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported assets and liabilities, disclosure of contingent assets and liabilities, and the reported revenues and expenses during the accounting period. Actual results could differ from these estimates.

The Governmental Accounting Standards Board (GASB) requires that plan assets be split between pension benefits and health care. To meet this requirement, plan assets and liabilities not specifically identifiable to a plan were proportionately allocated to the pension and post-employment health care plans. Additionally, a portion of the investment activity and administrative expenses are allocated to the health care fund. The amounts are derived from the health care projected allocation rate calculation. This calculation is the proportion of projected post-employment health care net position compared to the projected total net position.

**Investment Accounting**

Income on all investments is recognized on an accrual basis. Gains and losses on sales and exchanges, recognized at the trade date, are determined using the average cost of equity securities sold, and for all other investments, the specific cost of securities sold.

Certain investments are reported at fair value, which is the amount that the plan could reasonably expect to receive in a current sale between a willing buyer and a willing seller, other than in a forced or liquidation sale. Other investments are measured at Net Asset Value (NAV).

Securities traded on a national exchange are valued at the last reported sales price at the current exchange rate. Fair values of real estate and private equity investments are based on information provided by the fund's managers or by independent appraisals.

Net appreciation (or depreciation) in fair value of investments is determined by calculating the change in the fair value between the beginning of the year and the end of the year, less purchases at cost, plus sales at fair value. Investment expenses consist of expenses directly related to HPRS investment operations, as well as an allocation of certain administrative expenses.

#### **Use of Estimates**

In preparing financial statements in conformity with GAAP, the management of HPRS makes estimates and assumptions that affect: (1) the reported amounts of assets and liabilities; (2) disclosures of contingent assets and liabilities; and (3) the amount of revenues and expenses during the reporting period. Actual results could differ from those estimates and assumptions. Certain investment assets, including private equity and real estate, use estimates in reporting fair value in the financial statements. These estimates are subject to uncertainty in the near term, which could result in changes in the values reported for those assets in the Statement of Fiduciary Net Position.

#### **Capital Assets**

When acquired, an item of property or equipment in excess of \$5,000 is capitalized at cost. An improvement in excess of \$5,000 that extends the useful life of an asset is capitalized as well. An expenditure for maintenance or repair of an asset is expensed as incurred. Depreciation is computed using the straight-line method over the useful life of each asset (typically, between three and ten years).

#### **Accrued Health Care Liabilities**

Accrued health care liabilities are based upon estimates furnished by the claim's administrators. These estimates have been developed from prior claims experience.

In general, costs of member health care benefits are recognized as claims are incurred and premiums are paid. Health care expenses of \$9,900,250 for 2022 are shown on the accompanying Statement of Changes in Fiduciary Net Position.

#### **Contributions and Benefits**

Based on statutory requirements, employer and employee contributions are recognized when due. In accordance with the terms of the plan, benefits and refunds are recognized when due and payable.

#### **Federal Income Tax Status**

HPRS is a qualified entity under Section 501(a) of the Internal Revenue Code and is, therefore, exempt from federal income taxes.

**Recently Issued Accounting Pronouncements**

GASB issued Statement No. 87, *Leases*. The Statement’s objective is to improve accounting and financial reporting for leases by governments. The payments for short-term leasing of equipment should be recognized as outflows of resources based on the provisions of the lease contract. The requirements for this Statement are effective for reporting periods beginning after June 15, 2021. HPRS Management has evaluated the pronouncement and has determined there is no material impact to the financial statements.

**Note 2 Plan Description**

**Organization**

HPRS is a single-employer retirement system for employees of the Ohio State Highway Patrol, including officers with arrest authority, cadets in training at the Highway Patrol Training Academy, and members of the radio division who were hired prior to November 2, 1989. HPRS was created by Ohio Revised Code Chapter 5505 and is administered by a Board of Trustees consisting of five active members, two retired members, three appointed members, and one ex-officio member. The Board appoints an executive director, chief investment officer, actuary, investment consultant, medical advisor, and internal auditor.

HPRS administers both a defined benefit pension plan and a post-employment health care plan, which is considered to be an “other post-employment benefit,” or OPEB. Financial information for pensions and OPEB is presented separately in the financial statements. HPRS, a separate financial reporting entity in accordance with criteria established by GASB Statement No. 39 (an amendment to No. 14), is a component unit of the State of Ohio. HPRS does not have financial accountability over any other entities.

**Membership**

HPRS membership consisted of the following at the end of 2021 and 2022:

<b>Membership Data</b>		
Year ended December 31		
	<b><u>2022</u></b>	<b><u>2021</u></b>
<b>Pension &amp; OPEB Benefits</b>		
Retirees & other benefit recipients	1,852	1,807
Deferred retirees	49	35
<b>Active members</b>		
15 or more years of service	657	706
Less than 15 years of service	723	748

**Benefits**

Members are eligible for pension and health care benefits upon reaching both an age and a service requirement with the Ohio State Highway Patrol. The pension benefit is a percentage of the member's final average salary, which is defined as the average of the member's five highest salaried years. For 20 or more years of service, the percentage is determined by multiplying 2.5% times the first 20 years of service, plus 2.25% for the next 5 years of service, plus 2.0% for each year in excess of 25 years of service. A member's pension may not exceed 79.25% of the final average salary. Retirement with reduced benefits is available upon reaching age 48 with 20 years of service credit. Retirement with full benefits is available upon reaching age 48 with 25 years of service credit, or age 52 with 20 years of service credit. Beginning in 2020, new hires of the Ohio State Highway Patrol will be eligible for retirement with full benefits upon reaching age 52 with 20 years of service credit. All members must retire upon attaining age 60. Ohio law permits, but does not require, HPRS to offer health care to its membership. HPRS currently offers medical, hospitalization and prescription drug coverage for its members and their dependents. In addition to pension and health care benefits, HPRS also provides for disability and survivor benefits.

In 2006, HPRS implemented the Deferred Retirement Option Plan (DROP). In general, a member who is eligible to retire with an unreduced pension benefit may enter the DROP. The member will continue to work for the Ohio State Highway Patrol. A DROP member does not accumulate additional pension service credit; however, instead of receiving a monthly pension benefit, the member accrues that benefit in a tax-deferred account until employment with the Ohio State Highway Patrol is terminated. The DROP activity is discussed in Note 11.

Former members with at least 15 years of service but less than 20 years of service are eligible for a pension upon reaching age 55. The percentage of final average salary is determined by multiplying 1.5% by the number of years of service credit. These members, though eligible to receive a pension, are not eligible for health care benefits.

**Contributions**

The Ohio Revised Code requires contributions by both active members and the Ohio State Highway Patrol. The employer contribution rate is established by the Ohio General Assembly. The HPRS Board sets the employee contribution rate between 10.0%-14.0% of payroll.

In 2022, the member contribution rate was 14.0% of payroll, and the employer contribution rate was 26.5%.

Based on the December 31, 2020 actuarial valuation, the Board allocated the employer contribution rate to pension benefits and OPEB effective January 1, 2021 as follows:

Pension	OPEB	Total
26.50%	0.00%	26.50%

Based on the December 31, 2021 actuarial valuation, the Board allocated the employer contribution rate to pension benefits and OPEB effective January 1, 2022 as follows:

Pension	OPEB	Total
23.14%	3.36%	26.50%

Upon request of a member who terminates employment with the Ohio State Highway Patrol, member contributions are refunded. If a member dies while active in the service of the Ohio State Highway Patrol, member contributions are refunded to the member's beneficiary, provided that no survivor benefits are payable.

A member with credited service in OPERS, School Employees Retirement System (SERS), State Teachers Retirement System (STRS), Ohio Police & Fire Pension Fund (OP&F), or Cincinnati Retirement System (CRS) may transfer that service credit to HPRS. Similarly, a member with credited service in HPRS may transfer that service to OPERS, SERS, STRS, OP&F, or CRS.

**Note 3 Net Position**

Chapter 5505 of the Revised Code requires that various funds be established to account for contributions, reserves, income, and expenses.

The Employees' Savings Fund was created to accumulate the contributions deducted from the salaries of members, less any refunds of member contributions. Upon retirement, a member's contributions are transferred to the Pension Reserve Fund.

The Employer's Accumulation Fund is the fund in which the state's contributions to HPRS are accumulated. Included in this fund are the reserves allocated to the payment of OPEB.

The Pension Reserve Fund is the fund from which all pensions are paid to members who retire on or after January 1, 1966.

The Survivors' Benefit Fund is the fund from which survivor benefits are paid to qualifying beneficiaries.



Notes to the Financial Statements

The Income Fund is used to accumulate all interest, dividends, distributions, and other income from deposits and investments. Gifts, bequests to the system, transfers, and any other income are also credited to the Income Fund.

The Expense Fund provides for the payment of administrative expenses with the necessary money allocated to it from the Income Fund.

At December 31, 2022, the fiduciary net position was allocated to the various funds as follows:

<b>Fiduciary Net Position</b>	
December 31, 2022	
Employees' Savings Fund	\$134,668,614
Employer's Accumulation Fund	115,135,795
Pension Reserve fund	726,473,877
Survivors' Benefit Fund	-
Income Fund	-
Expense Fund	-
Total	\$976,278,286

Note 4 Property and Equipment

The following is a summary of equipment, at cost, less accumulated depreciation, at December 31, 2022:

<b>Capital Assets - Equipment</b>	
December 31, 2022	
Cost, 12/31/2021	\$147,039
(+) Additions	-
(-) Retirements	-
Cost, 12/31/2022	\$147,039
Accumulated depreciation, 12/31/2021	\$147,039
(+) Additions	-
(-) Retirements	-
Accumulated depreciation, 12/31/2022	\$147,039
Book value, 12/31/2022	\$0

Notes to the Financial Statements

The following is a summary of furniture, at cost, less accumulated depreciation, at December 31, 2022:

<b>Capital Assets - Furniture</b>	
December 31, 2022	
Cost, 12/31/2021	\$82,710
(+) Additions	-
(-) Retirements	-
Cost, 12/31/2022	\$82,710
Accumulated depreciation, 12/31/2021	\$82,710
(+) Additions	-
(-) Retirements	-
Accumulated depreciation, 12/31/2022	\$82,710
Book value, 12/31/2022	\$0

**Note 5 Fair Value Measurement**

HPRS’s investments measured and reported at fair value are classified according to the following hierarchy:

Level 1 – Investments reflect prices quoted in active markets.

Level 2 – Investments reflect prices that are based on a similar observable asset either directly or indirectly, which may include inputs in markets that are not considered to be active.

Level 3 – Investments reflect prices based upon unobservable sources.

The categorization of investments within the hierarchy is based upon the pricing transparency of the instrument and should not be perceived as a measurement of investment’s risk.

Debt and equities classified in Level 1 of the fair value hierarchy are valued by an external pricing vendor. Assets classified in Level 2 are subject to pricing by an alternative pricing source, due to lack of information available by the primary vendor.

## Financial Section

### Notes to the Financial Statements

<b>Investments and Short-Term Holdings Measured at Fair Value</b>				
<b>Investments by Fair Value Level</b>	<b>12/31/2022</b>	<b>Fair Value Measurements Using</b>		
		<b>Quoted Prices in Active Markets for Identical Assets (Level 1)</b>	<b>Significant Other Observable Inputs (Level 2)</b>	<b>Significant Unobservable Inputs (Level 3)</b>
<b>Debt Securities</b>				
Marketable Certificates of Deposit	-	-	-	-
Municipal Bonds	1,167,458	-	1,167,458	-
U.S. Agency Bonds	4,569,360	-	4,569,360	-
U.S. Corporate Bonds	14,739,949	-	14,739,949	-
U.S. Government	7,955,298	7,955,298	-	-
Total Debt Securities	28,432,065	7,955,298	20,476,767	-
<b>Equity Securities</b>				
Domestic Equity Mutual Funds	188,518,478	188,518,478	-	-
Global Equity Mutual Funds	33,971,132	33,971,132	-	-
Foreign Equity Mutual Funds	19,807,087	19,807,087	-	-
Foreign Stocks	2,235,619	2,235,619	-	-
U.S. Common and Preferred Stock	15,476,140	15,476,140	-	-
Total Equity Securities	260,008,456	260,008,456	-	-
Total Investments by Fair Value Level	\$288,440,521	267,963,754	20,476,767	-
<b>Investments Measured at the Net Asset Value (NAV)</b>				
Commingled Bond Funds	\$9,150,531			
Commingled Global Equity Funds	164,437,651			
Commingled International Equity Funds	32,587,858			
Real Assets	43,750,818			
Direct Lending	46,757,109			
Hedge Funds	69,942,188			
Private Equity	190,194,702			
Private Real Estate Funds	85,167,724			
Total Investments Measured at the NAV	641,988,581			
Total Investments	\$930,429,102			

The valuation method for investments measured at the net asset value (NAV) per share, or equivalent, is presented in the next table.

<b>Investments Measured at the Net Asset Value</b>				
	<u>12/31/2022</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency (If Currently Eligible)</u>	<u>Redemption Notice Period</u>
Commingled Bond Funds <sup>(1)</sup>	\$9,150,531	-	Daily, Monthly	1-20 Days
Commingled Global Equity Funds <sup>(1)</sup>	164,437,652	-	Monthly	10 Days
Commingled International Equity Funds <sup>(1)</sup>	32,587,858	-	Daily	1-3 Days
Real Assets <sup>(2)</sup>	43,750,818	24,598,383	-	-
Direct Lending <sup>(3)</sup>	46,757,109	45,166,291	-	-
Hedge Funds <sup>(4)</sup>	69,942,188	-	Monthly, Quarterly	45 - 65 days
Private Equity <sup>(5)</sup>	190,194,703	78,228,378	-	-
Private Real Estate Funds <sup>(5)</sup>	<u>85,167,724</u>	28,736,857	Quarterly	30 days
Total Investments Measured at the NAV	<u>\$641,988,583</u>			

(1) Commingled Bond Funds and Equity Funds: One bond fund and three equity funds are commingled in nature. Each are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

(2) Direct Infrastructure / Real Assets: HPRS has committed to three global infrastructure limited partnerships and two other private energy real asset limited partnerships. Infrastructure and private real asset strategies offer strong return potential, consistent cash flow yield and defensive characteristics. The fair values of these funds are determined using net assets valued one quarter in arrears plus current quarter cash flows. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5 to 10 years.

(3) Direct Lending: HPRS has committed to four direct lending limited partnerships. Direct lending funds generate strong cash flow, have variable interest rates, and are well protected through debt covenants. The fair values of these funds have been determined using net assets valued one quarter in arrears plus current quarter cash flows. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5 to 10 years.

(4) Hedge Fund: One multi-manager, multi-strategy “fund-of funds” investing predominantly in limited partnerships and similar pooled investment vehicles managed by independent portfolio managers that employ diverse alternative investment strategies across a variety of asset classes. HPRS also has a position in a merger arbitrage hedge fund that offers monthly liquidity, is intended to be market neutral and offer strong diversification benefits. HPRS has one position with a credit opportunities manager and has one small position with managers that are liquidating.

(5) Private Equity and Real Estate Funds: HPRS currently has twelve private real estate investments and twenty-four private equity investments in its portfolio. These strategies have exposure to several categories of investments, including real estate equity and debt, buyout, mezzanine debt, co-investment, and energy related private investments. The fair values of these funds have been determined using net assets valued one quarter in arrears plus current quarter cash flows. Only one of these funds is eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5 to 10 years.

Note 6 Deposits and Investment Risk

**Investments**

Ohio Revised Code Section 5505.06 grants “full power” to the Retirement Board to invest the system’s assets pursuant to a prudent person standard. This standard provides that “the board and other fiduciaries shall discharge their duties with respect to the funds solely in the interest of the participants and beneficiaries; for the exclusive purpose of providing benefits to participants and their beneficiaries and defraying reasonable expenses of administering the system; with care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims; and by diversifying the investments of the system so as to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so.”

All investments, both domestic and international, are registered in the name of HPRS.

**Deposits**

HPRS cash balances consist of an operating cash account held at PNC Bank, cash on deposit with the State Highway Patrol Federal Credit Union, and excess investment cash held by the custodian, PNC Bank. Cash balances are either interest-bearing or invested in highly liquid debt instruments with an original maturity of six months or less. As of December 31, 2022, the carrying value of all deposits was \$53,703,240 (including money market funds of \$26,905,246 and U.S. Treasury Bills valued at \$9,791,579), as compared to bank balances of \$53,761,206. The difference in the carrying amount and the bank balances is caused by outstanding warrants and deposits in transit.

**Concentration of Credit Risk**

Concentration of credit risk is the risk of inability to recover the value of deposits, investments, or collateral securities in the possession of an outside party.

Investment managers are expected to maintain diversified portfolios by sector and issuer. Pursuant to its investment policy, and excluding U.S. government securities, HPRS has no more than 10% of the fixed income portfolio invested in the securities of any one issuer, and no more than 5% in any one issue, with the exception of U.S. government securities.

**Credit Risk**

Credit risk is the risk that an issuer or counterparty to an investment will be unable to fulfill its obligations. HPRS does not have a policy to limit credit risk.

HPRS exposure to credit risk on fixed income securities, based on S&P Quality Ratings, is as follows:

<b>S&amp;P Quality Ratings</b>	
December 31, 2022	
A	\$6,887,781
BBB	8,619,260
BB	1,012,509
B	6,067,199
CCC	1,151,712
Unrated	13,844,133
Total Investments	<u>\$37,582,594</u>

**Foreign Currency Risk**

Foreign currency risk is the risk that changes in exchange rates between the U.S. dollar and foreign currencies could adversely affect an investment’s fair value. HPRS does not have a policy to limit foreign currency risk. HPRS’s exposure to foreign currency risk derives from its positions in foreign currency-denominated investments. As of December 31, 2022, HPRS had zero exposure to foreign currency risk.

**Interest Rate Risk**

Interest rate risk is the risk that an interest rate change could adversely affect an investment’s fair value. HPRS does not have a policy to limit interest rate risk.

The reporting of effective duration in the table below quantifies, to the fullest extent possible, the interest rate risk of the system’s fixed income assets.

<b>Investment Maturities</b>	
December 31, 2022	
Less than 1 year	\$532,248
1 - 5 years	10,042,753
Greater than 5, up to 10 years	19,016,519
Greater than 10 years	7,991,074
Total	<u>\$37,582,594</u>

**Custodial Credit Risk**

Custodial credit risk is the risk that, in the event of a failure of a depository institution or counterparty to a transaction, HPRS will be unable to recover the value of deposits, investments, or collateral securities in the possession of an outside party.

As of December 31, 2022, the carrying amounts of HPRS's operating and investment cash deposits totaled \$53,703,240, and the corresponding bank balances totaled \$53,761,206. Of the bank balances, the Federal Deposit Insurance Corporation insured \$250,000. In accordance with state law, bank balances of \$3,516,740 were collateralized with securities held in the name of HPRS's pledging financial institution.

**Investment Concentrations**

The following is a list of investments in any one organization that represents 5% or more of the pension plan's net position held in trust for pension benefits:

Vanguard Mutual Funds - \$164,440,637  
Ninety-One - \$84,847,606  
Mondrian Investment Group - \$79,590,046

**Money-Weighted Rate of Return**

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts invested. For the fiscal year ended December 31, 2022, the annual money-weighted rate of return on pension plan investments, net of investment expense was -9.46%.

**Commitments**

As of December 31, 2022, unfunded commitments related to the real estate, private equity, direct infrastructure, and direct lending investment portfolios totaled \$176,729,909.

**Note 7 Derivatives**

A derivative is an investment vehicle that derives its value from another instrument or index. Derivatives are primarily used to maximize yields and offset volatility caused by interest rate and currency fluctuations. These instruments leave investors exposed to various credit, market, and legal risks.

As of December 31, 2022, HPRS did not have any direct investments in derivatives; however, it held shares in commingled funds that had incidental exposure to derivatives.

