Highway Patrol Retirement System

Comprehensive Annual Financial Report

A Component Unit of the State of Ohio
Year Ended December 31, 2016

Mark R. Atkeson, Executive Director
1900 Polaris Parkway, Suite 201
Columbus, Ohio 43240-4037

Dave Yost • Auditor of State

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

We have reviewed the *Independent Auditors' Report* of the Ohio State Highway Patrol Retirement System, Franklin County, prepared by Schneider Downs & Co., Inc., for the audit period January 1, 2016 through December 31, 2016. Based upon this review, we have accepted these reports in lieu of the audit required by Section 117.11, Revised Code. The Auditor of State did not audit the accompanying financial statements and, accordingly, we are unable to express, and do not express an opinion on them.

Our review was made in reference to the applicable sections of legislative criteria, as reflected by the Ohio Constitution, and the Revised Code, policies, procedures and guidelines of the Auditor of State, regulations and grant requirements. The Ohio State Highway Patrol Retirement System is responsible for compliance with these laws and regulations.

Dave Yost
Auditor of State

October 4, 2017

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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 OMB Circular A-133.

HIGHWAY PATROL RETIREMENT SYSTEM

Introductory Section

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Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Highway Patrol Retirement System

Ohio

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

December 31, 2015

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Board of Trustees and Senior Staff


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Employee Trustee


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Employee Trustee


Col. Paul A. Pride
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Lt. (ret.) Larry A. Davis
Retiree Trustee


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Governor's Investment Expert Appointee

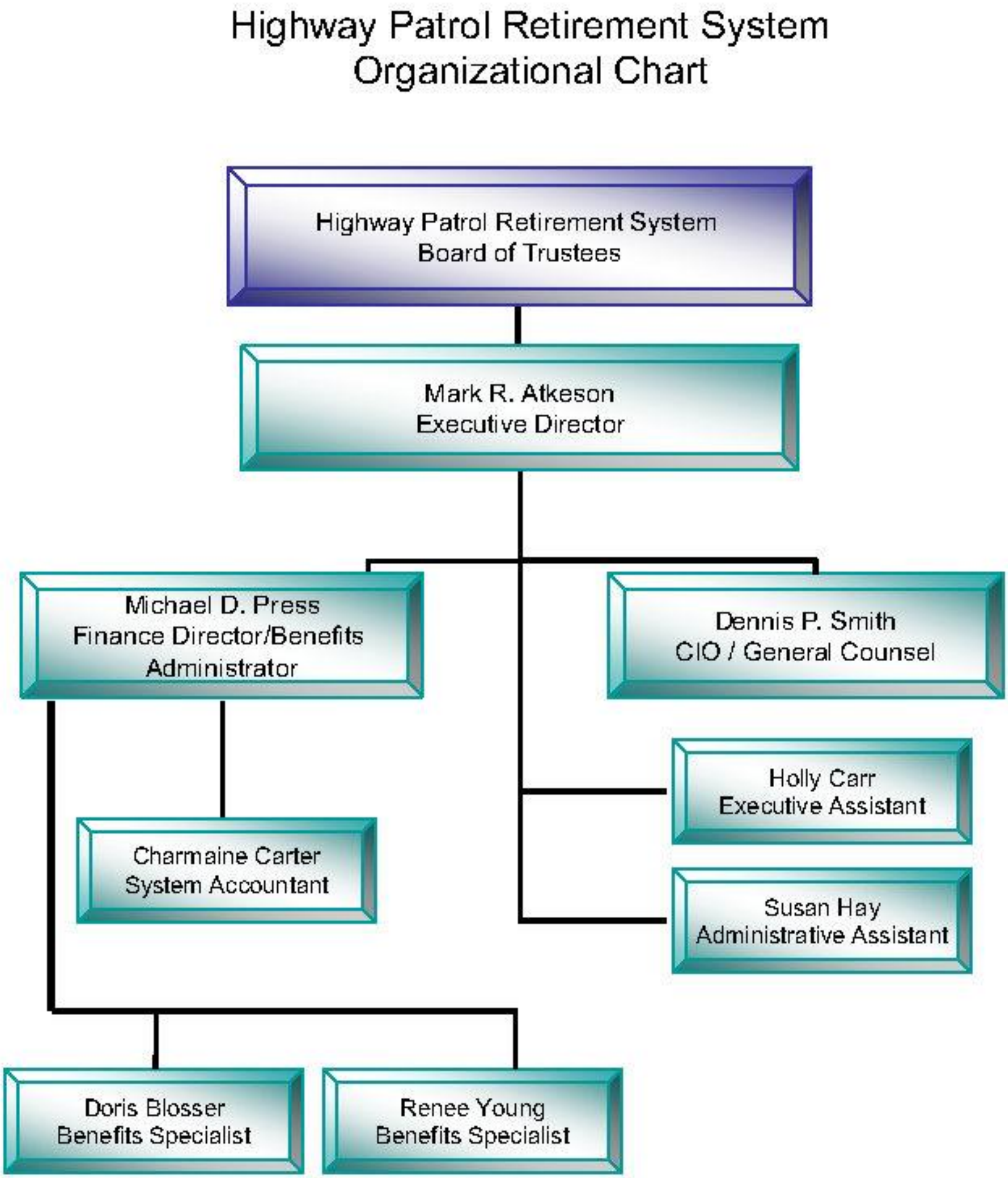

Kenneth C. Boyer
Treasurer of State's Investment Designee


Joseph H. Thomas
General Assembly's Investment Expert Appointee


Maj. (ret.) Mark R. Atkeson
Executive Director


Dennis P. Smith
Chief Investment Officer / General Counsel


Michael D. Press
Finance Director / Benefits Administrator



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

Consultants

Medical Advisor
David A. Tanner, DO
Columbus, Ohio

Actuary
Gabriel, Roeder, Smith & Co.
Southfield, Michigan

Investment Consultant
Hartland
Cleveland, Ohio

Investment Managers

Ancora Advisors
Cleveland, Ohio
Micro Cap Equity

Blue Point Capital Partners
Cleveland, Ohio
Private Equity

Credit Investments Group
New York, New York
High Yield Fixed Income

DePrince, Race & Zollo
Winter Park, Florida
Large Cap Value Equity

Dimensional Fund Advisors
Austin, Texas
Small Cap Blend / International Equity

Driehaus Capital Management
Chicago, Illinois
International Small Cap Growth Equity

Evanston Capital Management
Evanston, Illinois
Fund of Hedge Funds

Fidelity Investments
Boston, Massachusetts
Real Estate

Forest Investment Associates
Atlanta, Georgia
Timber

Grosvenor Capital Management
New York, New York
Private Equity

HarbourVest Partners
Boston, Massachusetts
Private Equity

Johnson Institutional Management
Cincinnati, Ohio
Core Fixed Income

J.P. Morgan Asset Management
New York, New York
Intermediate-Term Fixed Income

Kayne Anderson Capital Advisors
Los Angeles, California
Energy/Mezzanine & Private Equity

Long Wharf Real Estate Partners
Boston, Massachusetts
High Yield Fixed Income

LSV Asset Management
Chicago, Illinois
Large Cap Value Equity

Marathon Asset Management
New York, New York
Real Estate

Oaktree Capital Management
New York, New York
Real Estate

OFI Trust Company
New York, New York
Emerging Markets

Pantheon Ventures
San Francisco, California
Private Equity

Pacific Investment Management Company
Newport Beach, California
Real Estate

Standard Life Investments
Boston, Massachusetts
Tactical Asset Allocation

Silver Point Specialty Credit Fund
Greenwich, Connecticut
Fixed Income

The Vanguard Group
Wayne, Pennsylvania
Domestic Large Cap Blend, Mid Cap & International Equity

Thompson, Siegel & Walmsley LLC
Richmond, Virginia
International Equity

Wellington Management Co.
Boston, Massachusetts
Fixed Income & Large Cap Growth Equity

Westfield Capital Management
Boston, Massachusetts
Small Cap Growth Equity

William Blair & Company
Chicago, Illinois
International Equity

See the Investment Section, Pages 65-66 for payments to investment managers and brokers.

Legislative Summary

The Ohio Legislature passed House Bill 520 in late 2016 with an effective date in 2017. This bill, as it pertains to HPRS, made changes to current statutes that are mostly technical or non-substantive. This bill also included two more notable changes: requiring a member to have accrued five years of service credit to be eligible for an off-duty disability; and allowing DROP members to vote for active members of the board rather than retired members.

In 2016, the United States Congress took no meaningful action to improve the financial solvency of the Social Security System, Medicare, and Medicaid. The majority of HPRS retirees qualify for Social Security benefits due to employment other than with the Highway Patrol, and qualify for Medicare Part A or B, or both. Cutbacks to Medicare will place additional pressure on HPRS health care benefits.

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June 20, 2017

Letter of Transmittal

Members of the Board of Trustees:

We are pleased to present to you the *Comprehensive Annual Financial Report* for the Highway Patrol Retirement System (HPRS) for the period ended December 31, 2016. 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.

The 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 the HPRS. In 1974, the Legislature authorized the HPRS to offer health care benefits to retired members, if excess funds are available.

In addition to pension benefits, the HPRS provides disability benefits to active duty members, disabled both on- and off-duty. Survivor and death benefits and health care coverage are provided for benefit recipients and eligible dependents. A full description of benefits provided by the HPRS can be found in the *Summary of Plan Provisions* portion of the Actuarial Section.

Major Plan Initiatives and Changes in 2016

During 2016, the Board continued to modify the HPRS health care plan. The Board hired GRS Health and Welfare Consulting to create a study of the HPRS plan and provide options to increase the solvency while maintaining a high level of benefits to the membership. The Board is in the process of implementing several of these options and is making additional changes to increase the solvency of the health care fund. Health care is the greatest challenge facing HPRS, and the Board is continuously monitoring the status of the health care fund.

The Board also received its five-year experience study and DROP study in 2016. Based on the experience study, the Board adopted a 7.75% investment return assumption. Other assumptions, e.g., wage inflation, price inflation, mortality, were also changed as a result of the study. Though these assumption changes affected HPRS negatively, the system continues to be within the statutorily required 30-year funding period. The health care fund’s solvency period decreased to 2026.

For 2016, the employee contribution rate remained at 12.5% of payroll. COLA for eligible beneficiaries was set at 1.25%. These rates remained for 2017 as well.

Investments

The primary objective of the State Highway Patrol Retirement System is to provide eligible members and beneficiaries with scheduled pension benefits. It is very important for the Board to develop and implement 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 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.

The U.S. economy witnessed 1.6% real GDP growth in 2016, which was below the 2015 rate of 2.6%. According to the Bureau of Economic Analysis, the deceleration of GDP was due to “downturns in private inventory investment and in nonresidential fixed investment and decelerations in PCE, in residential fixed investment, and in state and local government spending that were partly offset by a deceleration in imports and accelerations in federal government spending and in exports.” However, there were many positive economic metrics of note in 2016. Unemployment continued to decline, as the U3 rate moved to 4.7% at year-end. This was accompanied by an improvement in U.S. average hourly earnings. The American consumer exhibited strong confidence and continued to spend as retail, auto and home sales all improved in 2016. Corporate America also produced positive readings in terms of ISM Manufacturing and Non-Manufacturing Indexes, while small business optimism picked up at year-end. Additionally, we saw an end to the earnings recession in the United States, much of which is related to the energy sector where prices have stabilized and stronger historical earnings numbers have rolled off.

Developed markets’ central bank activity continued to diverge in 2016, as the U.S. has gradually moved toward normalizing interest rates, hiking the Federal Funds Rate by 25 bps in December. The ECB and Bank of Japan have remained accommodative, with low interest rates and expanding balance sheets. The Federal Reserve appears poised to continue normalizing rates in the U.S., while Europe may become less accommodative if economic growth and inflation persist; Japan is likely to remain accommodative.

A more detailed report on investment operations and performance can be found in the *Management’s Discussion and Analysis* section, beginning on Page 19, and the Investment Section, beginning on Page 57.

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. Once again in 2016, the Summit County Internal Audit Department was retained to perform internal auditing services, specifically the assessment of health care premiums, COLA, management fees, and benefit eligibility. Although several recommendations for improvement were given, no material weaknesses were identified. In 2017, SCIAD will perform a health care eligibility audit 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 54. 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 the 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. A national standard of funding status is benchmarked at 80%. At the close of 2009, the 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, 2015 was 68.6%, and the amortization period was 30 years. Without the assumption changes resulting from the experience study, the funding status would have been 71.8% and the amortization period would have been 22 years.

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 comprehensive annual financial report for the fiscal year ended December 31, 2015. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual 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 comprehensive annual financial report continues to meet the Certificate of Achievement program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

Professional Services

To aid in efficient and effective management, professional services are provided to the HPRS by consultants appointed by the Board. Gabriel, Roeder, Smith & Company of Southfield, Michigan, provides actuarial services. The investment advisor to the Board is Hartland of Cleveland, Ohio. Under contract with the Auditor of State of Ohio, Schneider Downs & Co., Inc., 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. Gabriel, Roeder, Smith & Company Health and Welfare Consulting, LLC was retained to create a healthcare benefit plan options study.

Acknowledgements

The preparation of this report reflects 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, 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 Management.

Submitted for your review,

Mark R. Atkeson
Executive Director

Michael D. Press
Finance Director

Financial Section

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INDEPENDENT AUDITORS' REPORT

Board of Trustees
Ohio State Highway Patrol Retirement System
Columbus, Ohio

Report on the Financial Statements

We have audited the accompanying financial statements of The Ohio State Highway Patrol Retirement System (HPRS), a component unit of the State of Ohio (State), which comprise the statement of fiduciary net position as of December 31, 2016, and the related statement of changes in fiduciary net position for the year ended December 31, 2016, and related notes to the financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditors' Responsibility

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

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

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

Schneider Downs & Co., Inc.
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An Association of Independent Accounting Firms

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Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Ohio State Highway Patrol Retirement System as of December 31, 2016, and the change in fiduciary net position for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require this presentation to include management's discussion and analysis and required supplementary schedules, as listed in the table of contents, to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any other assurance.

