



ASPRS
ARKANSAS STATE POLICE
RETIREMENT SYSTEM

2020

Arkansas State Police Retirement System Annual Financial Report

For the Fiscal Year Ended June 30, 2020



Duncan Baird, Executive Director
Colonel Bill Bryant, Director of State Police

Prepared by
Arkansas Public Employees Retirement System
124 West Capitol Avenue, Suite 400
Little Rock, AR 72201

Introduction

A Brief History of ASPRS	7
System Highlights	8
Troop Headquarters	9
Letter of Transmittal	10
Board of Trustees	12
Senior Staff	13
Professional Service Providers	14

Financial Section

Management's Discussion and Analysis	17
Statement of Fiduciary Net Position	22
Statement of Changes in Fiduciary Net Position	23
Notes to the Financial Statements	24
Note 1: Plan Description	24
Note 2: Summary of Significant Accounting Policies	26
Note 3: Deposits and Investments	27
Note 4: Legally Required Reserves	43
Note 5: Net Pension Liability	44
Note 6: Deferred Retirement Option Plan	46
Required Supplementary Information	47
Schedule of Employer Contributions	47
Schedule of Investment Returns	47
Schedule of the Net Pension Liability	47
Schedule of Changes in Net Pension Liability and Related Ratios	48
Notes to Required Supplementary Information	50
Schedule of Administrative Expenses	50
Schedule of Investment Expenses	50
Payments for Professional Consultants	50

Investments Section

Chief Investment Officer's Report	53
Investment Policy Summary	57
Asset Allocation	58
Actual vs. Target Allocation	58
Schedule of Manager Distribution	60
Portfolio Characteristics	61
Schedule of Comparative Investment Results by Year	62
Schedule of Comparative Annualized Investment Results	63

Ten Largest Holdings	64
Schedule of Brokerage Commissions	65
Schedule of Investment Fees	66
Actuarial Section	
Actuary's Certification Letter	69
Summary of Actuarial Assumptions	71
Single Life Retirement Values	73
Separations from Active Employment Before Retirement	74
Probabilities of Retirement for Members Eligible to Retire	74
Active Members in Actuarial Valuation	75
Tier One and Tier Two Participants	75
Short Condition Test	76
Derivation of Experience (Gain/Loss)	77
Gains/Losses by Risk Area	78
Statistical Section	
Schedule of Revenues by Source	81
Schedule of Expenses by Type	82
Schedule of Benefit Expenses by Type	83
Schedule of Retired Members by Type of Benefit	84
Statistical Graphs: Membership	85

This Page Intentionally Left Blank



A Brief History of ASPRS

System Highlights

Troop Headquarters

Letter of Transmittal

Board of Trustees

Senior Staff

Professional Service Providers

This Page Intentionally Left Blank

A BRIEF HISTORY OF ASPRS

With the passage of Act 311 on March 19, 1951, the Arkansas General Assembly created the State Police Retirement System (ASPRS or the System). This System provides for the retirement of police officer employees of the Department of Arkansas State Police.

In the beginning, all ASPRS members participated in a contributory plan whereby employers and employees made contributions to the System. However, in 1977, Act 793 was signed by then Governor David Pryor. This legislation offered a choice to employees who were currently under the contributory plan. They could remain under the contributory plan or change over to the new non-contributory plan in which only employers make contributions to the System. This choice was offered to employees who were ASPRS members at some previous time and returned to work for the System on or after January 1, 1978; however, anyone joining the System on or after, January 1, 1978 who was not previously an ASPRS member is automatically covered under the new non-contributory plan.

Act 1071 of 1997 created the Tier Two Benefit Plan for the State Police Retirement System (Tier II) for all officers hired on or after April 3, 1997. Members of the plan in effect before April 3, 1997 (Tier I) had one year from April 3, 1997 to elect participation in Tier II.

Act 1242 of 2009 merged the investable assets of ASPRS with those of the Arkansas Public Employees Retirement System (APERS). All authority over investment of the merged assets was granted to the Board of Trustees of the Arkansas Public Employees Retirement System (APERS Board). Investment schedules contained herein reflect the market values accruing to each system.

This annual financial report, which covers the period from July 1, 2019 through June 30, 2020, provides comprehensive information about the System including a description of the retirement plan; investment policies and objectives; financial statements; an actuarial report; and historical and statistical information on active members, annuitants, and benefit payments.

SYSTEM HIGHLIGHTS for the year ended June 30, 2020

Active Members (excludes DROP participants)

Tier I		Tier II	
Number	25	Number	457
Average Age	51.1	Average Age	38.3
Average Years' Service	23.0	Average Years' Service	9.8
Average Annual Salary	\$ 81,436	Average Annual Salary	\$ 58,002

Inactive Vested Members	
Number	108

Members Who Retired or Entered DROP in Fiscal 2020

	Age and Service	Disability
Retired Members	33	2
Average Age	55.42	52
Average Credited Years' Service	21.65	21
Average Monthly Benefit	\$ 4,107	\$ 3,635

Total Retirees

(includes DROP participants, disability recipients, and death-in-service beneficiaries)	
Retired Members	746
Average Monthly Benefit	\$ 3,316

TROOP HEADQUARTERS

Troop "A" 501-618-8282
1 State Police Plaza Drive, Little Rock, AR 72209
Captain Mike Hagar - Commander

Troop "B" 870-523-2701
3200 Highway 367 North, Newport, AR 72112
Captain Todd Shaw - Commander

Troop "C" 870-935-7302
2216 Browns Lane Access Rd, Jonesboro, AR 72403
Captain John Carter - Commander

Troop "D" 870-633-1454
3205 North Washington, Forrest City, AR 72335
Captain David Moore - Commander

Troop "E" 870-247-1483
6816 Princeton Pike, Pine Bluff, AR 71602
Captain David Williams - Commander

Troop "F" 870-226-3713
1237 North Myrtle, Warren, AR 71671
Captain Scott Woodward - Commander

Troop "G" 870-777-4641
2501 North Hazel, Hope, AR 71801
Captain Brady Gore - Commander

Troop "H" 479-783-5195
5728 Kelley Highway, Fort Smith, AR 72914
Captain Chris Goodman - Commander

Troop "I" 870-741-3455
5196 US 65 South, Harrison, AR 72601
Captain Wesley Smithee - Commander

Troop "J" 479-754-3096
2700 West Main, Clarksville, AR 72830
Captain Kyle Drown - Commander

Troop "K" 501-767-8550
200 Karen Street, Hot Springs, AR 71901
Captain Ron Casey - Commander

Troop "L" 479-751-6663
1120 W Monroe Ave, Lowell, AR 72745
Captain David Cooper - Commander

LETTER OF TRANSMITTAL

Dear ASPRS Members:

The Arkansas State Police Retirement System (ASPRS or the System) is pleased to present the Annual Financial Report for the period ending June 30, 2020. The report is designed to provide a clear and concise picture of the financial conditions of the System. The report includes the following six sections:

- The Introduction contains the administrative organization, a letter of transmittal, and the chairman's report;
- The Financial Section contains the financial statements and required supplementary information;
- The Investments Section contains a report on investment activity, investment policies, investment results, and various investment schedules;
- The Actuarial Section contains the actuary's certification letter and the results of the annual actuarial valuation;
- The Statistical Section includes significant trend data pertaining to the System;
- The Appendix contains combined ASPRS and APERS financial statements.

Accounting System

The accrual basis of accounting is used to record the assets, liabilities, revenues, and expenses of the ASPRS trust fund. Revenues are recognized in the accounting period in which they are earned, without regard to date of collection, and expenses are recorded when incurred, regardless of when payment is made. Investments are reported at market values determined by the custodial agent. The agent's determination of market value includes, among other things, using pricing services or prices quoted by independent brokers at current exchange rates.

Revenues

The fiscal year 2020 revenue from employer contributions totaled \$7.2 million. This amount is \$477,638 more than the amount received in fiscal year 2019. Court fees and driver's license reinstatement fees for the fiscal year were \$2.11 million, an increase of \$250,665 from fiscal year 2019. In 2020, motor vehicle title fees totaling \$4.8 million were collected in accordance with Act 718 of 2011.

In addition to the funding provided in previous years, Act 1071 of 1997 provided for a transfer from insurance premium taxes to the State Police Retirement Fund. This transfer is equal to the difference between the actuarially computed contribution rate minus other funding sources (employer contributions and driver's license reinstatement fees). The fund received \$7.71 million from the insurance premium tax transfer during fiscal year 2020 and \$8.04 million in fiscal year 2019.

The System earned net investment income of \$6.7 million in fiscal year 2020 after expenses of just over \$1.7 million, a decrease of \$10.3 million from fiscal year 2019. Overall, the System's revenues decreased \$9.71 million over fiscal year 2019 due primarily to lower investment returns.

Expenses

Benefit payments for fiscal year 2020 were \$27.93 million, which is \$3 million more than fiscal year 2019. Administrative expenses were \$195,463, of which \$42,200 was for professional fees, and \$164,008 was transferred to APERS for indirect administrative costs.

Funding

The System is funded through contributions from the state and from investment income. The general financial objective of the System is to establish and receive contributions which, expressed as a percent of active member payroll, will remain approximately level from generation to generation.

Investments

Act 1242 of 2009 effectively merged the ASPRS investment program with that of APERS and granted the APERS Board all investment authority. In accordance with the Investment Code contained in the Arkansas Code Annotated, the APERS Board has established a policy which requires that the funds be invested in conformity with the “prudent investor rule.” The Investment Code permits the fund to establish an investment policy based upon certain investment criteria and allows for delegation of investment authority to professional investment managers. The statement of investment policy outlines the responsibility for the investment of the fund and reflects the degree of risk that is deemed appropriate for the fund. Investment managers are to execute the investment policy in accordance with statutory authority and the policies and respective guidelines of the APERS Board, but they are free to use full discretion within those policies and guidelines. Compliance by the current investment managers is monitored on a continuing basis by the investment consulting firm Callan Associates Inc. and APERS staff. The investment managers retained by the APERS Board are listed on page 14 of this report.

Professional Services

Professional services are provided to ASPRS by firms selected by the APERS Board to aid in the efficient and effective management of the System. A list of firms retained during the year can be found on page 14 of this report.

Acknowledgments

This report is the result of the combined efforts of the APERS staff under the direction of the Board of Trustees of the State Police Retirement System. Its purpose is to provide complete and reliable information as a basis for making management decisions, as a means for determining compliance with legal provisions, and as a means for determining responsible stewardship over the assets contributed by the members and employers.

Respectfully,

Phillip Milligan
Phillip Milligan


Duncan Baird

BOARD OF TRUSTEES

Mr. Phillip Milligan - Chair - Fort Smith, Citizen-at-Large
Expiration of Term - July 1 2025

Lieutenant Scott Joe – Vice Chair - Hot Springs, Active Tier II Member
Expiration of Term - July 1 2026

Mr. Carl “Ned” Hendrix - Winthrop, Citizen-at-Large
Expiration of Term - Unknown

Mr. Donny Underwood - Marion, Citizen-at-Large
Expiration of Term - July 1 2021

Captain Kyle Drown - Clarksville, Active Tier I Member
Expiration of Term - July 1 2022

Dr. John Shelnutt - Little Rock, Designee of the Chief Fiscal Officer for the State of Arkansas
Expiration of Term - Ex-Officio

Member of the Arkansas State Police Commission to be Named
Expiration of Term - Unknown

SENIOR STAFF

Duncan Baird

Executive Director

Allison Woods

Deputy Director

Jason Willett

Chief Financial Officer

Carlos Borrromeo

Chief Investment Officer

Laura Gilson

Chief Legal Counsel

Phillip Norton

Director of Information Technology

Abbi Bruno

Director of Operations

Jennifer Taylor

Director of Benefits Administration

Jacobia Twiggs

Manager, Educational Outreach

Jon Aucoin

Manager, Communications Section

Cheryl Wilburn

Manager, Member and Retiree Services Section

John Owens

Internal Auditor

Usha Doolabh

Accounting Operations Manager, Investments

PROFESSIONAL SERVICE PROVIDERS

Custodian Bank

The Bank of New York Mellon
Pittsburgh, PA 15258

Actuary

Gabriel, Roeder, Smith & Co.
Southfield, MI 48076

Investment Consultant

Callan Associates, Inc.
Chicago, IL 60602

Investment Managers

AQR Capital Management
Greenwich, CT 06830

Artisan Partners

Milwaukee, WI 53202

Baillie Gifford Overseas Ltd.

Edinburgh, Scotland

Blackstone Alternative Asset Management, LP

New York, NY 10154

CastleArk Management, LLC

Chicago, IL 60606

Double Line Capital

Los Angeles, CA 90071

Heitman America Real Estate

Chicago, IL 60606

Horrell Capital Management

Little Rock, AR 72211

INTECH

West Palm Beach, FL 33401

Invesco Real Estate

Dallas, TX 75240

LaSalle Investment Management

San Francisco, CA 94111

Lazard Asset Management

New York, NY 10020

LSV Asset Management

Chicago, IL

MacKay Shields

New York, NY 10105

Mellon Capital Management

Pittsburgh, PA 15258

Newton Capital Management

New York, NY 10166-0005

Pinnacle Forest Investments, LLC

Little Rock, AR 72211

PGIM, Inc.

Newark, NJ 07102

SSI Investment Management

Beverly Hills, CA 90210

Stephens Investment Management Group

Houston, TX 77046

TA Associates Realty

Boston, MA 02109

Wellington Management Company

Boston, MA 02210

Wells Fargo Asset Management

(formerly Golden Capital)

Charlotte, NC 28262



Management's Discussion and Analysis

Statement of Fiduciary Net Position

Statement of Changes in Fiduciary Net Position

Notes to the Financial Statements

Note 1: Plan Description

Note 2: Significant Accounting Policies

Note 3: Deposits and Investments

Note 4: Legally Required Reserves

Note 5: Net Pension Liability

Note 6: Deferred Retirement Option Plan

Required Supplementary Information

Schedule of Employer Contributions

Schedule of Investment Returns

Schedule of Net Pension Liability

Schedule of Changes in Net Pension Liability
and Related Ratios

Notes to Required Supplementary Information

Schedule of Administrative Expenses

Schedule of Investment Expenses

Payments for Professional Consultants

This Page Intentionally Left Blank

MANAGEMENT'S DISCUSSION AND ANALYSIS

To help facilitate a better understanding of the financial condition of the Arkansas State Police Retirement System (ASPRS or the System) as of June 30, 2020, the results of its operation for the fiscal year ended, and the fiscal policies that govern its significant business operations, management has prepared this narrative analysis. The narrative is intended to supplement the System's financial statements and, as such, should be read in conjunction with these statements, which are presented beginning on page 22.

Act 1242 of 2009 effectively merged the ASPRS investment program with that of the Arkansas Public Employees Retirement System (APERS) and granted the Board of Trustees of the Arkansas Public Employees Retirement System (APERS Board) all investment authority. The figures referred to in this section are ASPRS figures unless specifically stated otherwise.

Overview of the Financial Statements

This overview is intended to serve as an introduction to the System's financial reporting. Collectively, all the information contained in the Financial Section of this annual report presents the net assets held in trust for pension benefits as of June 30, 2020.

The basic financial statements contained in the Financial Section of the annual report consist of the following:

The Statement of Fiduciary Net Position

The *Statement of Fiduciary Net Position* (see page 22) reports the pension trust fund's assets, liabilities, and resulting net position such that assets – liabilities = net position at the end of the fiscal year. It is a snapshot of the financial position of the pension trust fund at that specific time. Below is a summary of the statement that includes total assets, total liabilities, and resulting net position for fiscal years 2019 and 2020.