Note 8 Net Pension Liability and Actuarial Information

The components of the net pension liability as of December 31, 2021:

<b>Schedule of Net Pension Liability</b>						
Year ended December 31						
<b>Year</b>	<b>Total Pension Liability</b>	<b>Fiduciary Net Position</b>	<b>Net Pension Liability</b>	<b>Plan Net Position as a % of Total Pension Liability</b>	<b>Covered Payroll<sup>1</sup></b>	<b>Net Pension Liability as a % of Covered Payroll</b>
2014	\$1,044,345,838	\$740,661,880	\$303,683,958	70.92%	\$99,211,756	306.10%
2015	1,111,064,399	704,225,034	406,839,365	63.38%	99,983,224	406.91%
2016	1,137,269,498	721,685,656	415,583,842	63.46%	108,788,871	382.01%
2017	1,178,543,088	786,354,140	392,188,948	66.72%	112,705,188	347.98%
2018	1,472,338,067	715,480,960	756,857,107	48.59%	116,009,622	652.41%
2019	1,263,838,541	817,859,488	445,979,053	64.71%	118,370,595	376.77%
2020	1,299,260,233	907,391,508	391,868,725	69.84%	117,996,230	332.10%
2021	1,314,958,872	1,000,315,787	314,643,085	76.07%	111,621,001	281.89%
2022	1,348,840,676	861,142,491	487,698,185	63.84%	112,476,672	433.60%

Source: GRS/F&F

<sup>1</sup>Includes members of DROP

The Total Pension Liability was determined by an actuarial valuation as of December 31, 2021, using the key actuarial assumptions, methods, and other inputs listed below as of December 31, 2022 and projected to that date assuming no Plan membership gains or losses.

<b>Actuarial Assumptions</b>	
Valuation Date	December 31, 2021, projected to December 31, 2022
Inflation	3.00% wage inflation; 2.50% price inflation
Salary Increases	3.80% to 13.50% including inflation
Investment Rate of Return	7.25%

**Long-Term Expected Return on Plan Assets**

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



allocation percentage and by adding expected inflation. The target allocations as of December 31, 2022 were provided by the system’s investment consultant. The development of the expected long-term rate of return based on the Plan’s asset allocation and the best estimates of geometric real rates of return for each major asset class as of December 31, 2022 is as follows:

<b>Asset Allocation</b>		
December 31, 2022		
<b>Asset Class</b>	<b>Target Allocations</b>	<b>Long-Term Expected Real Rate of Return</b>
Cash	4.00%	0.30%
Domestic Equity	20.00	4.30
Global Equity	22.00	6.30
Non-US Equity	6.00	4.40
Opportunistic Fixed Income	9.00	3.00
Core Fixed Income	6.00	1.60
Real Estate	8.00	7.60
Private Equity	15.00	8.20
Absolute Return	6.00	3.90
Real Assets	4.00	5.60
Total	100.00%	

*Source: Foster & Foster*

**Single Discount Rate**

A single discount rate of 7.25% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.25% and the municipal bond rate of 4.31%. The projection of cash flows used to determine this single discount rate assumed that:

- (1) Plan member contributions will be 14.0% of payroll for 2022 and 13.0% for 2023 and each year thereafter
- (2) The employer contribution rate allocated to the pension program will be 26.50% of payroll
- (3) Administrative expenses as of December 31, 2022 were projected to future period using an assumed growth rate of 2.50%

Based on these assumptions, the pension plan’s fiduciary net position and future contributions were sufficient to finance benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability. The resulting single equivalent discount rate was 7.25% as of December 31, 2022, and this discount rate was used, as prescribed, in the measurement of the Plan’s Total Pension Liability under GASB accounting rules.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan’s net pension liability, calculated using a Single Discount Rate of 7.25%, as well as what the plan’s net pension liability would be if it were calculated using a Single Discount Rate that is 1% lower or 1% higher:

<b>NPL Sensitivity</b>			
	<b>1% Decrease 6.25%</b>	<b>Current Single Discount Rate Assumption 7.25%</b>	<b>1% Increase 8.25%</b>
Net Pension Liability	\$639,487,877	\$487,698,185	\$360,399,604
			<i>Source: Foster &amp; Foster</i>

**Mortality Rates for Pension**

The pre-retirement mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the PubS-2010 total healthy public safety employee amount-weighted mortality rates with a static projection of mortality improvements from 2010-2026 using Scale MP-2021. For spouses of deceased members, Pub-2010 contingent survivor above-median amount-weighted mortality rates with a static projection of mortality improvements from 2010-2026 using Scale MP-2021. Static projected mortality rates for male and female contingent survivors have been adjusted to reflect 105% of gender-specific table rates at each age.

The healthy retiree mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the PubS-2010 total healthy public safety annuitant amount-weighted mortality rates with a static projection of mortality improvements from 2010-2026 using Scale MP-2021. Static projected mortality improvements for male and female annuitants have been adjusted to reflect 94% of gender-specific table rates at each age. For spouses of retired members, Pub-2010 contingent survivor above-median amount-weighted mortality rates with a static projection of mortality improvements from 2010-2026 using Scale MP-2021. Static projected mortality rates for male and female contingent survivors have been adjusted to reflect 105% of gender-specific table rates at each age.

The disabled retiree mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the PubS-2010 total disabled public safety annuitant amount-weighted mortality rates with a static projection of mortality improvements from 2010-2026 using Scale MP-2021. For spouses of disabled members, Pub-2010 contingent survivor above-median amount-weighted mortality rates with a static projection of mortality improvements from 2010-2026 using Scale MP-2021. Static projected mortality rates for male and

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female contingent survivors have been adjusted to reflect 105% of gender-specific table rates at each age.

**Experience Study**

The rates of retirement, disability incidence and classification, withdrawal, mortality improvement, and salary increases used in this report were updated to better reflect anticipated plan experience based on the results of an actuarial experience study for the period December 31, 2013 through December 31, 2018.

**Note 9 Net Other Postemployment Benefits (OPEB) Liability and Actuarial Information**

The components of the net OPEB liability as of December 31, 2022:

<b>Schedule of Net OPEB Liability</b>						
Year ended December 31						
<b>Year</b>	<b>Total OPEB Liability</b>	<b>Fiduciary Net Position</b>	<b>Net OPEB Liability</b>	<b>Plan Net Position as a % of Total OPEB Liability</b>	<b>Covered Payroll<sup>1</sup></b>	<b>Net OPEB Liability as a % of Covered Payroll</b>
2017	\$566,130,019	\$111,798,820	\$454,331,199	19.75%	\$112,705,188	403.11%
2018	459,600,937	101,827,574	357,773,363	22.16%	116,009,622	308.40%
2019	581,436,281	110,986,378	470,449,903	19.00%	118,370,595	397.44%
2020	752,036,057	118,622,893	633,413,164	15.77%	117,996,230	536.81%
2021	510,842,828	130,128,730	380,714,098	25.47%	111,621,001	341.08%
2022	353,427,147	115,135,796	238,291,351	32.58%	112,476,672	211.86%

*Source: GRS/Foster & Foster*

The Total OPEB Liability was determined by an actuarial valuation as of December 31, 2021, using the key actuarial assumptions, methods, and other inputs listed below as of December 31, 2022 and projected to that date assuming no changes in the projected eligible member population during the measurement period.

<b>Actuarial Assumptions</b>	
Valuation Date	December 31, 2021, projected to December 31, 2022
Inflation	3.00% wage inflation; 2.50% price inflation
Salary Increases	3.80% to 13.50% including inflation
Investment Rate of Return	7.25%
Health Care Cost Trend	Medicare Eligible (HRA): 5.65% for 2022, decreasing to an ultimate rate of 4.75% by 2030 Medicare Ineligible: 7.65% for 2022, decreasing to an ultimate rate of 4.75% by 2032

**Long-Term Expected Return on Plan Assets**

The long-term expected return on OPEB net assets is determined by a model that uses expected arithmetic returns for a given investment horizon to determine the underlying log-normally distributed (i.e., “geometric”) returns for each asset class and for the entire portfolio and reflects certain inputs and assumptions such as long-term inflation rate and the System’s Annual Investment Plan and long-term asset allocation. The resulting long-term expected rate of return is equal to the geometric combination of the allocation-weighted average expected real rate of return of the portfolio and the expected long-term rate of inflation. The development of the expected long-term rate of return based on the OPEB Plan’s asset allocation and the estimates of arithmetic real rates of return for each major asset class as is:

<b>Asset Allocation</b>		
December 31, 2022		
<b>Asset Class</b>	<b>Target Allocations</b>	<b>Long-Term Expected Real Rate of Return</b>
Cash	4.00%	0.30%
Domestic Equity	20.00	4.30
Global Equity	22.00	6.30
Non-US Equity	6.00	4.40
Opportunistic Fixed Income	9.00	3.00
Core Fixed Income	6.00	1.60
Real Estate	8.00	7.60
Private Equity	15.00	8.20
Absolute Return	6.00	3.90
Real Assets	4.00	5.60
Total	100.00%	

*Source: Foster & Foster*

**Single Discount Rate**

A single discount rate of 4.51% was used to measure the total OPEB liability. This single discount rate was a blended rate based on the expected rate of return on pension plan investments of 7.25% and the municipal bond rate of 4.31%. The municipal bond rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as published by the S&P Dow Jones Indices, and prescribed it for use in determining the Plan's discount rate under GASB accounting rules as of the Measurement Date. The projection of cash flows used to determine this single discount rate assumed that:

- (1) Total payroll for the initial projection year consists of the payroll of the active membership as of the Valuation Date who are expected to be actively employed on the Measurement Date. In subsequent years, total payroll was assumed to increase annually by a rate of 3.00%
- (2) The System is assumed to make no projected contributions to the Plan
- (3) Active employees do not explicitly contribute to the Plan
- (4) The average administrative expenses of the two most recent years were projected to increase 2.50% annually and were allocated to current and future employees based on the change in the percentage of total membership attributable to each group during each future period and are assumed to be paid in the middle of each fiscal year

Based on these assumptions, the OPEB Plan's fiduciary net position was projected to fund expected benefit payments through 2033, and as a result, the municipal bond rate was used to determine the discount rate. Therefore, the long-term expected rate of return on pension plan investments of 7.25% was used to discount projected benefit payments for roughly 11 years, and the remaining benefit payments were discounted using the S&P municipal bond rate. The resulting single equivalent discount rate was 2.49% as of December 31, 2022, and this discount rate was used, as prescribed, in the measurement of the Plan's Total Pension Liability under GASB accounting rules.

Regarding the sensitivity of the net OPEB liability to changes in the single discount rate, the following presents the plan's net OPEB liability, calculated using a single discount rate of 4.51%, as well as what the plan's net OPEB liability would be if it were calculated using a single discount rate that is 1% lower or 1% higher:

<b>Net OPEB Liability Sensitivity</b>			
	<b>1% Decrease</b>	<b>Current Single Discount Rate Assumption</b>	<b>1% Increase</b>
	<b>3.51%</b>	<b>4.51%</b>	<b>5.51%</b>
Net OPEB Liability	\$299,761,221	\$238,291,351	\$189,756,886

*Source: Foster & Foster*

Regarding the sensitivity of the net OPEB liability to changes in the health care cost trend rates, the following presents the plan’s net OPEB liability, calculated using the assumed trend rates as well as what the plan’s net OPEB liability would be if it were calculated using a trend rate that is 1% lower or 1% higher

<b>Net OPEB Liability Sensitivity</b>			
	<b>1% Decrease</b>	<b>Current Health Care Cost Trend Rate Assumption</b>	<b>1% Increase</b>
Net OPEB Liability	\$183,172,920	\$238,291,351	\$309,928,328

*Source: Foster & Foster*

**Mortality Rates for OPEB**

The pre-retirement mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the PubS-2010 total healthy public safety employee amount-weighted mortality rates with a static projection of mortality improvements from 2010-2025 using Scale MP-2020. For spouses of deceased members, Pub-2010 contingent survivor above-median amount-weighted mortality rates with a static projection of mortality improvements from 2010-2025 using Scale MP-2020. Static projected mortality rates for male and female contingent survivors have been adjusted to reflect 105% of gender-specific table rates at each age.

The healthy retiree mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the PubS-2010 total healthy public safety annuitant amount-weighted mortality rates with a static projection of mortality improvements from 2010-2025 using Scale MP-2020. Static projected mortality improvements for male and female annuitants have been adjusted to reflect 94% of gender-specific table rates at each age. For spouses of retired members, Pub-2010 contingent survivor above-median amount-weighted mortality rates with a static projection of mortality improvements from 2010-2025 using Scale MP-2020. Static projected mortality rates for male and female contingent survivors have been adjusted to reflect 105% of gender-specific table rates at each age.

The disabled retiree mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the PubS-2010 total disabled public safety annuitant amount-weighted mortality rates with a static projection of mortality improvements from 2010-2025 using Scale MP-2020. For spouses of disabled members, Pub-2010 contingent survivor above-median amount-weighted mortality rates with a static projection of mortality improvements from 2010-2025 using Scale MP-2020. Static projected mortality rates for male and female contingent survivors have been adjusted to reflect 105% of gender-specific table rates at each age.

**Experience Study**

The actuarial assumptions used in this report were last reviewed and updated as part of the five-year experience study for the period December 31, 2013 through December 31, 2018.

**Note 10 Pension and OPEB Benefits for Employees**

**Plan Description – Ohio Public Employees Retirement System (OPERS)**

The employees of HPRS are members of OPERS. OPERS administers three separate pension plans: The Traditional Pension Plan – a cost-sharing, multiple-employer defined benefit pension plan; the Member-Directed Plan – a defined contribution plan; and the Combined Plan – a cost-sharing, multiple-employer defined benefit pension plan that has elements of both a defined benefit and defined contribution plan.

OPERS maintains a cost-sharing, multiple-employer defined benefit post-employment health care trust, which funds multiple health care plans including medical coverage, prescription drug coverage and deposits to a Health Reimbursement Arrangement to qualifying benefit recipients of both the Traditional Pension and the Combined plans. This trust is also used to fund health care for Member-Directed Plan participants, in the form of a Retiree Medical Account (RMA). At retirement or refund, Member-Directed Plan participants may be eligible for reimbursement of qualified medical expenses from their vested RMA balance.

To qualify for health care coverage, age-and-service retirees under the Traditional Pension and Combined plans must have 20 or more years of qualifying Ohio service credit. Health care coverage for disability benefit recipients and qualified survivor benefit recipients is available. The health care coverage provided by OPERS meets the definition of an Other Post Employment Benefit (OPEB) as described in GASB Statement 45. Please see the Plan Statement in the OPERS 2021 Annual Comprehensive Financial Report for details.

The Ohio Revised Code permits, but does not require, OPERS to provide health care to its eligible benefit recipients. Authority to establish and amend

health care coverage is provided to the OPERS Board of Trustees (OPERS Board) in Chapter 145 of the Ohio Revised Code.

OPERS issues a stand-alone financial report. Interested parties may obtain a copy by visiting <https://www.opers.org/financial/reports.shtml>, by writing to OPERS, 277 East Town Street, Columbus, OH 43215-4642, or by calling 614.222.5601 or 800.222.7377.

#### **Funding Policy**

The Ohio Revised Code provides the statutory authority requiring public employers to fund health care through their contributions to OPERS. A portion of each employer's contribution to OPERS is set aside to fund OPERS health care plans.

Employer contribution rates are expressed as a percentage of the earnable salary of active members. In 2022, State and Local employers contributed at a rate of 14.0% of earnable salary and Public Safety and Law Enforcement employers contributed at 18.1%. These are the maximum employer contribution rates permitted by the Ohio Revised Code. Active member contributions do not fund health care.

HPRS employer contributions to OPERS for the years ended December 31, 2022, 2021, and 2020, were \$116,816, \$106,673, and \$101,809, respectively, which were equal to the required contributions for each year.

Each year, the OPERS Board determines the portion of the employer contribution rate that will be set aside to fund health care plans. As recommended by OPERS' actuary, the portion of employer contributions allocated to health care beginning January 1, 2018 decreased to 0.0% for both the Traditional and Combined plans. The OPERS Board is also authorized to establish rules for the retiree or their surviving beneficiaries to pay a portion of the health care provided. Payment amounts vary depending on the number of covered dependents and the coverage selected. The employer contribution as a percentage of covered payroll deposited for Member-Directed Plan for 2022 was 4.0%.

#### **Pension Assets, Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions**

At December 31, 2022, HPRS reported a liability of \$338,359 for its proportionate share of the Traditional Plan's net pension liability and an asset of \$147,114 for its proportionate share of the Combined Plan's net pension asset. The net pension liability and asset were measured as of December 31, 2021, and the total pension liability used to calculate the net pension liability and asset was determined by an actuarial valuation as of that date. HPRS's proportion of the net pension liability was based on a projection of the system's long-term share of contributions to the pension plan relative to the projected



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contributions of all participating employers, actuarially determined. At December 31, 2021, HPRS's proportions were as follows:

Traditional Plan	0.003889%
Combined Plan	0.037338%

For the year ended December 31, 2022, HPRS recognized pension income of \$103,069.

At December 31, 2022, HPRS reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

<b>Deferred Outflows and Inflows of Resources</b>		
	<u>Deferred Outflows</u>	<u>Deferred Inflows</u>
	<u>of Resources</u>	<u>of Resources</u>
Difference between expected and actual experience	\$18,162	\$23,877
Net difference between projected and actual earnings on pension plan investments	-	434,007
Assumption changes	49,704	-
Changes in proportion	6,970	37,199
Contributions subsequent to the measurement date	121,701*	-
<b>Total</b>	<b>196,537</b>	<b>495,083</b>

\*\$121,701 reported as deferred outflows of resources related to pensions resulting from HPRS' contributions subsequent to the measurement date will be recognized as a reduction of net pension liability in the year ending December 31, 2023.

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

<b>Year ended December 31:</b>	
2023	(81,705)
2024	(160,754)
2025	(104,750)
2026	(71,001)
2027	(1,395)
2028	(762)
2029	16
2030	104

**Actuarial Assumptions – OPERS Pension**

The total pension liability in the December 31, 2021 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

<b>Actuarial Assumption - OPERS</b>		
December 31, 2020 Valuation Date		
	Traditional Pension Plan	Combined Plan
Investment Rate of Return	6.90%	6.90%
Wage Inflation	2.75%	2.75%
	2.75% - 10.75%	2.75% - 8.25%
Projected Salary Increases	(includes wage inflation at 2.75%)	(includes wage inflation at 2.75%)
Cost-of-Living Adjustments	Pre 1/7/2013 Retirees: 3.00% Simple; Post 1/7/2013 Retirees: 3.00% Simple through 2022, then 2.05% Simple	Pre 1/7/2013 Retirees: 3.00% Simple; Post 1/7/2013 Retirees: 3.00% Simple through 2022, then 2.05% Simple

Pre-retirement mortality rates are based on 130% of the Pub-2010 General Employees mortality tables (males and females) for State and Local Government divisions and 170% of the Pub-2010 Safety Employee mortality tables (males and females) for the Public Safety and Law Enforcement divisions. Post-retirement mortality rates are based on 115% of the PubG-2010 Retiree mortality tables (males and females) for all divisions. Post-retirement mortality rates for disabled retirees are based on the PubNS-2010 Disabled Retiree mortality table (males and females) for all divisions. For all of the previously described tables, the base year is 2010 and mortality rates for a particular calendar year are determined by applying the MP-2020 mortality improvement scales (males and females) to all of these tables.

The discount rate used to measure the total pension liability was 6.90% for the Traditional Pension Plan, Combined Plan and Member-Directed Plan. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and those of the contributing employers are made at the contractually required rates, as actuarially determined. Based on those 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, the long-term expected rate of return on pension plan investments for the Traditional Pension Plan, Combined Plan and Member-Directed Plan was applied to all periods of projected benefit payments to determine the total pension liability.