Supplementary and Other Information

Our audit was conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplementary information, including the schedules of administrative expenses, investment expenses, and payments to consultants, as listed in the table of contents, are presented for the purposes of additional analysis and are not required part of the basic financial statements. The supplementary 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. Such 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 the basic financial statements themselves, and other additional procures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory, investments, actuarial and statistical sections, as listed in the table of contents have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated June 20, 2017, 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 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 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 the HPRS's internal control over financial reporting and compliance.

Schneider Downs & Co., Inc.

Columbus, Ohio
June 20, 2017

Financial Highlights

- At December 31, 2016, HPRS had net assets of $824,015,063. All of the 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 2016, HPRS's fiduciary net position increased by $18,370,303, or 2.3%.
- HPRS's funding objective is to meet long-term benefit obligations through contributions and investment income. At December 31, 2015, the date of the most recent actuarial valuation, HPRS assets equaled 68.6% of the present value of pension obligations.
- Additions to fiduciary net position for the year were $104,098,103, which includes member and employer contributions of $43,995,981 and an investment gain of $54,976,894.
- Deductions from fiduciary net position increased 4.7% over the prior year. Of this amount, pension benefits increased by 2.4%, health care expenses increased by 6.1% and administrative expenses increased by 24.5%.

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 23-24 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 25-46 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 47-51 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 2016, total contributions and investment returns resulted in additions of $104.1 million. Employer contributions increased by 10.9% and member contributions increased by 10.9%.

Additions to Fiduciary Net Position
(in thousands)

	2016	2015	$ Change	% Change
Net appreciation in fair value of investments	$46,445	($14,377)	$60,822	-
Interest and dividend income	14,599	14,558	41	0.3
Real estate operating income (loss), net	(36)	(46)	10	-
Investment expenses	(6,031)	(5,247)	(784)	-
Employer contributions	29,895	26,964	2,931	10.9
Member contributions	14,101	12,712	1,389	10.9
Transfers from other Ohio systems	773	947	(174)	(18.4)
Health care premiums	2,919	2,397	522	21.8
Retiree drug subsidy	1,082	1,140	(58)	(5.1)
Prescription drug rebates	351	428	(77)	(18.0)
Total additions	$104,098	$39,476	$64,622	163.7

The *Investment Section* of this report summarizes the result of investment activity for the year ended December 31, 2016.

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 2016, total deductions from the fiduciary net position increased 4.7%, health care expenses increased by 6.1%, and administrative expenses increased by 24.6%. Refunds of member contributions increased by 101.7%, and transfers of contributions to other Ohio retirement systems increased by 159%.

Deductions from Fiduciary Net Position
(in thousands)

	2016	2015	$ Change	% Change
Pension benefits	$61,310	$59,883	$1,428	2.4
DROP benefits	6,129	5,945	184	3.1
Refunds of member contributions	1,731	858	873	101.7
Health care expenses	14,595	13,759	836	6.1
Administrative expenses	1,546	1,241	305	24.6
Transfers to other Ohio systems	417	161	256	159.0
Total deductions	$85,728	$81,847	$3,882	4.7

Changes in Fiduciary Net Position

In 2016, the Net Position – Restricted for Pension and Post-Employment Health Care Benefits increased by $18,370,303, or 2.3%. Investment income attributable to the increase in fair values of investments equaled $46,444,603. All of the assets are available to meet HPRS's ongoing obligations to plan participants and their beneficiaries.

Changes in Fiduciary Net Position
(in thousands)

	2016	2015
Beginning balance	$805,645	$848,016
Ending balance	824,015	805,645
Total change	$18,370	($42,371)
% change	2.3%	(5.0%)

Capital Assets

As of December 31, 2016, HPRS's investment in capital assets totaled $66,208 (net of accumulated depreciation), a decrease of $23,215, or 26.0% from December 31, 2015. This investment in capital assets includes office equipment, software, and furniture for administrative use.

Total Assets

In 2016, total assets increased by $18,609,248, or 2.3%. The change in total assets was largely attributable to increases in the fair value of investments.

Assets
(in thousands)

	2016	2015	$ Change	% Change
Cash and short-term investments	$17,557	$13,515	$4,042	29.9
Receivables	9,312	3,919	5,393	137.6
Investments, at fair value	802,933	793,737	9,196	1.2
Prepaid expenses	11	11	-	-
Other assets	71	94	(23)	(24.5)
Total assets	$829,884	$811,276	$18,608	2.3

Total Liabilities

Total liabilities increased by $493,107, or 8.7%.

Liabilities
(in thousands)

	2016	2015	$ Change	% Change
Total liabilities	$6,145	$5,652	$493	8.7

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 requested from:

Michael Press, Finance Director
State Highway Patrol Retirement System
1900 Polaris Parkway, Suite 201, Columbus, OH 43240-4037
P: 614-431-0781 E: mpress@ohprs.org

Statement of Fiduciary Net Position
December 31, 2016

	Pension	Post-Employment Health Care	Total
Assets			
Cash and short-term investments	$ 15,361,055	$ 2,196,443	$ 17,557,498
Receivables			
Employer contributions receivable	1,480,451	263,102	1,743,553
Member contributions receivable	1,597,391	-	1,597,391
Accrued investment income	5,224,138	746,988	5,971,126
Total receivables	8,301,980	1,010,090	9,312,070
Investments, at fair value			
Domestic equity	224,320,379	31,741,153	256,061,532
International equity	144,820,815	20,492,390	165,313,205
Fixed income	128,248,254	18,146,844	146,395,098
Real estate	27,037,755	3,814,020	30,851,775
Private equity	95,834,991	13,518,746	109,353,737
Hedge funds	53,666,559	7,571,051	61,237,610
Tactical Asset Allocation	29,550,826	4,168,905	33,719,731
Total investments	703,479,579	99,453,109	802,932,688
Other Assets			
Prepaid expenses	9,790	1,400	11,190
Property and equipment, net	57,925	8,283	66,208
Net Pension Asset	5,124		5,124
Total other assets	72,839	9,683	82,522
Total assets	727,215,453	102,669,325	829,884,778
Deferred Outflows of Resources	322,129	-	322,129
Deferred Outflows – Pension			
Liabilities			
Accounts payable	595,439	85,141	680,580
Accrued payroll liabilities	215,998	30,885	246,883
Accrued pension liabilities	4,220,226	-	4,220,226
Accrued health care liabilities	-	181,201	181,201
Net Pension Liability	815,831	-	815,831
Total liabilities	5,847,494	297,227	6,144,721
Deferred Inflows of Resources			
Deferred Inflows – Pension	47,123	-	47,123
Net position – restricted for pension and post-employment health care benefits	$ 721,642,965	$ 102,372,098	$ 824,015,063

See the accompanying Notes to the Financial Statements, Pages 25-46.

Statement of Changes in Fiduciary Net Position
Year ended December 31, 2016

	Pension	Post-Employment Health Care	Total
Additions			
Contributions			
Employer	$ 25,383,684	$4,511,127	$29,894,811
Member	14,101,170	-	14,101,170
Transfers from other systems	773,206	-	773,206
Other income			
Health care premiums	-	2,918,533	2,918,533
Retiree drug subsidy	-	1,082,402	1,082,402
Prescription drug rebates	-	351,087	351,087
Total contributions	40,258,060	8,863,149	49,121,209
Investment activity			
Net appreciation (depreciation) in fair value of investments	40,634,386	5,810,217	46,444,603
Interest and dividend income	12,772,980	1,826,380	14,599,360
Real estate operating income (loss), net	(31,589)	(4,517)	(36,106)
	53,375,777	7,632,080	61,007,857
Less: investment expenses	(5,276,490)	(754,473)	(6,030,963)
Net income from investment activity	48,099,287	6,877,607	54,976,894
Total additions	88,357,347	15,740,756	104,098,103
Deductions			
Pension benefits	61,310,551	-	61,310,551
DROP benefits	6,128,893	-	6,128,893
Refunds of member contributions	1,730,725	-	1,730,725
Health care expenses	-	14,594,984	14,594,984
Administrative expenses	1,352,567	193,401	1,545,968
Transfers to other systems	416,679	-	416,679
Total deductions	70,939,415	14,788,385	85,727,800
Change in fiduciary net position	17,417,932	952,371	18,370,303
Net position – restricted for pension and post-employment health care benefits			
Balance, December 31, 2015	704,225,033	101,419,727	805,644,760
Balance, December 31, 2016	$721,642,965	$102,372,098	$ 824,015,063

See the accompanying Notes to the Financial Statements, Pages 25-46.

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.

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 assets compared to the projected total net assets.

Investment Accounting

Income on all investments is recognized on the 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.

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.

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. 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 claims 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 $14,594,984 for 2016 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.

Changes in Accounting Principles

GASB issued Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, which provides guidance on reporting OPEB plans similar to how pension plans are reported under Statement 67. This statement is effective for reporting periods beginning after June 15, 2016. Management is currently evaluating this statement and its impact to HPRS's financial statements.

GASB issued statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, which provides guidance on reporting OPEB liabilities similar to how pension liabilities are now reported under Statement 68. This statement is effective for reporting periods beginning after June 15, 2017.

Management is currently evaluating this statement and its impact to HPRS's financial statements.

GASB issued statement No. 82, *Pension Issues – An Amendment of GASB Statements No. 67, No. 68, and No. 73*, which addresses certain issues regarding (1) the presentation of payroll-related measures in RSI, (2) the selection of assumptions and the treatment of deviations from the guidance in an Actuarial Standard of Practice for financial reporting purposes, and (3) the classification of payments made by employers to satisfy employee (plan member) contributions requirements. This statement is effective for reporting periods beginning after June 15, 2016. Management is currently evaluating this statement and its impact to HPRS's financial statements.

GASB issues statement No. 85, *Omnibus 2017*, which addresses practice issues that have been identified during implementation and application of certain GASB statements. This statement addresses a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits [OPEB]). This statement is effective for reporting periods beginning after June 15, 2017. Management is currently evaluating this statement and its impact to HPRS's 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 are 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 2015 and 2016:

Membership Data Year ended December 31	**2016**	**2015**
Pension & OPEB Benefits		
Retirees & other benefit recipients	1,580	1,548
Deferred retirees	10	10
Active members		
15 or more years of service	788	763
Less than 15 years of service	882	858

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. 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 2016 DROP activity is discussed in Note 10.

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 2016, the member contribution rate was 12.5% of payroll, and the employer contribution rate was 26.5%.

Based on the December 31, 2014 actuarial valuation, the Board allocated the employer contribution rate to pension benefits effective January 1, 2015 and OPEB as follows:

Pension	OPEB	Total
22.50%	4.00%	26.50%

Based on the December 31, 2015 actuarial valuation, the Board allocated the employer contribution rate to pension benefits effective January 1, 2016 and OPEB as follows:

Pension	OPEB	Total
22.50%	4.00%	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.

Funded Status and Funding Progress

OPEB (other post-employment benefits)
The funded status of the OPEB plan at the most recent actuarial valuation, December 31, 2015, is as follows:

OPEB Funded Status December 31, 2015	
Actuarially Accrued Liability	$412,352,083
Valuation Assets	106,550,139
Unfunded Actuarially Accrued Liability	$305,801,944
Assets as a % of AAL	25.8%
Active Member Payroll	$99,983,224
UAAL as a % of Active Member Payroll	305.9%

OPEB Funding Status presents multi-year trend information about whether the actuarial values of plan assets are increasing or decreasing relative to the actuarial accrued liability for benefits over time. These schedules are presented in the *Required Supplementary Schedules* section.

Actuarial Assumptions and Methods
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.

The health care coverage provided by HPRS is considered to be an OPEB as described in GASB Statement 45. Health care benefits are not guaranteed and are subject to change at any time. The OPEB valuation is based on the substantive plan as it is currently presented to plan members, including the historical pattern of cost-sharing between the plan and benefit recipients. The actuarial methods and assumptions do not explicitly incorporate the potential effects of legal or contractual funding limitations on the pattern of cost sharing in the future. The actuarially determined amounts for the OPEB plan are subject to continual revision as results are compared to past expectations and new estimates are made about the future. The actuarial calculations of the OPEB plan reflect a long-term perspective.

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.

Other actuarial assumptions and methods are as follows:

- projected investment return of 7.75% for pension assets and 5.0% for OPEB assets, compounded annually, net of health care and administration expenses,
- projected salary increases of 3.5%, compounded annually, attributable to inflation,
- projected price inflation of 2.75%, compounded annually,
- additional projected salary increases attributable to seniority and merit, ranging from 0.3% to 10.0% per year, depending on service,
- healthy retiree mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the RP-2014 Healthy Annuitant mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The base year for females was then established to be 2012. Mortality rates for a particular calendar yearare determined by applying the MP-2015 mortality improvement scale to theabove described tables.
- probabilities of early withdrawal from active service based on actual plan experience,
- pre-retirement mortality tables used were the RP-2014 employees mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The base year for females was then established to be 2012. Mortality rates for a particular calendar year are determined by applying the MP-2015 mortality improvement scale to the above described tables.
- post-retirement mortality tables used were the RP-2014 disabled mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The base year for females was then established to be 2012. Mortality rates for a particular calendar year are determined by applying the MP-2015 mortality improvement scale to the above described tables.
- 50% of disability retirements are assumed to be duty-related and 50% are assumed to be non-duty-related,
- health care inflation of 4.0%, compounded annually, plus an additional declining percentage ranging from 5.0% - 0.5% until 2026,
- OPEB recipients are eligible for Medicare at age 65 or at the time of a social security disability,
- employer contributions are assumed to be received in equal installments throughout the year, and
- maximum contribution rates have not been considered in the projection of actuarially accrued liabilities for OPEB benefits.