Summary of Fiduciary Net Position

	2020	2019
Assets		
Cash and Cash Equivalents	\$ 15,441,520	\$ 16,179,690
Receivables	2,633,873	3,195,988
Investments	322,695,665	321,588,439
Securities Lending Collateral	28,278,978	37,425,857
Total Assets	369,050,036	378,389,973
Liabilities		
Other Liabilities	522,066	542,498
Investment Principal Payable	2,000,801	2,638,268
Securities Lending Collateral	28,343,491	37,470,194
Total Liabilities	30,866,358	40,650,961
Net Position Restricted For Pension Benefits	<u>\$ 338,183,678</u>	<u>\$ 337,739,012</u>

Totals may not add due to rounding.

The Statement of Changes in Fiduciary Net Position

The Statement of Changes in Fiduciary Net Position (page 23) reports the pension trust fund's financial transactions that have occurred during the fiscal year such that additions – deductions = net change in net position. It supports the change that has occurred to the prior year's net position value on the *Statement of Fiduciary Net Position*. Below is a summary of the statement that indicates the financial transactions of the trust fund for fiscal years 2019 and 2020.

Summary of Changes in Fiduciary Net Position

	2020	2019
Additions		
Employer Contributions	\$ 7,205,047	\$ 6,727,409
Plan Member Contributions	93,792	27,515
Supplemental Contributions	7,705,096	8,035,962
Court Fees	655,925	849,578
Driver's License Reinstatement Fees	1,458,872	1,014,554
Motor Vehicle Title Fees	4,754,635	4,598,976
Net Investment Income	6,700,847	17,031,466
Other Additions	57	17
Total Additions	<u>28,574,271</u>	<u>38,285,476</u>
Deductions		
Benefits	27,934,142	24,930,274
Administrative Expenses	195,463	554,441
Total Deductions	<u>28,129,605</u>	<u>25,484,715</u>
Net Increase (Decrease)	444,666	12,800,761
Net Position		
Beginning of the Year	<u>337,739,012</u>	<u>324,938,251</u>
End of the Year	<u>\$ 338,183,678</u>	<u>\$ 337,739,012</u>

Additions to Fiduciary Net Position

The reserves needed to finance retirement benefits are accumulated through the collection of employer and employee contributions and through earnings on investments. Accumulations for fiscal year 2020 totaled approximately \$28.6 million (see the following table):

Operating Additions

	2020	2019
Employer Contributions	\$ 7,205,047	\$ 6,727,409
Plan Member Contributions	93,792	27,515
Supplemental Contributions	7,705,096	8,035,962
Court Fees	655,925	849,578
Driver's License Reinstatement Fees	1,458,872	1,014,554
Motor Vehicle Title Fees	4,754,635	4,598,976
Net Investment Income	6,700,847	17,031,466
Other Additions	57	17
Total	\$ 28,574,271	\$ 38,285,476

The overall decrease in additions was approximately \$9.7 million when compared to fiscal year 2019 and was due to lower investment returns. The Investments Section of this report reviews investment activity and the results of the investment portfolio for fiscal year 2020.

Deductions to Fiduciary Net Position

The primary deductions from the System include the payment of benefits to members and beneficiaries, the refund of contributions to former members, and the cost of administering the System. Deductions for fiscal year 2020 totaled approximately \$28.1 million (see the following table):

Operating Deductions

	2020	2019
Benefits	\$ 27,934,142	\$ 24,930,274
Administrative Expenses	195,463	554,441
Total	\$ 28,129,605	\$ 25,484,715

The Notes to the Financial Statements

The Notes to the Financial Statements are provided to help explain in narrative form some of the more complex or less obvious elements of the statements. Further, the Notes to the Financial Statements provide additional information that is essential for a comprehensive understanding of the System's financial condition and the results of its operations.

- Note 1 provides a general description of the System, including information regarding membership and employers.
- Note 2 summarizes significant accounting policies, including the basis of accounting, management's use of estimates, and other accounting policies.
- Note 3 describes deposits, discloses investment risks, and addresses securities lending as well as derivative instruments.
- Note 4 provides information regarding legally required reserves.
- Note 5 provides information regarding the System's net pension liability.
- Note 6 describes the System's Deferred Retirement Option Plan.

The required supplementary information provides additional detail and historical information considered to be useful in evaluating the condition of the plan administered by APERS. The System provides certain required schedules and related note disclosures that collectively demonstrate the System's annual progress toward funding its actuarial accrued liability and disclose the annual employer contributions required and the percentage contributed.

The other supplementary schedules summarize the major categories of administrative and investment expenses and detail the amounts paid to professional consultants.

Funding

The System's overall funding objective is to accumulate sufficient assets over time to meet its long term benefit obligations as they become due. Accordingly, collecting employer and member contributions and earning an adequate long term rate of return on its investments are essential components of the System's plan for accumulating the funds needed to finance future retirement benefits.

ASPRS overall pension fund net position increased during the fiscal year ended June 30, 2020 by \$444,666. This increase can be attributed to an increase in the value of investments and their associated income.

System Investments as of June 30, 2020

The investments of the pension trust fund generated a 2.41% return for the fiscal year, which is lower than the prior year's return of 5.78%. The 2.41% return placed APERS/ASPRS in the 69th percentile when compared with a median return of 3.26% for large public plans. Investment results over time are compared with the System's benchmarks in the schedule of comparative investment results located in the Investments Section of this annual report. Below is a summary of the performance of the System's assets by class:

- Domestic Equity: the System had \$3.632 billion in U.S. domestic equity securities, which is an increase of approximately 0.43% from fiscal year 2019. Domestic equity posted a return of 6.07% for the fiscal year. The Russell 3000 Index posted a return of 6.53%.
- International Equity: the System had \$2.165 billion in assets, which is a decrease of approximately 1.79% from fiscal year 2019. International Equity posted a return of -1.45%. The MSCI EAFE Index posted a return of -5.13%.
- Fixed Income: the System had \$1.550 billion in assets which is an increase of approximately 7.11% from fiscal year 2019. Fixed Income posted a return of 6.81%. The Barclays Aggregate Index posted a return of 8.74%.
- Diversified Strategies: the System had \$445 million in assets, which is a decrease of approximately 1.90% from fiscal year 2019. Diversified Strategies posted a return of -1.17%.
- Real Assets: the System had \$1.231 billion in assets, which is a decrease of approximately 7.66% from fiscal year 2019. Real Assets posted a return of -4.37%.

Securities Lending

The System earns additional investment income by lending investment securities to broker-dealers. This is done by the System's custodian bank, Bank of New York Mellon (BNYM). The broker-dealers provide collateral to BNYM and generally use the borrowed securities to cover short sales and failed trades for their clients.

BNYM invests cash collateral to earn interest. For the fiscal year 2020, securities lending income to the System amounted to \$4.864 million.

Actuarial Valuations and Funding Progress

The actuarial accrued liability and actuarial value of assets of the System as of June 30, 2020, amounted to \$472.92 million and \$352.08 million respectively.

As of June 30, 2020, the System experienced a decrease in its funded status from 74% to 72% on a market value basis. On a funding basis, the System remained the same at 74%.

Requests for Information

This annual report is designed to provide a general overview of the finances of the System. Questions concerning any of the information provided in this report or requests for additional information should be addressed as follows:

Arkansas State Police Retirement System
124 W. Capitol, Suite 400
Little Rock, AR 72201

STATEMENT OF FIDUCIARY NET POSITION

as of June 30, 2020

	2020	2019
ASSETS		
Cash and Cash Equivalents	\$ 15,441,520	\$ 16,179,690
Receivables	2,633,873	3,195,987
Investments, At Fair Value		
Government Securities	11,326,048	12,557,419
Corporate Securities	146,017,108	140,452,950
International Securities	85,687,773	87,041,291
Core Plus Bond Fund	19,782,110	18,293,869
Real Estate	36,382,257	38,450,938
Diversified Strategies	16,164,722	16,385,332
Timberland	3,294,995	3,284,500
Global Energy Fund	3,667,885	4,662,835
Commercial Loans	372,766	459,304
Total Investments	322,695,665	321,588,439
Securities Lending Collateral Investments, At Fair Value	28,278,978	37,425,857
TOTAL ASSETS	<u>369,050,036</u>	<u>378,389,972</u>
LIABILITIES		
Accrued Expenses and Other Liabilities	522,066	542,498
Investment Principal Payable	2,000,801	2,638,268
Securities Lending Liability	28,343,491	37,470,194
TOTAL LIABILITIES	<u>30,866,358</u>	<u>40,650,961</u>
NET POSITION RESTRICTED FOR PENSION BENEFITS	<u>\$ 338,183,678</u>	<u>\$ 337,739,012</u>

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

for the fiscal year ended June 30, 2020

	2020	2019
ADDITIONS		
Contributions		
Employer	\$ 7,205,047	\$ 6,727,409
Plan Members	93,792	27,515
Supplemental	7,705,096	8,035,962
Court Fees	655,925	849,578
Driver's License Reinstatement Fees	1,458,872	1,014,554
Motor Vehicle Title Fees	4,754,635	4,598,976
Total Contributions	21,873,368	21,253,993
Investment Income		
Interest	757,518	1,236,192
Dividends	3,526,068	3,359,522
Investment Gain/Loss	2,149,771	11,941,718
Security Lending Income	593,473	1,021,984
Real Estate Income	1,379,738	1,592,711
Other	500	0
Total Investment Income	8,407,069	19,152,127
Less: Investment Expense	1,706,222	2,120,661
Net Investment Income	6,700,847	17,031,466
Other Additions	57	17
TOTAL ADDITIONS	28,574,271	38,285,476
DEDUCTIONS		
Benefits	27,934,142	24,930,274
Administrative Expenses	195,463	554,441
TOTAL DEDUCTIONS	28,129,605	25,484,715
NET INCREASE (DECREASE)	444,666	12,800,761
NET POSITION RESTRICTED FOR PENSION BENEFITS		
Beginning of Year	337,739,012	324,938,251
End of Year	<u>\$ 338,183,678</u>	<u>\$ 337,739,012</u>

NOTES TO THE FINANCIAL STATEMENTS

Note 1: Plan Description

General Information

The Arkansas State Police Retirement System (ASPRS or the System) is a single-employer, defined benefit pension plan that was established on March 19, 1951 with the passage of Act 311 of 1951. The System provides for the retirement of police officers employed by the Department of Arkansas State Police. The laws governing the operations of ASPRS are set forth in Arkansas Code Annotated (A.C.A.), Title 24, Chapters 2 and 6. Act 1071 of 1997 created a Tier II benefit plan for all police officers hired on or after April 3, 1997.

Effective July 1, 2009, Act 1242 of 2009 transferred the assets of ASPRS to the Arkansas Public Employees Retirement System (APERS) to hold in trust for ASPRS. Act 1242 of 2009 also states that the State Police Trust Fund shall not be treated as segregated funds but shall be commingled with the assets of APERS strictly for investment purposes and that the assets of ASPRS and APERS shall be invested as determined by the Board of Trustees of the Arkansas Public Employees Retirement System (APERS Board).

Act 1242 of 2009 also created the Arkansas State Police Officers' Tier II Deferred Retirement Option Plan (DROP), and it changed the composition of the Board of Trustees of the State Police Retirement System (ASPRS Board).

Arkansas Code Annotated § 24-6-204 states that the membership of the ASPRS Board shall be composed of seven members as follows:

- One active member enrolled in the Tier I benefits program,
- One active, vested member enrolled in the Tier II benefits program,
- The State Police Commissioner who shall be appointed by the Governor,
- The Chief Fiscal Officer of State or his or her designee, and
- Three citizens at large who shall be appointed by the Governor.

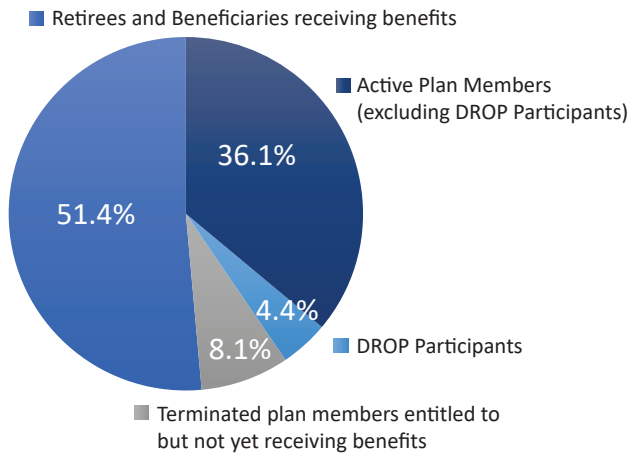
The members of the ASPRS Board are listed on page 12 of this report.

Membership

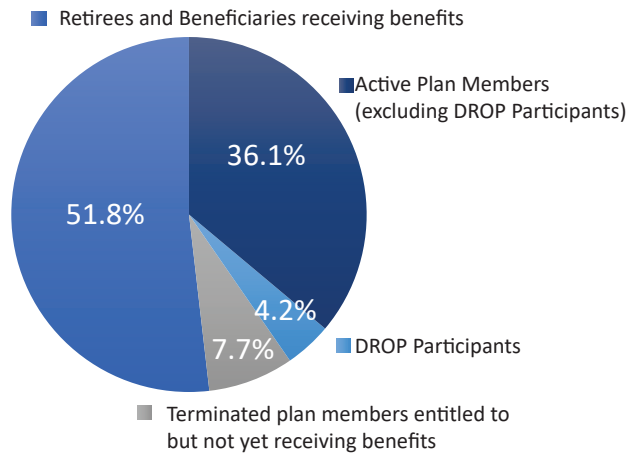
The membership as of the June 30 end of fiscal years 2019 and 2020 was as follows:

	2020	2019
Retirees and Beneficiaries Receiving Benefits	687	679
Terminated Plan Members Entitled to But Not Yet Receiving Benefits	108	102
DROP Participants	59	56
Active Plan Members (excluding DROP participants)	482	473
Total Membership	1,336	1,310

Membership 2020



Membership 2019



Contributions

As of June 30, 2019 and 2020, there were no contributory members of ASPRS. Plan member contributions presented in the financial statements are related to service purchase payments. For fiscal year 2020, the employer contribution rate was 22% of salaries paid (A.C.A. § 24-6-209). Contribution provisions are established by state law and may be amended only by the Arkansas General Assembly.

Additional Revenue

Act 1071 of 1997 provides for a transfer from insurance premium taxes to the State Police Retirement Fund (the ASPRS fund). The ASPRS fund received \$7.71 million of Act 1071 funds in fiscal year 2020 and \$8.04 million in fiscal year 2019. Additional funds are collected from motor vehicle title fees in accordance with Act 718 of 2011. The ASPRS fund received \$4.75 million of Act 718 funds in fiscal year 2020 and \$4.6 million in fiscal year 2019.

Plan Administration

The costs of administering the System are paid out of investment earnings.

Benefits

Benefit provisions are established by state law and found at Arkansas Code Annotated Title 24, Subchapter 6. They may be amended only by the Arkansas General Assembly. Members are eligible for full retirement benefits after meeting minimum age and service requirements. The normal retirement benefit, paid on a monthly basis, is determined based on a formula that uses (a) the member's final average salary and (b) the number of years of credited service.

Increases after Retirement

Retirees will receive a 3% cost of living adjustment (COLA) increase in their benefit each July 1. Eligibility for the COLA requires being retired from July 1 for a full 12 months.