The following table presents HPRS’ proportionate share of the net pension liability or asset calculated using the discount rate of 6.90%, as well as what HPRS’s proportionate share of the net pension liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate:

<b>Sensitivity of HPRS’ proportionate share of the Net Pension Liability (Asset)</b>			
	<b>1% Decrease – 5.9%</b>	<b>Current Rate – 6.9%</b>	<b>1% Increase – 7.9%</b>
Traditional Plan HPRS	\$892,098	\$338,359	\$(122,426)
Combined Plan HPRS	(109,774)	(147,114)	(176,235)

The allocation of investment assets within the Defined Benefit portfolio is approved by the Board as outlined in the annual investment plan. Plan assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the defined benefit pension plans. The following table displays the Board-approved asset allocation policy for 2021 and the long-term expected real rates of return.

<b>OPERS Asset Allocation</b>		
December 31, 2021		
<b>Asset Class</b>	<b>Target Allocation</b>	<b>Weighted Average Long-Term Expected Real Rate of Return (Geometric)</b>
Fixed Income	24.00%	1.03%
Domestic Equities	21.00	3.78
Real Estate	11.00	3.66
Private Equity	12.00	7.43
International Equities	23.00	4.88
Risk Parity	5.00	2.92
Other Investments	4.00	2.85
Total	100.00%	4.21%

The long-term expected rate of return on defined benefit investment assets was determined using a building-block method in which best estimate ranges of expected future real rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected real rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adjusted for inflation. Best estimates of geometric rates of return were provided by the Board’s investment consultant.

During 2021, OPERS managed investments in three investment portfolios: the Defined Benefit portfolio, the Health Care portfolio, and the Defined Contribution portfolio. The Defined Benefit portfolio contains the investment assets the Traditional Pension Plan, the defined benefit component of the Combined Plan and the annuitized accounts of the Member-Directed Plan. Within the Defined

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Benefit portfolio, contributions into the plans are recorded at the same time, and benefit payments all occur on the first of the month. Accordingly, the money-weighted rate of return is considered to be the same for all plans within the portfolio. The annual money-weighted rate of return expressing investment performance, net of investment expenses and adjusted for the changing amounts actually invested, for the Defined Benefit portfolio was a gain of 15.3% for 2021.

#### **OPEB Liabilities, OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB**

At December 31, 2022, HPRS reported an asset of \$147,554 for its proportionate share of OPERS net OPEB asset. The net OPEB asset was measured as of December 31, 2021, and the total OPEB liability used to calculate the net OPEB asset was determined by an actuarial valuation as of that date. HPRS's proportion of the net OPEB asset was based on a projection of the system's long-term share of contributions to the OPEB plan relative to the projected contributions of all participating employers, actuarially determined. At December 31, 2021, HPRS's proportion was as follows:

OPEB	0.004711%
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For the year ended December 31, 2022, HPRS recognized OPEB income of \$125,777.

At December 31, 2022, HPRS reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

<b>Deferred Outflows and Inflows of Resources</b>		
	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Difference between expected and actual experience	\$-	\$22,382
Net difference between projected and actual earnings on pension plan investments	-	70,344
Assumption changes	-	59,729
Changes in proportion	1,683	4,101
Contributions subsequent to the measurement date	-	-
Total	1,683	156,556

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in pension expense as follows:

Year ended December 31:	
2023	(\$96,141)
2024	(33,259)
2025	(15,370)
2026	(10,103)

**Actuarial Assumptions – OPERS OPEB**

The total OPEB liability was determined by an actuarial valuation as of December 31, 2020, rolled forward to the measurement date of December 31, 2021. The actuarial valuation used the following actuarial assumptions applied to all prior periods included in the measurement in accordance with the requirements of GASB 74:

Actuarial Assumption - OPERS	
December 31, 2020 Valuation Date (rolled forward to December 31, 2021)	
	OPEB
Single Discount Rate	6.00%
Investment Rate of Return	6.00%
Municipal Bond Rate	1.84%
Wage Inflation	2.75%
Projected Salary Increases	2.75% - 10.75% (includes wage inflation at 2.75%)
Health Care Cost Trend Rate	5.50% Initial 3.50% Ultimate in 2034

Pre-retirement mortality rates are based on 130% of the Pub-2010 General Employee mortality tables (males and females) for State and Local Government divisions and 170% of the Pub-2010 Safety Employee mortality tables (males and females) for the Public Safety and Law Enforcement divisions. Post-retirement mortality rates are based on 115% of the PubG-2010 Retiree mortality tables (males and females) for all divisions. Post-retirement mortality rates for disabled retirees are based on the Pub NS-2010 Disabled mortality tables (males and females) for all divisions. For all of the previously described tables, the base year is 2010 and mortality rates for a particular calendar year are determined by applying the MP-2020 mortality improvement scale to all of these tables.

A single discount rate of 6.00% was used to measure the total OPEB liability on the measurement date of December 31, 2021. Projected benefit payments

are required to be discounted to their actuarial present value using a single discount rate that reflects (1) a long-term expected rate of return on OPEB plan investments (to the extent that the health care fiduciary net position is projected to be sufficient to pay benefits), and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate are not met). This single discount rate was based on an expected rate of return on the health care investment portfolio of 6.00% and a municipal bond rate of 1.84%. The projection of cash flows used to determine this single discount rate assumed that employer contributions will be made at rates equal to the actuarially determined contribution rate. Based on these assumptions, the health care fiduciary net position and future contributions were sufficient to finance health care costs through 2121. As a result, the long-term expected rate of return on health care investments was applied to projected costs through the year 2121, the duration of the projection period through which projected health care payments are fully funded.

The following table presents HPRS’s proportionate share of the net OPEB asset or liability calculated using the discount rate of 6.00%, as well as what HPRS’s proportionate share of the net OPEB asset or liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate:

<b>Sensitivity of HPRS’ proportionate share of the Net OPEB Liability/Asset</b>			
	<b>1% Decrease – 5.00%</b>	<b>Current Rate – 6.00%</b>	<b>1% Increase – 7.00%</b>
Net OPEB Liability/Asset	(\$86,777)	(\$147,554)	(\$198,003)

Retiree health care valuations use a health care cost-trend assumption that changes over several years built into the assumption. The near-term rates reflect increases in the current cost of health care; the trend starting in 2022 is 5.50%. If this trend continues for future years, the projection indicates that years from now virtually all expenditures will be for health care. A more reasonable alternative is that in the not-too-distant future, the health plan cost trend will decrease to a level at, or near, wage inflation. On this basis, the actuaries project premium rate increases will continue to exceed wage inflation for approximately the next decade, but by less each year, until leveling off at an ultimate rate, assumed to be 3.50% in the most recent valuation.

Changes in the health care cost trend rate may also have a significant impact on the net OPEB liability or asset. The following table presents HPRS’s proportionate share of the net OPEB asset calculated using the assumed trend rates, as well as what HPRS’s proportionate share of the net OPEB asset would

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### Notes to the Financial Statements

be if it were calculated using a health care cost trend rate that is one percentage point lower or one percentage point higher than the current rate:

<b>Sensitivity of HPRS' proportionate share of the Net OPEB Liability/Asset</b>			
	<b>1% Decrease</b>	<b>Current Rate</b>	<b>1% Increase</b>
Net OPEB Liability	(\$149,150)	(\$147,554)	(\$145,664)

The allocation of investment assets within the Health Care portfolio is approved by the Board as outlined in the annual investment plan. Assets are managed on a total return basis with a long-term objective of continuing to offer a sustainable health care program for current and future retirees. The System's primary goal is to achieve and maintain a fully funded status for benefits provided through the defined pension plans. Health care is a discretionary benefit. The table below displays the Board-approved asset allocation policy for 2021 and the long-term expected real rates of return:

<b>OPERS OPEB Asset Allocation</b>		
December 31, 2021		
<b>Asset Class</b>	<b>Target Allocation</b>	<b>Weighted Average Long-Term Expected Real Rate of Return (Geometric)</b>
Fixed Income	34.00%	0.91%
Domestic Equities	25.00	3.78
Real Estate	7.00	3.71
International Equities	25.00	4.88
Risk Parity	2.00	2.92
Other Investments	7.00	1.93
Total	100.00%	3.45%

The long-term expected rate of return on health care investment assets was determined using a building-block method in which best-estimate ranges of expected future real rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected real rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adjusted for inflation. Best estimates of geometric rates of return were provided by the Board's investment consultant.

During 2021, OPERS managed investments in three investment portfolios: the Defined Benefit portfolio, the Health Care portfolio, and the Defined Contribution portfolio. The Health Care portfolio includes the assets for health care expenses for the Traditional Pension Plan, Combined Plan and Member-Directed Plan eligible members. Within the Health Care portfolio, contributions into the plans are assumed to be received continuously throughout the year based on the actual payroll payable at the time contributions are made, and health care-related payments are assumed to occur mid-year. Accordingly, the money-weighted rate

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of return is considered to be the same for all plans within the portfolio. The annual money-weighted rate of return expressing investment performance, net of investment expenses and adjusted for the changing amounts actually invested, for the Health Care portfolio was 14.3% for 2021.

#### Note 11 DROP Activity

<b>DROP Activity</b>	
Year ended December 31, 2022	
Beginning Balance	\$28,871,590
Contributions	6,507,262
Distributions	(7,831,549)
Net Adjustments	2,049,063
Ending Balance	<u>\$29,596,366</u>

#### Note 12 Risk Management

HPRS purchases insurance coverage for general liability, property damage, cyber, and employee and public official liability with varying policy limits. In the past three years, no settlements have exceeded insurance coverage, and coverage has not been significantly reduced.

#### Note 13 Contingent Liabilities

At any given time, HPRS is a party to various litigation actions. While the final outcome of any action cannot be determined, management does not expect that the liability, if any, for these legal actions will have a material adverse effect on the financial position of HPRS.



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### Required Supplementary Schedules

<b>Schedule of Changes in Net Pension Liability and Related Ratios<sup>1</sup></b>									
<b>Years ended December 31, 2014-2022</b>									
	2022	2021	2020	2019	2018	2017	2016	2015	2014
<b>Total Pension Liability</b>									
Service Cost	\$19,112,038	\$19,853,117	\$20,462,293	\$29,856,107	\$19,678,759	\$19,634,876	\$18,094,205	\$17,805,023	\$17,656,943
Interest on the Total Pension Liability	93,506,132	92,394,742	90,170,736	85,534,239	89,298,391	85,936,111	84,194,909	81,577,033	79,175,488
Benefit Changes	-	-	-	-	-	(5,681,779)	-	-	-
Difference between Expected & Actual Experience	9,925,954	(7,142,981)	5,921,752	(7,402,798)	537,872	17,854,158	(8,632,852)	(6,365,985)	-
Assumption Changes	-	-	-	(241,353,490)	256,572,285	-	-	40,773,369	-
Benefit Payments/Refunds	(88,662,320)	(89,406,239)	(81,133,089)	(75,133,584)	(72,294,328)	(76,467,776)	(67,451,163)	(67,070,879)	(66,703,454)
<b>Net Change in Total Pension Liability</b>	<b>33,881,804</b>	<b>15,698,639</b>	<b>35,421,692</b>	<b>(208,499,526)</b>	<b>293,792,979</b>	<b>41,275,590</b>	<b>26,205,099</b>	<b>66,718,561</b>	<b>30,128,977</b>
<b>Total Pension Liability – Beginning</b>	<b>1,314,958,872</b>	<b>1,299,260,233</b>	<b>1,263,838,541</b>	<b>1,472,338,067</b>	<b>1,178,545,088</b>	<b>1,137,269,498</b>	<b>1,111,064,399</b>	<b>1,044,345,838</b>	<b>1,014,216,861</b>
<b>Total Pension Liability – Ending (a)</b>	<b>1,348,840,676</b>	<b>1,314,958,872</b>	<b>1,299,260,233</b>	<b>1,263,838,541</b>	<b>1,472,338,067</b>	<b>1,178,545,088</b>	<b>1,137,269,498</b>	<b>1,111,064,399</b>	<b>1,044,345,383</b>
<b>Plan Fiduciary Net Position</b>									
Employer Contributions	28,972,464	30,089,578	32,855,342	33,107,047	26,014,314	26,109,836	25,383,684	22,895,242	22,325,421
Employee Contributions	18,004,154	16,489,483	18,106,460	16,252,737	14,451,649	14,504,919	14,101,171	13,686,292	11,577,268
Pension Plan Net Investment Income	(96,156,340)	136,722,435	121,225,640	129,802,232	(37,810,306)	101,482,224	46,423,125	(5,701,922)	45,104,959
Benefit Payments/Refunds	(88,662,320)	(89,406,239)	(81,146,074)	(75,133,584)	(72,294,328)	(76,467,776)	(67,451,163)	(67,070,879)	(66,703,454)
Pension Plan Administrative Expense	(1,331,254)	(970,978)	(1,509,348)	(1,649,904)	(1,435,864)	(1,437,267)	(1,352,722)	(1,084,161)	(1,031,473)
Other	-	-	-	-	199,355	478,548	356,527	838,582	420,984
<b>Net Change in Plan Fiduciary Net Position</b>	<b>(139,173,296)</b>	<b>92,924,279</b>	<b>89,532,020</b>	<b>102,378,528</b>	<b>(70,875,180)</b>	<b>64,670,484</b>	<b>17,460,622</b>	<b>(36,436,846)</b>	<b>11,693,705</b>
<b>Plan Fiduciary Net Position – Beginning</b>	<b>1,000,315,787</b>	<b>907,391,508</b>	<b>817,859,488</b>	<b>715,480,960</b>	<b>786,356,140</b>	<b>721,685,656</b>	<b>704,225,034</b>	<b>740,661,880</b>	<b>728,968,175</b>
<b>Plan Fiduciary Net Position – Ending (b)</b>	<b>861,142,491</b>	<b>1,000,315,787</b>	<b>907,391,508</b>	<b>817,859,488</b>	<b>715,480,960</b>	<b>786,356,140</b>	<b>721,685,656</b>	<b>704,225,034</b>	<b>740,661,880</b>
<b>Net Pension Liability – Ending (a) – (b)</b>	<b>\$487,698,185</b>	<b>\$314,643,085</b>	<b>\$391,868,725</b>	<b>\$445,979,053</b>	<b>\$756,857,107</b>	<b>\$392,188,948</b>	<b>\$415,583,842</b>	<b>\$406,839,365</b>	<b>\$303,683,503</b>
<b>Plan Fiduciary Net Position as a Percentage of Total Pension Liability</b>	63.84%	76.07%	69.84%	64.71%	48.59%	66.72%	63.46%	63.38%	70.92%
<b>Covered Payroll</b>	112,476,672	\$111,621,001	\$117,996,230	\$118,370,595	\$116,009,622	\$112,705,188	\$108,788,871	\$99,983,221	\$99,211,756
<b>Net Pension Liability as a Percentage of Covered Payroll</b>	433.60%	281.89%	332.10%	376.77%	652.41%	347.98%	382.01%	406.91%	306.10%
<b>Notes to Schedule:</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: GRS/F&F

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### Required Supplementary Schedules

#### Schedule of Employer Contributions - Pension

Years ended December 31, 2013 - 2022

Year	Actuarially Calculated Employer Contribution	Actual Contributions	Annual Contribution Deficiency	Covered Payroll	Annual Contributions as a % of Covered Payroll	% Contributed
2013	35,429,985	22,908,182	(12,521,803)	98,519,844	23.25	65
2014	29,767,228	22,325,421	(7,441,807)	99,211,756	22.50	75
2015	22,446,316	22,895,242	448,926	99,983,224	22.90	102
2016	24,407,389	25,383,684	976,295	108,788,871	23.33	104
2017	25,349,355	26,109,836	760,481	112,705,188	23.17	103
2018	26,014,314	26,014,314	0	116,009,622	22.42	100
2019	31,269,882	33,107,047	1,837,165	118,370,595	27.97	106
2020	32,265,286	32,855,342	590,056	117,996,230	27.84	102
2021	31,938,478	30,089,578	(1,848,900)	111,621,001	26.96	94
2022	28,708,522	28,972,464	263,942	112,476,672	25.76	100

Source: GRS/F&F

#### Schedule of Investment Returns<sup>1</sup>

Year ended December 31

	Annual Return <sup>2</sup>
2022	(9.46)%
2021	16.43
2020	16.90
2019	18.22
2018	(5.23)
2017	14.15
2016	6.60
2015	(0.61)
2014	5.99

Source: Clearstead

<sup>1</sup>The effort and cost to recreate financial statement information for the previous Year was not practical. Additional years will be displayed as they become available

<sup>2</sup>Annual money-weighted rate of return, net of investment expenses

**Notes to the Trend Data - Pension**

Valuation Date	December 31, 2021
Actuarial Cost Method	Entry Age Normal (Level Percent of Pay)
Amortization Method	Level-Percentage Closed
Remaining Amortization Period	24 years
Asset Valuation Method	Four-year smoothed market with a 20% Corridor
Inflation	3.00% wage inflation; 2.50% price inflation
Salary Increases	3.80% to 13.50% including inflation
Investment Rate of Return	7.25%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition
Mortality	<p>Healthy Active Lives:                      PubS-2010 (amount-weighted) employee tables.</p> <p>Retiree and Vested Terminated Lives:                      PubS-2010 (amount-weighted) healthy retiree tables adjusted by 94%.</p> <p>Contingent Survivor Lives:                      PubS-2010 (amount-weighted, above-median) contingent survivor tables adjusted by 105%.</p> <p>Disabled Lives:                      PubS-2010 (amount-weighted) disabled retiree tables.                      The mortality assumptions for all participants are sex distinct with mortality improvement projected five years beyond the valuation date using scale MP-2020 and a base year of 2010.</p>

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### Required Supplementary Schedules

<b>Schedule of Changes in Net OPEB Liability and Related Ratios</b>						
<b>Years ended December 31, 2017-2022</b>						
	<b>2022</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
<b>Total OPEB Liability</b>						
Service Cost	\$18,271,163	\$29,981,189	\$19,270,150	\$18,125,171	\$26,136,968	\$23,656,819
Interest on the Total OPEB liability	12,959,444	15,920,330	19,149,833	16,991,685	19,662,580	19,242,920
Changes of benefit terms	-	(142,052,226)	-	-	-	709,187
Difference between Expected and Actual Experience	(5,746,989)	5,300,713	(26,653,702)	(26,860,308)	(74,912,273)	(1,203,916)
Assumption Changes	(177,048,514)	(144,181,853)	167,136,540	122,197,501	(68,877,841)	46,862,079
Benefit payments, including refunds of employee contributions	(5,850,785)	(6,161,382)	(8,303,045)	(8,618,705)	(8,538,516)	(9,433,745)
<b>Net Change in Total OPEB Liability</b>	<b>(157,415,681)</b>	<b>(241,193,229)</b>	<b>170,599,776</b>	<b>121,835,344</b>	<b>(106,529,082)</b>	<b>79,833,344</b>
<b>Total OPEB Liability - Beginning</b>	<b>510,842,828</b>	<b>752,036,057</b>	<b>581,436,281</b>	<b>459,600,937</b>	<b>566,130,019</b>	<b>486,296,675</b>
<b>Total OPEB Liability - Ending (a)</b>	<b>353,427,147</b>	<b>510,842,828</b>	<b>752,036,057</b>	<b>581,436,281</b>	<b>459,600,937</b>	<b>566,130,019</b>
<b>Plan Fiduciary Net Position</b>						
Employer Contributions	3,890,000	-	-	-	4,623,201	4,640,177
Employee Contributions	-	-	-	-	-	-
Net investment income	(12,854,216)	17,793,515	16,140,521	18,006,553	(5,852,119)	14,467,179
Benefit payments, including refunds of employee contributions	(5,850,785)	(6,161,382)	(8,303,045)	(8,618,705)	(8,538,516)	(9,433,745)
OPEB plan administrative expense	(177,933)	(126,296)	(200,961)	(229,044)	(203,812)	(204,198)
<b>Net Change in Plan Fiduciary Net Position</b>	<b>(14,992,934)</b>	<b>11,505,837</b>	<b>7,636,515</b>	<b>9,158,804</b>	<b>(9,971,246)</b>	<b>9,469,413</b>
<b>Plan Fiduciary Net Position - Beginning</b>	<b>130,128,730</b>	<b>118,622,893</b>	<b>110,986,378</b>	<b>101,827,574</b>	<b>111,798,820</b>	<b>102,329,407</b>
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>115,135,796</b>	<b>130,128,730</b>	<b>118,622,893</b>	<b>110,986,378</b>	<b>101,827,574</b>	<b>111,798,820</b>
<b>Net OPEB Liability - Ending (a) - (b)</b>	<b>\$238,291,351</b>	<b>\$380,714,098</b>	<b>\$633,413,164</b>	<b>\$470,449,903</b>	<b>\$357,773,363</b>	<b>\$454,331,199</b>
<b>Plan Fiduciary Net Position as a Percentage of Total OPEB Liability Covered Payroll<sup>2</sup></b>						
	32.58%	25.47%	15.77%	23.59%	22.16%	19.75%
	\$112,476,672	\$111,621,001	\$117,996,230	\$118,370,595	\$116,009,622	\$112,705,188
<b>Net OPEB Liability as a Percentage of Covered Payroll</b>						
	211.86%	341.08%	536.81%	397.44%	308.40%	403.11%

Source: GRS/F&F

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### Required Supplementary Schedules

#### Schedule of Employer Contributions - OPEB

Years ended December 31, 2017-2022

<b>Year</b>	<b>Actuarially Calculated Employer Contribution</b>	<b>Actual Contributions</b>	<b>Annual Contribution Deficiency (Excess)</b>	<b>Covered Payroll</b>	<b>Annual Contributions as a % of Covered Payroll</b>	<b>% Contributed</b>
2017	30,774,152	4,640,177	26,133,975	112,705,188	4.12%	15.08%
2018	22,105,633	4,623,201	17,482,432	116,009,622	3.99%	20.91%
2019	15,228,377	-	15,228,377	118,370,595	0.00%	0.00%
2020	17,303,902	-	17,303,902	117,996,230	0.00%	0.00%
2021	15,435,382	-	15,435,382	111,621,001	0.00%	0.00%
2022	10,787,780	3,890,000	6,897,780	112,476,672	3.46%	36.05%

Source: GRS / F&F

<b>Schedule of Investment Returns</b>	
Year ended December 31	
	<b>Annual Return<sup>2</sup></b>
2022	(9.46)%
2021	16.43
2020	16.90
2019	18.22
2018	(5.23)
2017	14.15
2016	6.60
2015	(0.61)
2014	5.99

*Source: Clearstead*

<b>Notes to the Trend Data - OPEB</b>	
Valuation Date	December 31, 2021
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level percent of pay - open
Equivalent Single Amortization Period	30 years
Asset Valuation Method	Four-year smoothed market with a 20% Corridor
Inflation	3.50% wage inflation; 2.50% price inflation
Salary Increases	3.80% to 13.50% including inflation
Investment Rate of Return	7.25%, net to OPEB plan investment expense, including inflation
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.