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.

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, 2016, the fiduciary net position was allocated to the various funds as follows:

Fiduciary Net Position
December 31, 2016

Employees' Savings Fund	$115,269,393
Employer's Accumulation Fund	102,372,098
Pension Reserve fund	606,373,572
Survivors' Benefit Fund	-
Income Fund	-
Expense Fund	-
Total	$824,015,063

Note 4 Property and Equipment

The following is a summary of equipment, at cost, less accumulated depreciation, at December 31, 2016:

Capital Assets - Equipment December 31, 2016	
Cost, 12/31/2015	$125,039
(+) Additions	
(-) Retirements	
Cost, 12/31/2016	$125,039
Accumulated depreciation, 12/31/2015	$98,033
(+) Additions	7,683
(-) Retirements	
Accumulated depreciation, 12/31/2016	$105,716
Book value, 12/31/2016	$19,323

The following is a summary of furniture, at cost, less accumulated depreciation, at December 31, 2016:

Capital Assets - Furniture December 31, 2016	
Cost, 12/31/2015	$82,710
(+) Additions	
(-) Retirements	-
Cost, 12/31/2016	$82,710
Accumulated depreciation, 12/31/2015	$20,293
(+) Additions	15,532
(-) Retirements	-
Accumulated depreciation, 12/31/2016	$35,825
Book value, 12/31/2016	$46,885

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 the particular 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.

Investments and Short-Term Holdings Measured at Fair Value

		Fair Value Measurements Using		
Investments by Fair Value Level	**12/31/2016**	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Debt Securities				
Bond Mutual Funds	$35,989,379	$35,989,379	-	-
Municipal Bonds	2,045,361	-	2,045,361	-
U.S. Agency Bonds	7,506,214	-	7,506,214	-
U.S. Corporate Bonds	19,333,431	-	19,333,431	-
U.S. Government	5,543,570	5,543,570	-	-
Total Debt Securities	70,417,955	41,532,949	28,885,006	-
Equity Securities				
Domestic Equity Mutual Funds	142,484,162	142,484,162	-	-
Foreign Equity Mutual Funds	22,916,575	22,916,575	-	-
Foreign Stocks	5,533,080	5,533,080	-	-
U.S. Common and Preferred Stock	77,560,261	77,560,261	-	-
Total Equity Securities	248,494,078	248,494,078	-	-
Total Investments by Fair Value Level	$318,912,033	$290,027,027	$28,885,006	-
Investments Measured at the Net Asset Value (NAV)				
Commingled Bond Funds	$75,977,143			
Commingled Domestic Equity Funds	36,326,293			
Commingled International Equity Funds	136,863,550			
Hedge Funds	61,237,610			
Private Equity	109,353,737			
Private Real Estate Funds	30,542,591			
Tactical Asset Allocation	33,719,731			
Total Investments Measured at the NAV	484,020,655			
Total Investments	$802,932,688			

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

Investments Measured at the Net Asset Value

	12/31/2016	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Commingled Bond Funds [1]	$75,977,143		Daily, Monthly	1-20 Days
Commingled Domestic Equity Funds [1]	36,326,293		Monthly	10 Days
Commingled International Equity Funds [1]	136,863,550		Daily	1-3 Days
Hedge Funds [2]	61,237,610		Quarterly, Annually	65 days
Private Equity [3]	109,353,737	$71,890,459		
Private Real Estate Funds [3]	30,542,591	42,012,949	Monthly	30 days
Tactical Asset Allocation [4]	33,719,731		Monthly	5 Days
Total Investments Measured at the NAV	$484,020,655			

[1] **Commingled Bond Funds and Equity Funds**: Three bond funds and five equity funds are considered to be 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] **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.
[3] **Private Equity and Real Estate Funds**: HPRS currently has eight private real estate investments and fourteen 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. 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] **Tactical Asset Allocation**: Tactical asset allocation (TAA) strategies are intended to reduce portfolio volatility and improve risk-adjusted returns by having low equity market beta and low correlations to traditional long equity and fixed income strategies. HPRS currently has one TAA strategy that has monthly liquidity and is valued at NAV per share on a monthly basis.

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 three months or less. At December 31, 2016, the carrying value of all deposits was $17,557,498 (including money market funds of $14,654,266), as compared to bank balances of $2,934,205. 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:

S&P Quality Ratings December 31, 2016	
AAA	$26,688,508
AA	8,687,747
A	21,434,611
BBB	19,646,572
BB	15,162,801
B	28,081,291
CCC	9,828,261
Unrated	16,865,307
Total Investments	$146,395,098

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. At December 31, 2016, 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.

Investment Maturities December 31, 2016	
Less than 1 year	$21,332,611
1 - 5 years	52,024,226
Greater than 5, up to 10 years	52,040,021
Greater than 10 years	20,998,240
Total	$146,395,098

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.

At December 31, 2016, the carrying amounts of HPRS's operating and investment cash deposits totaled $17,557,498, and the corresponding bank balances totaled $2,903,232. Of the bank balances, the Federal Deposit Insurance Corporation insured $250,000. In accordance with state law, bank balances of $2,653,232 were collateralized at 109% 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 assets held in trust for pension benefits:

Vanguard Mutual Funds
Evanston Capital Management, LLC
Wellington Management Company, LLP

Money-Weighted Rate of Return

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. For the fiscal year ended December 31, 2016, the annual money-weighted rate of return on pension plan investments, net of investment expense, was 6.60%.

Commitments

As of December 31, 2016, unfunded commitments related to the real estate and private equity investment portfolios totaled $113,903,408.

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.

At December 31, 2016, 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, 2016:

Schedule of Net Pension Liability
Year ended December 31

Year	Total Pension Liability	Fiduciary Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll[1]	Net Pension Liability as a % of Covered Payroll
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%	99,983,221	406.91%
2016	1,137,269,498	721,685,656	415,583,842	63.46%	108,788,871	382.01%

Source: GRS

[1]Includes members of DROP

The total pension liability was determined by an actuarial valuation as of December 31, 2015, and update procedures were used to roll forward the total pension liability to December 31, 2016. The following actuarial assumptions were used, applied to all periods included in the measurement:

Actuarial Assumptions	
Valuation Date	December 31, 2015
Actuarial Cost Method	Entry Age
Amortization Method	Level-Percentage Closed
Remaining Amortization Period	30 years
Asset Valuation Method	Four-year smoothed market
Inflation	3.5% wage inflation; 2.75% price inflation
Salary Increases	3.8% to 13.5% including inflation
Investment Rate of Return	7.75%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	RP-2014 Mortality Tables for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The base year for females was then established to be 2012. Mortality rates for a particular calendar year are determined by applying the MP-2015 mortality improvement scale to the above described tables.
Other Information	There were no benefit changes during the year.

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, 2016 were provided by the system's investment consultant. Best estimates of arithmetic real rates of return were approximated using expected returns from eight investment consultants. For each major asset class that is included in the system's target asset allocation as of December 31, 2016, best estimates of the geometric rates of return are summarized in the following table:

Asset Allocation
December 31, 2016

Asset Class	Target Allocations	Long-Term Expected Real Rate of Return
Cash	1.00%	0.10%
Domestic Equity - Large Cap	25.00	5.68
Domestic Equity - Small Cap	5.00	6.51
International Equity	15.00	6.66
Emerging Markets	8.00	8.84
Domestic Corporate Fixed Income	10.00	1.42
Domestic Government Fixed Income	3.00	0.85
Treasury Inflation Protected Securities	0.00	1.01
High-Yield Bonds	3.00	4.08
Real Estate	0.00	4.24
Private Equity	10.00	9.19
Hedge Funds	10.00	3.92
Other Alternatives	10.00	4.57
Total	100.00%	

Source: GRS

Single Discount Rate

A single discount rate of 7.75% 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 7.75%. The projection of cash flows used to determine this single discount rate assumed that:

(1) plan member contributions will be 12.5% of payroll each calendar year, and
(2) the employer contribution rate allocated to the pension program will be 26.50% of payroll (22.50% for the December 31, 2016 valuaton).

Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members and beneficiaries. 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.

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 7.75%, 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:

NPL Sensitivity

	1% Decrease 6.75%	Current Single Discount Rate Assumption 7.75%	1% Increase 8.75%
Net Pension Liability	$ 540,752,969	$ 415,583,842	$ 311,868,395

Source: GRS

Note 9 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.

In March 2016, OPERS received two favorable rulings from the Internal Revenue Service (IRS) allowing OPERS to consolidate all health care assets into the OPERS 115 Health Care Trust. Transition to the new health care trust structure was completed July 1, 2016. As of December 31, 2016, 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. Members of the Member-Directed Plan do not qualify for ancillary benefits, including OPERS sponsored health care coverage. OPERS funds a Retiree Medical Account (RMA) for participants in the Member-Directed Plan. At retirement or refund, participants can be reimbursed for qualified medical expenses from their vested RMA balance.

In order 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 2015 CAFR 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#CAFR*, 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 2016, 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, 2016, 2015, and 2014, were $91,371, $87,916, and $96,651, 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. The portion of employer contributions allocated to health care for members in the Traditional Pension Plan and Combined Plan was 2.0% during calendar year 2016. As recommended by OPERS' actuary, the portion of employer contributions allocated to health care beginning January 2, 2017 decreased to 1.0% for both 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 into the RMA for participants in the Member-Directed Plan for 2016 was 4.0%.

The total employer contribution rates stated above are the statutorily required contribution rates for OPERS. HPRS employer contributions to OPERS for OPEB benefits for the year ended December 31, 2016 were $13,048, which were equal to the required contributions for the year, and included in the employer contribution amount listed earlier in this Note.

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

At December 31, 2016, HPRS reported a liability of $815,831 for its proportionate share of the Traditional Plan's net pension liability and $5,124 for its proportionate share of the Combined Plan's net pension asset. The net pension liability and asset were measured as of December 31, 2015, 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 contributions of all participating employers, actuarially determined. At December 31, 2015, HPRS's proportions were as follows:

	HPRS
Traditional Plan	0.004710%
Combined Plan	0.010530%

For the year ended December 31, 2016, HPRS recognized pension expense of $104,404.

At December 31, 2016, HPRS reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

Deferred Outflows and Inflows of Resources		
	Deferred *Outflows of* Resources	Deferred *Inflows of* Resources
Difference between expected and actual experience	-	$18,102
Net difference between projected and actual earnings on pension plan investments	$242,016	-
Changes in Proportion	1,790	29,021
Contributions subsequent to the measurement date	78,323	
Total	$322,129	$47,123

*$78,323 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, 2017

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

Year ended December 31:	
2017	$39,791
2018	43,626
2019	59,519
2020	54,918
2021	(299)
2022	(299)
2023	(299)
2024	(212)
2025	(62)

Actuarial Assumptions - OPERS

The total pension liability in the December 31, 2015 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Actuarial Assumption - OPERS December 31, 2015 Valuation Date		
	Traditional Pension Plan	Combined Plan
Investment Rate of Return	8.00%	8.00%
Wage Inflation	3.75%	3.75%
Projected Salary Increases	4.25% - 10.05% (includes wage inflation at 3.75%)	4.25% - 8.05% (includes wage inflation at 3.75%)
Cost-of-Living Adjustments	Pre 1/7/2013 Retirees: 3.00% Simple; Post 1/7/2013 Retirees: 3.00% Simple through 2018, then 2.80% Simple.	Pre 1/7/2013 Retirees: 3.00% Simple; Post 1/7/2013 Retirees: 3.00% Simple through 2018, then 2.80% Simple.

Mortality rates are the RP-2000 mortality table projected 20 years using the Projection Scale AA. For males, 105% of the combined healthy male mortality rates were used. For females, 100% of the combined healthy female mortality rates were used. The mortality rates used in evaluating disability allowances were based on the RP-2000 mortality table with no projections. For males, 120% of the disabled female mortality rates were used, set forward two years. For females, 100% of the disabled female mortality rates were used.

The discount rate used to measure the total pension liability was 8.0% 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's proportionate share of the net pension liability calculated using the discount rate of 8.00%, 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:

Share of the Net Pension Liability

	1% Decrease – 7.0%	Current Rate – 8.0%	1% Increase – 9.0%
Traditional Plan HPRS	$1,299,819	$815,831	$407,603
Combined Plan HPRS	($105)	($5,124)	($9,161)

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 2015 and the long-term expected real rates of return.

OPERS Asset Allocation
December 31, 2015

Asset Class	Target Allocation	Weighted Average Long-Term Expected Real Rate of Return
Fixed Income	23.00%	2.31%
Domestic Equities	20.70%	5.84%
Real Estate	10.00%	4.25%
Private Equity	10.00%	9.25%
International Equities	18.30%	7.40%
Other Investments	18.00%	4.59%
Total	100%	5.27%

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.

Note 10 DROP Activity

DROP Activity Year ended December 31, 2016	
Beginning Balance	$23,477,120
Contributions	6,125,684
Distributions	(5,792,987)
Net Adjustments	1,386,270
	$25,196,087

Note 11 Risk Management

HPRS purchases insurance coverage for general liability, property damage, 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 12 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.