Note 2: Summary of Significant Accounting Policies

Basis of Accounting

The System's accounts and records are maintained using fund accounting principles, and its financial statements are prepared using the accrual basis of accounting. Expenses are recorded when the liability is incurred, revenues are recorded in the accounting period in which they are earned and become measurable, and investment purchases and sales are recorded as of their trade dates. Member and employer contributions are established by statute as a percentage of salaries and are recognized when due, pursuant to legal requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

Use of Estimates

The preparation of the System's financial statements in conformity with accounting principles generally accepted in the U.S. requires the System administrator to make significant estimates and assumptions that affect various data in the report, including the following:

- The net position restricted for pensions at the date of the financial statements
- The net pension liability and other actuarial information presented in Note 5
- The required supplementary information as of the benefit information date
- The changes in fiduciary net position during the reporting period

Estimates may also be involved in formulating disclosures of contingent assets and liabilities at the date of the financial statements. Actual results could differ from these estimates.

Cash and Cash Equivalents

Cash and cash equivalents include demand accounts, imprest accounts, cash in the state treasury, and short-term investment funds (STIF). The STIF accounts are created through daily sweeps of excess cash by the System's custodian bank into bank-sponsored commingled funds that are invested in U.S. Government and agency securities and other short-term investments. The STIF accounts had an average weighted maturity of 90 days or less and are stated at fair value.

Note 3: Deposits and Investments

Deposits

Deposits are carried at cost and are included in “cash and cash equivalents.” Cash and cash equivalents include demand accounts, cash in state treasury, short-term investment funds, and petty cash. As of June 30, 2020, these totals were \$58,341, \$789,788, and \$14,593,391 respectively. State Treasury Management Law governs the management of funds held in the State Treasury (cash in state treasury), and it is the responsibility of the Treasurer of State to ensure the funds are adequately insured and collateralized.

Custodial Credit Risk for Deposits

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, the System will not be able to recover deposits or collateral securities. The System’s policy is to place deposits only in collateralized or insured accounts. As of June 30, 2020, the System’s only deposits exposed to potential custodial credit risk were those holding its foreign currency balance of -\$330. The System holds foreign currency in banks outside the United States as a result of transactions by international investment managers.

Investments

Act 1242 of 2009 merged the investable assets of ASPRS with those of APERS. All authority over investment of the merged assets was granted to the APERS Board. Investment schedules reflect the market values accrued to each system.

Arkansas Code Annotated §§ 24-2-601 – 24-2-619 authorize the APERS Board to have full power to invest and reinvest monies of the System and to hold, purchase, sell, assign, transfer or dispose of any of the investments or proceeds of the investment in accordance with the prudent investor rule. Security transactions and any resulting gains or losses are accounted for on a trade basis. Net investment income includes net appreciation in the fair value of investments, interest income, dividend income, and total investment expense, which includes investment management fees, custodial fees, and all other significant investment-related costs.

Arkansas Code Annotated § 24-2-608 also states that the System shall seek to invest not less than 5% nor more than 10% of the System’s portfolio in Arkansas-related investments. The APERS Board recognizes a legal responsibility to seek to invest in the Arkansas economy while realizing that its primary, legal, and fiduciary commitment is to beneficiaries of the retirement system. As stated in A.C.A. § 24-2-608 (d), “nothing in this section shall in any way limit or impair the responsibility of a fiduciary to invest in accordance with the prudent investor rule set forth in §§ 24-2-610 – 24-2-619.”

Investments are reported at fair value as determined by the custodian bank. The custodian bank’s determination of fair values includes, among other things, using pricing services or quotes by major independent brokers at current exchange rates as available. The schedule on the following page reflects the fair value of investments.

Statement of Invested Assets by Type (fair value as of June 30, 2020)

	Combined	ASPRS	APERS
Government Securities			
U.S. Government Securities	\$ 156,797,099	\$ 5,692,017	\$ 151,105,081
U.S. Fixed Futures	(227,418)	(8,256)	(219,162)
Agency Pooled	105,863,522	3,843,037	102,020,485
Municipal Bonds	2,360,394	85,687	2,274,707
Agency CMO	47,203,240	1,713,563	45,489,678
Corporate Securities			
Collateralized Obligations	151,535,091	5,500,997	146,034,094
U.S. Corporate Bonds	283,664,372	10,297,528	273,366,844
Convertible Bonds	273,145,332	9,915,668	263,229,664
Convertible Preferred Stock	42,546,318	1,544,508	41,001,810
Common Stock	2,863,642,054	103,955,369	2,759,686,685
U.S. Equity Index Fund	292,325,210	10,611,932	281,713,278
Co-Mingled Funds	51,479,714	1,868,806	49,610,907
High Yield Income Bond Fund	59,723,195	2,168,060	57,555,135
Preferred Stock	4,265,406	154,842	4,110,564
International Securities			
Global Government Fixed	2,457,112	89,198	2,367,914
Global Corporate Bonds	83,194,014	3,020,093	80,173,922
Equity Securities	1,336,384,362	48,513,161	1,287,871,200
Global Preferred Stock	24,461,963	888,013	23,573,950
Global Co-Mingled Funds	87,123,135	3,162,727	83,960,408
International Equity Index Fund	758,289,624	27,527,280	730,762,344
Global Collateralized Obligations	18,436,538	669,280	17,767,259
Global Convertible Bonds	23,915,162	868,163	23,046,999
Emerging Market	26,165,590	949,858	25,215,731
Core Plus Bond Fund	544,934,658	19,782,110	525,152,547
Real Estate	1,002,216,265	36,382,257	965,834,008
Diversified Strategies	445,287,037	16,164,722	429,122,315
Timberland	90,766,706	3,294,995	87,471,711
Global Energy Fund	101,038,651	3,667,885	97,370,766
Commercial Loans	10,268,530	372,766	9,895,764
Total Investments	8,889,262,876	322,696,267	8,566,566,609
Securities Lending Collateral Investments at Fair Value			
Commercial Paper	169,035,218	6,136,283	162,898,935
Receivables/Payables	171,337	6,220	165,117
Repurchase Agreements	74,201,404	2,693,645	71,507,759
Floating Rate Notes	330,620,807	12,002,130	318,618,677
Asset Backed Securities	206,744,394	7,505,194	199,239,200
Total Securities Lending Collateral Investments	780,773,160	28,343,471	752,429,689
Total Invested Assets	\$ 9,861,324,567	\$ 357,983,856	\$ 9,503,340,710

Investment Policy

A summary of APERS' investment policy, including its asset allocation guidelines, can be found in the Investment Section of this report, which begins on page 53.

Custodial Credit Risk for Investments

Custodial credit risk for investments is the risk that, in the event of failure of the counterparty to a transaction, the System will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are (a) uninsured, (b) not registered in the name of the government, and (c) held by either the counterparty or the counterparty's trust department or agent but not in the System's name. Arkansas Code Annotated § 24-2-606 does address the custodianship of assets, and the investment policy states that "the custodian bank shall, by nominee agreement, hold any and all securities for the beneficial interest of the APERS fund." As of June 30, 2020, there were no investments exposed to custodial credit risk.

Credit Risk for Investments

Credit risk of investments is the risk that the issuer or other counterparty will not fulfill its obligation to the holder of the investment. Credit risk exposure is dictated by each investment manager's agreement. This credit risk is measured by the credit quality of investment in debt securities as described by nationally recognized statistical rating organizations. Each portfolio is managed in accordance with investment guidelines that are specific as to permissible credit quality ranges, exposure levels within individual security quality rating tiers, and the average credit quality of the overall portfolio.

The schedule on the following page indicates the System's exposure to credit risk for investments.

*The System's Exposure to Credit Risk (as of June 30, 2020)**

Moody's Credit Ratings	Aaa	Aa	A	Baa	Ba	B	Caa or below	Not Rated	Base Market Value
Government Securities	\$ 301,647,709	0	0	1,586,867	0	0	0	2,174,249	\$ 305,408,825
U.S. Government Securities	156,797,099	0	0	0	0	0	0	0	156,797,099
Agency CMO	38,987,088	0	0	1,586,867	0	0	0	2,401,666	42,975,622
Agency Pooled	105,863,522	0	0	0	0	0	0	0	105,863,522
U.S. Fixed Futures	0	0	0	0	0	0	0	(227,418)	(227,418)
Corporate Securities	26,636,398	15,880,440	61,861,236	151,389,287	43,427,313	38,836,038	10,575,928	406,549,877	755,156,519
Collateralized Obligations	25,400,410	7,910,502	3,269,433	4,050,651	2,633,438	11,382,171	6,748,271	90,140,216	151,535,091
Convertible Bonds	0	0	3,390,953	7,028,266	1,782,014	3,467,791	0	257,476,308	273,145,332
Preferred Stock	0	0	540,525	3,061,581	663,300	0	0	0	4,265,406
Convertible Preferred Stock	0	0	0	0	0	0	0	42,546,318	42,546,318
U.S. Corporate Bonds	1,235,988	7,969,938	54,660,326	137,248,789	38,348,562	23,986,077	3,827,657	16,387,036	283,664,372
International Securities	932,018	2,937,435	20,287,082	55,188,390	22,678,822	7,753,309	968,947	43,422,414	154,168,416
Emerging Market	0	0	3,556,377	12,131,808	4,062,697	764,002	525,813	5,124,893	26,165,590
Global Collateralized Obligations	932,018	0	478,956	7,051,198	918,599	0	0	9,055,767	18,436,538
Global Government Fixed	0	1,062,840	776,772	435,000	182,500	0	0	0	2,457,112
Global Convertible Bonds	0	0	0	0	4,886,138	0	0	19,029,025	23,915,162
Global Corporate Bonds	0	1,874,596	15,474,976	35,570,384	12,628,889	6,989,307	443,134	10,212,729	83,194,014
Floating Rate Fund	0	0	0	0	0	0	0	15,952,803	15,952,803
Core Plus Bond Fund	0	0	0	0	0	0	0	544,934,658	544,934,658
Commercial Loans	0	0	0	0	2,984,067	5,609,547	0	1,674,916	10,268,530
Municipal Bonds	0	2,059,775	300,619	0	0	0	0	0	2,360,394
Co-Mingled Funds	0	0	0	0	0	0	0	35,526,910	35,526,910
High Yield Income Fund	0	0	0	0	0	0	0	59,723,195	59,723,195
Grand Total	\$ 329,216,125	20,877,650	82,448,937	208,164,544	69,090,202	52,198,894	11,544,875	1,109,959,023	\$ 1,883,500,250

S&P Credit Ratings	AAA	AA	A	BBB	BB	B	CCC or below	Not Rated	Base Market Value
Government Securities	\$ 0	163,947,588	0	0	0	0	0	141,461,237	\$ 305,408,825
U.S. Government Securities	0	19,096,977	0	0	0	0	0	137,700,122	156,797,099
Agency CMO	0	38,987,088	0	0	0	0	0	3,988,533	42,975,622
Agency Pooled	0	105,863,522	0	0	0	0	0	0	105,863,522
U.S. Fixed Futures	0	0	0	0	0	0	0	(227,418)	(227,418)
Corporate Securities	28,819,042	8,315,711	66,751,667	175,488,699	47,939,259	44,790,533	19,858,734	363,192,873	755,156,519
Collateralized Obligations	23,298,750	2,406,407	8,203,481	2,501,683	213,238	5,490,098	13,287,436	96,133,998	151,535,091
Convertible Bonds	0	0	5,852,187	7,341,882	11,213,181	20,292,852	3,467,791	224,977,439	273,145,332
Preferred Stock	0	0	0	3,602,106	663,300	0	0	0	4,265,406
Convertible Preferred Stock	0	0	0	6,244,763	0	0	0	36,301,555	42,546,318
U.S. Corporate Bonds	5,520,292	5,909,305	52,696,000	155,798,265	35,849,541	19,007,582	3,103,508	5,779,881	283,664,372
International Securities	0	2,824,589	21,395,617	55,620,069	22,616,148	8,673,274	1,039,406	41,999,313	154,168,416
Emerging Market	0	0	3,118,742	11,196,017	5,383,389	1,146,919	242,085	5,078,438	26,165,590
Global Collateralized Obligations	0	964,370	3,611,612	2,441,884	416,063	0	0	11,002,611	18,436,538
Global Government Fixed	0	1,062,840	0	435,000	182,500	0	0	776,772	2,457,112
Global Convertible Bonds	0	0	0	1,693,856	6,992,588	1,337,875	0	13,890,843	23,915,162
Global Corporate Bonds	0	797,379	14,665,263	39,853,313	9,641,609	6,188,480	797,321	11,250,649	83,194,014
Floating Rate Fund	0	0	0	0	0	0	0	15,952,803	15,952,803
Core Plus Bond Fund	0	0	0	0	0	0	0	544,934,658	544,934,658
Commercial Loans	0	0	0	324,782	4,007,097	5,936,651	0	0	10,268,530
Municipal Bonds	0	2,059,775	300,619	0	0	0	0	0	2,360,394
Co-Mingled Funds	0	0	0	0	0	0	0	35,526,910	35,526,910
High Yield Income Fund	0	0	0	0	0	0	0	59,723,195	59,723,195
Grand Total	\$ 28,819,042	177,147,662	88,447,903	231,433,551	74,562,504	59,400,458	20,898,140	1,202,790,990	\$ 1,883,500,250

Securities Lending Collateral	\$ 173,964,404	168,880,710	307,268,414	0	0	0	1,594,025	127,289,031	\$ 778,996,583
--------------------------------------	----------------	-------------	-------------	---	---	---	-----------	-------------	----------------

*Figures are APERS and ASPRS combined. Totals may not add due to rounding.

Concentration of Credit Risk for Investments

The concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer (not including investments issued or guaranteed by the U.S. government or investments in mutual funds or external investment pools). The System has a formal investment policy for concentration of credit risk. None of the System's investments in any one issuer (other than those issued or guaranteed by the U.S. government) represented more than 5% of total investments.

Interest Rate Risk for Investments

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of investments. Investments can be highly sensitive to changes in interest rates due to their terms or characteristics. Interest rate risk is the greatest risk faced by an investor in the debt securities market since the price of a debt security will often move in the opposite direction of the change in interest rates.

The System's external fixed income investment managers use the measurement of effective duration to mitigate the interest rate risk of the fixed income investments. Each fixed income investment manager monitors and reports the effective duration monthly. The effective duration of the investment portfolio is required to be +/- 10% of the benchmark's duration. The benchmark for the U.S. fixed income markets is the Barclays Capital U.S. Aggregate Bond Index.