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### Required Supplementary Schedules

Schedule of HPRS' Proportionate Share of the Net Pension Liability – Last 10 Years <sup>1</sup>								
<b>Ohio Public Employees Retirement System – Traditional Pension Plan</b>								
	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
HPRS' proportion of the net pension liability (asset)	0.003889%	0.003991%	0.004088%	0.004527%	0.004786%	0.004728%	0.004710%	0.005055%
HPRS' proportionate share of the net pension liability (asset)	\$338,359	\$590,980	\$808,021	\$1,239,854	\$750,831	\$1,073,648	\$815,831	\$609,690
HPRS' covered payroll	564,480	562,179	575,112	611,504	632,469	611,150	586,187	619,711
HPRS' proportionate share of the net pension liability (asset) as a % of its covered payroll	60%	105%	140%	203%	119%	176%	139%	98%
Plan fiduciary net position as a % of the total pension liability	92.62%	86.88%	82.17%	74.70%	84.66%	77.25%	81.08%	86.45%
<b>Ohio Public Employees Retirement System – Combined Pension Plan</b>								
	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
HPRS' proportion of the net pension liability (asset)	0.037338%	0.037444%	0.034801%	0.017626%	0.011893%	0.011169%	0.010530%	0.010396%
HPRS' proportionate share of the net pension liability (asset)	(147,114)	(108,087)	(72,437)	(19,710)	(16,190)	(6,216)	(5,124)	(4,003)
HPRS' covered payroll	170,220	165,016	154,720	75,384	48,708	43,475	38,320	36,600
HPRS' proportionate share of the net pension liability (asset) as a % of its covered payroll	86%	66%	47%	26%	33%	14%	13%	11%
Plan fiduciary net position as a % of the total pension liability	169.88%	157.67%	145.28%	126.64%	137.28%	116.55%	116.90%	114.83%

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### Required Supplementary Schedules

Schedule of Contributions - Last 10 Years <sup>1</sup>								
<b>Ohio Public Employees Retirement System – Traditional Pension Plan</b>								
	<b><u>2022</u></b>	<b><u>2021</u></b>	<b><u>2020</u></b>	<b><u>2019</u></b>	<b><u>2018</u></b>	<b><u>2017</u></b>	<b><u>2016</u></b>	<b><u>2015</u></b>
Contractually required contribution	\$79,028	\$78,705	\$80,516	\$85,611	\$82,221	\$73,338	\$70,343	\$74,365
Contributions in relation to the contractually required contribution	79,028	78,705	80,516	85,611	82,221	73,338	70,343	74,365
Contribution deficiency (excess)	-	-	-	-	-	-	-	-
HPRS' covered payroll	564,480	562,179	575,112	611,504	632,469	611,150	586,187	619,711
Contributions as a % of covered payroll	14%	14%	14%	14%	13%	12%	12%	12%
<b>Ohio Public Employees Retirement System – Combined Pension Plan</b>								
	<b><u>2022</u></b>	<b><u>2021</u></b>	<b><u>2020</u></b>	<b><u>2019</u></b>	<b><u>2018</u></b>	<b><u>2017</u></b>	<b><u>2016</u></b>	<b><u>2015</u></b>
Contractually required contribution	23,831	23,102	21,689	10,554	6,332	5,217	4,598	4,560
Contributions in relation to the contractually required contribution	23,831	23,102	21,689	10,554	6,332	5,217	4,598	4,560
Contribution deficiency (excess)	-	-	-	-	-	-	-	-
HPRS' covered payroll	170,220	165,016	154,720	75,384	48,708	43,475	38,320	36,600
Contributions as a % of covered-employee payroll	14%	14%	14%	14%	13%	12%	12%	12%

<sup>1</sup>Additional years will be added as they become available



Required Supplementary Schedules

Notes to Required Supplementary Schedules

**Schedule of Changes in Net Pension Liability and Net OPEB Liability**

The total pension liability and total OPEB liability contained in these schedules were provided by HPRS's actuary, Foster & Foster. The net pension liability is measured as the total pension liability, less the amount of the fiduciary net position of the Retirement System related to Pension. The net OPEB liability is measured as the total OPEB liability, less the amount of the fiduciary net position of the Retirement System related to OPEB.

<b>Schedule of Administrative Expenses</b>	
Year ended December 31, 2022	
<b>Personnel</b>	\$821,554
<b>Professional and technical services</b>	
Computer services	47,284
Actuary	155,646
Education	36,759
Medical consulting	6,200
Audit	46,122
Legal	69,281
Miscellaneous services	21,213
Medical services	12,900
<b>Total professional and technical services</b>	<b>395,405</b>
<b>Communications</b>	
Printing	2,836
Postage	9,061
Telephone	3,780
Internet	7,920
<b>Total communications</b>	<b>23,597</b>
<b>Other expenses</b>	
Office rent	125,163
Depreciation	-
Insurance	69,649
Supplies	8,047
Miscellaneous	20,369
Loss on disposal of equipment	-
Ohio Retirement Study Council	2,704
Travel	23,743
Memberships and subscriptions	7,020
New equipment	6,231
Computer Service – Offsite server	3,900
Cable	1,807
Retiree Health Care Consultant	-
<b>Total other expenses</b>	<b>268,631</b>
<b>Total administrative expenses</b>	<b>\$1,509,187</b>

Above amounts do not include investment-related administrative expenses.

<b>Schedule of Investment Expenses</b>	
Year ended December 31, 2022	
<b>Personnel</b>	108,162
<b>Professional services</b>	
Investment services	8,156,915
Monitoring services	311,637
<b>Total professional services</b>	<b>8,468,552</b>
<b>Other expenses</b>	
Due diligence	5,292
Computer services	5,254
Memberships and subscriptions	2,077
Printing and supplies	315
Total other expenses	12,938
<b>Total investment expenses</b>	<b>\$8,589,652</b>

<b>Payments to Consultants</b>		
Year ended December 31, 2022		
<b>Consultant</b>	<b>Fee</b>	<b>Service</b>
Attorney General's Office	\$16,180	Legal
Bricker Graydon	5,850	Legal
Clearstead	311,637	Investment
County of Summit, Ohio	19,095	Auditing
David Tanner, MD	6,200	Medical
Foster & Foster	107,500	Actuarial
Ohio Auditor of State	527	Auditing
Pension Trustee Advisors	48,146	Actuarial
Rea & Associates	26,500	Auditing
Seyfarth Shaw, LLP	47,250	Legal
<b>Total</b>	<b>\$588,885</b>	

See the Investment Section, pages 80-82 for payments to investment managers and brokers.

**INDEPENDENT AUDITOR’S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS***

To the Ohio Highway Patrol Retirement System Board  
Franklin County, Ohio  
1900 Polaris Parkway, Suite 201  
Columbus, Ohio 43240

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States (*Government Auditing Standards*), the financial statements of the Ohio Highway Patrol Retirement System (the HPRS), a component unit of the State of Ohio, as of and for the year ended December 31, 2022, and the related notes to the financial statements, which collectively comprise the HPRS’ basic financial statements, and have issued our report thereon dated June 15, 2023.

**Report on Internal Control Over Financial Reporting**

In planning and performing our audit of the financial statements, we considered the HPRS’ internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the HPRS’ internal control. Accordingly, we do not express an opinion on the effectiveness of the HPRS’ internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses or significant deficiencies may exist that were not identified.

### **Report on Compliance and Other Matters**

As part of obtaining reasonable assurance about whether the HPRS' financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

### **Purpose of this Report**

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the HPRS' internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the HPRS' internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

*Rea & Associates, Inc.*

Rea & Associates, Inc.  
Gahanna, Ohio  
June 15, 2023

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# Investment Section

### **Investment Overview**

#### **Introduction**

Chapter 5505 of the Ohio Revised Code and the Board-adopted *Investment Policy* govern investment activity at HPRS. In accordance with Ohio Revised Code 5505.06, “The Board shall have full power to invest the funds. The Board and other fiduciaries shall discharge their duties with respect to the funds solely in the interest of the participants and beneficiaries; for the exclusive purpose of providing benefits to participants and their beneficiaries and defraying reasonable expenses of administering the system; with care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims; and by diversifying the investments of the system so as to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so.”

HPRS’s total investment portfolio, as reflected in the *Statement of Fiduciary Net Position* (page 24), is comprised of the Pension (Defined Benefit) and Post-Employment Health Care portfolios’ assets. Defined Benefit portfolio assets originate from member and employer contributions to the system. The management of these assets is the responsibility of the HPRS Investment Committee, under the direction of the Board of Trustees, and HPRS’s Investment Consultant, Clearstead. Clearstead assists the Board with the construction and diversification of HPRS’s investment portfolio and manager selection. Additionally, Clearstead assists with matters of investment policy and asset allocation recommendations and provides monthly and quarterly performance reviews.

#### **Investment Policy**

The Board-adopted *Investment Policy* (pages 83-93) provides information on HPRS’s investment policies and performance objectives. The policy establishes asset allocation targets, risk tolerances, return objectives, and other guidelines, such as defining the responsibilities of the fiduciaries who implement the strategies and manage HPRS’s investment portfolio.

#### **Investment Summary**

HPRS’s *Investment Summary* (page 72) includes the total fund assets of the Pension and Post-Employment Health Care portfolios. All investments are reported at fair value, which is the amount that the plan could reasonably expect to receive in a current sale between a willing buyer and a willing seller, other than in a forced or liquidation sale.

A complete listing of assets held as of December 31, 2022 is available from HPRS upon request.



### **Investment Performance**

As shown in the *Schedule of Investment Results* (page 76), performance information is reported gross-of-fees (net-of-fees for alternative investments) versus benchmark for the total fund and each asset class over selected periods. All returns are calculated in U.S. Dollars using a time-weighted rate of return. Net-of-fees returns are available from HPRS upon request.

*Source: HPRS Investment Staff*

## Investment Section

### Investment Summary

December 31, 2022

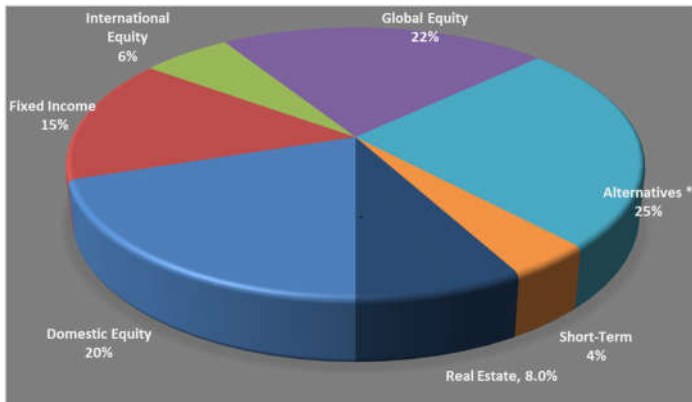
	Fair Value	Actual	Target	Range
Domestic equity	\$203,994,618	20.6%	20.0%	15 - 25%
Fixed income	84,339,704	8.6	15.0	9 - 29
Alternatives *	303,887,708	30.8	25.0	15 - 35
International equity	54,630,565	5.6	6.0	1 - 11
Global equity	198,408,783	20.2	22.0	17 - 27
Short-term	53,703,240	5.5	4.0	0 - 9
Real estate	85,167,724	8.7	8.0	3 - 13
Net portfolio value	<u>\$984,132,342</u>	<u>100.0%</u>	<u>100.0%</u>	

\* Alternatives include private equity, fund of hedge funds, and direct infrastructure investments

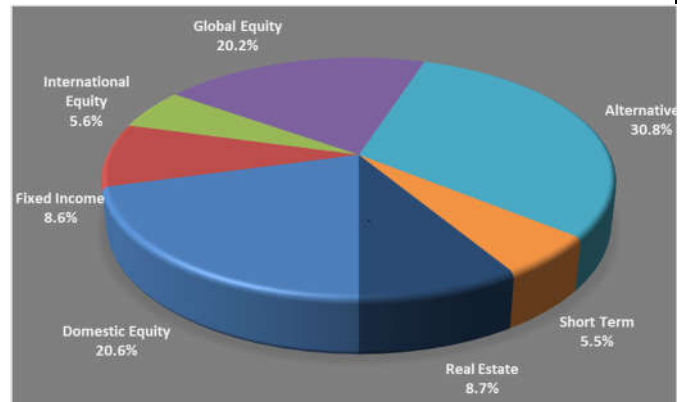
### Asset Allocation – Total Fund

December 31, 2022

Policy Allocation

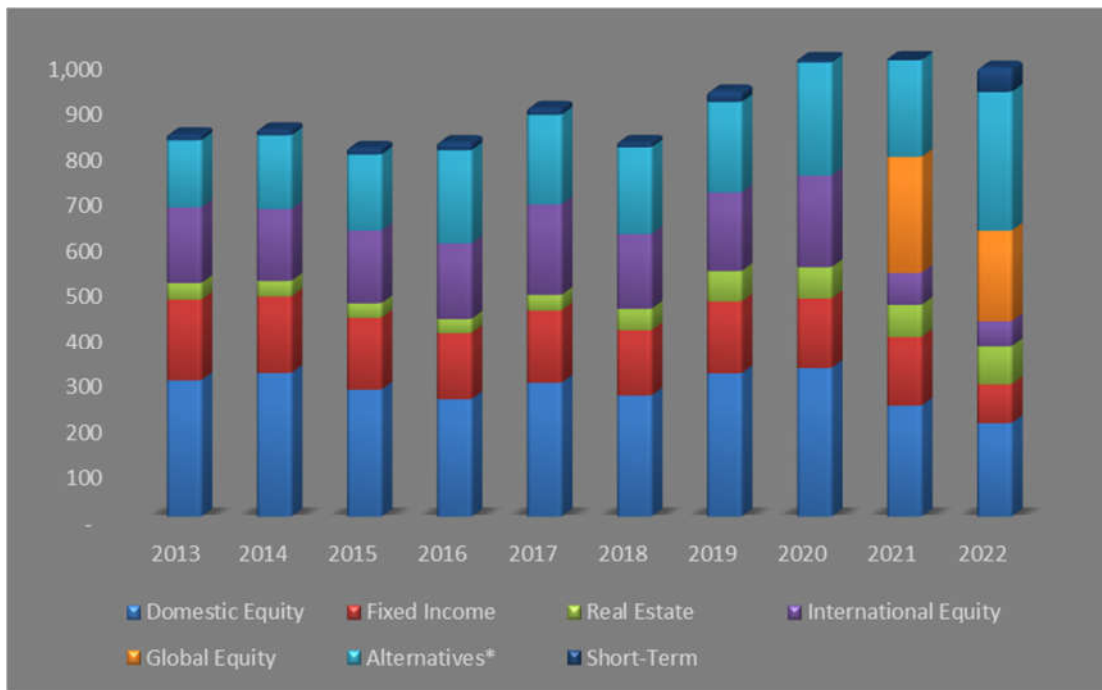


Actual Allocation



\* Alternatives include private equity, fund of hedge funds, and direct infrastructure investments

**Ten-Year Investment Comparison**  
(in millions)



\* Alternatives include private equity, fund of hedge funds, and direct infrastructure investments.

## Economic & Market Review – 2022

2022 was a challenging year for investors. While the economy continued to grow (real GDP was +2.1% in 2022), the markets were volatile and experienced meaningful drawdowns. The principal issue was related to stubbornly high inflation, which peaked at 9% (US Headline) in June before retrenching to 6.5% by year-end. High inflation created angst because it led to more restrictive monetary policy, whereby the Federal Reserve began to reduce the size of its balance sheet and increase interest rates in an effort to fight it.

The causes of the inflationary pressures can be linked to easy fiscal and monetary policy that began during the pandemic as governments and central banks attempted to avert a financial crisis resulting from mandatory lockdowns related to COVID-19. In addition, the pandemic and measures taken during that time had a significant impact on global supply chains, which created limited supply of products. At the onset of the pandemic, consumer purchases were focused initially on goods rather than services; this negatively impacted travel and leisure (among other industries) and resulted in massive layoffs in such industries. Gradually, consumers began to travel and demand services again, which led many companies to hire aggressively from a smaller pool of workers and created wage pressures. Housing and energy prices also increased significantly due to similar factors (limited supply, significant demand).

Compounding these issues was Russia's invasion of Ukraine in February, which reduced energy supply to Europe because of resulting sanctions placed on Russia and the lessened the availability of grains, fertilizer and other natural resources sourced from Ukraine. This increased energy and food prices and created uncertainty about Europe's ability to supply its citizens and corporations with the necessary energy they would need to heat their homes and run their businesses. In addition, China struggled with its zero Covid policy, leverage, and policy decisions related to some of its largest tech and communication service companies.

Global central banks reacted to inflationary pressures by raising interest rates and becoming less accommodative. For example, the Federal Reserve hiked interest rates from 0% - 0.25% to 4.25% - 4.50% within the calendar year, including four consecutive meetings in which the overnight lending rate was increased by 75 bps.