Schedule of Changes in Net Pension Liability and Related Ratios[1]

Year ended December 31

	2016	2015	2014
Total Pension Liability			
Service Cost	$18,094,205	$17,805,023	$17,656,943
Interest on the Total Pension Liability	84,194,909	81,577,033	79,175,488
Benefit Changes	-	-	-
Difference between Expected and Actual Experience	(8,632,852)	(6,365,985)	-
Assumption Changes	-	40,773,369	-
Benefit Payments	(65,720,438)	(66,213,253)	(64,525,978)
Refunds	(1,730,725)	(857,626)	(2,177,476)
Net Change in Total Pension Liability	26,205,099	66,718,561	30,128,977
Total Pension Liability - Beginning	**$1,111,064,399**	**1,044,345,838**	**1,014,216,861**
Total Pension Liability - Ending (a)	**$1,137,269,498**	**1,111,064,399**	**1,044,345,838**
Plan Fiduciary Net Position			
Employer Contributions	25,383,684	22,895,242	22,325,421
Employee Contributions	14,101,171	13,686,292	11,577,268
Pension Plan Net Investment Income	46,423,125	(5,701,922)	45,104,959
Benefit Payments	(65,720,438)	(66,213,253)	(64,525,978)
Refunds	(1,730,725)	(857,626)	(2,177,476)
Pension Plan Administrative Expense	(1,352,722)	(1,084,161)	(1,031,473)
Other	356,527	838,582	420,984
Net Change in Plan Fiduciary Net Position	**17,460,622**	**(36,436,846)**	**11,693,705**
Plan Fiduciary Net Position - Beginning	**704,225,034**	**740,661,880**	**728,968,175**
Plan Fiduciary Net Position - Ending (b)	**721,685,656**	**704,225,034**	**740,661,880**
Net Pension Liability - Ending (a) - (b)	**415,583,842**	**406,839,365**	**303,683,958**
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	63.46%	63.38%	70.92%
Covered Employee Payroll[2]	108,788,871	99,983,221	99,211,756
Net Pension Liability as a Percentage of Covered Employee Payroll	382.01%	406.91%	306.10%
Notes to Schedule:	N/A	N/A	N/A

Source: GRS

[1]The effort and cost to recreate financial statement information for the previous seven years was not practical. Additional years will be displayed as they become available.
[2]Includes members of the DROP

Schedule of Employer Contributions - Pension
Years ended December 31, 2007 - 2016

Year	Actuarially Calculated Employer Contribution	Actual Contributions	Annual Contribution Deficiency	Covered Payroll	Annual Contributions as a % of Covered Payroll	% Contributed
2007	21,666,160	19,956,700	(1,709,460)	93,752,908	21.29	92
2008	21,221,089	20,302,216	(918,873)	94,301,538	21.53	96
2009	19,978,427	20,453,914	475,487	94,824,789	21.57	102
2010	22,872,487	21,211,944	(1,660,543)	94,767,852	22.38	93
2011	26,956,449	22,966,338	(3,990,111)	93,126,449	24.66	85
2012	30,488,160	23,766,361	(6,721,799)	98,117,403	24.22	78
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

Source: GRS

Schedule of Investment Returns[1]
Year ended December 31

	Annual Return[2]
2016	6.60%
2015	-0.61%
2014	5.99%

Source: Hartland

[1]The effort and cost to recreate financial statement information for the previous seven years was not practical. Additional years will be displayed as they become available.
[2]Annual money-weighted rate of return, net of investment expenses

Schedule of Employer Contributions and Other Contributing Entities - OPEB
Years ended December 31, 2013 - 2016

Year	Actuarial Annual Required Contributions	% Contributed by Employer	Federal Subsidy	% Contributed
2013	24,296,709	15.06	446,616	16.89
2014	24,532,822	17.63	647,225	20.27
2015	25,886,887	15.72	1,140,016	20.12
2016	30,088,127	14.99	1,082,402	18.59

Schedule of Funding Progress - OPEB

Years ended December 31, 2012-2015

Valuation Year	Actuarially Accrued Liability ("AAL")	Valuation Assets	Unfunded Actuarially Accrued Liability ("UAAL")	Assets as a % of AAL	Active Member Payroll	UAAL as a % of Active Member Payroll
2012	$411,467,825	$99,817,173	$311,650,652	24.3%	$98,117,403	317.6%
2013	438,561,694	102,083,923	336,477,771	23.3	98,519,844	341.5
2014	376,683,113	103,812,807	272,870,306	27.6	99,211,756	275.0
2015	412,352,083	106,550,139	305,801,944	25.8	99,983,224	305.9

Notes to the Trend Data

Information in the Required Supplementary Schedules is from the actuarial valuation for each year indicated. Additional information from the latest actuarial valuation is as follows:

Valuation Date	December 31, 2015
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent Closed
Remaining Amortization Period	30 years for retiree health benefits and pension benefits in determining the Annual Required Contribution
Asset Valuation Method	Four-year smoothed market, 20% corridor
<u>Actuarial Assumptions</u>	
Investment Rate of Return	7.75% for pension, 5.0% for OPEB
Projected Salary Increases	3.8% – 13.5%, including wage inflation of 3.5%
Cost-of-Living Adjustments	1.25% annual increases beginning at age 60 (age 53 for members who entered DROP as of December 29, 2012, or retired before January 7, 2013)
Health Trend	Intermediate

Schedule of HPRS' Proportionate Share of the Net Pension Liability - Last 10 Years*

Ohio Public Employees Retirement System - Traditional Pension Plan	**2016**	**2015**
HPRS' proportion of the net pension liability (asset)	0.004710 %	0.005055 %
HPRS' proportionate share of the net pension liability (asset)	815,831	609,690
HPRS' covered-employee payroll	586,187	619,711
HPRS' proportionate share of the net pension liability (asset) as a % of its covered-employee payroll	139%	98%
Plan fiduciary net position as a % of the total pension liability	81.08%	86.45%

Ohio Public Employees Retirement System - Combined Pension Plan	**2016**	**2015**
HPRS' proportion of the net pension liability (asset)	0.010530 %	0.010396 %
HPRS' proportionate share of the net pension liability (asset)	(5,124)	(4,003)
HPRS' covered-employee payroll	38,320	36,600
HPRS' proportionate share of the net pension liability (asset) as a % of its covered-employee payroll	13%	11%
Plan fiduciary net position as a % of the total pension liability	116.90%	114.83%

Schedule of Contributions - Last 10 Years*

Ohio Public Employees Retirement System - Traditional Pension Plan	**2016**		**2015**
Contractually required contribution	70,343		74,365
Contributions in relation to the contractually required contribution	70,343	-	74,365
Contribution deficiency (excess)	-		-
HPRS' covered employee payroll	586,187		619,711
Contributions as a % of covered-employee payroll	12%		12%

Schedule of Contributions

Ohio Public Employees Retirement System - Combined Pension Plan	**2016**	**2015**
Contractually required contribution	4,598	4,560
Contributions in relation to the contractually required contribution	4,598	4,560
Contribution deficiency (excess)	-	-
HPRS covered employee payroll	38,320	36,600
Contributions as a % of covered-employee payroll	12%	12%

*Additional years will be added as they become available.

Notes to Required Supplementary Schedules

Schedule of Changes in Net Pension Liability
The total pension liability contained in this schedule was provided by HPRS's actuary, Gabriel, Roeder, Smith & Company. The net pension liability is measured as the total pension liability, less the amount of the fiduciary net position of the Retirement System.

Description of Schedule of Funding Progress
An unfunded actuarially accrued liability exists when (1) actual financial experiences are less favorable than assumed financial experiences and (2) additional benefit obligations are applied to past service. Section 5505.121 of the Ohio Revised Code requires that an unfunded liability be systematically financed over a period of no more than 30 years.

In an inflationary economy, the value of a dollar decreases over time. While member payroll and unfunded actuarially accrued liabilities may be increasing in dollar amounts, the relative percentages of these factors may be declining. To account for this inconsistency, it is useful to measure the quotient of unfunded actuarially accrued liabilities divided by active member payroll. A smaller ratio indicates greater system strength. A declining ratio over time indicates an improving financial position.

Schedule of Administrative Expenses
Year ended December 31, 2016

Personnel	$861,559
Professional and technical services	
Computer services	72,594
Actuary	157,013
Education	12,023
Medical consulting	2,330
Audit	43,449
Legal	79,390
Miscellaneous services	6,042
Medical services	1,975
Total professional and technical services	374,816
Communications	
Printing	1,551
Postage	6,652
Telephone	4,549
Internet	7,848
Total communications	20,600
Other expenses	
Office rent	120,112
Depreciation	23,216
Insurance	28,853
Supplies	5,300
Miscellaneous	8,407
Loss on disposal of equipment	-
Ohio Retirement Study Council	2,423
Travel	20,245
Memberships and subscriptions	6,265
New equipment	3,491
Computer Service – Offsite server	3,300
Cable	1,625
Retiree Healthcare Consultant	65,756
Total other expenses	288,993
Total administrative expenses	$ 1,545,968

Above amounts do not include investment-related administrative expenses.

Schedule of Investment Expenses
Year ended December 31, 2016

Personnel	$20,605
Professional services	
Investment services	5,733,675
Monitoring services	265,330
Total professional services	5,999,005
Other expenses	
Due diligence	1,363
Computer services	8,066
Memberships and subscriptions	1,752
Printing and supplies	172
Total other expenses	11,353
Total investment expenses	$ 6,030,963

Payments to Consultants
Year ended December 31, 2016

Consultant	Fee	Service
Attorney General's Office	$17,828	Legal
Brennen, Manna & Diamond	1,530	Legal
Calfee, Halter & Griswold	6,593	Legal
County Of Summit Ohio	19,439	Auditing
David Tanner, D.O.	2,330	Medical
Gabriel, Roeder, Smith & Company	222,769	Actuarial
Hartland	265,330	Investment
Ice Miller LLC	48,094	Legal
Ohio Auditor of State	510	Auditing
Schneider Downs	23,500	Auditing
Squire Patton Boggs LLP	2,374	Legal
Tucker Ellis LLP	2,972	Legal
Total	$613,269	

See the Investment Section, Pages 65-66 for payments to investment managers and brokers.

SCHNEIDER DOWNS

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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*

Board of Trustees
Ohio State Highway Patrol Retirement System
Columbus, Ohio

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 Statements, the financial statements of The Ohio State Highway Patrol Retirement System (HPRS), which comprise the statement of fiduciary net position as of December 31, 2016, and the related statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated June 20, 2017.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the HPRS's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the HPRS's internal control. Accordingly, we do not express an opinion on the effectiveness of the HPRS's 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 HPRS'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 may exist that have not been identified.

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether the HPRS's 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 determination of financial statement amounts. 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's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Schneider Downs & Co., Inc.

Columbus, Ohio
June 20, 2017

Investment Section

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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 23) 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, Hartland. Hartland assists the Board with the construction and diversification of HPRS's investment portfolio and manager selection. Additionally, Hartland 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 67-80) 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 59) 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 at December 31, 2016 is available from HPRS upon request.

Investment Performance

As shown in the *Schedule of Investment Results* (Page 61), 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

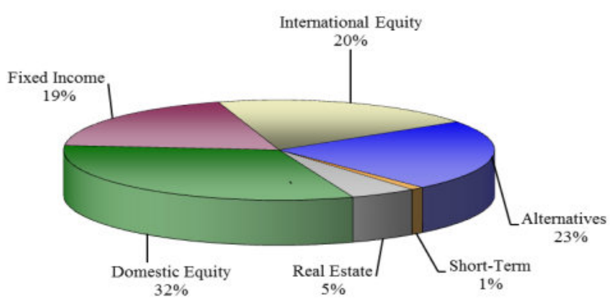
Investment Summary
December 31, 2016

	Fair Value	Actual	Target	Range
Domestic equity	$256,061,532	31.2%	32.0%	20-40%
Fixed income	146,395,098	17.8	19.0	10-30
Alternatives *	204,311,078	24.9	23.0	15-35
International equity	165,313,205	20.1	20.0	10-30
Short-term	17,552,498	2.1	1.0	0 – 6
Real estate	30,851,775	3.8	5.0	0 – 10
Net portfolio value	$820,485,186	100.0%	100.0%	

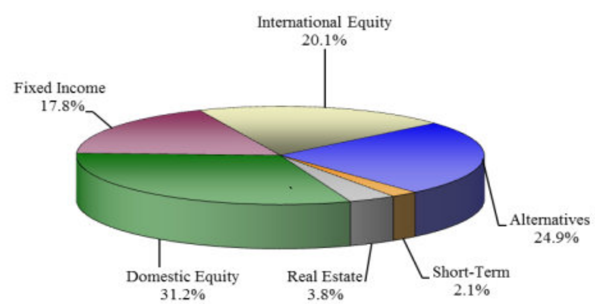
* Alternatives include private equity, fund of hedge funds, and global tactical asset allocation investments.

Asset Allocation – Total Fund
December 31, 2016

Policy Allocation

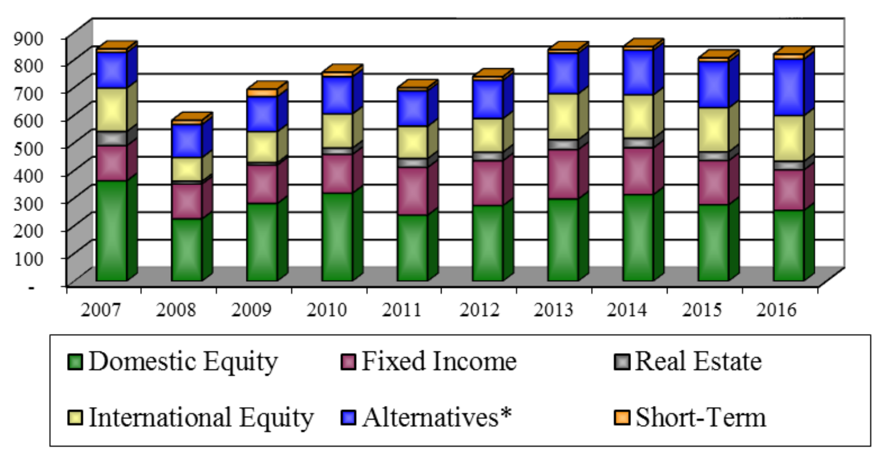


Actual Allocation



* Alternatives include private equity, fund of hedge funds and global tactical asset allocation investments.