As of June 30, 2020, the System had the following debt security investments and maturities (following page):

*Debt Security Investments and Maturities (as of June 30, 2020)**

Investment Type	Investment Maturity (In Years)					Fund - No Maturities
	Fair Value*	Less than 1	1 - 5	6 - 10	More than 10	
Government Securities						
U.S. Government Securities	\$ 156,797,099	\$ 2,021,598	\$ 46,155,264	\$ 57,276,326	\$ 51,343,911	\$ 0
Agency CMO	42,975,622	0	0	3,988,533	38,987,088	0
Agency Pooled	105,863,522	1,919	0	8,286,189	97,575,413	0
U.S. Fixed Futures	(227,418)	(227,418)	0	0	0	0
Corporate Securities						
Collateralized Obligations	151,535,091	0	11,300,687	6,571,799	133,662,605	0
Convertible Bonds	273,145,332	5,967,035	187,501,861	68,595,177	11,081,259	0
U.S. Corporate Bonds	283,664,372	531,232	74,641,127	125,508,294	82,983,719	0
Preferred Stock	4,265,406	0	540,525	0	3,724,881	0
Convertible Preferred Stock	42,546,318	42,546,318	0	0	0	0
International Securities						
Emerging Market	26,165,590	202,100	6,258,607	11,300,527	8,404,355	0
Global Collateralized Obligations	18,436,538	0	0	6,322,078	12,114,460	0
Global Government Fixed	2,457,112	0	1,683,610	591,002	182,500	0
Global Convertible Bonds	23,915,162	1,693,856	14,247,334	6,190,060	1,783,912	0
Global Corporate Bonds	83,194,014	3,629,153	27,413,114	35,800,920	16,350,828	0
Floating Rate Fund	15,952,803	0	0	0	0	15,952,803
Core Plus Bond Fund	544,934,658	0	0	0	0	544,934,658
Commercial Loans	10,268,530	0	8,595,936	1,672,594	0	0
Municipal Bonds	2,360,394	0	152,983	0	2,207,410	0
Co-Mingled Funds	35,526,910	0	0	0	0	35,526,910
High Yield Income Fund	59,723,195	59,723,195	0	0	0	0
	<u>\$ 1,883,500,250</u>	<u>\$ 116,088,988</u>	<u>\$ 378,491,048</u>	<u>\$ 332,103,499</u>	<u>\$ 460,402,343</u>	<u>\$596,414,371</u>
Securities Lending Collateral						
Asset-Backed Securities	\$ 204,730,579	\$ 186,645,033	\$ 16,491,520	\$ 0	\$ 1,594,025	
Commercial Paper	169,067,795	169,067,795	0	0	0	
Floating Rate Notes	330,784,146	323,551,886	7,232,260	0	0	
Repo	74,201,404	74,201,404	0	0	0	
	<u>\$ 778,783,923</u>	<u>\$ 753,466,118</u>	<u>\$ 23,723,780</u>	<u>\$ 0</u>	<u>\$ 1,594,025</u>	

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. The System's currency risk resides within the international equity investments as well as within the fixed income investments and the fixed income managers. The System's policy is to allow the external investment managers to decide what action to take regarding their respective portfolio's foreign currency exposure using currency forward contracts. The System has a formal investment policy for foreign currency risk which limits foreign currency exposure to 10% of the investment manager's respective portfolio.

The System's exposure to foreign currency risk on June 30, 2020, was as follows (next page):

*Figures are APERS and ASPRS combined. Totals may not add due to rounding.

*Foreign Currency Risk (as of June 30, 2020)**

Currency	%	Equities	Cash	Forward Contracts	Fair Value
Australian Dollar	1.29%	\$ 17,812,449	\$ 0	\$ 0	\$ 17,812,449
Brazilian Real	1.19	16,383,610	0	0	16,383,610
British Pound Sterling	12.74	175,353,594	8	(7,598)	175,346,004
Canadian Dollar	6.13	84,322,328	0	0	84,322,328
Chinese Yuan Renminbi	6.18	85,128,446	0	(103,379)	85,025,067
Danish Krone	1.65	22,642,814	3	0	22,642,817
Euro Currency	34.54	475,387,511	(189)	(39,749)	475,347,573
Hong Kong Dollar	2.74	37,670,059	0	0	37,670,059
Israeli Shekel	1.22	16,798,945	0	0	16,798,945
Japanese Yen	12.08	166,206,014	18	37,120	166,243,151
Liberian Dollar	0.15	2,112,333	0	0	2,112,333
Mauritian Rupee	0.09	1,230,380	0	0	1,230,380
Mexican New Peso	0.18	2,493,409	0	0	2,493,409
Norwegian Krone	0.27	3,649,420	4	0	3,649,424
New Zealand Dollar	0.48	6,542,444	0	0	6,542,444
Singapore Dollar	1.06	14,636,288	0	0	14,636,288
South Korean Won	4.69	64,488,216	0	0	64,488,216
Swedish Krone	2.31	31,819,169	0	0	31,819,169
Swiss Franc	9.42	129,678,292	(173)	(163)	129,677,956
Taiwan Dollar	1.32	18,129,945	0	0	18,129,945
Thailand Baht	0.27	3,726,572	0	0	3,726,572
	<u>100.00%</u>	<u>\$ 1,376,212,238</u>	<u>\$ (330)</u>	<u>\$ (113,769)</u>	<u>\$ 1,376,098,139</u>

Asset-Backed Securities

Asset-backed securities (ABSs) are bonds or notes backed by loan paper or accounts receivable originated by banks, credit card companies, or other credit providers. The System's ability to recover the amount of principal invested in these securities depends on the performance and quality of the trust assets.

Mortgage-Backed Securities

A mortgage-backed security (MBS) is a type of asset-backed security that is secured by a mortgage or collection of mortgages. MBSs depend on the underlying pool of mortgage loans to provide cash flow to make principal and interest payments on the security to its holders. The payments are usually periodic, similar to coupon payments. MBSs are subject to credit risk, prepayment risk, and extension risk.

A collateralized mortgage obligation (CMO) is an MBS that comprises classes of bonds created by prioritizing the cash flows of the underlying mortgage pool. CMOs may be collateralized by whole-loan mortgages, mortgage pass-through securities, or stripped mortgage-backed securities.

*Figures are APERS and ASPRS combined. Totals may not add due to rounding.

The System invests in MBSs and CMOs for diversification and to enhance fixed income returns. These instruments are reported at fair value in the Statement of Fiduciary Net Position.

Corporate Bonds

Corporate bonds are a debt security issued by a corporation. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations.

Convertible Corporate Bonds

Convertible bonds convey an option to the bondholders to be exchanged for another asset, generally a fixed number of shares of common stock at a pre-stated price.

Pooled Funds

Pooled funds are funds from many individual investors that are aggregated for the purposes of investment and benefit from economies of scale. The System could be indirectly exposed to credit and market risks associated with forward currency contracts to the extent that these pooled funds hold forward currency contracts for purposes of managing exposure to fluctuations in foreign exchange rates. APERS and ASPRS have approximately \$87 million invested in international pooled funds.

Securities Lending

Arkansas Code Annotated § 24-2-602 and the Board's investment policy permit the System to participate in a securities lending program to augment investment income. The System lends its securities to brokers-dealers and other entities with a simultaneous agreement to return the collateral for the same securities in the future.

U.S. securities are loaned versus collateral valued at 101.24% of the market value of the securities plus any accrued interest for domestic loans. Non-U.S. securities are loaned versus collateral valued at 101.40% of the market value of the securities plus any accrued interest. Collateral is marked-to-market daily if price movements exceed certain minimal thresholds.

As of June 30, 2020, the cash collateral investments had an average weighted maturity of 28 days, whereas the weighted average loan maturity was 2 days. Investments with cash collateral were approximately \$780.7 million (market value).

Derivative Instruments

The System adheres to *GASB Statement No. 53: Accounting and Financial Reporting for Derivative Instruments*, which addresses the recognition, measurement, and disclosure of information regarding derivative instruments entered into by state and local governments.

Derivative instruments are financial contracts or agreements whose values depend on the values of one or more underlying assets, reference rates, or financial indexes. Derivative instruments include futures contracts, forward contracts, swap contracts, options contracts, and forward foreign currency exchange. APERS, through its external investment managers, could hold such instruments.

The System does comply with GASB No. 53 and will disclose its exposure to derivative instruments if there is exposure. The System had no exposure to any GASB No. 53 Derivative Instruments at June 30, 2020.

Foreign Currency Forward Contracts

A foreign currency forward is a contractual agreement between two parties to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. Forward commitments are not standardized and carry credit risk due to the possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened. These transactions are entered in order to hedge risks from foreign currency rate fluctuation and to facilitate trade settlement of foreign security transactions. Forwards carry foreign currency risk resulting from adverse fluctuations in foreign exchange rates.

*Foreign Currency Forwards (as of June 30, 2020)**

	Pay	Receive	Notional Value	Market Value	Unrealized Gain/Loss
Swiss Franc	CHF	USD	\$ (33,958)	\$ (34,120)	\$ (163)
Chinese Yuan Renminbi	CNY	USD	(23,434,354)	(23,558,321)	(123,968)
Euro Currency	EUR	USD	(1,186,603)	(1,226,050)	(39,447)
British Pound	GBP	USD	(2,132,343)	(2,139,941)	(7,598)
Japanese Yen	JPY	USD	(6,475,974)	(6,438,854)	37,120
U.S. Dollar	USD	CNY	1,605,348	1,625,937	20,589
U.S. Dollar	USD	EUR	184,910	184,607	(303)
			<u>\$ (31,472,974)</u>	<u>\$ (31,586,742)</u>	<u>\$ (113,769)</u>

Financial Futures

A financial future is an agreement to purchase or sell a specific amount of an asset at a specified delivery or maturity date for an agreed upon price. These derivative securities are used to improve yield, adjust duration of the portfolio, circumvent changes in interest rates, or to replicate an index. Futures contracts are standardized and traded on organized exchanges, thereby reducing credit risk.

*Financial Futures (as of June 30, 2020)**

Futures Contracts	Expiration	Notional Value	Fair Value	Unrealized Gain/(Loss)
U.S. 2-year Treasury Note	Sept 2020	\$ 51,880,156	\$ 51,894,610	\$ 14,453
U.S. 5-year Treasury Note	Sept 2020	(19,301,771)	(19,364,297)	(62,526)
U.S. 10-year Treasury Note	Sept 2020	(6,803,721)	(6,819,422)	(15,701)
U.S. 10-year Ultra Treasury Note	Sept 2020	(36,181,831)	(36,378,891)	(197,060)
U.S. Ultra Long Bond Treasury	Sept 2020	13,928,585	13,962,000	33,415
		<u>\$ 3,521,418</u>	<u>\$ 3,294,000</u>	<u>\$ (227,418)</u>

*Figures are APERS and ASPRS combined. Totals may not add due to rounding.

Fair Value Measurements

The Arkansas Public Employees Retirement System categorizes their fair value measurements within the fair value hierarchy by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets of liabilities (Level 1 measurements) and the lower priority to unobservable inputs (Level 3 measurements).

- Level 1 – Unadjusted quoted prices for identical instruments in active markets.
- Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.
- Level 3 – Valuations derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The System assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. The table(s) on the following pages shows the fair value leveling of the investments for the System.

Assets classified in Level 1 of the fair value hierarchy are valued directly from a predetermined primary 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. Real estate, timberland, and partnership assets classified in Level 3, due to lack of an independent pricing source, are valued using an internal fair value as provided by the investment manager.

The categorization of investments within the hierarchy is based upon the pricing transparency of the instrument(s) and should not be perceived as the particular investment's risk.

Investments and Derivative Instruments at Fair Value (as of June 30, 2020)

	Fair Value	Level 1	Level 2	Level 3
Investments at Fair Value				
U.S. Domestic Equities	\$ 102,120,145	\$ 102,120,145	\$ 0	\$ 0
Convertible Securities	11,414,335	1,355,784	10,058,552	0
Preferred Securities	111,141	0	111,141	0
International Equities	53,511,100	53,511,100	0	0
Lazard	0	0	0	0
Convertible Securities	914,120	45,840	868,280	0
Preferred Securities	931,714	888,013	43,701	0
Fixed Income	4,662,480	0	4,662,480	0
Loans/JV interest	48,928	0	0	48,928
Domestic Fixed Income	0	0	0	0
Global Bond Fund	1,289,691	1,289,691	0	0
Infrastructure Fund	0	0	0	0
U.S. Government Securities	5,618,629	5,618,629	0	0
Futures	(8,256)	(8,256)	0	0
Fixed Income Fund	579,115	579,115	0	0
Corporate Bonds	43,714,816	0	43,714,816	0
Loans/JV interest	323,838	0	0	323,838
Total Investments	\$ 225,231,798	\$ 165,400,062	\$ 59,458,970	\$ 372,766

Securities Lending Collateral Investments at Fair Value

Repo	\$ 2,693,645	\$ 0	\$ 2,693,645	\$ 0
Commercial Paper	6,137,465	0	6,137,465	0
Floating Rate Notes	12,008,060	0	12,008,060	0
Asset Backed Floating Securities	7,432,089	0	7,432,089	0
Total Securities Lending Collateral	28,271,258	0	28,271,258	0
Total Investments at Fair Value	\$ 253,503,056	\$ 165,400,062	\$ 87,730,228	\$ 372,766

Investments at the Net Asset Value (NAV)

High Yield Core Fund	\$ 361,470
Defensive Bond Fund	1,806,589
Domestic Equity Index Funds	10,611,931
Core Plus Bond Fund	19,782,109
Timberland	3,074,612
Global Energy Plus Fund	3,667,885
Global Equity Pooled Funds	
MCM REIT Index	3,650,827
MCM ACWI ex-US Index	27,527,278
Real Estate	
Invesco Core	17,022,158
Heitman Core	10,887,998
Heitman Value Add	1,222,681
TA Fund X	123,262
TA Fund XI	1,819,319
TA Fund XII	220,383
LaSalle Fund Fund VI	367,105
LaSalle Fund Fund VII	1,288,905
Diversified Strategies	
AQR Global Risk Premium	4,968,912
Newton Global Real Return	4,542,138
Blackstone	6,653,671
Total Investments at the NAV	\$ 119,599,233

Investments classified as level 1 in the preceding table are exchange-traded securities whose values are based on published market prices and quotations from either national security exchanges or active markets for those securities.

Investments classified as level 2 in the preceding table include publicly traded debt securities and exchange traded stocks in inactive markets. Investments in this category are sourced from reputable pricing vendors using pricing matrix models and techniques. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Fair value is defined as the quoted market value on the last trading day of the period. These prices are obtained from various pricing sources by the System's custodian bank which maintains the book of record for all investments.

Investments classified as level 3 in the preceding table are unobservable, meaning that the assets lack an independent pricing source. Values are provided by the investment manager or an external pricing source such as an independent appraiser.