The market reacted to this policy shift by sending both equity and bond prices lower (higher bond yields indicate lower prices). U.S. Large Cap Stocks (S&P 500) returned -18.1%, Developed International Stocks (MSCI EAFE) returned -14.5%, and Emerging Market Equities (MSCI EM) returned -20.1%. Meanwhile, the US Bond Market (Bloomberg US Aggregate) returned -13.0%. Diversification across the broad markets did not work well in 2022.

However, there were some large differences in returns based on investment style and characteristics. For example, value stocks (less expensive, more dividend focused) greatly outperformed growth stocks for the year while shorter maturity bonds outperformed longer maturity bonds meaningfully. Collectively, short maturity bonds and

## Investment Section

### Report on Investment Activity

value stocks are considered to be low duration assets because the value can be attributed to cash flows occurring closer to the present time. This theme was important in 2022.

Private markets also generally performed relatively well in 2022, though there was dispersion by investment type. Energy-oriented investments were among the best performers while some of the high growth, higher valuation areas of the private markets began to see mark downs. Private credit remained an area of strength, particularly compared to public credit markets, and real estate was up for the year though began to deteriorate in Q4.

MARKET BENCHMARK RETURNS					
December 31, 2022		1M	3M	12M	YTD
US Large Cap	S&P 500	-5.8%	7.6%	-18.1%	-18.1%
US Small Cap	Russell 2000	-6.5%	6.2%	-20.4%	-20.4%
Developed Intl	MSCI EAFE	0.1%	17.3%	-14.5%	-14.5%
Emerging Intl	MSCI Em Mkt	-1.4%	9.7%	-20.1%	-20.1%
Real Estate	NAREIT	-5.1%	4.5%	-25.1%	-25.1%
Core Fixed	BarCap Agg	-0.5%	1.9%	-13.0%	-13.0%
Short Fixed	BarCap 1-3Yr	0.2%	0.9%	-3.7%	-3.7%
Long Fixed	BarCap LT G/C	-1.4%	2.6%	-27.1%	-27.1%
Corp Debt	BarCap Corp	-0.4%	3.4%	-15.3%	-15.3%

Source: Bloomberg

The performance data shown represents past performance. Past performance is not an indicator of future results. Current performance data may be lower or higher than the performance data presented.

\*Source: Bloomberg

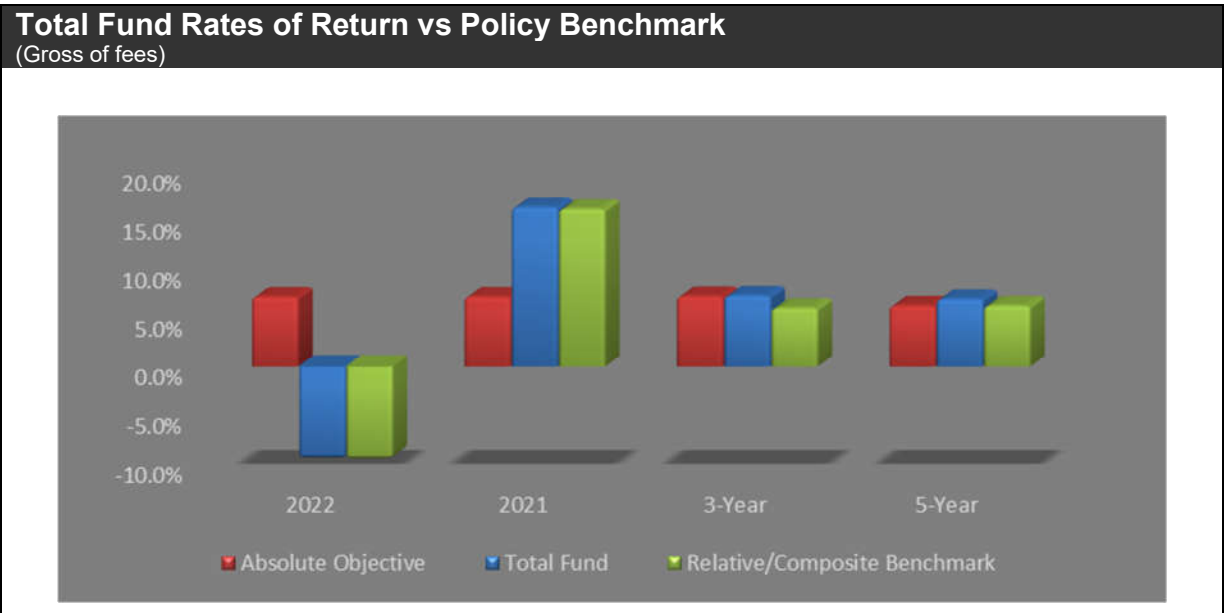
Source: Clearstead

<b>Schedule of Investment Results</b>				
Year ended December 31, 2022				
	<u>2022</u>	<u>2021</u>	<u>3-Year</u>	<u>5-Year</u>
<b>Domestic Equity</b>	<b>-17.3%</b>	<b>27.4%</b>	<b>9.1%</b>	<b>9.3%</b>
Russell 3000	-19.2	25.7	7.1	8.8
<b>International Equity</b>	<b>-22.1</b>	<b>1.9</b>	<b>-1.9</b>	<b>0.1</b>
MSCI ACWI ex US IMI	-20.3	1.6	-3.5	-1.4
<b>Global Equity</b>	<b>-22.5</b>	<b>-</b>	<b>-</b>	<b>-</b>
MSCI AC World Index (Net)	-18.4	18.5	4.0	5.2
<b>Fixed Income</b>	<b>-4.9</b>	<b>3.6</b>	<b>2.2</b>	<b>3.7</b>
Barclays Capital Aggregate/Opp. Blend	-8.5	1.5	-0.52	1.4
<b>Real Estate</b>	<b>7.6</b>	<b>13.7</b>	<b>8.3</b>	<b>10.2</b>
NCREIF	5.9	12.7	6.9	8.8
<b>Alternatives ▲</b>	<b>2.6</b>	<b>23.3</b>	<b>13.7</b>	<b>10.0</b>
HFRI Fund of Funds Composite Blend	3.5	22.6	12.9	9.8
<b>Total Fund</b>	<b>-9.5</b>	<b>16.4</b>	<b>7.4</b>	<b>7.0</b>
Absolute Objective	7.25	7.25	7.25	7.25
Relative/Composite Benchmark ►	-9.5	16.3	6.1	6.3

▲ Includes private equity, direct infrastructure and fund of hedge funds. Performance results for private equity classes are typically reported on a quarter lag basis, adjusted for cash flow activity during the fourth quarter.  
 ► Relative Composite Benchmark: Russell 3000, 31%; MSCI ACWI ex USA IMI, 20%; BBgBarc US Aggregate TR, 10%; HPRS Opportunistic Benchmark, 9%; BofA Merrill Lynch 91-Day T-Bill, 1%; HFRI Fund of Funds Composite Index, 12%; NCREIF Timberland, 3%; Alerian MLP, 2%; HPRS Private Equity Benchmark, 7%; NCREIF Property Index, 5%.

The HPRS Total Fund performance returns consist of all assets of the fund. All returns are calculated in U.S. Dollars using a time-weighted rate of return based on market values. Performance is net of fees for alternative investments and gross of fees on all other investments. Net of fees returns are available upon request, and investment management fees vary among asset classes. Market value adjustments made as of December 31 will be reflected in the investment returns in the next financial statement.

*Source: Clearstead*



## Investment Section

### Domestic Equity Holdings

December 31, 2022

Security	Shares	Market Price	Fair Value
Innoviva Inc.	41,290	\$13.25	\$547,093
Churchill Downs Inc.	2,420	211.43	511,661
Shift4 Payments Inc.	9,090	55.93	508,404
Spirit Realty Capital Inc.	11,850	39.93	473,171
Smartsheet Inc.	11,950	39.36	470,352
Encore Wire Corp	3,410	137.56	469,080
Option Care Health Inc.	15,370	30.09	462,483
Saia Inc.	2,150	209.68	450,812
Inspire Medical Systems Inc.	1,770	251.88	445,828
ITT Inc.	5,230	81.10	424,153
Other	278,793		10,713,103
Total domestic equity securities	<u>383,323</u>		<u>\$15,476,140</u>

### Domestic Equity Commingled Funds

DFA Small Cap Subtrust			\$24,077,842
Vanguard Institutional Index Fund			164,440,637
Total domestic equity commingled funds			<u>188,518,479</u>
<b>Total domestic equity</b>			<b><u>\$203,994,619</u></b>

### International Equity Holdings

December 31, 2022

Security	Shares	Market Price	Fair Value
Ascendis Pharmaceuticals A/S ADR	4,830	\$122.13	\$589,888
Alkermes PLC	21,700	26.13	567,021
Axalta Coating Systems Ltd.	11,020	25.47	280,679
BRP Inc.	3,520	76.35	268,752
Sensata Technologies Holdings	6,610	40.38	266,912
WNS Holdings, Inc.	3,280	79.99	262,367
Total international equity securities	50,960		\$2,235,619

### International Equity Commingled Funds

DFA International Small Cap Value			7,949,490
Driehaus International Small Cap Growth			11,857,597
Invesco Emerging Markets			32,587,858
Total international equity commingled funds			<u>52,394,945</u>
<b>Total international equity</b>			<b><u>\$54,630,564</u></b>

## Investment Section

<b>Global Equity Holdings</b>	
December 31, 2022	
<b>Global Equity Commingled Funds</b>	
Bailie Gifford Long Term Global Growth	\$33,971,132
Mondrian Global All Countries World Equity	79,590,046
Ninety-One Global Franchise	84,847,606
Total global equity commingled funds	<u>198,408,784</u>
<b>Total global equity</b>	<b><u>\$198,408,784</u></b>

<b>Fixed Income Holdings</b>		
December 31, 2022		
<b>Security</b>	<b>Par Value</b>	<b>Fair Value</b>
USA Treasury Notes 2.875% Due 5/15/2032	\$1,500,000	\$1,382,340
USA Treasury Notes 5.500% Due 2/15/2045	1,760,000	1,325,016
USA Treasury Notes 3.750% Due 9/30/2029	1,200,000	1,191,516
FHLMC Series 5100 Class PD 1.500% Due 2/25/2049	1,288,233	1,059,765
FHLMC Series 5092 Class XC 1.500% Due 1/15/2041	1,232,331	1,048,196
FNMA Pool MA3186 4.00% Due 11/1/2037	1,018,486	980,659
USA Treasury Notes 0.625% Due 12/31/2027	1,000,000	847,150
USA Treasury Notes 2.375% Due 2/15/2042	1,050,000	801,696
Dover Corp Callable 8/4/2029 Unsecured 2.95% Due 11/4/2029	890,000	774,585
Berkshire Hathaway Energy Series WI Callable 1/15/2028 3.25% Due 4/15/2028	825,000	763,241
Other	<u>20,003,975</u>	<u>18,257,901</u>
Total fixed income securities	<u>\$31,768,025</u>	<u>\$28,432,065</u>
<b>Fixed Income Commingled Funds</b>		
Credit Suisse Secured Loan Fund		\$9,150,531
HIG Whitehorse Direct Lending Adv Fund		7,912,134
HIG Whitehorse Principal Lending Fund		16,410,430
Proterra Credit Fund 2		3,233,405
Silver Point Specialty Credit Fund		<u>19,201,140</u>
Total fixed income commingled funds		<u>\$55,907,640</u>
<b>Total fixed income</b>		<b><u>\$84,339,705</u></b>



## Investment Section

### Real Estate Holdings

December 31, 2022

<u>Asset</u>	<u>Shares</u>	<u>Market Price</u>	<u>Fair Value</u>
UMH Properties Inc Real Estate Investment Trust	12,240	\$16.10	\$197,064
<b><u>Total real estate assets</u></b>	12,240		\$197,064
<b><u>Real Estate Commingled Funds</u></b>			
Harrison Street Core Property			\$36,308,497
Long Wharf Real Estate Partners Fund IV			377,966
Long Wharf Real Estate Partners Fund V			12,330,620
Long Wharf Real Estate Partners Fund VI			8,958,361
Marathon European Credit Opportunity Fund III			8,645,589
Oaktree Real Estate Opportunities Fund IV			13,525
Oaktree Real Estate Opportunities Fund V			204,136
Oaktree Real Estate Opportunities Fund VI			2,961,772
Oaktree Real Estate Opportunities Fund VII			7,268,878
Oaktree Real Estate Opportunities Fund VIII			<u>7,901,315</u>
Total real estate commingled funds			\$84,970,659
<b>Total real estate</b>			<b>\$85,167,723</b>

### Private Equity Holdings

December 31, 2022

<u>Asset</u>	<u>Fair Value</u>
Alpine Investors VIII, LP	\$5,095,031
Bain Capital Distressed and Special Situations 2019 (A), LP	11,870,328
BDCM Opportunity Fund V, LP	4,632,681
Blue Point Capital Partners Fund III	4,315,690
Blue Point Capital Partners Fund IV	14,945,033
Carlyle Global Infrastructure Opportunity Fund, LP	7,470,118
GCM Grosvenor Private Equity Opportunities Fund, LP <sup>1</sup>	520,178
Genstar X LP	7,851,095
HarbourVest Partners 2013 Direct Fund LP	5,210,001
HarbourVest Partners Co-Investment Fund IV LP	11,504,065
HarbourVest Partners Co-Investment Fund IV LP AIV	(115,022)
HarbourVest Partners Co-Investment Fund V LP	16,094,821
HarbourVest Partners Co-Investment Fund V LP AIV	2,476,827
HarbourVest Partners Co-Investment Fund VI LP	4,618,926
HIG Advantage Buyout Fund, LP	18,924,033
HIG Middle Market LBO Fund III LP	11,344,834
HIG Middle Market LBO Fund IV LP	(159,672)
HIG Whitehorse Equity Sidecar LP	2,906,356
Kayne Anderson Energy Fund V	2,491,773
Kayne Anderson Energy Fund VI	233,030
Kayne Anderson Mezzanine Partners	32,008
Kayne Anderson Private Energy Income Fund	6,088,024
Kayne Anderson Private Energy Income Fund II	12,637,713
Pantheon Multi-Strategy Program 2014	36,191,308
Pantheon USA Fund VII, LP	2,966,158
PIMCO Corporate Opportunities Fund II	6,383,076
Quantum Energy Partners VII, LP	18,109,229
Quantum Energy Partners VII Co-Investment Fund, LP	<u>1,752,915</u>
<b>Total private equity</b>	<b>\$260,390,557</b>

## Investment Section

### Fund of Hedge Funds Holdings

December 31, 2022

<u>Asset</u>	<u>Fair Value</u>
Carlson Black Diamond Arbitrage Partners LP	\$17,898,381
DSC Meridian Credit Opportunities Onshore Fund LP	9,024,922
Evanston Capital Weatherlow Offshore Fund II	43,018,885
<b>Total fund of hedge funds</b>	<b>\$69,942,188</b>

### Direct Infrastructure Holdings

December 31, 2022

<u>Asset</u>	<u>Fair Value</u>
Partners Group Direct Infrastructure 2016 (USD) A, LP	\$12,567,538
Partners Group Direct Infrastructure III (USD) A, LP	4,987,425
<b>Total direct infrastructure</b>	<b>\$17,554,963</b>

All values are stated in U.S. dollars. A complete list of holdings is available upon request.

### Summary Schedule of Investment Manager Fees

Year ended December 31, 2022

Manager	Strategy	Assets Managed	Fees	Performance Fees
<b>Domestic Equity</b>				
Dimensional Fund Advisors	Small Cap Blend	24,077,842	80,118	-
Vanguard Institutional Index Fund	Large Cap Blend	164,440,636	34,378	-
WA Account	Miscellaneous	2,876	-	-
Westfield Capital Management	Small Cap Growth	17,905,947	273,652	-
<b>International Equity</b>				
Dimensional Fund Advisors	Small Cap Value	7,949,491	36,230	-
Driehaus Capital Management	Small Cap Growth	11,857,597	145,816	-
Invesco Trust Company	Emerging Markets	32,587,858	290,749	-
<b>Fixed Income</b>				
Credit Suisse	High Yield	9,150,530	83,968	-
WhiteHorse Capital Johnson Institutional Management	Direct Lending	24,322,564	669,314	411,633
Proterra Investment Partners LP	Intermediate-Term	28,432,065	71,906	-
Metlife Investment Management LLC	Private Credit	3,233,405	164,967	-
Silver Point Capital LP	Emerging Markets Debt	-	53,019	-
	Specialty Credit	19,201,140	148,804	279,417

**Summary Schedule of Investment Manager Fees (con't.)**

<b>Real Estate</b>				
Harrison Street Real Estate Capital LLC	Specialty Real Estate	36,308,497	348,178	-
Long Wharf Real Estate Partners	Specialty Real Estate	21,666,947	389,354	330,418
Marathon Asset Management	Credit Opportunity	8,645,589	220,437	61,937
Oaktree Capital Management	Specialty Real Estate	18,349,627	446,505	1,129,452
<b>Private Equity</b>				
<b>Alpine Investors</b>		5,095,031	62,119	
Bain Capital Credit, LP	Specialty Credit	11,870,328	125,000	-
Black Diamond Capital Management		4,632,681	39,393	-
Blue Point Capital Partners	Mid-Market Buyout	19,260,723	178,784	347,810
The Carlyle Group		7,470,118	107,314	-
GCM Grosvenor	Fund of Funds	520,178	-	9,137
Genstar Capital Partners		7,851,095	-	54,656
HarbourVest Partners	Co-Investment	39,789,617	307,067	-
HIG Capital		33,015,551	743,742	1,135,914
Kayne Anderson Capital Advisors LP	Energy, MLP, & Mezzanine	21,482,548	195,472	1,280,100
Pantheon Ventures LP	Fund of Funds	39,157,466	202,990	-
Pacific Investment Management Co. LLC	Corporate Opportunities	6,383,076	94,691	310,996
QEM Management LLC	Energy	19,862,144	238,874	830,594
<b>Hedge Funds</b>				
Carlson Capital LP	Arbitrage	17,898,381	155,740	-
DSC Meridian Capital		9,024,922	129,073	4,891
Evanston Capital Management	Fund of Funds	43,018,885	479,202	-
<b>Direct Infrastructure</b>				
Partners Group		17,554,963	366,235	490,631
<b>Global Equity</b>				
Baillie Gifford		33,971,132	318,410	-
Mondrian		79,590,046	347,078	-
Ninety-One		84,847,606	322,322	-
<b>Total</b>		<b>\$930,429,102</b>	<b>\$7,870,901</b>	<b>\$6,677,586</b>

## Investment Section

### Summary Schedule of Broker Fees

Year ended December 31, 2022

Broker	Fees	Shares	Average Cost
Goldman Sachs & Co.	-	11,322,290	0.000
Wells Fargo Securities	-	8,510,000	0.000
Bank of New York	-	7,929,973	0.000
Citigroup Global	-	6,891,721	0.000
JP Morgan Securities	-	2,525,000	0.000
Morgan Stanley	-	2,279,030	0.000
Millennium Advisors	-	1,640,000	0.000
Bank of America Securities	-	1,600,000	0.000
Merrill Lynch Pierce Fenner & Smith	-	1,500,000	0.000
Keybanc Capital	-	1,175,000	0.000
MarketAxess Corp.	-	1,175,000	0.000
Jane Street Execution Services	-	1,115,000	0.000
US Bancorp Investments	-	750,000	0.000
First Tennessee Bank	-	700,000	0.000
Janney Montgomery Scott	-	400,342	0.000
Abel Noser Corp.	3,280	327,978	0.010
National Financial Services	-	240,000	0.000
Robert W. Baird & Co.	3,162	210,822	0.020
Cap Institutional Services	3,161	210,720	0.020
Tradeweb Direct	-	200,000	0.000
Mutual Fund Agent	-	14,128	0.000
Mizuho Securities	243	6,080	0.040
Cowen & Co.	155	3,870	0.040
Keefe, Bruyette, & Woods	109	2,730	0.040
UBS Securities LLC	66	1,660	0.040
Liquidnet Inc.	15	510	0.030
Direct Trading Inc.	9	300	0.030
Instinet	1	70	0.020
<b>Total</b>	<b>\$10,202</b>	<b>50,732,223</b>	<b>\$0.000</b>

The brokerage commissions do not include commissions paid by external investment managers utilizing commingled fund structures. HPRS maintains a commission recapture program with Abel / Noser Corporation.