Ten-Year Investment Comparison
(in millions)



* Alternatives include private equity, fund of hedge funds, and global tactical asset allocation investments.

Economic & Market Review – 2016

After a challenging 2015, risk assets rebounded in 2016 to deliver positive and in some cases strong returns to investors. The S&P 500 index returned +12.0%, while the MSCI EAFE index delivered a 1.5% return for those investing in international developed market countries. Investment grade fixed income investors returned slightly less than the yield to start the year, 2.7% (per the Barclay's Aggregate index). High yield bonds was among the best performing asset classes, returning 17.5% (per the BAML U.S. High Yield Master II Index). Patience was rewarded in 2016 as the markets faced drawdowns in January (energy prices), June (Brexit fears), and November (U.S. election), only to rebound strongly in each case.

The U.S. economy witnessed 1.6% real GDP growth in 2016, which was below the 2015 rate of 2.6%. According to the Bureau of Economic Analysis, the deceleration of GDP was due to "downturns in private inventory investment and in nonresidential fixed investment and decelerations in PCE, in residential fixed investment, and in state and local government spending that were partly offset by a deceleration in imports and accelerations in federal government spending and in exports." However, there were many positive economic metrics of note in 2016. Unemployment continued to decline, as the U3 rate moved to 4.7% at year-end. This was accompanied by an improvement in U.S. average hourly earnings. The American consumer exhibited strong confidence and continued to spend as retail, auto and home sales all improved in 2016. Corporate America also produced positive readings in terms of ISM Manufacturing and Non-Manufacturing Indexes, while small business optimism picked up at year-end. Additionally, we saw an end to the earnings recession in the United States, much of which is related to the energy sector where prices have stabilized and stronger historical earnings numbers have rolled off.

The European economy has produced encouraging economic data, with positive GDP growth, declining (albeit high) unemployment and strong demand for credit. Japan continues to produce relatively low GDP, with minimal wage growth despite extremely low unemployment (3.1%). Emerging market growth, including China (+6.7%), remains significantly stronger than that of the developed world.

Developed markets central bank activity continued to diverge in 2016 as the U.S. has gradually moved towards a normalizing interest rates, hiking the Federal Funds Rate by 25 bps in December. The ECB and Bank of Japan have remained accommodative, with low interest rates and expanding balance sheets. The Federal Reserve appears poised to continue normalizing rates in the U.S., while Europe may become less accommodative if economic growth and inflation persist; Japan is likely to remain accommodative.

The political landscape took center stage throughout 2016 with important referendums and elections occurring in the United Kingdom, Italy and the United States, among others. The United Kingdom voted to initiate Article 50 and leave the European Union (Brexit), which created significant market volatility and angst in late June – ramifications are still being evaluated and will take time to fully grasp. Italian voters rejected a referendum to reduce bureaucracy, leading to the resignation of Prime Minister Matteo Renzi. In the U.S., Donald Trump won the presidential election and Republicans gained a majority in the Senate – the market has rallied post-election on hopes of fiscal stimulus and deregulation.

Heading into 2017, political uncertainty remains a focus, with key elections in France and Germany, fallout related to Brexit and high expectations for the new administration in the United States. Central bank activity, while still important, has taken a back seat to politics, but interest rates will remain an important factor in capital market assumptions and asset class returns. *Source: Hartland*

Schedule of Investment Results
Year ended December 31, 2016

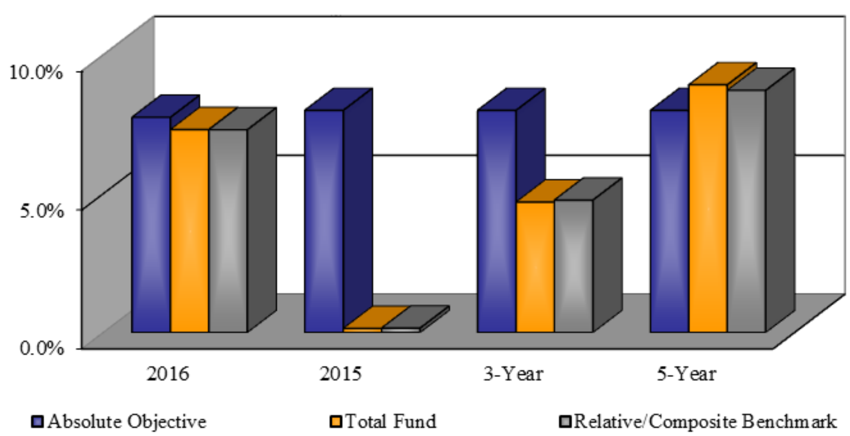
	2016	2015	3-Year	5-Year
Domestic Equity	**13.7%**	**0.2%**	**8.5%**	**15.0%**
Russell 3000	12.7	0.5	8.4	14.7
International Equity	**1.7**	**-2.9**	**-2.0**	**5.8**
MSCI ACWI ex US IMI	4.4	-5.3	-1.5	5.4
Fixed Income	**6.4**	**0.6**	**3.6**	**3.3**
Barclays Capital Aggregate/Opp. Blend	3.3	0.6	3.2	2.4
Real Estate	**7.8**	**6.1**	**11.9**	**11.2**
NCREIF	9.2	13.5	11.3	11.2
Alternatives ▲	**4.1**	**0.8**	**4.5**	**6.4**
HFRI Fund of Funds Composite Blend	5.3	3.3	5.9	8.6
Total Fund	**7.3**	**0.2**	**4.7**	**8.9**
Absolute Objective	7.75	8.0	8.0	8.0
Relative/Composite Benchmark ►	7.3	0.2	4.8	8.7

▲ Includes private equity, GTAA 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, 32%; 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, 6%; 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: Hartland

Total Fund Rates of Return vs Policy Benchmark
(Gross of fees)



Domestic Equity Holdings
December 31, 2016

Security	Shares	Market Price	Fair Value
JPMorgan Chase & Co	18,820	$86.29	$1,623,978
Chevron Corporation	10,600	117.70	1,247,620
AT&T Inc	28,650	42.53	1,218,485
Exxon Mobil Corp	12,090	90.26	1,091,243
Intel Corp	28,230	36.27	1,023,902
Johnson & Johnson	7,900	115.21	910,159
Bank of America Corp	38,900	22.10	859,690
BB&T Corp	18,040	47.02	848,241
Merck & Co Inc	13,670	58.87	804,753
Citigroup Inc	13,400	59.43	796,362
Other	3,439,167		66,826,644
Total domestic equity securities	3,629,467		$77,251,077
Domestic Equity Commingled Funds			
DFA Small Cap Subtrust			$12,093,964
Vanguard Institutional Index Fund			114,513,847
Vanguard Mid Cap Index Fund			15,876,351
Wellington Mgmt Diversified Growth			36,326,293
Total domestic equity commingled funds			$178,810,455
Total domestic equity			**$256,061,532**

International Equity Holdings
December 31, 2016

Security	Shares	Market Price	Fair Value
Schlumberger Ltd	6,400	$83.95	$537,280
Everest RE Group Ltd	2,379	216.40	514,816
Pentair Plc	6,490	56.07	363,894
Bunge Limited	4,400	72.24	317,856
Johnson Ctls Intl Plc	7,286	41.19	300,110
Icon Plc	3,470	75.20	260,944
Teva Pharmaceutical Inds Ltd	7,140	36.25	258,825
Royal Dutch Shell Plc	4,550	54.38	247,429
Syngenta AG	2,950	79.05	233,198
Lyondellbasell Industries N.V.	2,700	85.78	231,606
Other	249,813		2,267,123
Total international equity securities	297,578		$5,533,081
International Equity Commingled Funds			
DFA International Small Cap Value			$14,789,141
Driehaus International Small Cap Growth			8,127,434
Lazard International			36,990,996
OFI Emerging Markets			22,613,970
TS&W International			38,385,984
William Blair International			38,872,600
Total international equity commingled funds			$159,780,125
Total international equity			**$165,313,206**

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

Fixed Income Holdings
December 31, 2016

Security	Par Value	Fair Value
USA Treasury Notes 2.750% Due 11/15/2042	$1,375,000	$1,298,674
Freddie Mac Struct Nts Call 2/24/17 @ 100 1.05% Due 8/24/2021	1,100,000	1,082,807
General Elec Cap Corp Ser Notz Unsc Var% Due 3/15/2023	1,000,000	1,013,020
Freddie Mac Struct Nts Call 12/21/16 @ 100 1.1% Due 6/21/2021	1,000,000	993,170
Freddie Mac Struct Nts Call 5/8/17 @ 100 1.1% Due 11/8/2021	1,000,000	993,130
USA Treasury Notes 2.5% Due 2/15/2045	1,075,000	957,546
Johnson Controls Intl Pl Sedol ISIN US478375AD00 5% Due 3/30/2020	800,000	860,744
Kroger Co Sr Unsec 7.000% Due 5/01/2018	800,000	853,904
USA Treasury Notes Var % Due 4/30/2018	850,000	851,488
BB&T Corp Ser Mtn Call 2/22/22 @100 3.950% Due 3/22/2022	800,000	838,080
Other	23,418,255	24,686,015
Total fixed income securities	$33,218,255	$34,428,576

Fixed Income Commingled Funds	Fair Value
Credit Suisse Secured Loan Fund	$30,975,105
JP Morgan Investment Management	33,031,367
JP Morgan Strategic Income Opp Fund	35,989,379
Wellington World Bond	11,970,671
Total fixed income commingled funds	$111,966,522
Total fixed income	**$146,395,098**

Real Estate Holdings
December 31, 2016

Asset	Shares	Market Price	Fair Value
Hospitality Pptys Tr Sh Ben Int REIT	6,100	31.74	$193,614
Brandywine Rlty Tr sh Ben Int REIT	7,000	16.51	115,570
Total real estate assets	13,100		$309,184

Real Estate Commingled Funds	Fair Value
Long Wharf Real Estate Partners Fund IV	$6,863,092
Long Wharf Real Estate Partners Fund V	5,202,086
Marathon European Credit Opportunity Fund III	1,627,542
Oaktree Real Estate Opportunities Fund IV	2,298,075
Oaktree Real Estate Opportunities Fund V	3,930,597
Oaktree Real Estate Opportunities Fund VI	9,173,301
Oaktree Real Estate Opportunities Fund VII	1,048,040
Pyramis Global Advisors (FREG III)	399,859
Total real estate commingled funds	$30,542,592
Total real estate	**$30,851,776**

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

Private Equity Holdings
December 31, 2016

Asset	Fair Value
Blue Point Capital Partners Fund III	$4,432,667
Core Value, LLC	29,345,391
GCM Grosvenor Private Equity Opportunities Fund, LP[1]	9,097,012
HarbourVest Partners 2013 Direct Fund L.P.	12,349,305
Kayne Anderson Energy Fund IV	297,543
Kayne Anderson Energy Fund V	4,195,231
Kayne Anderson Energy Fund VI	4,955,269
Kayne Anderson Mezzanine Partners	1,014,862
Kayne Anderson MLP Fund	15,247,820
Kayne Anderson Private Energy Income Fund	1,942,480
Pantheon Multi-Strategy Program 2014	5,311,457
Pantheon USA Fund VII, LP	13,445,917
PIMCO Corporate Opportunities Fund II	1,984,225
Silver Point Specialty Credit Fund	5,734,558
Total private equity	**$109,353,737**

Fund of Hedge Funds Holdings
December 31, 2016

Asset	Fair Value
Evanston Capital Weatherlow Offshore Fund II	$61,044,514
GAM Fund Management Ltd.	166,802
Sankaty / Prospect Harbor Credit Partners	26,293
Total fund of hedge funds	**$61,237,609**

Global Tactical Asset Allocation Holdings
December 31, 2016

Asset	Fair Value
Standard Life Investments Global Absolute Return Strategy	$33,719,731
Total fund of Global Tactical Asset Allocation Holdings	**$33,719,731**

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, 2016

Manager	Strategy	Assets Managed	Fees	Performance Fees
Domestic equity				
Ancora Investment Advisors	Micro Cap	$11,461,343	$72,977	$-
DePrince, Race & Zollo, Inc.	Large Cap Value	23,731,352	94,771	-
Dimensional Fund Advisors	Small Cap Blend	12,093,964	66,559	-
LSV Asset Management	Large Cap Value	36,406,982	164,919	-
Vanguard Institutional Index Fund	Large Cap Blend	114,513,847	45,786	-
Vanguard Mid Cap Index Fund	Mid-Cap	15,876,351	12,828	-
WA Account	Miscellaneous	2,064	-	-
Wellington Mgmt Co., LLP	Large Cap Growth	36,326,293	241,941	-
Westfield Capital Management	Small Cap Growth	11,491,601	131,603	-
International Equity				
Dimensional Fund Advisors	Small Cap Value	14,789,141	32,236	-
Driehaus Capital Management	Small Cap Growth	8,127,434	146,795	-
Lazard Asset Management	Large Cap Value	36,990,996	-	-
Manning & Napier Advisors, Inc.	Large Cap Value	-	62,803	-
OFI Trust Company	Emerging Markets	22,613,970	187,915	-
Thompson, Siegel & Walmsley	Large Cap Value	38,385,984	66,474	-
Vanguard Total International Stock Indx Fnd	Large Cap Core	-	24,151	-
William Blair International	Large Cap Growth	38,872,600	271,353	-
Fixed Income				
Credit Suisse Secured Loan Fund	High Yield	30,975,105	132,039	-
Johnson Institutional Management	Intermediate-Term	34,428,575	69,886	-
JP Morgan Asset Management	Intermediate-Term	33,031,367	93,338	-
JP Morgan Strategic Income Opp Fund	Intermediate-Term	35,989,379	204,877	-
Wellington World Bond	Global Bond	11,970,671	125,185	-
Real Estate				
Long Wharf Real Estate Partners	Speciality Real Estate	12,065,178	532,531	(20,168)
Marathon Asset Management, LP	Credit Opportunity	1,627,542	-	-
Oaktree Capital Management, LP	Specialty Real Estate	16,450,013	387,176	257,641
Pyramis Global Advisors	Specialty Real Estate	399,859	14,259	-
Private Equity				
Blue Point Capital Partners	Mid-Market Buyout	4,432,667	109,875	395,624
Core Value, LLC	Timber	29,345,391	214,309	-
GCM Grosvenor Private Equity Opp Fund	Fund of Funds	9,097,012	60,508	17,599
HarbourVest Partners	Co-Investment	12,349,305	76,701	223,839
Kayne Anderson Capital Advisors, LP	Energy, MLP, and Mezzanine	27,653,205	360,328	884,170
Pantheon Ventures LP	Fund of Funds	18,757,374	232,157	-
Pacific Investment Management Co. LLC	Corporate Opportunities	1,984,225	13,727	46,057
Silver Point Capital LP	Specialty Credit	5,734,558	68,768	1,957,905
Hedge Funds				
Evanston Capital Management, LLC	Fund of Funds	61,044,514	519,667	-
GAM Fund Mgmt Ltd	Fund of Funds	166,802	-	-
Sankaty Advisors, LLC	Distressed Securities	26,293	162	-
Global Tactical Asset Allocation				
Standard Life Investment Global Abs. Return	Tactical Asset	33,719,731	311,584	-
Total		**$802,932,688**	**$5,150,188**	**$3,762,667**