Investments Measured at the Net Asset Value (NAV)

The fair value of investments that are organized as commingled funds or limited partnerships have no readily ascertainable fair value. The value is determined by using the net asset value per share or its equivalent. Commingled fund values are based on each investor's proportionate share of the total underlying assets in the fund less any liabilities for client withdrawals, investment purchases or other accrued expenses. Limited partnership values are based on the capital account balance the general partner reports at the end of each reporting period, adjusted by subsequent contributions, distributions, management fees, and changes in values of foreign currency and published market prices for certain securities. Even though the limited partnerships and commingled funds issue annual financial statements audited by independent auditors, the year-end for the state and these entities do not always agree. There are inherent uncertainties in estimating fair values for these types of investments, and it is possible that the estimates will change in the near-term or the subsequent sale of assets will be different from the reported net asset value. With certain exceptions, mainly the equity and the fixed income funds, these investments cannot be redeemed, or, have certain restrictions regarding redemption. The real estate investments distributions are through the liquidation of the underlying assets or net operating cash flows. Each investment has a different redemption frequency and notice period as noted in the following table (facing page):

Investments Measured at the Net Asset Value (as of June 30, 2020)

	Fair Value	Strategy Type	Fund Life of Non-redeemable Mandates	Unfunded Commitments	Redemption Frequency (if currently eligible)	Redemption Notice Period	Other Redemption Restrictions	Restriction Time Remaining
High Yield Core Fund	\$ 361,470	Active High Yield Fixed Income	N/A	none	monthly	T + 3	N/A	N/A
Defensive Bond Fund	1,806,589	Income Oriented	N/A	none	daily	T + 1	N/A	N/A
Domestic Equity Index Funds	10,611,931	S & P 500 Index	N/A	none	daily	T + 3	N/A	N/A
Core Plus Bond Fund	19,782,109	Active Global Fixed Income	N/A	none	daily	T + 3	N/A	N/A
Timberland	3,074,612	Timber	N/A	none	none	N/A	N/A	partnership terminates in December 2027
Global Energy Fund	3,667,885	Global Energy stocks	N/A	none	daily	T + 3	N/A	N/A
International Equity Pooled Funds								
MCM REIT Index	3,650,827	Global Real Estate securities	N/A	none	daily	T + 1	N/A	N/A
MCM ACWI ex-US Index	27,527,278	International Equities	N/A	none	daily	T + 1	N/A	N/A
Real Estate								
Invesco	17,022,158	Core Real Estate	N/A	none	quarterly	T + 45	N/A	N/A
Heitman	10,887,998	Core Real Estate	N/A	none	quarterly	T + 90	N/A	N/A
Heitman Value Partners IV	1,222,681	Value Add Real Estate	N/A	\$ 1,498,805	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
TA Fund X	123,262	Value Add Real Estate	N/A	none	7-year lock up	N/A	N/A	currently in capital redistribution phase
TA Fund XI	1,819,319	Value Add Real Estate	N/A	none	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
TA Fund XII	220,383	Value Add Real Estate	N/A	2,450,372	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
LaSalle Fund Fund VI	367,105	Value Add Real Estate	N/A	51,860	7-year lock up	N/A	N/A	currently in capital redistribution phase
LaSalle Fund Fund VII	1,288,905	Value Add Real Estate	N/A	120,201	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
Diversified Strategies								
AQR Global Risk Premium	4,968,912	Risk Premia	N/A	none	weekly and monthly	T + 2	N/A	N/A
Newton Global Real Return	4,542,138	Global Real Return	N/A	none	daily	T + 3	N/A	N/A
Blackstone	6,653,671	Fund of Funds	N/A	none	last day of each quarter	1yr; 2yrs; 3yrs; >3yrs	55% liquidity; then 20%; then 15%; then 10%	N/A
Total	\$ 119,599,233			\$ 4,069,377				

High Yield Core Fund

The High Yield Active Core philosophy is centered on the belief that the best risk-adjusted returns and, ultimately, the best absolute returns are generated by a strategy of yield capture and error avoidance.

Defensive Bond Fund

The investment objective is to exploit different sources of return available in high yield corporate securities in a way that generates risk-adjusted returns superior to those available from conventional high yield securities. The investment strategy is based on the assumption and observation that numerous market inefficiencies exist throughout the capital markets (particularly in the high yield bond markets) and that the prudent, active and systematic exploitation of these inefficiencies can generate returns consistent with these objectives.

Domestic Equity Index Funds

This is an S&P 500 Index fund.

Core Plus Bond Fund

The Core Plus Fixed Income Strategy seeks excess return from multiple sources, including sector allocation and subsector and security selection. Duration, yield curve, and currency positioning is moderate. The largest component of the Core Plus Fixed Income risk budget is allocated to portfolio strategies that have consistently generated the highest return for the lowest unit of risk over time, such as sector allocation and subsector/security selection. The Core Plus Fixed Income portfolios may emphasize spread product in the sector allocation process and therefore may hold larger-than-benchmark allocations to corporate bonds, structured product, high yield bonds, and emerging markets debt. As a result, the strategy would likely outperform in a 'risk on' environment where corporate bonds, for example, are outperforming. The reverse would also likely be true. The Core Plus Fixed Income portfolios take an actively-managed, relative-value driven approach. The Strategy is expected to perform best in markets with excess spread dislocations that it can capitalize on through relative value trading.

Timberland

An objective of a timber investment is to provide the fund with diversification from traditional asset classes. The goal of the timber investment is to get a stable core-type return with very low or little volatility.

Global Energy Fund

The fund seeks to invest globally in opportunities found in the energy industry. The fund invests, both long and short, in the equity securities, and related instruments, of energy and energy related businesses, including companies that are not in the Benchmark, which are expected to outperform the energy sector as a whole.

International Equity Pooled Funds

- The MCM EB DV Non-SL REIT Index Fund — This REIT Index Fund seeks to match the performance and the characteristics of the Dow Jones U.S. Select REIT Index which tracks the performance of publicly traded REITs and REIT-like securities and designed to serve as a proxy for direct real estate investments.

- **MCM ACWI ex-US Index** — The MSCI ACWI ex USA Index captures large and mid-cap representation across 22 of 23 Developed Markets (DM) countries (excluding the U.S.) and 24 Emerging Markets (EM) countries. With 2,166 constituents, the index covers approximately 85% of the global equity opportunity set outside the U.S.
- **Fidelity Select International Strategy** — The Select International strategy utilizes a disciplined investment approach that capitalizes on fundamental research by combining qualitative stock selection with quantitative risk control. The available investment universe is comprised of stocks in Japan, the United Kingdom, Europe ex UK, and Asia Pacific ex Japan rated attractive by Fidelity's analysts. The strategy uses a quantitative model to match the regional weights of the portfolio to the index. This approach is designed to diversify specific risk, reduces tracking error and factor risk, and controls transaction costs.

Real Estate

This asset class provides diversification to the total portfolio and strives to reduce total fund volatility while also enhancing the total return of the portfolio. Real estate has a low, and in some cases, negative, correlation with other major investment asset classes. The following are the strategies that comprise the Real Estate asset class and are explained in greater detail:

- **Invesco Core Real Estate (ICRE)** — The ICRE strategy is a portfolio of U.S. properties diversified by property type and geographic location, with an emphasis on attractive current income returns and the opportunity for both income and capital growth. It is based on top-down economic fundamentals combined with bottom-up local market intelligence.
- **Heitman America Real Estate Trust (HART)** — The HART strategy creates a high-quality, low-risk portfolio of stabilized, income-producing assets diversified by property type and economic exposure through acquiring assets in infill locations within major metropolitan areas, focusing on strong site attributes such as proximity to amenities and transportation networks, and ensuring that assets are well constructed with features that will appeal to tenants over long periods of time.
- **TA Realty Funds X, XI, and XII** — TA Realty has managed value-add, commingled real estate funds for approximately 30 years. They have investments in 35 markets, and 4 property types (office, industrial, multifamily, and retail). The firm has developed and refined a consistent approach focused on creating diversified real estate portfolios that can generate strong cash flow, benefit from an intensive asset management approach and result in the long-term creating of value of the life of the fund(s).
- **LaSalle Funds VI and VII** — The Funds pursue non-core properties that exhibit strong fundamentals and are expected to generate both income and appreciation. The sectors that are focused on are office, multifamily, retail, industrial, and specialty.
- **Heitman Value Partners IV ("HPV IV")** is the fourth offering in Heitman's North American value-add series. It is a closed-end, commingled fund that will pursue a diverse set of real estate opportunities with value-added business plans. The objective is to provide investors with attractive risk-adjusted returns. The strategy seeks to benefit from Heitman's extensive research, real estate, and capital markets expertise to identify emerging investment opportunities and trends before they are fully appreciated by the broader market. The Fund will execute investment strategies that capitalize on those opportunities.

Diversified Strategies

This asset class provides diversification to the total portfolio and strives to reduce total fund volatility while also enhancing the total return of the portfolio. The following are the strategies that comprise the Diversified Strategies asset class and are explained in greater detail:

- **Global Risk Premium Tactical Fund (GRPT)** — The AQR Global Risk Premium Tactical Fund seeks to efficiently deliver exposure to a broadly diversified set of global risk premia. In many institutional portfolios, equity risk is the predominant risk, a concentration driven by the need for high expected return that cannot be satisfied in a traditionally constrained, well-diversified portfolio. Rather than diversifying by capital, this strategy seeks to diversify based on risk across global equities, global nominal bonds, inflation sensitive assets, and credit/default related assets. Starting from this strategic risk-parity base, GRPT then employs modest tactical tilts across sub-sectors and across individual exposures, attempting to exploit temporary opportunities which may arise within markets. Following basic financial theory, AQR designed its Risk Parity strategies based on what they believe to be the most optimal liquid portfolio of global market betas, and AQR offers that same portfolio at various levels of leverage to target a desired amount of risk as approximated by ex-ante volatility. AQR's approach employs modest leverage to scale up a lower-risk, broadly-diversified portfolio.
- **Newton Global Real Return (US\$)** — Newton's global real return US\$ strategy is an actively managed, unconstrained, multi-asset strategy, which aims to achieve a return of one-month USD LIBOR +4 % p.a. over rolling five-year periods. The strategy seeks to add value through security selection and asset type flexibility and it also has an emphasis on capital preservation. The strategy is long only, does not use leverage or short securities and is daily valued.
- **Blackstone (Fund of Funds)** — The System hired Blackstone to manage a fund-of-funds strategy. As the name suggests Blackstone invests APERS funds in other hedge funds. The number of funds that APERS invests in varies on market conditions. The types of strategies that are contained within the APERS portfolio also vary. For full disclosure purposes on June 30 there were fundamental equity strategies, event driven strategies, fundamental credit strategies, credit trading strategies, distressed credit strategies, RMBS strategies, structured ABS strategies, multi-strat strategies, commodity strategies, macro rates strategies, thematic macro strategies, quantitative strategies, CTA strategies, and special situation strategies in the portfolio.

Note 4: Legally Required Reserves

A description of reserve accounts and their balances for the year ended June 30, 2020, are as follows:

The Member Deposit Account (MDA) represents members' contributions held in trust until their retirement, at which time contributions are transferred to the Retirement Reserve Account.

The MDA Interest Reserve represents the accumulated interest paid on the MDAs held in trust. As members retire, the interest on their contributions is transferred to the Retirement Reserve Account.

The Employers' Accumulation Account accumulates employers' contributions to be used in providing the reserves required for transfer to the Retirement Reserve Account as members retire or become eligible for disability benefits.

The Retirement Reserve Account is the account to which member contributions, interest on those contributions, and employer contributions are transferred upon member retirement.

The DROP Reserve Account is the account established for the accumulation of balances paid to members who have been approved by the ASPRS Board to participate in the DROP. When a member retires, these amounts can be paid to the member as a lump sum, transferred to an authorized account, or be received as an annuity.

The Deferred Annuity Account is the account established to cover estimated retirement benefits to inactive vested members who are not currently receiving benefit payments.

The Outlawed Warrants Reserve is a cumulative total of warrants not cashed in prior years that have been outlawed. These amounts will be paid if members request payment from the Arkansas State Claims Commission and the commission approves payment.

*Reserve Balances (as of June 30, 2020)**

Account	System Total
Member Deposit Account Reserve	\$ 654,591
MDA Interest Reserve	(4,501)
Employer Accumulation Account	32,163,871
Retirement Reserve Account	291,574,208
DROP Reserve Account	9,929,218
Deferred Annuity Reserve	3,865,196
Outlawed Warrants Reserve	1,095
Total	<u>\$ 338,183,678</u>

*Before recommended actuarial transfers. Totals may not add due to rounding.

Note 5: Net Pension Liability

The Components of the Net Pension Liability as of June 30, 2020

	Fiscal 2020	Fiscal 2019
Total Pension Liability	\$ 476,569,897	\$ 458,133,785
Plan Fiduciary Net Position	\$ 338,183,678	\$ 337,739,012
Net Pension Liability	\$ 138,386,219	\$ 120,394,773
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	70.96%	73.72%

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of June 30, 2020, using the following actuarial assumptions, applied to all periods included in the measurement:

Valuation Date	June 30, 2020
Actuarial Cost Method	Entry Age Normal Cost
Amortization Method	Level Percent-of-Payroll
Remaining Amortization Period	19-Year Closed
Asset Valuation Method	4-Year Smoothed Market
Actuarial Assumptions:	
Investment Rate of Return	7.15%
Projected Salary Increases	3.55% - 7.75%
Including Wage Inflation at	3.25%
Cost-of-Living Increases	3.0% Annual Compound Increases
Retirees and Beneficiaries Receiving Benefits	687
Terminated Plan Members Entitled to But Not Yet Receiving Benefits	108
DROP Members	59
Active Plan Members	482
Total	1,336

Long-Term Expected Return on Plan Assets

The System's policy in regard to the allocation of its invested assets was established by the APERS Board and is reviewed at least annually to determine if the asset allocation is consistent with an acceptable level of risk and volatility.

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 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 current asset allocation percentage and by adding expected price inflation. Best estimates of arithmetic real rates of return for the 10-year period from 2020 to 2029 were based upon capital market assumptions provided by the plan's investment consultant(s). For each major asset class that is included in the pension plan's current asset allocation as of June 30, 2020, these best estimates are summarized in the following table:

Long-Term Expected Return on Plan Assets by Class (as of June 30, 2020)

Asset Class	Current Allocation	Long-Term Expected Real Rate of Return
Broad Domestic Equity	37%	6.22%
International Equity	24	6.69
Real Estate	16	4.81
Absolute Return	5	3.05
Domestic Fixed	18	0.57
Total	100%	
Total Real Rate of Return		4.93%
Plus: Price Inflation - Actuary's Assumption		2.50
Less: Investment Expenses (Passive)		0.00
Net Expected Return		7.43%

For the year ended June 30, 2020, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 2.03%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Discount Rate

A single discount rate of 7.15% 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 7.15%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, 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.

Sensitivity of the Net 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 7.15%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher:

Sensitivity of the Net Pension Liability as of June 30, 2020

	1% Decrease	Current Discount Rate	1% Increase
	6.15%	7.15%	8.15%
ASPRS \$	190,393,696	\$ 138,386,219	\$ 86,056,662

Note 6: Deferred Retirement Option Plan

A Deferred Retirement Option Plan (DROP) is available to members of the System as authorized by A.C.A. §§ 24-4-801 - 24-4-806. In lieu of terminating employment and accepting a retirement benefit under the System, any member who has at least 30 years of credited service, which includes reciprocal from another system, can elect to participate in the DROP. The DROP allows a member to defer the receipt of retirement benefits for a maximum of seven years. During that time, a percentage of a member's chosen benefit is deposited into an account that accrues interest at a rate of 3.25% annually. The System had a balance of \$9,929,218 in the DROP reserve as of June 30, 2020.

REQUIRED SUPPLEMENTARY INFORMATION

The following data on historical trends indicate the System's progress in accumulating sufficient assets to pay benefits when due. It is required supplemental information.

Schedule of Employer Contributions (in millions for fiscal years ended June 30)

Fiscal Year	Actuarially Determined Contribution	Actual Contribution*	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2011	\$ 12.6	\$ 14.1	\$ (1.5)	\$ 28.2	50.00%
2012	14.1	19.7	(5.6)	29.5	66.78
2013	13.6	19.5	(5.9)	28.1	69.40
2014	14.0	19.5	(5.5)	29.1	67.01
2015	14.2	19.8	(5.6)	29.9	66.22
2016	14.3	19.7	(5.4)	29.4	67.01
2017	14.1	20.0	(5.9)	29.1	68.73
2018	15.2	21.0	(5.8)	30.0	70.00
2019	15.6	21.3	(5.7)	30.3	70.30
2020	\$ 16.9	\$ 21.9	\$ (5.0)	\$ 33.3	65.77%

*Actual contributions are based on covered payroll at the time of the contribution. This payroll is not reported to the actuary.