#### **HPRS Investment Policy**

##### **INTRODUCTION:**

The State Highway Patrol Retirement System (“System”) was established by section 5505.02 of the Ohio Revised Code (ORC) for State Highway Patrol employees, as defined in division (A) of ORC section 5505.01.

Pursuant to ORC section 5505.04, the administration and management of the Highway Patrol Retirement System are vested in the State Highway Patrol Retirement Board (“Board”). Members of the State Highway Patrol Retirement Board are the trustees of the funds created by ORC section 5505.03. The Board has full power to create and adopt, in regular meetings, an investment committee, policies, objectives, or criteria for the operation of the investment program that include asset allocation targets and ranges, risk factors, asset class benchmarks, time horizons, total return objectives, and performance evaluation guidelines.

##### **SYSTEM OBJECTIVE:**

The primary objective of the State Highway Patrol Retirement System is to provide eligible members and beneficiaries with scheduled pension benefits. To reach this objective, the Board and other System fiduciaries will comply with the duty detailed in ORC section 5505.06; to exercise care, skill, prudence, and diligence -- under the circumstances then prevailing -- that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character with like aims. A secondary objective of the fund is to maintain a sufficient degree of liquidity in order to meet unanticipated demands and changing environments. Members of the Retirement Board and other fiduciaries of the Retirement System fully accept the duty to incur only reasonable expenses in the operation of the State Highway Patrol Retirement System.

##### **INVESTMENT POLICY PURPOSE:**

This Investment Policy Statement (“Statement”) details the policies, procedures, asset allocation and guidelines for investment of the System, as established by the Board. It defines and assigns the responsibilities of all involved parties. The policy is intended to be sufficiently specific to be meaningful, yet flexible enough to be practical.

The investment policies and restrictions presented in this Statement serve as a framework to achieve the investment objectives at a level of risk deemed acceptable. These policies and restrictions are designed to minimize interference with efforts to attain overall objectives and to minimize the potential of excluding any appropriate investment opportunities.

#### **INVESTMENT OBJECTIVES:**

The overall long-term investment objective is for the System is to earn 7.25% over a market cycle. Meeting this return objective among other factors will help the System achieve full funded status in the future. This investment objective should be achieved with the least required level of portfolio volatility.

#### **DUTIES AND RESPONSIBILITIES:**

##### ***Board***

The role of the Board is supervisory, and discretion is delegated to investment managers who must adhere to the general guidelines established by the Board. The primary role of the Board is to:

- Establish performance goals
- Identify and review appropriate investment policy and guidelines
- Retain outside investment and actuarial counsel
- Review the results of the fund on a regular basis and implement necessary changes in the investment policies, objectives, asset allocation, and investment managers as needed

##### ***Investment Committee***

As delegated by the Board, the Investment Committee is responsible for ensuring that the investment process is managed in a prudent manner, seeking to meet the System's return objectives.

The Investment Committee will, at least quarterly, review the performance of the overall portfolio and selected components against their investment goals and policies.

The Investment Committee will, in accordance with the Manager Review Policy, consider whether the manager continues to operate in the manner represented when retained and outlined in the agreement between the System and the investment manager. The Committee will have the discretion to accept, reject or modify, in accordance with the Manager Review Policy, any recommendation to terminate an investment manager. The elected Chair, or Vice-Chair, will report to the Board at regularly scheduled meetings.

Other roles of the Investment Committee include the following:

- Approve the initiation of a search in accordance with the Selection of Investment Managers and Agents Policy as well as the Manager Search and Termination Policy
- Validate that the search process was carried out appropriately
- Attend manager presentations when necessary
- Request additional information, if warranted

### Investment Objectives, Policies, and Guidelines

#### **Chief Investment Officer and Staff**

The Chief Investment Officer (CIO), who is responsible for the day-to-day management of the investment program, is employed by, and is directly responsible to, the Retirement Board. A complete job description is available from HPRS upon request.

Other roles of the staff include the following:

- Rebalance the investment portfolio within the asset allocation guidelines of the Statement
- Implement tactical asset allocation positioning within the asset allocation guidelines of the Statement
- Raise cash for the payment of pension benefits and other commitments
- Post RFPs to HPRS' website
- Oversee the work of the Investment Consultant
- Ensure processes are completed in an appropriate manner
- Ensure the Investment Committee and Board receive appropriate information
- Coordinate the development and execution of manager contracts and guidelines
- Conduct on-site due diligence with firms if deemed appropriate

#### **Investment Consultant**

An Investment Consultant is employed by, and is directly responsible to, the Retirement Board. The consultant is a fiduciary to the System, attends Investment Committee and Board meetings, provides monthly investment monitoring reports, and works with the CIO to implement the Investment Policy of the Retirement Board.

Other roles of the investment consultant include the following:

- Reviewing asset allocation and investment strategy to determine if the current strategy meets the investment objective of the System
- Monitoring the performance of the total portfolio to determine if the collective investment strategy is outperforming the established benchmarks over rolling time periods
- Recommending strategic and tactical changes to asset allocation from time to time
- Communicating with investment managers to determine portfolio composition and ascertain information concerning organizational change
- Performing an annual fee assessment of the investment portfolio
- Identify the need for new managers
- Develop any request for proposals (RFP) for new managers
- Conduct on-site due diligence with candidate firms when necessary
- Conduct on-site due diligence with existing managers when necessary
- Attend the ORSC or other legislative meetings as needed

#### ***Custodian***

As provided in ORC section 5505.11, the Treasurer of State is the custodian of HPRS funds. The Treasurer appoints a banking institution as a sub-custodian, which acts as the custodian of HPRS funds. All disbursements are processed under the direction of the Treasurer after authorization by the Board. The custodian will physically maintain possession of securities owned by the System, collect dividend and interest payments, redeem maturing securities, and affect receipt and delivery following purchases and sales. The custodian shall also perform regular accounting of all assets owned, purchased, or sold, as well as movement of assets into and out of the System accounts. The custodian is also responsible for providing monthly statements to the System and investment consultant.

#### ***Investment Managers***

Each investment manager has discretion to purchase, sell, or hold the specific securities that will be used to meet the System's investment objectives. Each investment manager will be held responsible and accountable to achieve the objectives herein stated. While it is not believed that the limitations will hamper any investment manager, the investment manager should request modifications that it deems appropriate.

Managers are expected to:

- Act as a fiduciary to the System
- Meet with the Board or Investment Committee when requested, to review investment activity and results
- Hold and maintain errors and omissions insurance and provide proof of this insurance
- Provide frequent communication with HPRS and the Investment Consultant on all significant matters pertaining to the investment of assets
- Promptly notify HPRS and the Investment Consultant of any significant changes in the manager's investment strategy, organizational structure, financial condition, or personnel assigned to manage HPRS assets

#### **ADDITIONAL PROVIDERS:**

Additional specialists such as attorneys, auditors, and others may be employed by the Investment Committee to assist in meeting its responsibilities and obligations to administer the System prudently. All expenses for such experts must be customary and reasonable and will be borne by the System as deemed appropriate and necessary.

#### **ASSET ALLOCATION GUIDELINES:**

The asset allocation targets for the System are as follows:



		Long-Term Targets	
		<u>Sub Category</u>	<u>Range</u>
<b>Public Equity</b>	<b>48.0%</b>		<b>38% - 58%</b>
Global Equity		22.0%	17% - 27%
US Equity		20.0%	15% - 25%
Non- US Equity		6.0%	1% - 11%
<b>Alternative Investments</b>	<b>25.0%</b>		<b>15% - 35%</b>
Absolute Return		6.0%	0% - 11%
Private Equity		15.0%	10% - 25%
Real Assets		4.0%	0% - 9%
<b>Real Estate</b>	<b>8.0%</b>	8.0%	<b>3% - 13%</b>
<b>Fixed Income</b>	<b>19.0%</b>		<b>9% - 29%</b>
Core Fixed Income		6.0%	1% - 11%
Opportunistic		9.0%	4% - 14%
Cash		4.0%	0% - 9%
<b>Total Pension</b>	<b>100.0%</b>		

**ASSET CLASS PURPOSE:**

- The purpose of the public equity allocation is to provide a total return that will simultaneously provide for growth in principal and current income sufficient to support the System, while at the same time preserve the purchasing power of the System’s assets. It is recognized that the public equity allocation entails the assumption of greater market variability and risk.
- The purpose of the alternative investment allocation is to provide diversification, risk reduction, hedge inflation, as well as enhance the performance of the System. These purposes will vary by investment.
  - Absolute Return: The purpose of this allocation is to provide diversification, risk reduction and moderate growth.
  - Private Equity: The purpose of this allocation is to provide diversification and growth above public equity.
  - Real Assets: The purpose of this allocation is to provide diversification, income, and to hedge inflation.
- The purpose of the real estate component is to provide for growth of principal while at the same time preserving the purchasing power of the portfolio’s assets. In addition, the real

## Investment Section

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### Investment Objectives, Policies, and Guidelines

estate component seeks to enhance the overall portfolio by providing income, a hedge on inflation and modest diversification.

- The purpose of the fixed income allocation is to provide a deflation hedge, to reduce the overall volatility of the System, and to produce income.
- The purpose of the cash allocation is to provide liquidity for short-term obligations. All cash and equivalent investments should be made with concern for quality. High return is desirable, but the highest possible investment return should be sacrificed where quality is considered questionable.

### **PERMISSIBLE INVESTMENTS:**

System assets may invest in the following types of investments:

#### ***Equity Securities***

- Common stocks
- Convertible preferred stocks
- American depository receipts (ADRs) of non-U.S. companies
- Stocks of non-U.S. companies (Ordinary shares)
- Equity collective pools, mutual funds, and exchange traded funds

#### ***Alternative Investments***

- Tactical asset allocation strategies
- Absolute return strategies
- Long-short strategies
- Hedge funds or hedge fund-of-fund strategies
- Private equity and debt strategies
- Timber investments
- Energy master limited partnerships
- Infrastructure strategies
- Alternative collective pools, mutual funds, and exchange traded funds

#### ***Real Estate***

- U.S. and non-U.S. public real estate (REITS)
- U.S. and non-U.S. private real estate
- Real estate collective pools, mutual funds, and exchange traded funds

#### ***Fixed Income Securities***

- U.S. government and agency securities
- Municipal bonds
- Corporate notes and bonds
- Convertible notes and bonds
- Mortgage-backed bonds
- Preferred stock
- Fixed income securities of foreign governments and corporations
- Below investment grade corporate bonds
- Tactical fixed income strategies
- Private lending strategies
- Fixed income collective pools, mutual funds, and exchange traded funds

#### ***Cash Equivalents***

- Treasury bills
- Commercial paper
- Banker's acceptances
- Repurchase agreements
- Certificates of deposit
- Money market collective pools, mutual funds, and exchange traded funds

#### **PERFORMANCE BENCHMARKS:**

Performance results will be measured in three ways over a full business cycle:

1. The investment objective of the System: 7.25% (actuarial rate of return)
2. A blended benchmark of market indices based on the targeted asset allocation for the System portfolio:

## Investment Section

### Investment Objectives, Policies, and Guidelines

Asset Class	Benchmark(s)	Weight
U.S. Equity	Russell 3000 Index	20%
Non-U.S. Equity	International Blend: 67% MSCI Emerging Market Index/ 33% MSCI EAFE Small Cap Index	6%
Global Equity	MSCI ACWI Index	22%
Absolute Return	HFRI Fund of Funds Composite	6%
Real Assets	100% Real Assets Composite	4%
Private Equity	Total Portfolio: PE composite performance PE Secondary: Wilshire 5000 + 3% lagged 1 quarter PE Tertiary: Cambridge Private Equity Index	15%
Real Estate	Total Portfolio: Real estate composite performance Real Estate Primary: NCREIF Property Index	8%
Core Fixed Income	Bloomberg U.S. Aggregate Bond Index	6%
Global Opportunistic Fixed Income	Credit Suisse Leveraged Loans Index	9%
Cash	ML 91-Day T-Bill Index	4%

3. The System will be compared to a peer universe of similar sized public pension funds

#### SEPARATE ACCOUNT PORTFOLIO GUIDELINES:

The following guidelines only apply to separately managed accounts. Mutual funds and collective vehicles are not expected to comply with these guidelines but rather are bound to their fund prospectus for mutual funds and ETFs or the governing documents for collective pools.

#### Equity

An equity manager may not:

- Hold more than 15% of the account value in a single issuer
- Where a sector is greater than 10% of the benchmark, allow that sector to exceed 60% of the portfolio
- Where a sector is 10% or less of the benchmark, allow that sector to exceed 40% of the portfolio
- Invest in international-domiciled securities exceeding 20% of portfolio value in a domestic mandate
- Allow one country to be more than 20 percentage points above the country weighting of the relative benchmark in an international mandate
- Invest in emerging markets exceeding 35% of portfolio value in a developed international mandate

Equity managers are prohibited from investing in the following:

- Private placements
- Unregistered or restricted stock
- Derivatives
- Margin Trading/Short Sales
- Commodities
- Real Estate Property (excluding REITs)
- Guaranteed Insurance Contracts
- Securities issued by Highway Patrol Retirement System or its affiliates

#### **Core Fixed Income**

A core fixed income allocation will be diversified as to type of security, issuer, coupon, and maturity. Qualifying bonds, at the time of purchase, will be rated as investment-grade by at least two nationally recognized bond rating services. Generally, the average maturity of a fixed income allocation will be ten years or less, although individual securities may be longer.

No more than ten percent of a fixed income allocation will be invested in the securities of any one issuer and no more than five percent in any one issue, with the exception of U.S. government securities. Diversification of the bond portfolio will be accomplished by investing in a combination of U.S. government bonds, U.S. agency bonds, U.S. corporate bonds, high yield bonds, and non-U.S. bonds.

Managers are prohibited from using derivative instruments.

#### **Manager Selection**

Investment Managers shall be selected in accordance with the Selection of Investment Managers and Agents Policy as well as the Manager Search and Termination Policy.

The Board will consider investments that enhance the welfare of the State of Ohio, and Ohio citizens, where such investments offer safety and quality of return comparable to other investments currently available. Equal consideration will be given to investments otherwise qualifying under this section that involve minority-owned and controlled firms, or firms owned and controlled by women, either alone or in joint venture with other firms.

The Board will, at least annually, establish a policy with the goal to increase utilization of Ohio-qualified investment managers, when an Ohio-qualified investment manager offers quality, services, and safety comparable to other investment managers otherwise available.

## Investment Section

### Investment Objectives, Policies, and Guidelines

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The Board will, at least annually, establish a policy with the goal to increase utilization of Ohio-qualified agents for the execution of domestic equity and fixed income trades on behalf of the System, when an Ohio-qualified agent offers quality, services, and safety comparable to other agents otherwise available.

#### **Voting of Proxies**

Investment managers are responsible for voting proxies and should be made in the best interest of investors.

#### **Execution of Security Trades**

The Investment Committee expects the purchase and sale of its securities to be made in a manner designed to receive the combination of best price and execution.

#### **Directed Brokerage**

In separately managed equity accounts, HPRS investment managers are encouraged to use brokers that are under contract with HPRS to provide execution-only brokerage. Every five years, these brokers will be reviewed; the Board may consider issuing a Request for Proposal if it is deemed necessary. An investment manager may be excused from the directed brokerage requirement if it can document favorable execution.

#### **Periodic Portfolio and Policy Reviews**

Asset allocation should be reviewed at least annually to ensure that the plan is on track to achieve the investment goals and that all the major assumptions used to establish the plan remain reasonable. A comprehensive review of asset allocation in the form of asset-liability modeling should be conducted every five years, or whenever a major structural change occurs in liabilities or investment assets.

An asset allocation plan may require reconsideration when it becomes apparent that the assets are not keeping pace with the liabilities of a plan. This may occur not only as a result of the assets not performing as expected but also because the liabilities may not be behaving as expected.

To assure the continued relevance of the guidelines and objectives, as established in this investment policy statement, the Board should review the investment policy annually, or as deemed necessary.

#### **Investment Policy Revisions**

*Approved and Revised, December 16, 2022*  
*Approved and Revised, December 16, 2021*  
*Approved and Revised, December 17, 2020*  
*Approved and Revised, December 19, 2019*  
*Approved and Revised, February 21, 2019*  
*Approved and Revised, December 20, 2018*  
*Revised, December 14, 2017*  
*Revised December 15, 2016*  
*Revised, December 17, 2015*  
*Revised, December 18, 2014*  
*Approved, No Revisions, December 19, 2013*  
*Revised, February 21, 2013*  
*Revised, February 23, 2012*  
*Revised, October 27, 2011*  
*Revised, August 26, 2010*  
*Revised, April 22, 2010*  
*Revised, February 25, 2010*  
*Revised, April 23, 2009*  
*Revised, October 25, 2007*  
*Revised, June 16, 2005*  
*Revised, June 26, 2003*  
*Revised, November 15, 2001*  
*Revised, June 22, 1999*  
*Revised, March 13, 1997*  
*Adopted and approved, September 7, 1994*  
*Revised, June 29, 1994*  
*Revised, September 5, 1990*  
*Revised, June 1, 1988*  
*Adopted and approved, June 11, 1986*

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# Actuarial Section

June 15, 2023

Board of Trustees  
Ohio State Highway Patrol Retirement System  
1900 Polaris Parkway, Suite 201  
Columbus, OH 43240-4037

Dear Board:

Each year, an actuarial funding valuation is performed by a qualified actuary to determine the current financial status of the plan and calculate the contribution requirement that, combined with future investment returns, will ensure that all future obligations of the plan are satisfied. In these calculations, the actuary uses assumptions to estimate future experience and methods that serve as a budgeting mechanism to allocate contributions to the appropriate generation of taxpayers. The most recent funding valuation was completed based on the personnel data, assets, and plan provisions as of December 31, 2022.

In addition to the funding valuation, the actuary provides separate reports that contain the related results for GASB Statements No. 67 (pension) and No. 74 (retiree healthcare). The total pension/OPEB liability, net pension/OPEB liability, and certain sensitivity information shown in the GASB results are based on an actuarial valuation performed as of the December 31, 2021 measurement date. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statements No. 67 and No. 74. Use of these results for other purposes may not be applicable and produce significantly different results.

#### **DATA SOURCES**

The plan administrative staff provided the actuary with the personnel data used in the analysis. The actuarial value of assets was determined based on financial statements supplied by plan administrative staff. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results.

#### **EXPERIENCE**

The experience of the Fund over the last year is outlined in the funding report. Overall, the Fund experienced an actuarial gain of \$8.9 million, which consists of a \$19.8 million gain on the Fund's actuarial value of assets and a \$10.9 million loss on the System's actuarial accrued liability. Based on the actuarial value of assets, the Fund earned 9.50% compared to the assumed 7.25% return. For funding purposes, investment gains/losses are smoothed over a four-year period, subject to an 80% and 120% corridor on market value.

#### **BENEFIT CHANGES SINCE PRIOR REPORT**

There have been no benefit changes since prior report.

## **ASSUMPTIONS**

There were no changes made to the assumptions in the December 31, 2022 GASB Statements No. 67.

The changes to the assumptions in the December 31, 2022 GASB Statements No. 74 (retiree healthcare) are as follows:

- The discount rate was changed from 2.49% to 4.51%. This change is driven by the 20-year municipal bond index rate.
- The per capita claims cost and contribution amounts were updated to reflect the most recent 36-month Plan experience. Administrative fees, stop-loss premiums, and HRA contribution rates have also been updated to use rates effective January 1, 2022.

In our opinion, the assumptions used in the valuations, as adopted by the Board of Trustees, represent reasonable expectations of anticipated fund experience.