Summary Schedule of Broker Fees
Year ended December 31, 2016

Broker	Fees	Shares	Average Cost
First Tennessee	$ -	5,070,000	$0.000
BNY/ Suntrust Capital	-	3,700,000	0.000
Mutual Fund Agent	-	3,668,976	0.000
Keybanc Capital	-	3,090,000	0.000
Citigroup Global	-	3,080,000	0.000
Wells Fargo Securities	-	2,025,000	0.000
Abel Noser Corp	11,776	1,177,559	0.010
Pierpont Securities	-	1,125,000	0.000
RBC Capital Markets	-	1,000,000	0.000
Morgan Stanely	133	984,000	0.000
G.X. Clarke & Co	-	900,000	0.000
JP Morgan	-	800,000	0.000
Ivy Securities	7,044	787,199	0.009
BNY Capital Markets	-	640,000	0.000
Jefferies & Co	-	601,690	0.000
Chase Securities	-	588,967	0.000
Piper Jaffray & Co	-	540,000	0.000
Brownstone Investment Group	-	539,000	0.000
Raymond James	-	525,000	0.000
Weeden & Co	2,548	254,792	0.010
Cap Institutional Services	3,210	214,050	0.015
Robert Baird	3,207	213,775	0.015
Merrill Lynch Pierce Fenner & Smith	542	108,435	0.005
Jones Trading Institutional Services	685	68,470	0.010
UBS Securities LLC	427	60,522	0.007
Credit Suisse Fixed Income	412	46,530	0.009
Investment Technology Group Inc	269	35,800	0.008
Leerink Swann	-	14,390	0.000
Fox River Execution	97	13,859	0.007
JP Morgan Securities	40	10,540	0.004
Knight Equity Markets	283	9,440	0.030
Sanford C. Bernstein	37	4,900	0.008
Barclays Capital	-	4,240	0.000
ISI Group Inc	8	4,070	0.002
BTIG LLC	120	4,000	0.030
Deutsche Morg Grenfell	-	2,220	0.000
Goldman Sachs & Co	51	2,090	0.024
Davidson (D.A.)	-	2,000	0.000
Liquidnet Inc.	23	1,440	0.016
Fidelity Capital	5	700	0.008
Other	17	670	0.070
Total	**$30,934**	**$31,919,324**	**$0.003**

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 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. 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.

Purpose and Duties

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 Goals

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 the fund'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 while maintaining level contributions. In meeting these objectives, the Board will give consideration to 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.

Policies

Diversification of assets will ensure that adverse or unexpected results from a security class will not have a detrimental impact on the entire portfolio. Diversification is interpreted to include diversification by asset type, performance and risk characteristic, number of investments, and by investment style of management organizations. These guidelines may be implemented through specific directions or instructions to investment managers, and those directions or instructions may contain other more specific restrictions on diversification of assets by percentage holdings, by quality, or other factors.

Asset classes and ranges considered appropriate for investment of fund assets are to be determined by the Board in accordance with these investment guidelines. Asset class constraints only apply to separate account mandates.

Assignment of responsibilities for each asset category, including components of each asset category, may be assigned to one or more management firms that may be "specialty" managers (i.e., managing only one type of asset class).

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.

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 retirement system, when an Ohio-qualified agent offers quality, services, and safety comparable to other agents otherwise available.

In order to achieve the return objectives, the fund will employ the following strategies for specific asset classes:

Interim Targets

		Estimated (evaluate annually)				Targets		
	10/31/2016	2016	2017	2018	2019	Asset Class	Sub Asset Class	Range
Domestic Equity	**32.1%**	**32.0%**	**31.0%**	**30.0%**	**30.0%**	**30.0%**		**20% - 40%**
Large/Mid Cap	27.1%	27.0%	26.0%	25.0%	25.0%		25.0%	20% - 30%
Small/Micro Cap	5.0%	5.0%	5.0%	5.0%	5.0%		5.0%	0% - 10%
International Equity	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**		**10% - 30%**
Developed Markets	14.1%	15.0%	15.0%	15.0%	15.0%		15.0%	10% - 20%
Emerging Markets	3.0%	2.5%	2.5%	2.5%	2.5%		2.5%	0% - 7.5%
Small Cap	2.9%	2.5%	2.5%	2.5%	2.5%		2.5%	0% - 7.5%
Alternative Investments	**24.0%**	**23.0%**	**24.0%**	**25.0%**	**25.0%**	**25.0%**		**15% - 35%**
Absolute Return	11.6%	12.0%	12.0%	11.0%	10.0%		10.0%	0% - 15%
Private Equity	7.0%	6.0%	7.0%	9.0%	10.0%		10.0%	0% - 15%
Real Assets	5.4%	5.0%	5.0%	5.0%	5.0%		5.0%	0% - 10%
Real Estate	**3.8%**	**5.0%**	**5.0%**	**5.0%**	**5.0%**	**5.0%**	5.0%	**0% - 10%**
Fixed Income	**20.1%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**	**20.0%**		**10% - 30%**
Core Fixed Income	8.6%	10.0%	10.0%	10.0%	10.0%		10.0%	5% - 15%
Opportunistic	10.4%	9.0%	9.0%	9.0%	9.0%		9.0%	4% - 14%
Cash	1.1%	1.0%	1.0%	1.0%	1.0%		1.0%	0% - 6%
Total Pension	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**		

Absolute Return: Hedge Funds, Tactical Asset Allocation
Real Assets: Timber, MLPs, Commodities
Opportunistic Fixed Income: Absolute Return Fixed Income, Non-US Developed, Emerging Markets, High Yield

This asset allocation is newly adopted in December, 2015; therefore, the above detailed transition plan, subject to annual review, will be implemented by the CIO and Investment Consultant.

Short-Term

The purpose of the short-term cash component is to provide liquidity for short-term obligations.

Cash equivalent investments may include the following:

- Short-Term Maturity Securities
- U.S. Treasury Bills
- U.S. Government Repurchase Agreements
- Commercial Paper
- Commingled Investment Funds

Fixed Income

The purpose of the fixed income component is to provide a deflation hedge, to reduce the overall volatility of the pension assets in relation to the liability, and to produce current 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.

An opportunistic fixed income allocation may invest in (1) below-investment-grade bonds or loans, (2) non-United States bonds, or (3) bonds issued by emerging countries, (4) direct lending strategies, (5) tactical strategies.

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, domestic corporate bonds, high yield bonds, and non-U.S. bonds.

Managers are prohibited from using derivative instruments.

Equities

The purpose of the equity component is to provide for growth in principal, while at the same time preserve the purchasing power of the Portfolio's assets. It is recognized that the equity in the Portfolio will represent a greater assumption of market volatility and risk as well as high total return over the long-term.

Qualifying equities will be listed on an established stock market and be readily marketable. They may be held in separate or commingled accounts.

At least 67% of the value of a large cap domestic mandate will be invested in securities with a market capitalization of more than $5 billion.

At least 67% of the value of a small/mid cap domestic mandate will be invested in securities with a market capitalization of more than $500 million. Micro cap mandates are excluded from this guideline.

At least 50% of the value of an international mandate (excluding small cap) will be invested in securities with a market capitalization of more than $1 billion. Each equity manager will diversify the portfolio in an attempt to minimize the impact of substantial losses in any specific industry or issuer.

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 50% of the portfolio,

- where a sector is 10% or less of the benchmark, allow that sector to exceed 30% 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, or

- 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.

Real Estate

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

The fund may invest in improved or unimproved real property, mortgage collective investment funds (Real Estate Investment Trusts or Real Estate Funds), notes secured by real property, mortgage-backed bonds, and pass-through securities backed by mortgages. The real estate portfolio will be constructed and managed to --

- provide sufficient diversity to protect against adverse conditions in any single market sector,
- provide diversity among geographical locations, property types, and property sizes,
- provide relatively stable returns consistent with the overall U.S. commercial real estate market,
- provide a strong current income stream with the potential for long-term principal growth,
- primarily contain fully developed, fully leased properties, and
- minimize the use of debt financing.

Alternatives

The purpose of the alternatives component is to provide diversification, risk reduction and to enhance the overall risk-adjusted return of the portfolio.

Alternative investments may include: private equity, absolute return investments (hedge funds and tactical asset allocations), and real assets (timber, master limited partnerships, and commodities).

The fund may invest in alternatives with individual fund managers or with fund of funds managers.

Performance

Comparative performance measurement of the total fund and its components will be conducted at least quarterly.

Active large cap equity managers are expected to exceed benchmark performance by 50 bps over rolling three and five year periods, net-of-fees, and rank in the upper 40th percentile relative to peers.

The objective of each active small/mid cap equity and international manager is to exceed benchmark performance by 100 bps over rolling three and five year periods, net-of-fees, and rank in the upper 40th percentile relative to peers.

All other managers are expected to exceed benchmark performance over rolling three and five year periods, net-of-fees, and rank in the upper 40th percentile relative to peers. The broad benchmarks for each type of manager, subject to revision, are as follows:

Large cap equity – S&P 500
Large cap growth equity – Russell 1000 Growth
Large cap value equity – Russell 1000 Value
Mid cap equity – Russell Mid Cap
Small cap equity – Russell 2000
Small cap growth equity – Russell 2000 Growth
Small cap value equity – Russell 2000 Value
Micro cap equity – Russell Micro Cap
International equity – MSCI ACWI ex-USA IMI
Fixed income – Barclays Capital Aggregate
Opportunistic fixed income: Citi WGBI, Credit Suisse Leveraged Loans, ML 91-Day T-bill
Cash – ML 91-Day T-Bill
Timber – NCREIF Timber
MLPs – Alerian MLP
Absolute return – HFRI Fund of Funds
Private equity/GTAA – Wilshire 5000 + 3%, lagged one quarter, Cambridge Private Equity
Real estate – NCREIF

Over a market cycle, the total fund return is expected to exceed the following benchmarks:

- A minimum return target of seven and three-quarter percent, representing the fund's actuarial assumption, and also representing the long-term inflation rate of two and three-quarter percent plus a risk premium of five percent.

Asset Class	Benchmark	2017 Interim Target
U.S. Equity	Russell 3000 Index	31%
International Equity	MSCI ACWI ex USA IMI	20%
Core Fixed Income	Barclays U.S. Aggregate	10%
Global Opportunistic Fixed Income	Opportunistic Composite: 1/3 Citi WGBI, 1/3 Credit Suisse Leveraged Loans, 1/3 ML 91-Day T-Bill	9%
Cash	ML 91-Day T-Bill	1%
Absolute Return	HFRI Fund of Funds Composite	12%
Real Assets	60% NCREIF Timber / 40% Alerian MLP	5%
Private Equity	**Total Portfolio:** PE Composite Performance **PE Primary:** Wilshire 5000 + 3% lagged 1 quarter **PE Secondary:** Cambridge Private Equity Index	7%
Real Estate	NCREIF Property Index	5%

As noted above under "Policies," the Board has adopted a new asset allocation in December 2015 and implemented a transition plan. To accurately and efficiently monitor that transition and the new allocation, the Board has also adopted the benchmark transition plan. This overall weighting will be adjusted annually.

Manager Selection

Investment Managers shall be selected in accordance with the Selection of Investment Managers and Agents Policy and Investment Managers RFP Policy.

Directed Brokerage

In separately-managed equity accounts, HPRS investment managers are expected 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.

Roles 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, and
- 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

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 require investment managers to provide a comprehensive written quarterly report that includes the following:

- a review of investment performance, including the investment manager's relative performance,
- a review of the HPRS investment,
- a report on the investment manager's current investment outlook or forecast, and
- a strategy for the future.

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 Investment Committee 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 and Investment Managers RFP Policy,
- validate that the search process was carried out appropriately,
- attend manager presentations at HPRS' offices when necessary, and
- request additional information, if warranted.