Schedule of Investment Returns (for fiscal years ended June 30)

Annual Money-Weighted Rate of Return, Net of Investment Expense

Fiscal Year	Return
2014	18.75%
2015	2.26%
2016	(0.08)%
2017	11.82%
2018	9.82%
2019	5.36%
2020	2.03%

Schedule of the Net Pension Liability (for fiscal years ended June 30)#

Fiscal Year	Total Pension Liability	Fiduciary Net Position	Net Pension Liability	Fiduciary Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2014	\$ 385,645,392	\$ 277,201,968	\$ 108,443,424	71.88%	\$ 28,548,873	379.85%
2015	403,202,550	279,657,570	123,544,980	69.36	29,929,358	412.79
2016	413,882,894	272,920,012	140,962,882	65.94	29,448,593	478.67
2017	437,870,023	299,525,117	138,344,906	68.41	29,076,764	475.79
2018	446,878,220	324,938,251	121,939,969	72.71	29,593,145	412.05
2019	458,133,785	337,739,012	120,394,773	73.72	30,287,691	397.50
2020	\$ 476,569,897	\$ 338,183,678	\$ 138,386,219	70.96%	\$ 33,311,093	415.44%

#In 2017 and thereafter, actual DROP participant pays were used. In 2016, \$67,241 was used as an estimate of average annual pay for DROP participants. In 2015, \$75,000 was used as an estimate of average annual pay for DROP participants.

Schedule of Changes in Net Pension Liability and Related Ratios

Year Ended June 30	2020	2019
Total Pension Liability		
Service Cost	\$ 5,861,499	\$ 6,691,528
Interest	31,967,469	31,299,758
Benefit Changes	997,533	0
Differences Between Expected And Actual Experience	7,543,752	(1,805,446)
Assumption Changes	0	0
Benefit Payments	(27,934,141)	(24,930,275)
Net Change In Total Pension Liability	\$ 18,436,112	\$ 11,255,565
Total Pension Liability, Beginning of Year	458,133,785	446,878,220
Total Pension Liability, End of Year (A)	\$ 476,569,897	\$ 458,133,785
Fiduciary Net Position		
Contributions - Employer	\$ 21,873,425	\$ 21,254,010
Contributions - Member	0	0
Net Investment Income	6,700,845	17,031,467
Benefit Payments	(27,934,141)	(24,930,275)
Administrative Expense	(195,463)	(554,441)
Other	0	0
Net Change In Fiduciary Net Position	444,666	12,800,761
Fiduciary Net Position, Beginning of Year	\$ 337,739,012	\$ 324,938,251
Fiduciary Net Position, End of Year (B)	\$ 338,183,678	\$ 337,739,012
Net Pension Liability, End of Year (A) - (B)	\$ 138,386,219	\$ 120,394,773
Fiduciary Net Position as a Percentage of the Total Pension Liability	70.96%	73.72%
Covered-Employee Payroll	\$ 33,311,093	\$ 30,287,691
Net Pension Liability as a Percentage of Covered-Employee Payroll	415.44%	397.50%

2018	2017	2016	2015	2014
\$ 6,577,148	\$ 5,473,626	\$ 5,488,445	\$ 6,101,608	\$ 4,866,199
30,678,211	30,322,786	29,469,678	29,218,802	28,558,511
0	0	0	0	0
467,389	(3,052,763)	1,757,687	(3,107,531)	(454,349)
(4,529,133)	15,875,267	0	8,703,080	8,970,858
(24,185,418)	(24,631,787)	(26,035,466)	(23,358,801)	(21,688,239)
\$ 9,008,197	\$ 23,987,129	\$ 10,680,344	\$ 17,557,158	\$ 20,252,980
437,870,023	413,882,894	403,202,550	385,645,392	365,392,412
\$ 446,878,220	\$ 437,870,023	\$ 413,882,894	\$ 403,202,550	\$ 385,645,392
\$ 21,003,650	\$ 19,961,066	\$ 19,713,295	\$ 19,784,130	\$ 19,501,684
0	0	0	94,814	0
28,823,333	31,484,250	(210,045)	6,131,684	43,307,746
(24,185,419)	(24,631,787)	(26,035,466)	(23,358,801)	(21,688,239)
(228,430)	(208,424)	(205,342)	(196,231)	(189,658)
0	0	0	6	0
25,413,134	26,605,105	(6,737,558)	2,455,602	40,931,533
\$ 299,525,117	\$ 272,920,012	\$ 279,657,570	\$ 277,201,968	\$ 236,270,435
\$ 324,938,251	\$ 299,525,117	\$ 272,920,012	\$ 279,657,570	\$ 277,201,968
\$ 121,939,969	\$ 138,344,906	\$ 140,962,882	\$ 123,544,980	\$ 108,443,424
72.71%	68.41%	65.94%	69.36%	71.88%
\$ 29,593,145	\$ 29,076,764	\$ 29,448,593	\$ 29,929,358	\$ 28,548,873
412.05%	475.79%	478.67%	412.79%	379.85%

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Administrative Expenses (for the year ended June 30, 2020)

	2020	2019
Communications		
Printing and Advertising	\$ 0	\$ 3,073
Services and Charges		
Professional Fees and Services	42,200	65,500
Conference Fees and Travel	228	677
Bank and Federal Service Charges	4,596	4,007
IRS Penalties	0	0
Total Services and Charges	47,024	70,184
Bad Debt Expense	(15,569)	320,497
Transfer to APERS for Administrative Expenses	164,008	160,687
Total Administrative Expenses	\$ 195,463	\$ 554,441

Schedule of Investment Expenses

Expenses for the Fiscal Years Ended June 30	2020	2019
Investment Consultant Fee	\$ 11,346	\$ 10,715
Money Manager Fees*	1,234,907	1,222,599
Custodian Bank Fees	18,697	18,147
Other Investment Expenses	441,272	869,199
Total Investment Expenses#	\$ 1,706,222	\$ 2,120,661

Payments for Professional Consultants

Expenses for the Fiscal Years Ended June 30	2020	2019
Gabriel, Roeder, Smith & Company	\$ 42,200	\$ 62,700

*For fees paid to investment managers, please see the schedule of investment fees shown on page 66 in the Investments Section of this report.

#Total investment expenses include international withholding taxes, which are not included in the schedule of investment fees referenced above.



Chief Investment Officer's Report

Investment Policy Summary

Asset Allocation

Schedule of Manager Distribution

Portfolio Characteristics

Schedule of Comparative Investment Results by Year

Schedule of Comparative Annualized Investment Results

Ten Largest Holdings

Schedule of Brokerage Commissions

Schedule of Investment Fees

This Page Intentionally Left Blank

CHIEF INVESTMENT OFFICER'S REPORT

Dear Members,

On behalf of the APERS Investment Department, it is my pleasure to present the Investment Section of the ASPRS Annual Financial Report for the fiscal year ended June 30, 2020.

Performance and Stability

For fiscal year 2020, the APERS/ASPRS investment portfolio closed with total investments and cash of \$9,025,426,027. The investment return for the fiscal year was 2.41%.

Positive performance in domestic equities and fixed income was able to overcome negative performance by international equities, diversified strategies, and real assets.

Domestic equities as an asset class contributed 6.06% to the performance of the investment fund. The Dow Jones was able to set a new high in February 2020, right before the Coronavirus COVID-19 pandemic caused the financial markets to tumble in March 2020. The markets were able to rebound and post a positive gain for the fund at the end of the fiscal year (June 2020.)

Diversified strategies turned in -1.17% of the total performance of the investment fund. Fixed income as an asset class contributed 6.81 to the total performance of the investment fund.

International equities and real assets posted returns of -1.45% and -4.37% respectively to the total performance of the fund.

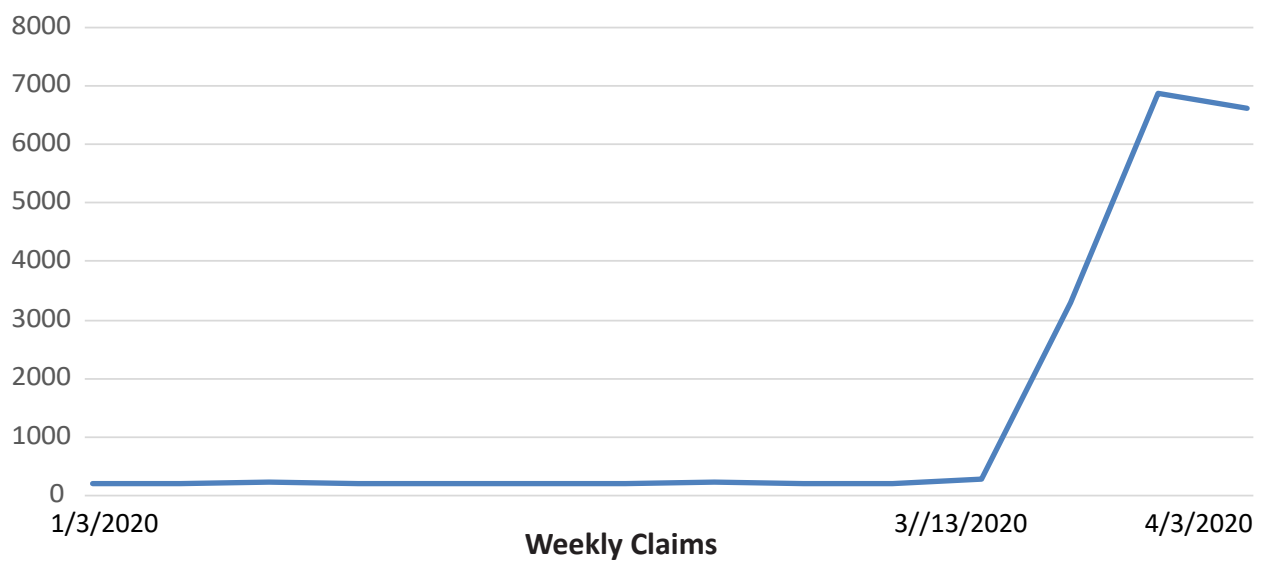
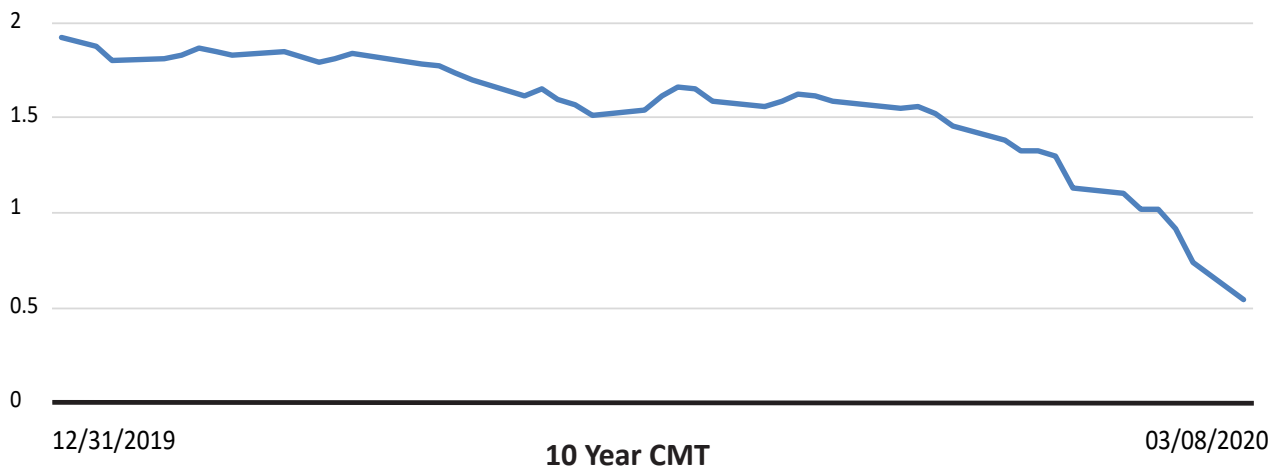
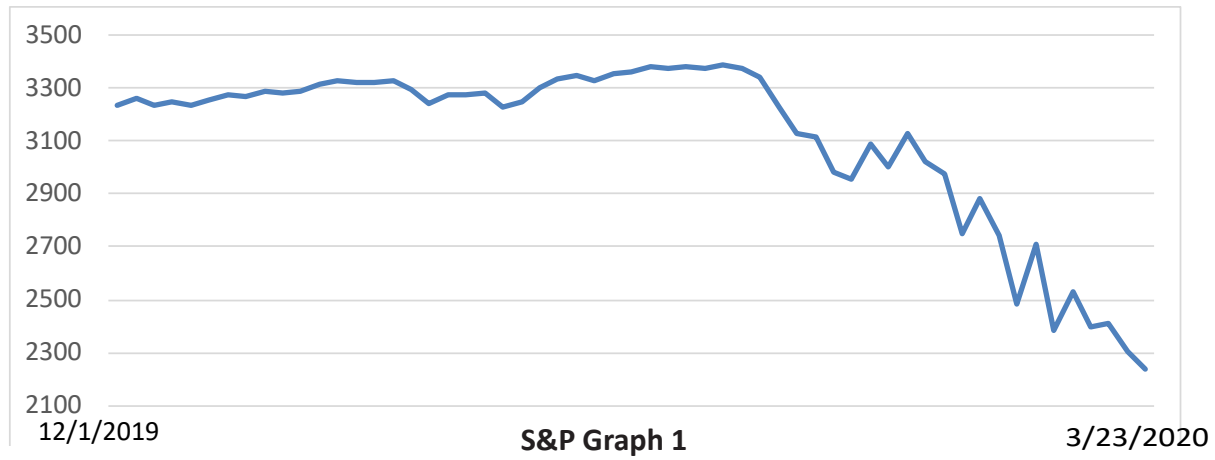
Fiscal Year 2020 Global Financial Market Recap

I normally would spend time recapping the first and second quarters of fiscal year 2020. I would point out that at the end of the 2019 fiscal year the portfolio was up 6.40%. As good it was to finish 2019 with a strong first half performance, fiscal year 2020 will be remembered for one thing, the Novel Coronavirus (COVID-19) pandemic which erased all gains for the financial markets in a matter of days.

On February 19, 2020 the S&P 500 Index set a new all-time high of 3,386. A month later, on March 23, 2020 the S&P 500 closed at 2,237. The index suffered a 33% peak-to-trough sell-off.

In response to the coronavirus economic disruption, the Federal Reserve announced two emergency rate cuts in the first quarter of 2020. U.S. Treasury interest rates plunged. To relieve the economic contraction fiscal policy stepped in, and Congress passed the CARES Act at the end of March. The fiscal support package totaled over \$2 trillion. It was an attempt to cushion the economic blow of the virus and the new social distancing policies. Oil prices plunged given the pandemic's economic disruption as well as a tit-for-tat price war between Saudi Arabia and Russia. The March non-farm payroll figure saw the U.S. labor markets lose 701,000 jobs, wiping out the jobs added in January and February. Worse was the record 6.6 million that filed for unemployment benefits in the week ending March 28.

They say a picture is worth a thousand words, the following graphs illustrate how the markets reacted in March to the COVID-19 pandemic.



As the fourth quarter of the fiscal year began, the economic impact of COVID-19 could clearly be seen. In April 2020, 20.5 million non-farm payroll jobs were lost, the largest drop ever recorded. The unemployment rate reached 14.7% and more than 33 million Americans filed for unemployment claims. First quarter GDP contracted 5.0%, and second quarter GDP contracted 32.9%.

Those workers who were laid off in March and April started to come back in May as non-farm payrolls added 2.5 million jobs. In June the labor markets added 4.8 million jobs, and the unemployment rate nudged down to 11.1%. The fiscal year ended showing signs of easing pressure on the global markets. Retail sales grew a record 18%. Durable goods orders increased 16% in May. Housing got a boost from relatively low mortgage rates. Pending home sales were up 44%.