## **SCHEDULES FOR COMPREHENSIVE ANNUAL FINANCIAL REPORT**

The following schedules in the Actuarial Section of the Annual Financial Report were prepared based on information presented in the actuarial valuation reports. For more details on the development of these results, please see the complete valuation reports.

- Statement of Actuarial Assumptions and Methods
- Short-Term Solvency Test
- Active Membership Data
- Retirees and Beneficiaries Added to and Removed from Rolls
- Analysis of Financial Experience
- Number of Retired Lives Covered by Medical Mutual & Aetna Medicare Advantage – Added to and Removed from Rolls
- Summary of Plan Provisions

## **ACTUARIAL CERTIFICATION**

The valuations have been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of Chapter 5505 of the Ohio Revised Code, as well as applicable federal laws and regulations. Future actuarial measurements may differ significantly from the current measurements for a variety of reasons including changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations.

In our opinion, the assumptions and method used to determine the annual required contribution, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience.

In our opinion, the valuation results fairly represent the financial condition of the Ohio State Highway Patrol Retirement System as of December 31, 2021 and the GASB Statement Nos. 67 and 74 results as of December 31, 2022.

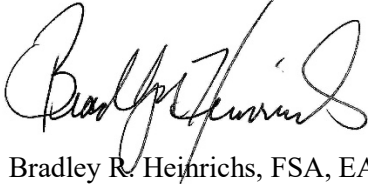
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meets the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All the sections of each valuation report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on this report has any direct financial interest or indirect material interest in the Ohio State Highway Patrol Retirement System, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Ohio State Highway Patrol Retirement System. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

Regards,



Jason L. Franken, FSA, EA, MAAA



Bradley R. Heinrichs, FSA, EA, MAAA

Statement of Actuarial Assumptions and Methods

After consulting with the actuary, these assumptions have been adopted by the Highway Patrol Retirement System Board of Trustees, effective for the year ended December 31, 2020, following a five-year experience study covering the period January 1, 2014 through December 31, 2018. The assumptions used for funding purposes are based on the December 31, 2021 actuarial valuation, while the assumptions used for financial reporting purposes are based on the December 31, 2022 reports issued in accordance with GASB Statements 67 and 68 and Statements 74 and 75.

**Funding Method**

An entry age normal actuarial cost method of valuation is used in determining benefit liabilities and normal cost. Differences between assumed experience and actual experience (“actuarial gains and losses”) become part of actuarially accrued liabilities. Unfunded actuarially accrued liabilities are amortized to produce payments (principal and interest) that are a level percent of payroll contributions.

**Asset Valuation Method**

The asset valuation method fully recognizes assumed investment income each year. Differences between actual and expected investment income are phased-in over a closed four-year period.

**Investment Return**

The investment return rates used in making valuations are 7.25% for both pension and OPEB assets, compounded annually (net of investment expenses).

**Payroll Growth**

Base pay increases are assumed to be 3.0% annually, attributable to broad economic effects such as inflation and real wage growth. Additional merit and seniority increases are assumed as follows:

<b>Payroll Growth</b>			
<b>Service Years</b>	<b>Merit &amp; Seniority</b>	<b>Base (Economic)</b>	<b>Total</b>
0 - 1	10.5%	3.0%	13.5%
2 - 3	6.5	3.0	9.5
4 - 5	5.0	3.0	8.0
6 - 11	2.0	3.0	5.0
12 +	0.8	3.0	3.8

**Other Assumptions**

80% of active participants are assumed to be married for purposes of death-in-service benefits and for purposes of retiring with the automatic joint and survivor benefit.

Health care costs are assumed to increase between 4.00% and 8.25% per year until 2028, ultimately declining to 3.5% for future years.

Each benefit recipient is assumed to be eligible for Medicare at age 65.

Statement of Actuarial Assumptions and Methods

Post-employment mortality is based on the MP-2021 Healthy Annuitant mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2010. Mortality rates for a particular calendar year are determined by applying the MP-2021 mortality improvement scale to the above-described tables.

Rates of separation from active service before retirement are developed on the basis of actual plan experience.

<b>Probabilities of Separation from Active Employment before Age &amp; Service Retirement</b>			
<i>Percentage of Active Members Separating Within Next Year</i>			
<b>Sample Age</b>	<b>Disability</b>	<b>Service</b>	<b>Other</b>
20	0.06%	0	13.00%
25	0.06	1 - 2	6.50
30	0.17	3 - 5	4.50
35	0.32	6 - 9	2.50
40	0.53	10 - 20	1.00
45	0.64	21 & up	2.50
50	0.85		
55	1.00		

<b>Probabilities of Age &amp; Service Retirement</b>		
<i>Percentage of Eligible Members Retiring Within Next Year</i>		
<b>Retirement Ages</b>	<b>Unreduced Benefit</b>	<b>Reduced Benefit</b>
48	20%	5.0%
49	15	5.0
50	15	5.0
51	15	10.0
52	20	--
53	10	--
54	20	--
55	30	--
56	40	--
57	40	--
58	40	--
59	40	--
60+	100	--

**Summary of Unfunded Actuarial Liabilities**

Each time a new benefit is added which applies to service already rendered, an “unfunded actuarial accrued liability” is created. In addition, if actual financial experiences are less favorable than assumed financial experiences, the difference is added to unfunded actuarial accrued liabilities.

In an inflationary economy, the value of the dollar is decreasing. This environment results in employee pays increasing in dollar amounts resulting in unfunded actuarial accrued liabilities increasing in dollar amounts, all at a time when the actual substance of these items may be decreasing. Looking at just dollar amounts of unfunded actuarial accrued liabilities can be misleading. Unfunded actuarial accrued liabilities divided by active employee payroll provides an index, which aids understanding. The smaller ratio of unfunded liabilities to active member payroll, the stronger the system. Observation of this relative index over a period of years will give an indication of whether the system is becoming financially stronger or weaker.

**Summary of Assets and Actuarial Liabilities for Retirement, Survivor, and Disability Allowances**

Years Ended December 31

Year	Actuarially Accrued Liability (AAL)	Actuarial Valuation of Assets (AVA)	Unfunded Actuarially Accrued Liability (UAAL)	Ratio of AVA to AAL	Active Member Payroll	UAAL as % of Active Member Payroll
2012 ▲	966,310,485	658,428,914	307,881,571	68.1	98,117,403	313.8
2013 ►	989,101,470	690,605,582	298,495,888	69.8	98,519,844	303.0
2014	1,012,752,337	712,285,604	300,466,733	70.3	99,211,756	302.9
2015 ►	1,078,984,597	739,848,920	339,135,677	68.6	99,983,224	339.2
2016	1,127,927,927	763,667,712	364,260,215	67.7	108,788,871	334.8
2017 ▲	1,153,619,256	774,670,663	378,948,593	67.2	112,705,188	336.2
2018 ▲	1,158,179,566	769,097,204	389,082,362	66.4	116,009,622	335.4
2019	1,173,155,313	796,284,462	376,870,851	67.9	118,370,595	318.4
2020	1,203,886,606	907,391,508	359,142,477	70.2	117,996,230	304.4
2021	1,233,493,873	1,000,315,787	339,064,208	72.5	111,621,001	303.8

▲ Plan Amendment  
► Assumption or method change

**Short-Term Solvency Test**

The HPRS financing objective is to pay for benefits through contributions that remain approximately level from year-to-year as a percent of member payroll. If the contributions to the system are level in concept and soundly executed, the system will pay all promised benefits when due, which is the ultimate test of financial soundness.

A short-term solvency test is one means of checking a system’s progress under its funding program. In a short-term solvency test, the plan’s present assets (cash and investments) are compared with (1) active member contributions on deposit, (2) the liabilities for future benefits to present retired lives, and (3) the liabilities for service already rendered by active members. In a system that has been following the discipline of level percent financing, the liabilities for active member contributions on deposit (column 1 below) and the liabilities for future benefits to present retired lives (column 2 below) will be fully covered by present assets, except in rare circumstances. In addition, the liabilities for service already rendered by active members (column 3 below) will be partially covered by the remainder of the present assets. Generally, if the system has been using level cost financing, the funded portion of column 3 will increase over time.

<b>Short-Term Solvency Test</b>							
Accrued Liabilities and Assets Allocated to Retirement, Survivor, and Disability Allowances							
Year	(1) Active Member Contributions	(2) Retirees, Beneficiaries, & Deferrals	(3) Active Members (Employer Financed Portion)	Valuation Assets	% of Accrued Liabilities Covered by Reported Assets		
					(1)	(2)	(3)
2012▲	108,311,937	586,311,106	271,687,442	658,428,914	100	94	-
2013▶	113,334,067	601,342,081	274,425,322	690,605,582	100	96	-
2014	117,441,639	622,719,141	272,591,557	712,285,604	100	96	-
2015▶	122,286,821	662,562,480	294,135,296	739,848,920	100	93	-
2016	127,311,764	688,936,795	311,679,368	763,667,712	100	92	-
2017▲	130,494,700	717,621,283	305,503,273	774,670,663	100	90	-
2018▲	138,101,643	706,952,911	313,125,012	769,097,204	100	89	-
2019▶	143,160,097	719,452,018	310,543,198	796,284,462	100	91	-
2020	147,608,705	748,539,825	307,738,076	844,744,129	100	93	-
2021	144,993,174	797,843,018	290,657,681	894,429,665	100	94	-

▲ Plan Amendment  
▶ Assumption or method change

In a short term OPEB solvency test, the plan’s present assets (cash and investments) are compared with (1) the liabilities for future benefits to present retired lives, and (2)



the liabilities for service already rendered by active members. In a system that has been following the discipline of level percent financing, the liabilities for active member contributions on deposit (column 1 below) and the liabilities for future benefits to present retired lives (column 1 below) will be fully covered by present assets, except in rare circumstances. In addition, the liabilities for service already rendered by active members (column 2 below) will be partially covered by the remainder of the present assets. Generally, if the system has been using level cost financing, the funded portion of column 2 will increase over time.

<b>Short-Term Solvency Test</b>					
<b>Accrued Liabilities and Assets Allocated to Retirement, Survivor, and Disability Health Care</b>					
Year	(1) Retirants, Beneficiaries, & Vested Deferreds	(2) Active Members (Employer Financed Portion)	Health Care Valuation Assets	% of Accrued Liabilities Covered by Reported Assets	
				(1)	(2)
2013	246,744,210	191,817,484	102,083,923	41%	-
2014 ▲	177,574,474	199,108,639	103,812,807	58	-
2015 ►	195,195,607	217,156,476	106,550,139	55	-
2016	187,123,383	216,579,635	108,282,136	58	-
2017 ▲►	125,764,087	122,323,654	110,137,458	88	-
2018 ►	120,357,969	141,646,686	109,458,262	91	-
2019	168,752,009	134,575,043	108,058,572	64	-
2020	162,432,699	122,895,230	110,433,029	68	-
2021	130,826,489	98,410,633	116,354,253	89	-

▲ Plan Amendment  
► Assumption or method change

Additional years will be displayed as they become available. Ultimately 10 years of data will be shown.

<b>Active Member Valuation Data</b>				
<b>Years Ended December 31</b>				
Year	Active Members	Annual Payroll (\$)	Average Annual Salary (\$)	% Increase in Average Pay
2012	1,645	98,117,403	59,646	(2.6)
2013	1,613	98,519,844	61,079	2.4
2014	1,622	99,211,756	61,166	0.1
2015	1,621	99,983,224	61,680	0.8
2016	1,670	108,788,871	65,143	5.6
2017	1,650	112,705,188	68,306	4.9
2018	1,668	116,009,622	69,550	1.8
2019	1,614	118,370,595	73,340	5.4
2020	1,542	117,996,230	76,522	4.3
2021	1,454	111,621,001	76,768	0.3

<b>Retirees and Beneficiaries Added to and Removed from Rolls</b>						
Years Ended December 31						
Year	Added to Rolls		Removed from Rolls		Rolls at End of Year	
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances
2012	79	3,380,304	47	983,484	1,497	53,646,504
2013	61	3,204,660	35	843,804	1,523	56,007,360
2014	66	3,008,568	31	723,492	1,558	58,292,436
2015	73	3,102,744	83*	1,671,876	1,548	59,723,304
2016	69	3,576,372	37	841,200	1,580	62,458,476
2017	83	3,878,244	26	675,084	1,637	65,661,636
2018	72	3,127,464	38	1,066,116	1671	67,722,984
2019	63	2,881,148	35	772,944	1699	69,831,187
2020	83	3,372,681	52	1,649,076	1730	71,554,792
2021	120	4,613,439	43	1,344,674	1807	74,823,557

\*Includes Alternate Payee records, which were combined with Participant records beginning with December 31, 2015

<b>Number of Retired Lives Covered by Medical Mutual &amp; Added and Removed from Rolls</b>			
Years Ended December 31			
Year	Added to Rolls	Removed from Rolls	Retirees with Health Care, Dental, or Vision Coverage
	Number	Number	Number
2017	78	87	1,386
2018	42	77	1,351
2019	88	46	1,393
2020	83	52	1,730
2021	120	43	1,807

The number of lives was compiled from data files provided by HPRS staff. This is the number of retired members covered and will differ from the number of actual lives covered based on the type of coverage elected. Additional years will be displayed as they become available. Ultimately 10 years of data will be shown.

### Summary of Plan Provisions

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#### **Purpose**

In 1941, the Highway Patrol Retirement System (HPRS) was created by the Ohio General Assembly to provide for retirement and survivor benefits for members and dependents.

#### **Administration**

The general administration and management of HPRS are vested in the Highway Patrol Retirement System Board of Trustees under Ohio Revised Code Chapter 5505. The eleven-member Board consists of the Superintendent of the State Highway Patrol, three appointed members, five elected active members, and two elected retired members.

The appointed members are investment experts designated by the Governor, the Treasurer of State, and the General Assembly. The active members are elected to four-year terms by members of the plan. Any contributing member is eligible to become an active member candidate, and each contributing member is eligible to vote in the active member election process. Any retiree who is an Ohio resident and who has not served as a statutory or active member of the Board during the past three years is eligible to become a retired member candidate. Each retiree is eligible to vote in the retired member election.

The Superintendent of the State Highway Patrol serves by virtue of the office held. A chairperson and vice-chairperson are elected by the Board annually. All regular Board meetings are public meetings. While the Board members serve without compensation, they are not expected to suffer any loss because of absence from regular employment while engaged in official Board duties. In addition, the members of the Board are reimbursed for actual and necessary expenses.

#### **Employer Contributions**

Ohio law requires that the Board certify the employer contribution rate to the Office of Budget and Management in even-numbered years. The employer rate may not be lower than the member rate, nor may it exceed three times the member rate. The employer contribution rate was 26.5% in 2021.

#### **Member Contributions**

Each member of HPRS, through payroll deduction, must contribute the legally established contribution rate as a percentage of salary. Individual member accounts are maintained by HPRS and, upon termination of employment, the amount contributed is refundable in lieu of the payment of a pension benefit. The member contribution rate was 14.0% in 2022.

#### **Service Credit**

Prior to retirement, the following types of additional service credit may be purchased: (1) military service, (2) prior refunded full-time service as a contributing member of the State Highway Patrol Retirement System, the Ohio Police & Fire Pension Fund, the State Teachers Retirement System of Ohio, the School Employees Retirement System of Ohio, the Ohio Public Employees Retirement System, and the Cincinnati Retirement System. Military service and prior refunded full-time service in HPRS and the Ohio Police & Fire Pension Fund may be used to meet the minimum service requirement in order to qualify

Summary of Plan Provisions

for unreduced pension benefits. In the case of prior service credit that was not refunded, service credit may be transferred directly from another Ohio retirement system to HPRS.

**Retirement**

**Age and Service Retirement**

Upon retirement from active service, a member is eligible to receive a pension by achieving a minimum age and service requirement, as follows:

Age	Service Credit
52	20 years
48*	25 years

\*Age 52 for troopers hired after January 1, 2020

A member may retire at age 52 to age 60, provided he has 20 or more years of service, or at age 48 with 25 or more years of contributing service. For members hired after January 1, 2020, 52 is the minimum retirement age. The member's pension equals the sum of 2.5% of final average salary times years of service not in excess of 20, 2.25% of final average salary times years of service in excess of 20 but not in excess of 25, and 2% of final average salary times years of service in excess of 25. The maximum pension payable is 79.25% of the member's final average salary. A member must retire upon attainment of age 60.

The final average salary, which includes base pay, longevity pay, hazard duty pay, shift differential, and professional achievement pay, is the average of a member's five highest years of salary.

Benefit payments become effective the day following the last day of employment and are payable monthly throughout the retiree's lifetime.

**Deferred Retirement**

A member who has acquired 20 years of service and retires is eligible to receive a pension computed in the same manner as an age and service pension at the attainment of age 52. A reduced benefit is payable if the retirant elects to receive a benefit after age 48 and prior to age 52. The reduction is waived for members with 25 or more years of service.

Summary of Plan Provisions

**Reduced Retirement**

A member who has acquired at least 20 but less than 25 years of service and is between the ages of 48 and 52 is eligible to receive a pension computed in the same manner as an age and service pension but reduced as follows:

Age	Percent of Age & Service Pension
48	75%
49	80%
50	86%
51	93%
52	100%

The election to receive a reduced pension may not be changed once a retiree has received a benefit payment.

**Other Pension**

A member who has acquired 15 years of service and who voluntarily resigns or is discharged is eligible to receive a pension equal to 1.5% of final average salary multiplied by total service. The pension shall begin the first month after attainment of age 55, provided the member does not withdraw his accumulated contributions from the employees' savings fund.

**Resignation or Discharge**

With less than 20 years of service credit, a member may not collect a pension if "dishonesty, cowardice, intemperate habits, or conviction of a felony" was the basis for discharge or resignation from the Ohio State Highway Patrol.

**Disability Retirement**

A member who retires as the result of a disability that was incurred in the line of duty is eligible to receive a pension that is the larger of (1) 61.25% of average final salary, or (2) the age and service pension. A member who retires as the result of a disability that was not incurred in the line of duty is eligible to receive a pension that is the larger of (1) 30% of average annual salary or (2) the age and service pension.

**Deferred Retirement Option Plan (DROP)**

A member who is eligible to retire with an unreduced pension benefit may enter the DROP. The member will continue to work for the Ohio State Highway Patrol. For actuarial purposes, a DROP member is considered retired; however, instead of receiving a monthly pension benefit, the member begins to accrue funds in a tax-deferred account. The DROP account is funded by the member's continuing active contributions and a pension accrual, as well as interest that accrues on these amounts.

A member may participate in DROP until age 60, but for no more than eight years. The minimum participation period is two years for members who enter the DROP at age 52 or more and three years for members who enter the DROP before age 52. A member

### Summary of Plan Provisions

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who terminates employment earlier than the minimum participation period will forfeit any accrued interest.

When a DROP member terminates employment with the Ohio State Highway Patrol, the member will begin to receive the monthly pension benefit that had previously been funding the DROP account. In addition, after the minimum participation period, the proceeds of the DROP account will be rolled over into a qualified plan or paid to the member in a lump sum, an annuity, or a combination of these distribution types.

#### **Payment Plans**

Each retirement applicant must select a benefit payment plan. Regardless of the plan selected, a survivor benefit is paid to an eligible survivor of a deceased active member or retiree. The plan options are as follows:

##### **Plan 1 - Single Life Annuity**

This plan pays the highest monthly benefit, calculated as a percentage of final average salary, and is limited to the lifetime of the retiree. A member who receives a disability retirement may only receive a single life annuity.

##### **Plan 2 - Joint and Survivor Annuity**

This plan pays a reduced monthly benefit for a member's lifetime and provides for a monthly benefit to a surviving beneficiary.

##### **Plan 3 - Life Annuity Certain and Continuous**

This plan is an annuity, payable for a guaranteed minimum period. If a retiree dies before the end of the period, the pension benefit is paid to the designated beneficiary for the remainder of the period.