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:

- post the RFP to HPRS' website,
- oversee the work of the Investment Consultant,
- ensure the process is completed in an appropriate manner,
- ensure the Investment Committee and Board receive appropriate information,
- coordinate the development and execution of manager contracts and guidelines, and
- conduct on-site due diligence with selected finalist firm 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 quarterly 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:

- identify the need for new managers,
- develop the Request for Proposal (RFP),
- evaluate proposals,
- assist the Investment Committee in identifying finalists,
- attend manager presentations at HPRS' office when necessary,
- discuss candidates with the Investment Committee and the Board,
- conduct on-site due diligence with finalist firms,
- conduct on-site due diligence with existing managers when necessary,
- prepare comprehensive written search reports,
- assist in the development of investment manager guidelines,

- conduct and provide the HPRS staff with comprehensive written search reports , and

- at least every three years, the investment consultant will provide a written manager structure review. This review will go beyond a customary statistical review to elaborate on the following aspects of the manager structure: including the number of managers, allocations to managers, active versus passive management, investment management fees, and overall risk levels of the portfolio,

- provide the HPRS staff with written reviews of the investment managers in the portfolio when necessary. These reviews should include both relevant statistical data as well as qualitative assessments of the manager's performance and portfolio strategy,

- provide HPRS staff with a quarterly report that documents managers' compliance with the guidelines they are to operate within, and

- attend the ORSC or other legislative meetings with the Executive director 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.

Investment Managers

Managers are expected to --

- acknowledge the acceptance of this document,

- 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 performance measurement data, explanation, and other communication as required by the Investment Consultant,

- 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, and
- vote the proxies of the fund's assets, consistent with the manager's internal voting process.

Asset Allocation

The definition of asset allocation targets and ranges is the single most important investment decision that the Board faces. An optimal mix of investments will produce returns that consistently meet the long-term assumed rate of return at a prudent level of risk.

Periodic 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. A new asset allocation review may be necessary when various asset classes are either failing to achieve their expected long-term returns or exhibiting volatility or correlation characteristics much different than expected.

The Investment Consultant will conduct risk budgeting to monitor the active risk that each asset class introduces into the portfolio to ensure it remains consistent with the Board's risk tolerance on a periodic basis.

Rebalancing Policy

In order to maintain the desired asset allocation mix, the portfolio will be reviewed regularly to determine compliance with asset allocation targets and ranges. Strategic decisions will be based on trading costs, liquidity needs, market conditions, and the relative weighting of each manager.

To the extent that an asset class is outside of the allowable range, the Chief Investment Officer and the Investment Consultant will develop a plan for compliance. Without formal Board approval, the Chief Investment Officer may authorize one or more rebalancing transactions to implement the plan.

To the extent that an asset class varies from the target, the Chief Investment Officer and the Investment Consultant may develop a plan for tighter compliance. Provided that rebalancing may be achieved at minimal cost (e.g., through commingled funds with no direct trading expense), without formal Board approval, the Chief Investment Officer may authorize one or more rebalancing transactions to implement the plan.

Securities Lending

The Board may authorize an external service provider to conduct securities lending activities.

Shareholder Activities

Each investment manager is responsible for voting the proxies of the fund's assets, consistent with the manager's internal voting process. Unless the Board takes specific action to do so, HPRS does not take positions on shareholder proposals.

Monitoring and Reporting

Periodically, to accomplish the goal of earning the highest rate of return, HPRS may elect to have existing managers present to the Investment Committee, a subset of the Investment Committee or to the Investment Consultant. This comprehensive performance review should go well beyond simply reviewing the manager's performance relative to the benchmark. It should encompass: ensuring compliance with the investment guidelines, ensuring compliance with reporting requirements, ensuring continuity of the investment process and philosophy, and ensuring consistency of strategy (no "style drift"). In short, the review is intended to ensure that the reasons for originally selecting the manager are still intact.

The manager's presentation should begin with an organizational overview, including discussion of the firm's mission, history, ownership, assets, clients, etc. Any pertinent organizational or staff changes (resignations, hires, etc.) should be highlighted, and biographies of key personnel should always be included. Any pending legal or regulatory issues should be disclosed. A thorough review should restate the portfolio objectives and account guidelines.

The investment universe should be reviewed, highlighting allowed or prohibited types of securities and what, if any, derivative use is allowed. Perhaps most importantly, Investment Committee members should inquire about and be comfortable with the manager's risk management procedures. The manager should offer a market overview, reviewing and analyzing trends and conditions in the relevant market. He should compare the portfolio structure to the benchmark, highlighting significant over-weightings or under-weightings in sectors. Similar comparisons should be shown for major portfolio characteristics (for stocks, cap size, P/E valuation, etc.; for bonds, maturity, coupon, etc.). Major holdings should be listed; if possible, all holdings should be listed.

Analysis of performance should begin with confirmation that the manager is using the benchmark(s) agreed to in the account guidelines. Appropriate time periods for performance appraisal should be both short-term (quarter, year-to-date, past 12 months) and long-term (i.e., three years, five years, since inception). Performance should ideally be presented in both gross and net terms, but it should at least be clear which returns are being presented.

Just as important as the appropriate presentation of relevant performance figures is the discussion of performance attribution. The manager should explicitly present the factors (sectors, securities, duration, etc.) that enhanced performance and that had a negative impact.

As part of the presentation, the manager should present the firm's and/or department's outlook for the economy, the market and the portfolio. For managers of nontraditional asset classes like real estate and alternative investments, the monitoring process will be different, tempered by such facts as the absence of public markets for the underlying investments, the lack of obvious benchmarks and the much longer investment time horizons.

Annual Review

In light of rapid changes in the capital markets and in investment management techniques, these guidelines will be reviewed by the Board on an annual basis. Changes and exceptions to these guidelines may be made at any time with the approval of the Board.

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

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June 20, 2017

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

Dear Board Members:

The basic financial objective of the Highway Patrol Retirement System (HPRS) is to establish and receive contributions which:

- when expressed in terms of percents of active member payroll will remain approximately level from generation to generation, and
- when combined with present assets and future investment return will be sufficient to meet the financial obligations of HPRS to present and future retirees and beneficiaries.

The financial objective is addressed within the annual actuarial funding valuation. The valuation process develops contribution rates for the pension benefits provided by HPRS (i.e., not retiree health benefits) that are sufficient to fund the plan's current cost (i.e., the costs assigned by the valuation method to the year of service about to be rendered), as well as to fund unfunded actuarial accrued liabilities as a level percent of active member payroll over a finite period. The most recent valuations were completed based upon population data, asset data, and plan provisions as of December 31, 2015 and an actuarial funding valuation report was issued as of that date. In addition, this report provides accounting information for the retiree health portion of HPRS in accordance with Governmental Accounting Standards Board (GASB) Statement No. 43.

In addition to the funding valuation report, a separate report is issued to provide financial reporting information for HPRS in accordance with Governmental Accounting Standards Board (GASB) Statement No. 67. Financial reporting information has been produced based upon a measurement date of December 31, 2016 for GASB Statement No. 67.

The plan administrative staff provides the actuary with data for the actuarial valuation. The actuary relies on the data after reviewing it for internal and year-to-year consistency. The actuary summarizes and tabulates population data in order to analyze longer term trends. The plan's external auditor audits the actuarial data annually.

The following schedules in the Actuarial Section of the CAFR were prepared based upon certain information presented in the previously mentioned funding and financial reporting valuation reports:

Actuarial Section

Summary of Assumptions

Funding Method, Asset Valuation Method, Interest Rate

Payroll Growth

For funding valuation purposes, assets are valued on a market related basis that recognizes each year's difference between actual and assumed investment return over a closed four-year period, subject to an 80% to 120% corridor on market value. The actuarial value of assets is 105% of the market value of assets as of December 31, 2015. For GASB Statement No. 67 purposes, assets are valued on a market basis.

Actuarial valuations are based upon assumptions regarding future activity in specific risk areas including the rates of investment return and payroll growth, eligibility for the various classes of benefits, and longevity among retired lives. These assumptions are adopted by the Board after considering the advice of the actuary and other professionals. The assumptions and the methods comply with the requirements of Statements No. 67 and No. 43 of the Governmental Accounting Standards Board and are in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution rates as needed. The assumptions used for the December 31, 2015 funding valuation, GASB Statement No. 43 and GASB Statement No. 67 accounting information were based upon a study of experience during the years 2010 through 2014.

Investment return on a market value basis during 2015 was less than the assumed return. Areas of particular concern include: (1) the pension unfunded actuarial accrued liability is 339% of the covered payroll, and (2) the funded ratio of the pension program is 69% based upon the actuarial value of assets and in particular the retiree and beneficiary portion is only 93% funded. The pension plan has an amortization period of 30 years. Based upon a 4.0% employer contribution rate allocation to the retiree health plan in calendar year 2016 and 0.0% thereafter, the retiree health plan is expected to remain solvent until 2026. Available resources need to be brought in line with projected benefit payouts in the near future if the retiree health plan is to continue to provide benefits similar to those currently provided.

Based upon the results of the December 31, 2015 funding valuation, the Highway Patrol Retirement System of Ohio is meeting its basic financial objective with respect to pensions and continues to operate in accordance with actuarial principles of level percent of payroll financing. However, improvement in the funded ratio of the pension program will be important for its long-term financial security. Continued cost containment efforts can have a positive effect on the retiree health plan, but additional contribution income is needed.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions;

increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

Readers desiring a more complete understanding of the actuarial condition of HPRS are encouraged to obtain and read the complete valuation reports. The material in the Actuarial Section and Financial Section of this CAFR contains some, but not all of, the information in the valuation reports.

Mita D. Drazilov and Brian B. Murphy are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,

Mita Drazilov

Mita D. Drazilov, ASA, FCA, MAAA

Brian B Murphy

Brian B. Murphy, FSA, EA, FCA, MAAA

BBM/MDD:mdd

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 December 31, 2015. The assumptions used for funding purposes are the same as those that are used for financial reporting purposes.

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 7.75% for pension assets and 5.0% for OPEB assets, compounded annually (net of investment expenses).

Payroll Growth

Base pay increases are assumed to be 3.5% annually, attributable to broad economic effects such as inflation and real wage growth. Additional merit and seniority increases are assumed as follows:

Payroll Growth

Service Years	Merit & Seniority	Base (Economic)	Total
1 - 2	10.0%	3.5%	13.5%
3 - 5	3.0	3.5	6.5
6 - 10	1.0	3.5	4.5
11 +	0.3	3.5	3.8

Other Assumptions

85% 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 annually by 4.0%, plus an additional declining percentage ranging from 5.0% - 0.5% until 2026.

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

Post-employment mortality is based on the RP-2014 Healthy Annuitant mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The base year for females was then established to be 2012. Mortality rates for a particular calendar year are determined by applying the MP-2015 mortality improvement scale to the above described tables.

Statement of Actuarial Assumptions and Methods

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

Probabilities of Separation from Active Employment before Age & Service Retirement
Percentage of Active Members Separating Within Next Year

Sample Age	Disability	Death (Men)	Death (Women)	Service	Other
20	0.08%	0.0355%	0.0180%	1	10.00%
25	0.08	0.0434	0.0173	2 - 5	4.00
30	0.23	0.0422	0.0208	6 - 15	1.00
35	0.42	0.0498	0.0304	16 - 20	0.75
40	0.70	0.0594	0.0455	21 & up	0.50
45	0.85	0.0916	0.0705		
50	1.13	0.1639	0.1103		
55	1.32	0.2760	0.1730		

Probabilities of Age & Service Retirement
Percentage of Eligible Members Retiring Within Next Year

Retirement Ages	Unreduced Benefit	Reduced Benefit
48	30%	3.0%
49	15	2.0
50	15	2.0
51	15	2.0
52	15	--
53	15	--
54	10	--
55	30	--
56	25	--
57	30	--
58	30	--
59	40	--
60+	100	--

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.

Short-Term Solvency Test

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)
2010►	104,503,065	583,714,389	329,552,995	630,971,500	100	90	-
2011	104,701,161	618,984,073	324,014,452	623,360,121	100	84	-
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	-

▲ Plan Amendment – COLA eligibility changed to age 60
► Assumption or method change

Active Member Valuation Data

Years Ended December 31

Year	Active Members	Annual Payroll ($)	Average Annual Salary ($)	% Increase in Average Pay
2010	1,537	94,767,852	61,658	0.6
2011	1,520	93,126,449	61,267	(0.6)
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

Retirees and Beneficiaries Added to and Removed from Rolls
Years Ended December 31

	Added to Rolls		Removed from Rolls		Rolls at End of Year		% Increase	Average
Year	Number	Annual Allowances ($)	Number	Annual Allowances ($)	Number	Annual Allowances ($)	in Annual Allowances	Annual Allowances ($)
2010	64	3,119,568	25	497,568	1,424	48,138,648	5.8	33,804
2011	73	3,932,508	32	821,472	1,465	51,249,684	6.5	34,980
2012	79	3,380,304	47	983,484	1,497	53,646,504	4.7	35,832
2013	61	3,204,660	35	843,804	1,523	56,007,360	4.4	36,780
2014	66	3,008,568	31	723,492	1,558	58,292,436	4.1	37,416
2015	73	3,102,744	83*	1,671,876	1,548	59,723,304	2.5	38,580

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

Analysis of Financial Experience
Gains and Losses in Pension Accrued Liabilities Resulting from Differences Between Assumed Experience and Actual Experience

	Gain (or Loss) for Year	
Type of Activity	**2015**	**2014**
Age & Service Retirements If members retire at older ages or with lower final average pay than assumed, there is a gain -- if younger ages or higher average pays, a loss.	($365,491)	($139,594)
Disability Retirements If disability claims are less than assumed, there is a gain - if more claims, a loss.	419,882	1,290,916
Death-in-Service Benefits If survivor claims are less than assumed, there is a gain - if more claims, a loss.	(50,114)	(81,706)
Withdrawal from Employment If more liabilities are released by withdrawals than assumed, there is a gain -- if smaller releases, a loss.	1,272,449	558,083
Pay Increases If there are smaller pay increases than assumed, there is a gain - if greater increases, a loss.	6,155,599	8,493,589
Investment Income If there is greater investment return on pension assets than assumed, there is a gain - if less return, a loss.	1,471,554	106,548
Other Miscellaneous gains and losses resulting from data adjustments, timing of financial transactions, valuation methods, and other events.	5,683,114	(4,872,188)
Gain (or Loss) During Year From Experience	$14,586,993	$5,355,648
Non-Recurring Items Adjustments for benefit and assumption changes.	(48,811,895)	-
Composite Gain (or Loss) During Year	$(34,224,902)	$5,355,648

Summary of Plan Provisions

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. DROP members are eligible to become a candidate and 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 considered to be 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 2016.