As rapidly as the global markets fell in March, they were able to reverse course. However, it took a tsunami of central bank support and fiscal stimulus to fuel confidence and inject liquidity into the markets. The U.S. Federal Reserve cut rates to zero, commenced QE (quantitative easing), instituted multiple facilities to backstop money markets, credit markets, and therefore the economy. Total fiscal stimulus approached \$3 trillion, which was nearly 14% of U.S. GDP. Speculation of a “V-shaped” recovery started to be discussed.

However, I will issue a disclaimer as well as a warning. The positive performance was concentrated. Five stocks represent a bulk of the S&P’s return. Jobless claims continued to hover around 1.5 million people per week with those receiving state benefits at around 18 million. There are still certain segments of the economy that have not participated in the strong rebound and are likely to be impacted for a prolonged period. Hotels, restaurants, airlines, and many small businesses have been among the hardest hit.

As a result, the S&P 500 posted its best quarter since 1998 with a 20.5% return, nearly erasing its first quarter loss.



Any economic recovery will be uncertain as COVID-19 infections continue at an alarming rate. Business re-openings may be reversed. The upcoming 2021 fiscal year will be choppy.

I would like to thank each of our APERS Trustees, the ultimate fiduciaries of the System. APERS' staff is committed to placing the system in the best position to continue to face the challenges of the global financial markets and to ensure that the APERS/ASPRS assets are positioned to provide long-term financial stability for you, the members.

Respectfully yours,

A handwritten signature in black ink, appearing to read "Carlos Borromeo". The signature is fluid and cursive, with the first name "Carlos" being more prominent than the last name "Borromeo".

Carlos Borromeo
Chief Investment Officer

INVESTMENT POLICY SUMMARY

The investment objective of the Arkansas Public Employees Retirement System (APERS) shall be to

1. Protect the APERS fund (the fund) so that its assets are preserved for providing benefits to participants and their beneficiaries, and
2. Maximize total return – either in the form of income or capital appreciation or both – in a manner that is consistent with prudent risk taking on the amounts available to provide such benefits.

For this purpose, short-term fluctuations in value shall be considered secondary to long-term investment results. The long-term return objective for the fund shall be to achieve a real rate of return of 4.5%. This is the return over the rate of inflation (as measured by the Consumer Price Index). This objective is not to be a goal from year to year but is intended as a long-term guideline to those involved in investing the fund's assets.

An additional overall investment objective will be to achieve a total fund return of at least the actuarial rate of 7.15%. The investments of the fund shall be so diversified as to minimize the risk of large losses, unless under particular circumstances it is clearly prudent not to do so. Investments will be further diversified by hiring an appropriate number of managers whose investment styles are varied enough to provide a balance to the overall risk of the fund.

Asset Allocation

In order to ensure that the System's investments are prudently diversified, the APERS Board has established the following asset allocation on guidelines:

Asset Allocation Guidelines

Asset Type	Allocation Target	Lower and Upper Limits
Equities	37%	32% - 42%
International Equities	24%	19% - 29%
Fixed Income	18%	13% - 23%
Diversified Strategies	5%	0% - 10%
Real Assets	16%	11% - 21%
	100%	

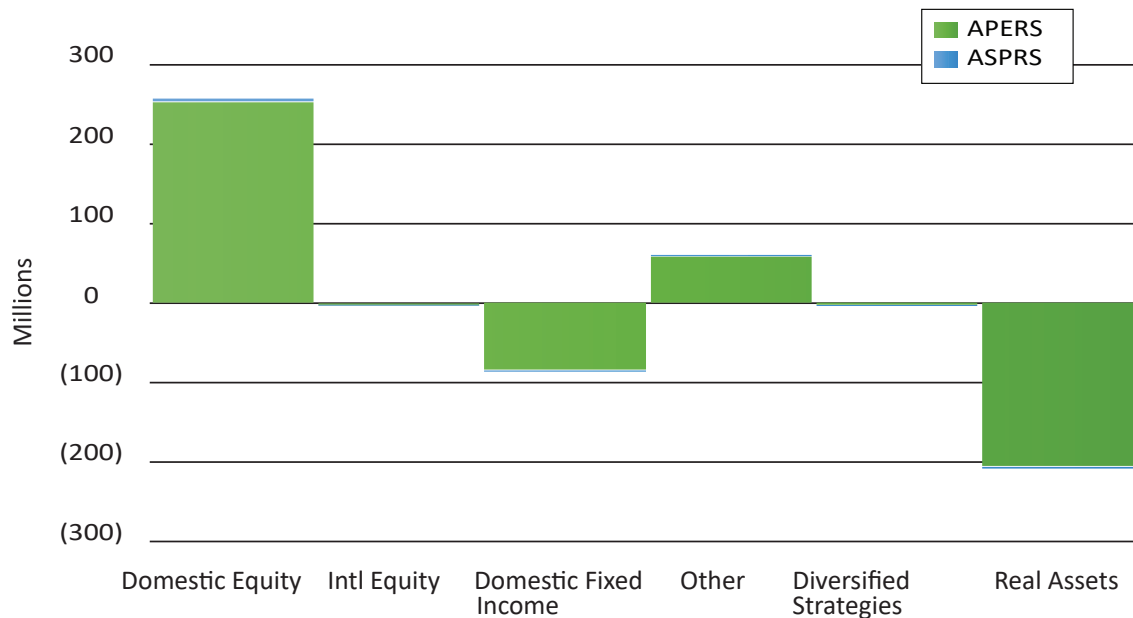
Actual vs. Target Allocation (as of June 30, 2020)

Asset Class	\$\$\$ Actual	\$\$\$ ASPRS	Weight Actual	Target	% Difference	\$\$\$ Difference	ASPRS \$\$\$ Difference
Domestic Equity	\$ 3,632,992	\$ 131,884	40.0%	37.0%	3.0%	\$ 268,397	\$ 9,743
Int'l Equity	\$ 2,165,607	\$ 78,615	23.8%	24.0%	(0.2)%	\$ (16,832)	\$ (611)
Domestic Fixed Income	\$ 1,550,524	\$ 56,287	17.1%	18.0%	(0.9)%	\$ (86,306)	\$ (3,133)
Other	\$ 68,072	\$ 2,471	0.7%	0.0%	0.7%	\$ 68,072	\$ 2,471
Diversified Strategies	\$ 445,287	\$ 16,165	4.9%	5.0%	(0.1)%	\$ (9,388)	\$ (341)
Real Assets	\$ 1,231,016	\$ 44,688	13.5%	16.0%	(2.5)%	\$ (223,943)	\$ (8,130)
Total	<u>\$ 9,093,498</u>	<u>\$ 330,110</u>	<u>100.0%</u>	<u>100.0%</u>			

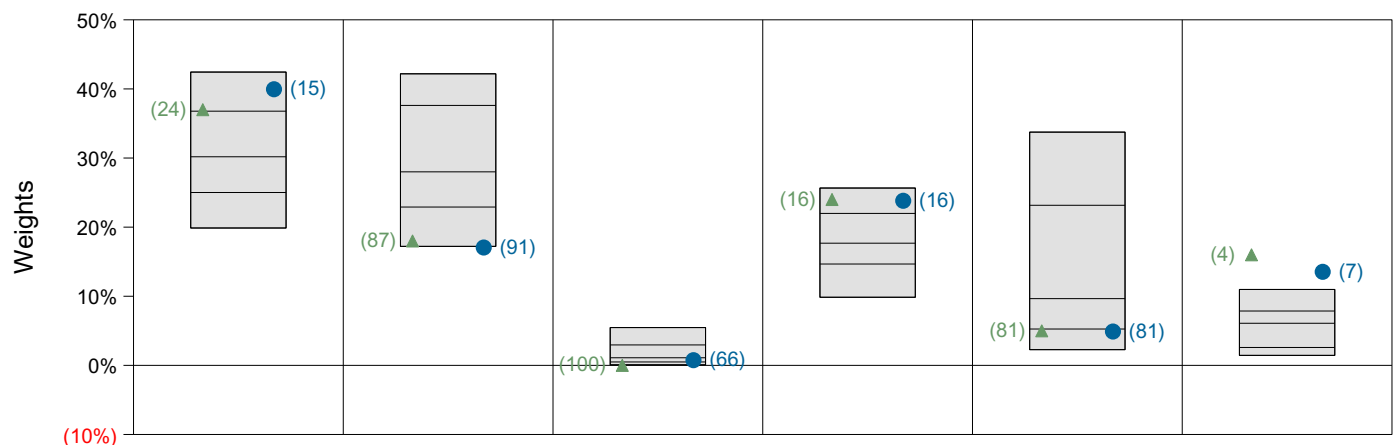
Asset Class	\$\$\$ Actual	\$\$\$ APERS	Weight Actual	Target	% Difference	\$\$\$ Difference	APERS \$\$\$ Difference
Domestic Equity	\$ 3,632,992	\$ 3,501,108	40.0%	37.0%	3.0%	\$ 268,397	\$ 258,654
Int'l Equity	\$ 2,165,607	\$ 2,086,992	23.8%	24.0%	(0.2)%	\$ (16,832)	\$ (16,221)
Domestic Fixed Income	\$ 1,550,524	\$ 1,494,237	17.1%	18.0%	(0.9)%	\$ (86,306)	\$ (83,173)
Other	\$ 68,072	\$ 65,601	0.7%	0.0%	0.7%	\$ 68,072	\$ 65,601
Diversified Strategies	\$ 445,287	\$ 429,122	4.9%	5.0%	(0.1)%	\$ (9,388)	\$ (9,047)
Real Assets	\$ 1,231,016	\$ 1,186,328	13.5%	16.0%	(2.5)%	\$ (223,943)	\$ (215,813)
Total	<u>\$ 9,093,498</u>	<u>\$ 8,763,388</u>	<u>100.0%</u>	<u>100.0%</u>			

ASSET ALLOCATION

Actual vs. Target Allocation (as of June 30, 2020)



The illustration below shows the average percentage of asset allocations by asset type for the Public Plan Sponsor Database. Due to different asset allocations of public plans, percentages will not equal 100%.



	Domestic Equity	Domestic Fixed-Income	in house	Intl Equity	Other Alternatives	Real Assets
10th Percentile	42.44	42.19	5.47	25.66	33.75	10.98
25th Percentile	36.78	37.61	2.96	21.99	23.16	7.86
Median	30.18	28.00	1.10	17.68	9.66	6.09
75th Percentile	25.01	22.91	0.50	14.66	5.26	2.59
90th Percentile	19.88	17.22	0.08	9.86	2.27	1.44
● Fund	39.95	17.05	0.75	23.81	4.90	13.54
▲ Target	37.00	18.00	0.00	24.00	5.00	16.00
% Group Invested	97.83%	98.55%	79.09%	97.10%	39.44%	23.19%

SCHEDULE OF MANAGER DISTRIBUTION (for the year ended June 30, 2020)

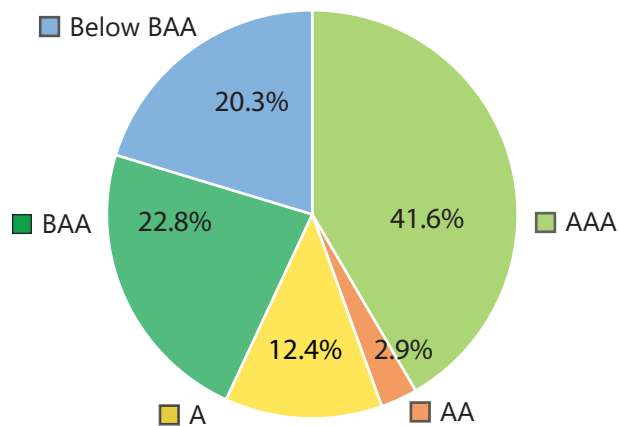
Asset Allocation	Market Value	% of Total	ASPRS	APERS
Domestic Equity				
MCM S&P 500 Index Fund	\$ 292,325,246	3.21%	\$ 10,611,933	\$ 281,713,314
LSV Asset Management	196,177,983	2.16	7,121,614	189,056,369
CastleArk Management	662,166,664	7.28	24,037,842	638,128,822
Golden Capital Management	219,966,493	2.42	7,985,180	211,981,313
INTECH	592,661,269	6.52	21,514,671	571,146,598
Wellington Management Co.	402,828,210	4.43	14,623,389	388,204,821
Westwood Management	0	0.00	0	0
Lazard Asset Management	386,109,165	4.25	14,016,458	372,092,708
SSI Investment Management	351,447,432	3.86	12,758,174	338,689,258
Horrell Capital Management	132,022,663	1.45	4,792,660	127,230,003
Stephens Investment Management Group	397,286,460	4.37	14,422,214	382,864,247
	<u>\$ 3,632,991,587</u>	<u>39.95%</u>	<u>\$ 131,884,134</u>	<u>\$ 3,501,107,453</u>
International Equity				
Mellon ACWI ex-US Fund	\$ 758,289,684	8.34%	\$ 27,527,280	\$ 730,762,403
Lazard Asset Management	454,065,772	4.99	16,483,405	437,582,367
Artisan Partners	425,212,019	4.68	15,435,962	409,776,058
Baillie Gifford	527,752,854	5.80	19,158,379	508,594,475
Manning & Napier	286,869	0.00	10,414	276,455
Fidelity	0	0.00	0	0
	<u>\$ 2,165,607,198</u>	<u>23.81%</u>	<u>\$ 78,615,439</u>	<u>\$ 2,086,991,759</u>
Fixed Income				
Doubleline Capital	\$ 479,486,950	5.27%	\$ 17,406,239	\$ 462,080,710
MacKay Shields	526,102,200	5.79	19,098,457	507,003,743
Prudential Investments	544,934,658	5.99	19,782,109	525,152,549
	<u>\$ 1,550,523,807</u>	<u>17.05%</u>	<u>\$ 56,286,805</u>	<u>\$ 1,494,237,002</u>
Real Assets				
INVESCO Real Estate	\$ 472,768,790	5.20%	\$ 17,162,358	\$ 455,606,432
MCM REIT Index Fund	100,568,746	1.11	3,650,827	96,917,920
TA Associates Realty Fund X	3,395,491	0.04	123,262	3,272,229
TA Associates Realty Fund XI	50,116,492	0.55	1,819,319	48,297,173
TA Associates Realty Fund XII	6,070,844	0.07	220,383	5,850,461
CastleArk Management	33,132,705	0.36	1,202,777	31,929,928
CastleArk Management Global Energy Fund	101,038,651	1.11	3,667,885	97,370,766
Pinnacle Forest Investments	84,695,862	0.93	3,074,612	81,621,250
Heitman Real Estate Trust LP	299,929,972	3.30	10,887,998	289,041,974
Heitman Value Partners	33,680,993	0.37	1,222,681	32,458,312
LaSalle Inc & Growth VI LP	10,112,583	0.11	367,105	9,745,478
LaSalle Inc & Growth VII LP	35,505,269	0.39	1,288,905	34,216,364
	<u>\$ 1,231,016,399</u>	<u>13.54%</u>	<u>\$ 44,688,111</u>	<u>\$ 1,186,328,287</u>
Diversified Strategies				
AQR Capital	\$ 136,877,838	1.51%	\$ 4,968,912	\$ 131,908,926
Blackstone Hedge	183,287,628	2.02	6,653,671	176,633,957
Newton Capital	125,121,572	1.38	4,542,138	120,579,433
	<u>\$ 445,287,037</u>	<u>4.90%</u>	<u>\$ 16,164,721</u>	<u>\$ 429,122,316</u>
Short-term Investment Fund	<u>\$ 68,071,675</u>	<u>0.75%</u>	<u>\$ 10,273,355</u>	<u>\$ 57,798,320</u>
Composite Fund	<u>\$ 9,093,497,703</u>	<u>100.00%</u>	<u>\$ 337,912,566</u>	<u>\$ 8,755,585,137</u>

Totals may not add due to rounding.