##### **Partial Lump-Sum (PLUS) Distribution**

In addition to selecting one of the three retirement payment plans, a retiree may elect to receive a lump-sum cash payment, either as a taxable distribution, or as a rollover to a tax-qualified plan. Following this payment, a retiree will receive a reduced monthly benefit for life. To be eligible for a PLUS distribution, a retiree must have attained age 51 with at least 25 years of total service, or age 52 with at least 20 years of total service. The lump-sum amount may not be less than six times the monthly single life pension and not more than 60 times the monthly single life pension.

#### **Survivor Benefits**

A surviving spouse of a deceased retiree, or of an active member who was eligible to receive a retirement pension at the time of death, who retired or entered DROP prior to the effective date of House Bill 362 (May 11, 2018) receives a monthly benefit equal to one-half the deceased member's monthly pension benefit (minimum \$900). A surviving spouse of an active member who was not eligible for a retirement benefit at the time of death, or a deceased member who retired after May 11, 2018 receives a monthly survivor benefit of \$900, subject to annual review and increase by the Board.

Summary of Plan Provisions

Each surviving dependent child receives \$150 monthly until age 18. If the child is a full-time student, this benefit continues until age 23. A surviving qualified disabled child receives this benefit for life, or recovery from the qualifying disability.

**Health Care**

A comprehensive group medical health care plan is currently offered to all eligible benefit recipients and dependents. Benefit recipients may elect to cover spouses and dependent children by authorizing the appropriate premium deduction.

Dental and vision coverage is also available to benefit recipients and dependents. The Board, which has the authority to implement changes, annually evaluates the premiums and plan design.

**Medicare**

Medicare-eligible members are allocated a monthly amount pursuant to a Health Reimbursement Arrangement (HRA) to purchase individual plans on a vendor-operated exchange. HPRS no longer reimburses Part B premiums.

**Cost of Living (COLA)**

The Board has been vested with the responsibility to establish the COLA rate each year between 0.0 and 3.0%. In October 2022, the Board set a COLA rate of 3.00%, effective January 1, 2023. Various benefit recipients are eligible for a COLA according to the table below:

<b>Cost of Living Adjustment Eligibility</b>		
<b>Type of Benefit Recipient</b>	<b>Pension Effective Date Prior to January 7, 2013</b>	<b>Pension Effective Date on or After January 7, 2013</b>
Service Retirant / DROP Participant	The later of age 53 or the 13 <sup>th</sup> month after benefit commences	The later of age 60 or the 13 <sup>th</sup> month after benefit commences
Disability Retirant	The earlier of age 53 or the 61 <sup>st</sup> month after the benefit commences	
Beneficiary / Survivor	The 13 <sup>th</sup> month after the benefit commences	

**Death After Retirement**

Upon the death of a retiree, a lump-sum payment of \$5,000 is paid to the surviving spouse or to the retiree’s estate if there is no surviving spouse.

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# Statistical Section

### Introduction

The objectives of the statistical section are to provide financial statement users with additional historical perspective, context, and relevant details that will assist in using information in the financial statements, notes to the financial statements, and required supplementary information in order to better understand and assess HPRS's overall financial condition.

The schedules, beginning on page 113, show financial trend information that will assist users in understanding and assessing how HPRS's financial condition has changed over the past ten years. The financial trend schedules presented are --

- Changes in Fiduciary Net Position - Pension
- Changes in Fiduciary Net Position - OPEB
- Benefit Deductions from Net Position by Type - Pension
- Benefit Deductions from Net Position by Type - OPEB

The schedules, beginning on page 114, show demographic and economic information. This information is designed to assist in understanding the environment in which HPRS operates. The demographic and economic information and the operating information presented include --

- Principal Participating Employer
- Benefit Recipients by Type of Benefit
- Average Benefit Payments

**Changes in Fiduciary Net Position – Pension**

Years Ended December 31

	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
<b>Additions</b>										
Employer contributions	\$28,972,464	\$30,089,578	\$32,855,342	\$33,107,047	\$26,014,314	\$26,109,836	\$25,383,684	\$22,895,242	\$22,325,421	\$22,908,182
Member contributions	17,361,370	15,896,368	17,334,068	15,618,020	14,451,649	14,504,919	14,101,170	12,711,676	10,637,385	9,082,857
Transfers from other systems	804,605	638,854	826,595	781,873	410,250	619,110	773,206	947,265	586,929	1,353,520
Investment income, net	(96,172,186)	136,798,307	121,225,640	129,709,247	(37,806,872)	101,528,022	48,099,287	(4,465,153)	44,848,656	115,686,752
<b>Total additions</b>	<b>\$(49,033,747)</b>	<b>\$183,423,107</b>	<b>\$172,241,645</b>	<b>\$179,216,187</b>	<b>\$3,069,341</b>	<b>\$142,761,887</b>	<b>\$88,357,347</b>	<b>\$32,089,030</b>	<b>\$78,398,391</b>	<b>\$149,031,311</b>
<b>Deductions</b>										
Benefits paid to participants	84,861,348	85,884,437	78,593,402	73,484,448	71,581,420	75,395,901	67,439,444	65,828,374	63,329,792	60,955,916
Member contribution refunds	3,785,126	3,597,674	2,552,672	1,556,151	716,739	1,074,973	1,730,725	857,626	2,177,476	943,433
Administrative expenses	1,331,254	970,978	1,509,348	1,649,904	1,435,864	1,436,879	1,352,567	1,084,161	1,031,473	909,929
Transfers to other systems	161,821	45,739	54,203	147,156	210,895	140,562	416,679	160,888	165,945	467,462
<b>Total deductions</b>	<b>\$90,139,549</b>	<b>\$90,498,828</b>	<b>\$82,709,625</b>	<b>\$76,837,659</b>	<b>\$73,944,918</b>	<b>\$78,048,315</b>	<b>\$70,939,415</b>	<b>\$67,931,049</b>	<b>\$66,704,686</b>	<b>\$63,276,740</b>
<b>Change in pension net position</b>	<b>(\$139,173,296)</b>	<b>\$90,924,279</b>	<b>\$89,532,020</b>	<b>\$102,378,528</b>	<b>(\$70,875,577)</b>	<b>\$64,713,572</b>	<b>\$17,417,932</b>	<b>(\$35,842,019)</b>	<b>\$11,693,705</b>	<b>\$85,754,571</b>

**Changes in Fiduciary Net Position – OPEB**

Years Ended December 31

	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
<b>Additions</b>										
Employer contributions	\$3,890,000	\$-	\$-	\$-	\$4,623,201	\$4,640,177	\$4,511,127	\$4,068,887	\$4,325,434	\$3,658,189
Investment income, net	(12,854,216)	17,793,515	16,140,521	18,006,553	(5,366,447)	14,424,489	6,877,607	(647,230)	6,790,553	17,885,294
Health care premiums	2,415,723	4,203,731	4,101,755	4,006,980	4,062,903	3,885,594	2,918,533	2,397,253	1,756,117	1,570,692
Retiree Drug Subsidy	433,632	3,687,575	1,742,357	1,665,632	1,808,082	1,418,110	1,082,402	1,140,016	647,225	446,616
Prescription Drug Rebates	1,200,110	2,128,443	1,578,830	1,318,027	1,352,977	719,538	351,087	428,517	886,661	612,325
Medicare D Refunds	-	-	-	-	-	-	-	-	-	1,521
<b>Total additions</b>	<b>(\$4,914,751)</b>	<b>\$27,813,264</b>	<b>\$23,563,463</b>	<b>\$24,997,192</b>	<b>\$6,480,716</b>	<b>\$25,087,908</b>	<b>\$15,740,756</b>	<b>\$7,387,443</b>	<b>\$14,405,990</b>	<b>\$24,174,637</b>
<b>Deductions</b>										
Health care expenses	9,900,250	16,181,131	15,725,987	15,609,344	15,762,478	15,456,987	14,594,984	13,759,103	14,055,881	13,703,605
Administrative expenses	177,934	126,296	200,961	229,044	203,812	204,143	193,401	157,150	156,176	140,676
<b>Total deductions</b>	<b>\$10,078,183</b>	<b>\$16,307,427</b>	<b>\$15,926,948</b>	<b>\$15,838,388</b>	<b>\$15,966,290</b>	<b>\$15,661,130</b>	<b>\$14,788,385</b>	<b>\$13,916,253</b>	<b>\$14,212,057</b>	<b>\$13,844,281</b>
<b>Change in OPEB net position</b>	<b>(\$14,992,935)</b>	<b>\$11,505,837</b>	<b>\$7,636,515</b>	<b>\$9,158,804</b>	<b>(\$9,485,574)</b>	<b>\$9,426,778</b>	<b>\$952,371</b>	<b>(\$6,528,810)</b>	<b>\$193,933</b>	<b>\$10,330,356</b>

**Benefit Deductions from Net Position by Type - Pension**

Years Ended December 31

Type of Benefit*	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Age & Service	\$71,169,040	\$72,802,319	\$65,795,145	\$61,332,945	\$59,778,507	\$63,909,049	\$55,912,247	\$54,637,611	\$52,593,663	\$50,462,318
Reduced	2,032,710	2,018,154	2,314,430	2,006,286	1,998,325	1,987,800	2,180,522	2,192,201	2,186,653	2,224,182
Disability	5,663,550	5,478,399	5,344,149	5,144,803	4,824,425	4,710,650	4,496,025	4,381,011	4,270,957	4,068,926
Survivor	5,826,048	5,405,565	5,024,678	4,920,414	4,870,163	4,688,402	4,765,650	4,307,551	4,208,519	4,080,490
Death Benefits	170,000	180,000	115,000	80,000	110,000	100,000	85,000	110,000	70,000	120,000
<b>Total Pension Benefits</b>	<b>\$84,861,348</b>	<b>\$85,884,437</b>	<b>\$78,593,402</b>	<b>\$73,484,448</b>	<b>\$71,581,420</b>	<b>\$75,395,901</b>	<b>\$67,439,444</b>	<b>\$65,828,374</b>	<b>\$63,329,792</b>	<b>\$60,955,916</b>

\*Previous versions of this schedule included an "Early" category, which has now been combined with "Age & Service", since the criterion for eligibility is the same.

**Benefit Deductions from Net Position by Type - OPEB**

Years Ended December 31

Type of Benefit	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Medical	\$5,602,223	\$6,785,358	\$7,094,642	\$7,906,107	\$8,153,320	\$8,091,247	\$7,331,598	\$7,087,732	\$7,623,999	\$7,872,163
Wellness	38,007	57,214	20,549	42,447	27,951	53,566	31,455	68,263	48,728	53,440
Prescription drugs	1,530,598	8,451,258	7,782,415	6,789,285	6,718,222	6,488,074	6,115,493	5,245,815	4,722,044	4,110,260
Medicare-B reimbursement	-	-	-	-	-	-	311,820	601,860	874,164	896,970
Dental	715,924	714,782	656,141	713,553	690,084	642,998	621,659	593,016	619,286	612,575
Vision	211,255	172,519	172,240	157,952	172,901	181,102	182,959	162,417	167,660	158,197
Medicare HRA	1,801,686	-	-	-	-	-	-	-	-	-
Medicare CatRx	557	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>\$9,900,250</b>	<b>\$16,181,131</b>	<b>\$15,725,987</b>	<b>\$15,609,344</b>	<b>\$15,762,478</b>	<b>\$15,456,987</b>	<b>\$14,594,984</b>	<b>\$13,759,103</b>	<b>\$14,055,881</b>	<b>\$13,703,605</b>
Member premiums/adjustments	(7,939,465)	(10,019,749)	(7,422,942)	(6,990,639)	(7,223,961)	(6,023,241)	(4,352,023)	(3,965,786)	(3,290,003)	(2,631,154)
<b>Net paid by HPRS</b>	<b>\$1,960,785</b>	<b>\$6,161,382</b>	<b>\$8,303,045</b>	<b>\$8,618,705</b>	<b>\$8,538,517</b>	<b>\$9,433,746</b>	<b>\$10,242,961</b>	<b>\$9,793,317</b>	<b>\$10,765,878</b>	<b>\$11,072,451</b>

**Principal Participating Employer**

2013-2022

Year	Participating Government*	Covered Employees	Year	Participating Government*	Covered Employees
2022	Ohio State Highway Patrol	1,380	2017	Ohio State Highway Patrol	1,650
2021	Ohio State Highway Patrol	1,454	2016	Ohio State Highway Patrol	1,670
2020	Ohio State Highway Patrol	1,542	2015	Ohio State Highway Patrol	1,621
2019	Ohio State Highway Patrol	1,614	2014	Ohio State Highway Patrol	1,622
2018	Ohio State Highway Patrol	1,668	2013	Ohio State Highway Patrol	1,613

\*HPRS is a single-employer pension system; 100% of members are employed by the Ohio State Highway Patrol.

**Benefit Recipients by Type of Benefit**

December 31, 2022

Monthly Benefit	Number of Benefit Recipients	Type of Benefit					Retirement Option								
		1	2	3	4	5	Unmodified	1	2	3	4	5	6	7	
Deferred	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$1 - 250	30	-	-	-	29	1	30	-	-	-	-	-	-	-	-
251-500	6	-	-	-	-	6	6	-	-	-	-	-	-	-	-
501 - 750	9	-	-	-	-	9	9	-	-	-	-	-	-	-	-
751 - 1000	23	-	-	2	9	12	23	-	-	-	-	-	-	-	-
1001 - 1250	52	-	2	1	36	13	52	-	-	-	-	-	-	-	-
1251 - 1500	63	-	1	2	50	10	63	-	-	-	-	-	-	-	-
1501 - 1750	95	4	12	-	70	9	94	1	-	-	-	-	-	-	-
1751 - 2000	85	10	9	5	53	8	83	-	2	-	-	-	-	-	-
2001 - 2250	62	16	18	4	23	1	60	1	1	-	-	-	-	-	-
2251 - 2500	52	18	6	11	14	3	49	-	1	2	-	-	-	-	-
2501 - 2750	77	25	13	22	16	1	74	-	-	3	-	-	-	-	-
2751 - 3000	77	52	8	14	3	-	68	2	3	4	-	-	-	-	-
3001 - 3250	171	131	-	38	2	-	153	-	14	4	-	-	-	-	-
3251 - 3500	212	192	-	19	1	-	190	1	10	10	-	-	-	-	1
Over 3,500	1,046	998	5	41	2	-	908	9	58	71	-	-	-	-	-
<b>Total</b>	<b>2,096</b>	<b>1,446</b>	<b>74</b>	<b>159</b>	<b>308</b>	<b>73</b>	<b>1,862</b>	<b>14</b>	<b>89</b>	<b>94</b>	-	-	-	-	<b>1</b>

**Type of Benefit Recipient (Includes current members in DROP)\***

- 1 – Age & Service
- 2 – Reduced
- 3 – Disability
- 4 – Survivor
- 5 – Alternate Payee (Division of Property Order)

\* Previous versions of this schedule included an “Early” category, which has now been combined with “Age & Service”, since the criterion for eligibility is the same.

**Retirement Option**

Under the unmodified plan, a surviving spouse receives a 50% continuance (minimum, \$900 monthly)

Under the following options, a surviving spouse qualifies for the above-noted 50% continuance; however, the member’s lifetime benefit is reduced:

- Option 1 – Beneficiary receives 0 to <25% of member’s reduced monthly benefit
- Option 2 – Beneficiary receives 25 to <50% of member’s reduced monthly benefit
- Option 3 – Beneficiary receives 50% or more of member’s reduced monthly benefit
- Option 4 – Beneficiary receives 100% of member’s remaining reduced monthly benefit for 5 years after benefit begins
- Option 5 – Beneficiary receives 100% of member’s remaining reduced monthly benefit for >5 to 10 years after benefit begins
- Option 6 – Beneficiary receives 100% of member’s remaining reduced monthly benefit for >10 to 15 years after benefit begins
- Option 7 – Beneficiary receives 100% of member’s remaining reduced monthly benefit for >15 years after benefit begins

<b>Average Benefit Payments</b>					
<b>2013-2022</b>					
<b>Retirement During</b>		<b>Years of Credited Service</b>			<b>Overall</b>
		<b>20 to &lt;25</b>	<b>25 to &lt;30</b>	<b>30+</b>	
2022	Average Monthly Benefit	\$3,328	\$4,024	\$4,243	\$3,931
	Average Final Average Salary	\$6,069	\$6,768	\$6,630	\$6,584
	Number of Retirees	16	40	19	75
2021	Average Monthly Benefit	\$3,194	\$3,983	\$4,507	\$3,930
	Average Final Average Salary	\$5,962	\$6,548	\$6,950	\$6,511
	Number of Retirees	18	43	19	80
2020	Average Monthly Benefit	\$3,083	\$3,959	\$3,993	\$3,772
	Average Final Average Salary	\$5,586	\$6,438	\$5,931	\$6,220
	Number of Retirees	13	43	4	60
2019	Average Monthly Benefit	\$2,841	\$3,711	\$4,369	\$3,694
	Average Final Average Salary	\$5,085	\$6,010	\$5,959	\$5,959
	Number of Retirees	7	32	8	47
2018	Average Monthly Benefit	\$2,761	\$3,731	\$3,831	\$3,517
	Average Final Average Salary	\$5,186	\$6,064	\$5,697	\$5,807
	Number of Retirees	12	32	7	51
2017	Average Monthly Benefit	\$3,115	\$3,640	\$4,219	\$3,584
	Average Final Average Salary	\$5,611	\$5,795	\$5,986	\$5,775
	Number of Retirees	13	53	5	71
2016	Average Monthly Benefit	\$2,511	\$3,846	\$4,013	\$3,505
	Average Final Average Salary	\$5,020	\$6,091	\$5,678	\$5,796
	Number of Retirees	13	35	2	50
2015	Average Monthly Benefit	\$2,882	\$3,648	\$3,980	\$3,478
	Average Final Average Salary	\$5,287	\$5,828	\$5,821	\$5,684
	Number of Retirees	13	31	5	49
2014	Average Monthly Benefit	\$3,181	\$4,063	\$6,669	\$4,002
	Average Final Average Salary	\$5,093	\$5,982	\$7,824	\$5,903
	Number of Retirees	6	37	1	44
2013	Average Monthly Benefit	\$3,725	\$4,128	\$4,207	\$3,936
	Average Final Average Salary	\$5,190	\$6,164	\$5,747	\$5,677
	Number of Retirees	13	33	2	48

The table above does not include active DROP participants.

The average monthly benefit is based on the benefit paid at termination from employment, not entry into DROP.

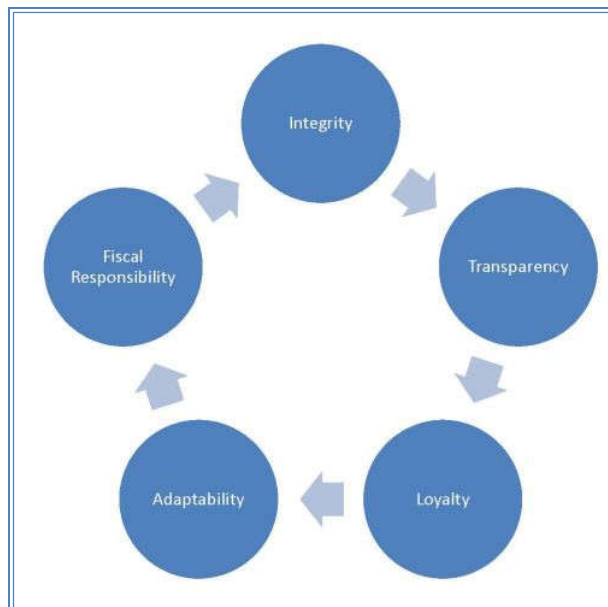
### **HPRS Mission Statement**

*Provide stable pension services that are fiscally responsible, prudently administered, and delivered with understanding and responsiveness to all members and beneficiaries.*

### **HPRS Vision Statement**

*Maintain a financially sound pension system that is a leader in the oversight of our investments and liabilities, providing for the long-term financial wellbeing of our retirement system.*

### **HPRS Values**



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