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 12.5% in 2016.

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 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

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. 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 or completion of 20 years of service, whichever occurs later.

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.

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) 50% 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 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, 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 receives a monthly survivor benefit of $900.

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.

Health Care
A comprehensive medical health care plan is currently offered to all 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
A portion (annually set by the Board) of the Medicare Part B basic premium amount may be reimbursed to eligible benefit recipients upon proof of coverage. The reimbursement amount was $30 monthly for 2016.

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 2015, the Board set a COLA rate of 1.25%, effective January 1, 2016. Various benefit recipients are eligible for a COLA according to the table below:

Cost of Living Adjustment Eligibility

<table>
<tr><th>Type of Benefit Recipient</th><th>Pension Effective Date Prior to January 7, 2013</th><th>Pension Effective Date On or After January 7, 2013</th></tr>
<tr><td>Service Retirant / DROP Participant</td><td>The later of age 53 or the 13th month after benefit commences</td><td rowspan="3">The later of age 60 or the 13th month after benefit commences</td></tr>
<tr><td>Disability Retirant</td><td>The earlier of age 53 or the 61st month after the benefit commences</td></tr>
<tr><td>Beneficiary / Survivor</td><td>The 13th month after the benefit commences</td></tr>
</table>

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.

Statistical Section

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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 97, 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
- Benefit Deductions from Fiduciary Net Position by Type

The schedules, beginning on Page 98, 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 Recipient by Type of Benefit
- Average Benefit Payments

Changes in Fiduciary Net Position – Pension

Years Ended December 31

Additions	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Employer contributions	$25,383,684	$22,895,242	$22,325,421	$22,908,182	$23,766,361	$22,966,338	$21,211,944	$20,453,914	$20,302,216	$19,956,700
Member contributions	14,101,170	12,711,676	10,637,385	9,082,857	8,755,937	8,348,577	8,295,882	8,624,025	8,870,985	8,901,454
Transfers from other systems	773,206	947,265	586,929	1,353,520	557,316	608,366	329,335	1,009,422	632,894	717,017
Investment income, net	48,099,287	(4,465,153)	44,848,656	115,686,752	63,509,018	(16,385,745)	72,161,170	109,493,243	(207,583,959)	50,333,115
Total additions	$88,357,347	$32,089,030	$78,398,391	$149,031,311	$96,588,632	$15,537,536	$101,998,331	$139,580,604	($177,777,864)	$79,908,286
Deductions										
Benefits paid to participants	67,439,444	65,828,374	63,329,792	60,955,916	58,297,304	55,638,322	52,498,558	49,884,126	47,939,139	44,676,510
Member contribution refunds	1,730,725	857,626	2,177,476	943,433	179,614	451,682	476,936	1,076,685	570,827	98,628
Administrative expenses	1,352,567	1,084,161	1,031,473	909,929	859,477	948,319	637,943	758,818	613,447	605,165
Transfers to other systems	416,679	160,888	165,945	467,462	377,994	1,797,986	566,615	406,147	282,987	330,539
Total deductions	$70,939,415	$67,931,049	$66,704,686	$63,276,740	$59,714,389	$58,836,309	$54,180,052	$52,125,776	$49,406,400	$45,710,842
Change in pension net position	**$17,417,932**	**($35,842,019)**	**$11,693,705**	**$85,754,571**	**$36,874,243**	**($43,298,773)**	**$47,818,279**	**$87,454,828**	**($227,184,264)**	**$34,197,444**

Changes in Fiduciary Net Position – OPEB

Years Ended December 31

Additions	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Employer contributions	$4,511,127	$4,068,887	$4,325,434	$3,658,189	$1,679,422	$1,622,889	$3,227,905	$4,281,052	$4,350,474	$4,276,436
Investment income, net	6,877,607	(647,230)	6,790,553	17,885,294	10,192,983	(2,752,009)	17,734,416	21,030,418	(30,809,552)	11,254,046
Health care premiums	2,918,533	2,397,253	1,756,117	1,570,692	1,283,866	1,274,337	911,076	902,310	784,499	577,511
Retiree Drug Subsidy	1,082,402	1,140,016	647,225	446,616	500,134	422,640	471,909	513,668	317,381	329,158
Prescription Drug Rebates	351,087	428,517	886,661	612,325	356,377	366,316	-	-	-	-
Medicare D Refunds	-	-	-	1,521	17,090	6,567	-	-	-	-
Total additions	$15,740,756	$7,387443	$14,405,990	$24,174,637	$14,029,872	$940,740	$22,345,306	$26,727,448	($25,357,198)	$16,437,151
Deductions										
Health care expenses	14,594,984	13,759,103	14,055,881	13,703,605	12,302,980	12,360,917	11,447,630	9,801,853	9,648,543	11,260,675
Administrative expenses	193,401	157,150	156,176	140,676	137,943	159,271	106,450	123,210	98,082	97,101
Total deductions	$14,788,385	$13,916,253	$14,212,057	$13,844,281	$12,440,923	$12,520,188	$11,554,080	$9,925,063	$9,746,625	$11,357,776
Change in OPEB net position	**$952,371**	**($6,528,810)**	**$193,933**	**$10,330,356**	**$1,588,949**	**($11,579,448)**	**$10,791,226**	**$16,802,385**	**($35,103,823)**	**$5,079,375**

Benefit Deductions from Net Position by Type - Pension
Years Ended December 31

Type of Benefit*	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Age & Service	$55,912,247	$54,637,611	$52,593,663	$50,462,318	$47,725,907	$46,540,462	$43,425,529	$41,439,766	$44,842,690	$36,835,804
Reduced	2,180,522	2,192,201	2,186,653	2,224,182	2,777,829	1,829,190	1,865,761	1,828,296	1,833,554	1,693,050
Disability	4,496,025	4,381,011	4,270,957	4,068,926	3,840,068	3,537,849	3,305,364	3,044,325	2,927,862	2,761,851
Survivor	4,765,650	4,307,551	4,208,519	4,080,490	3,803,500	3,670,821	3,846,904	3,496,739	3,575,139	3,320,805
Death Benefits	85,000	110,000	70,000	120,000	150,000	60,000	55,000	75,000	80,000	65,000
Total Pension Benefits	**$67,439,444**	**$65,828,374**	**$63,329,792**	**$60,955,916**	**$58,297,304**	**$55,638,322**	**$52,498,558**	**$49,884,126**	**$53,259,245**	**$44,676,510**

*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	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Medical	$7,331,598	$7,087,732	$7,623,999	$7,872,163	$6,393,584	$6,755,757	$6,380,295	$4,983,739	$5,087,073	$6,512,976
Wellness	31,455	68,263	48,728	53,440	24,604	95,210	57,747	86,007	79,679	67,479
Prescription drugs	6,115,493	5,245,815	4,722,044	4,110,260	4,301,088	4,053,343	3,709,855	3,430,089	3,274,896	3,513,662
Medicare-B reimbursement	311,820	601,860	874,164	896,970	839,451	770,183	713,317	673,450	632,293	572,127
Dental	621,659	593,016	619,286	612,575	594,292	528,824	453,276	495,272	453,003	464,402
Vision	182,959	162,417	167,660	158,197	149,962	157,600	133,140	133,296	121,599	130,029
Total	$14,594,984	$13,759,103	$14,055,881	$13,703,605	$12,302,981	$12,360,917	$11,447,630	9,801,853	$9,648,543	$11,260,675
Member premiums/adjustments	(4,352,023)	(3,965,786)	(3,290,003)	(2,631,154)	(2,157,466)	(2,069,859)	(1,382,985)	(1,415,978)	(1,101,880)	(906,669)
Net paid by HPRS	**$10,242,961**	**$9,793,317**	**$10,765,878**	**$11,072,451**	**$10,145,515**	**$10,291,058**	**$10,064,645**	**$8,385,875**	**$8,546,663**	**$10,354,006**

Principal Participating Employer
2007-2016

Year	Participating Government*	Covered Employees	Year	Participating Government*	Covered Employees
2016	Ohio State Highway Patrol	1,670	2011	Ohio State Highway Patrol	1,520
2015	Ohio State Highway Patrol	1,621	2010	Ohio State Highway Patrol	1,537
2014	Ohio State Highway Patrol	1,622	2009	Ohio State Highway Patrol	1,547
2013	Ohio State Highway Patrol	1,613	2008	Ohio State Highway Patrol	1,544
2012	Ohio State Highway Patrol	1,645	2007	Ohio State Highway Patrol	1,597

*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, 2016

Monthly Benefit	Number of Benefit Recipients	Type of Benefit 1	2	3	4	5	Retirement Option Unmodified	1	2	3	4	5	6	7
Deferred	10	-	-	-	-	-	-	-	-	-	-	-	-	-
$1 - 250	22	-	-	-	21	1	22	-	-	-	-	-	-	-
251-500	3	-	-	-	-	3	3	-	-	-	-	-	-	-
501 - 750	8	-	-	-	-	8	8	-	-	-	-	-	-	-
751 - 1000	22	-	-	-	17	5	22	-	-	-	-	-	-	-
1001 - 1250	61	2	-	1	51	7	61	-	-	-	-	-	-	-
1251 - 1500	102	-	7	1	84	10	101	1	-	-	-	-	-	-
1501 - 1750	84	7	16	1	54	6	83	-	1	-	-	-	-	-
1751 - 2000	72	26	15	10	17	4	71	-	-	1	-	-	-	-
2001 - 2250	47	16	12	4	13	2	46	1	-	-	-	-	-	-
2251 - 2500	60	16	11	22	11	-	59	-	1	-	-	-	-	-
2501 - 2750	55	30	7	11	7	-	54	1	-	-	-	-	-	-
2751 - 3000	107	73	6	27	1	-	98	-	8	1	-	-	-	-
3001 - 3250	188	161	2	25	-	-	180	1	6	-	-	-	-	1
3251 - 3500	165	151	4	9	1	-	160	-	4	-	-	-	-	1
Over 3,500	757	734	3	19	1	-	732	4	20	1	-	-	-	-
Total	**1,763**	**1,216**	**83**	**130**	**278**	**46**	**1,700**	**8**	**40**	**3**	**-**	**-**	**-**	**2**

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

Average Benefit Payments
2007-2016

Retirement During		Years of Credited Service 20 to <25	25 to <30	30+	Overall
2016	Average Monthly Benefit	$2,511	$3,846	$4013	$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
2012	Average Monthly Benefit	$3,023	$3,453	$4,055	$3,339
	Average Final Average Salary	$5,146	$5,643	$4,922	$5,450
	Number of Retirees	15	29	2	46
2011	Average Monthly Benefit	$2,781	$3,757	$4,738	$3,685
	Average Final Average Salary	$5,734	$5,779	$6,155	$5,694
	Number of Retirees	8	42	4	54
2010	Average Monthly Benefit	$2,923	$3,571	$5,375	$3,670
	Average Final Average Salary	$5,185	$5,501	$7,123	$5,632
	Number of Retirees	7	33	5	45
2009	Average Monthly Benefit	$2,861	$4,114	$5,424	$3,826
	Average Final Average Salary	$4,975	$6,016	$7,334	$5,792
	Number of Retirees	9	19	2	30
2008	Average Monthly Benefit	$2,621	$3,879	$4,822	$3,736
	Average Final Average Salary	$5,182	$6,009	$6,491	$5,902
	Number of Retirees	6	24	3	33
2007	Average Monthly Benefit	$2,089	$3,245	$5,619	$3,202
	Average Final Average Salary	$4,359	$5,138	$7,523	$5,174
	Number of Retirees	5	17	2	24

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.

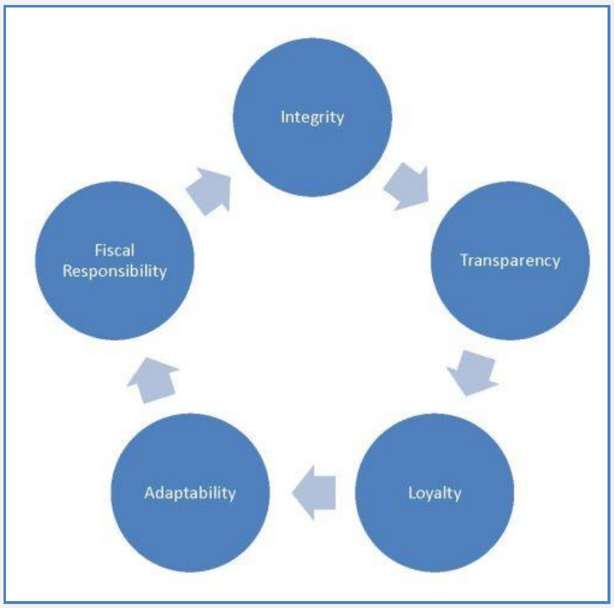
HPRS Mission Statement

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



Highway Patrol Retirement System
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Telephone (614) 431-0781
Fax (614) 431-9204
e-mail: hprsportal@ohprs.org
www.ohprs.org

Office Hours: 8:00 am to 4:30 pm

OHIO STATE HIGHWAY PATROL RETIREMENT SYSTEM

FRANKLIN COUNTY

CLERK'S CERTIFICATION

This is a true and correct copy of the report which is required to be filed in the Office of the Auditor of State pursuant to Section 117.26, Revised Code, and which is filed in Columbus, Ohio.

Susan Babbitt

CLERK OF THE BUREAU

CERTIFIED
OCTOBER 19, 2017

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