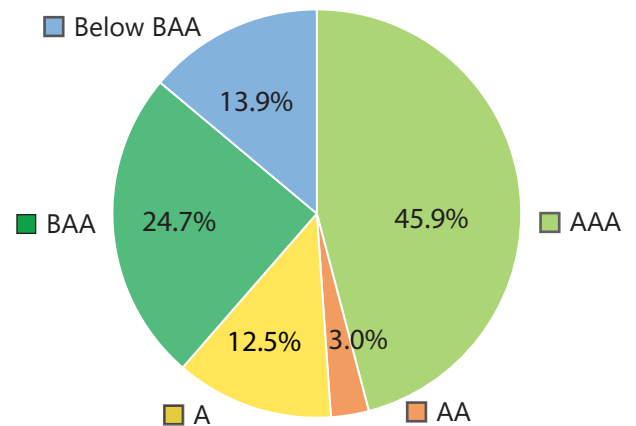
PORTFOLIO CHARACTERISTICS

Fiscal Years Ended June 30	2020	2019
Selected Bond Characteristics		
Yield to Maturity (Market)	2.78%	3.15%
Current Yield	3.09%	3.53%
Average Coupon Rate	3.48%	3.73%
Average Maturity	8.13 yrs.	7.41 yrs.
Quality Breakdown		
AAA (includes Govts & Agencies)	41.6%	45.9%
AA	2.9%	3.0%
A	12.4%	12.5%
BAA	22.8%	24.7%
Below BAA	20.3%	13.9%
Selected Stock Characteristics		
Average P/E Ratio	27.13x	23.8x
Estimated Earnings Growth Rate (Next 5 Years)	12.35%	14.82%
Current Yield	1.42%	1.52%

Quality Breakdown 2020



Quality Breakdown 2019



SCHEDULE OF COMPARATIVE INVESTMENT RESULTS BY YEAR

Fiscal Years Ended	2020	2019	2018	2017	2016	2015	2014
Total Fund							
APERS	2.41%	5.78%	10.25%	12.30%	0.30%	2.45%	19.68%
Callan Total Public Fund Median	3.26	6.19	8.23	12.42	0.54	3.24	16.30
APERS Benchmark	4.91	6.68	8.40	12.90	0.27	2.77	17.37
Equities							
APERS	6.06%	8.12%	16.27%	17.52%	(0.38)%	7.25%	24.48%
Callan Total Equity Database Median	3.18	7.73	15.02	19.48	(1.58)	7.17	25.26
Russell 3000 Index	6.53	8.98	14.78	18.51	2.14	7.29	25.22
International Equities							
APERS	(1.45)%	1.98%	7.22%	18.39%	(6.88)%	(2.38)%	24.43%
Callan Total Non-U.S. Equities Database Median	(4.14)	0.57	8.05	20.86	(8.20)	(1.80)	23.34
MSCI-EAFE Index	(5.13)	1.08	6.84	20.27	(10.16)	(4.22)	23.57
Fixed Income							
APERS	6.81%	8.57%	0.79%	3.04%	5.06%	1.32%	7.03%
Callan Total Fixed Income Database Median	6.93	7.34	0.26	1.16	4.48	1.59	5.54
Bloomberg Aggregate Index	8.74	7.87	(0.40)	(0.31)	6.00	1.86	4.37
Diversified Strategies							
APERS	(1.17)%	10.20%	6.43%	5.51%	2.86%	1.97%	13.91%
Callan Int'l/Global Balanced Database Median	0.55	2.31	6.53	7.54	(1.73)	0.59	13.59
Real Assets							
APERS	(4.37)%	1.72%	11.34%	3.27%	8.29%	0.19%	14.51%
Consumer Price Index - U + 4%	4.65	5.65	6.87	5.63	5.01	4.13	6.07

SCHEDULE OF COMPARATIVE ANNUALIZED INVESTMENT RESULTS

*Investment Results for Fiscal Year Ended June 30, 2020 and the Preceding 3 and 5 Year Periods**

	2020	3-Year Annualized	5-Year Annualized
Total Fund			
APERS	2.41%	6.10%	6.11%
Callan Total Public Fund Median	3.26	5.81	6.02
Inflation (Consumer Price Index)	1.65	1.72	1.56
APERS Benchmark	4.91	6.65	6.55
Equities			
APERS	6.06%	10.06%	9.32%
Callan Total Equity Database Median	3.18	8.70	8.88
Russell 3000 Index	6.53	10.04	10.03
International Equities			
APERS	(1.45)%	2.52%	3.50%
Callan Total Non-U.S. Equities Database Median	(4.14)	1.53	2.92
MSCI-EAFE Index	(5.13)	0.81	2.05
Fixed Income			
APERS	6.81%	5.34%	4.82%
Callan Total Fixed Income Database Median	6.93	4.89	4.31
Bloomberg Aggregate Index	8.74	5.32	4.30
Diversified Strategies			
APERS	(1.17)%	5.04%	4.69%
Callan International/Global Balanced Database Median	0.55	3.07	3.81
Real Assets			
APERS	(4.37)%	2.69%	3.91%
Consumer Price Index - U + 4%	4.65	5.72	5.56

*Source: Callan Associates Inc. Returns are reported gross of fees.

TEN LARGEST HOLDINGS (for the year ended June 30, 2020)*

Domestic Fixed Income Holdings	Par Value	Market Value	ASPRS	APERS
1 U.S. Treasury 2.00 02/15/2050	\$ 14,910,000	\$ 17,075,379	\$ 619,867	\$ 16,455,512
2 U.S. Treasury 0.25% 06/15/2023	11,330,000	11,353,906	412,167	10,941,739
3 U.S. Treasury 4.375% 11/15/2039	6,431,000	10,112,233	367,092	9,745,141
4 FNMA 2.500% 07/01/2046	9,675,542	9,993,287	362,774	9,630,513
5 U.S. Treasury 0.25% 05/31/2025	9,500,000	9,488,505	344,450	9,144,055
6 U.S. Treasury 1.625% 08/15/2029	8,500,000	9,274,605	336,685	8,937,920
7 U.S. Treasury 0.875% 01/15/2029	7,627,306	8,689,485	315,444	8,374,041
8 U.S. Treasury 0.50% 05/31/2027	7,970,000	7,978,129	289,620	7,688,509
9 U.S. Treasury 1.75% 11/30/2021	7,330,000	7,493,532	272,029	7,221,504
10 FHLMC 3.000% 03/01/2042	6,989,909	7,489,268	271,874	7,217,394
Total		<u>\$ 98,948,331</u>	<u>\$ 3,592,003</u>	<u>\$ 95,356,328</u>

Domestic Equity Holdings	Shares	Market Value	ASPRS	APERS
1 Microsoft Corporation	700,223	\$ 142,502,383	\$ 5,173,093	\$ 137,329,290
2 Apple Inc.	283,062	103,261,018	3,748,561	99,512,457
3 Amazon.Com Inc.	28,673	79,103,646	2,871,605	76,232,041
4 Alphabet Inc. Class A Shares	31,579	44,780,601	1,625,616	43,154,985
5 McDonald's Corporation	241,390	44,529,213	1,616,491	42,912,723
6 Medtronic PLC	466,197	42,750,265	1,551,912	41,198,353
7 Lowe's Cos. Inc.	284,957	38,503,390	1,397,742	37,105,647
8 Alphabet Inc. Class C Shares	26,587	37,583,649	1,364,354	36,219,295
9 S&P Global Inc.	111,175	36,629,939	1,329,733	35,300,206
10 Nvidia Corporation	87,031	33,063,947	1,200,281	31,863,666
Total		<u>\$ 602,708,050</u>	<u>\$ 21,879,387</u>	<u>\$ 580,828,663</u>

International Equity Holdings	Shares	Market Value	ASPRS	APERS
1 Samsung Electronics Co. Ltd.	598,165	\$ 26,256,904	\$ 953,173	\$ 25,303,732
2 ABB Ltd.	1,087,838	24,487,979	888,958	23,599,021
3 Naver Corporation	92,751	20,588,204	747,389	19,840,815
4 Compass Group PLC	1,382,433	18,994,452	689,533	18,304,920
5 UBS Group AG	1,577,847	18,158,853	659,199	17,499,654
6 Fresenius Medical Care AG & Co.	197,214	16,900,519	613,519	16,287,000
7 Novartis AG	172,050	14,965,290	543,267	14,422,024
8 CIE Financiere Richemont SA	228,526	14,576,657	529,159	14,047,498
9 ASML Holding NV	37,324	13,703,795	497,472	13,206,323
10 Sanofi	133,889	13,631,714	494,856	13,136,858
Total		<u>\$ 182,264,369</u>	<u>\$ 6,616,525</u>	<u>\$ 175,647,845</u>

*By market value. Totals may not add due to rounding.

SCHEDULE OF BROKERAGE COMMISSIONS (for the year ended June 30, 2020)

Brokerage Firm	Number of Shares Traded	Total Commission	Commission Per Share	ASPRS	APERS
J.P. Morgan Securities, NY	8,899,443	\$ 169,058	\$ 0.02	\$ 6,137	\$ 162,921
Citigroup Global Markets Inc., NY	4,687,125	139,185	0.03	5,053	134,133
Morgan Stanley & Co. Inc., NY	5,706,792	118,404	0.02	4,298	114,106
Credit Suisse, New York	12,754,516	115,395	0.01	4,189	111,205
Merrill Lynch Pierce Fenner Smith Inc., NY	8,098,964	103,003	0.01	3,739	99,264
Goldman Sachs & Co., NY	7,498,877	99,942	0.01	3,628	96,314
UBS Securities LLC, Stamford	4,225,891	71,009	0.02	2,578	68,431
Sanford Bernstein & Co., NY	4,359,207	70,328	0.02	2,553	67,775
Jefferies & Co. Inc., NY	4,080,380	61,240	0.02	2,223	59,017
Liquidnet Inc., NY	2,817,937	54,752	0.02	1,988	52,764
Barclays Capital Inc., New Jersey	2,058,863	51,309	0.02	1,863	49,447
Investment Tech Group Inc., NY	3,047,562	49,747	0.02	1,806	47,941
Piper Jaffray & Co., Jersey City	2,036,770	49,186	0.02	1,786	47,400
RBC Capital Markets LLC	3,718,228	47,513	0.01	1,725	45,788
Instinet Clearing Services Inc., NY	2,910,369	47,028	0.02	1,707	45,321
BMO Capital Markets, NY	1,356,038	42,939	0.03	1,559	41,381
Knight Equity Markets LP, NY	1,806,142	42,374	0.02	1,538	40,835
SG Securities	1,942,482	37,155	0.02	1,349	35,806
William Blair & Co., Chicago	1,172,598	35,202	0.03	1,278	33,924
ISI Group, NY	1,258,227	33,763	0.03	1,226	32,538
Robert W. Baird & Co. Inc., Milwaukee	968,186	32,900	0.03	1,194	31,705
Pershing Securities, LTD	2,808,924	28,616	0.01	1,039	27,577
MacQuarie Securities	2,517,416	27,316	0.01	992	26,325
National Financial Services Corp., NY	1,146,303	26,246	0.02	953	25,293
Wells Fargo Securities LLC	871,007	26,151	0.03	949	25,201
Others (including 95 brokerage firms)	26,789,428	430,984	0.02	15,646	415,339
	<u>119,537,675</u>	<u>\$ 2,010,746</u>		<u>\$ 72,994</u>	<u>\$ 1,937,752</u>

Totals may not add due to rounding.

SCHEDULE OF INVESTMENT FEES (for the year ended June 30, 2020)

Investment Category	Market Value	Fee	Basis Points	ASPRS		APERS		
				Market Value	Fee	Market Value	Fee	
Domestic Equity								
MCM S&P 500 Index Fund	\$ 292,325,246	\$ 60,072	0.02	\$ 10,611,933	\$ 2,181	\$ 281,713,314	\$ 57,892	
LSV Asset Management	196,177,983	1,282,200	0.65	7,121,614	46,546	189,056,369	1,235,654	
CastleArk Management	662,166,664	1,854,751	0.28	24,037,842	67,331	638,128,822	1,787,420	
Golden Capital Management	219,966,493	471,725	0.21	7,985,180	17,124	211,981,313	454,601	
INTECH	592,661,269	1,987,206	0.34	21,514,671	72,139	571,146,598	1,915,067	
Wellington Management Co.	402,828,210	1,260,600	0.31	14,623,389	45,762	388,204,821	1,214,838	
Lazard Asset Management	386,109,165	1,144,007	0.30	14,016,458	41,530	372,092,708	1,102,478	
SSI Investment Management	351,447,432	1,263,052	0.36	12,758,174	45,851	338,689,258	1,217,201	
Horrell Capital Management	132,022,663	218,987	0.17	4,792,660	7,950	127,230,003	211,038	
Stephens Inv. Management Group	397,286,460	2,299,661	0.58	14,422,214	83,482	382,864,247	2,216,179	
	\$ 3,632,991,587	\$ 11,842,261		\$ 131,884,134	\$ 429,895	\$3,501,107,453	\$ 11,412,366	
International Equity								
Mellon ACWI ex-US Fund	\$ 758,289,684	\$ 429,821	0.06	\$ 27,527,280	\$ 15,603	\$ 730,762,403	\$ 414,218	
Lazard Asset Management	454,065,772	1,499,235	0.33	16,483,405	54,425	437,582,367	1,444,810	
Artisan Partners	425,212,019	2,385,773	0.56	15,435,962	86,608	409,776,058	2,299,165	
Baillie Gifford	527,752,854	1,919,290	0.36	19,158,379	69,674	508,594,475	1,849,616	
*# Manning & Napier	286,869	0	0.00	10,414	0	276,455	0	
	\$ 2,165,607,198	\$ 6,234,119		\$ 78,615,439	\$ 226,310	\$2,086,991,759	\$ 6,007,809	
Fixed Income								
Doubleline Capital	\$ 479,486,950	\$ 839,661	0.18	\$ 17,406,239	\$ 30,481	\$ 462,080,710	\$ 809,180	
MacKay Shields CP II	526,102,200	1,004,628	0.19	19,098,457	36,470	507,003,743	968,158	
Prudential Investments	544,934,658	1,046,089	0.19	19,782,109	37,975	525,152,549	1,008,114	
	\$ 1,550,523,807	\$ 2,890,378		\$ 56,286,805	\$ 104,926	\$1,494,237,002	\$ 2,785,452	
Real Assets								
INVESCO Real Estate	\$ 472,768,790	\$ 1,646,000	0.35	\$ 17,162,358	\$ 59,753	\$ 455,606,432	\$ 1,586,247	
MCM REIT Index Fund	100,568,746	65,827	0.07	3,650,827	2,390	96,917,920	63,437	
+ TA Associates Realty Fund X	3,395,491	435,029	12.81	123,262	15,792	3,272,229	419,237	
+ TA Associates Realty Fund XI	50,116,492	1,384,384	2.76	1,819,319	50,256	48,297,173	1,334,128	
++ TA Associates Realty Fund XII	6,070,844	573,333	9.44	220,383	20,813	5,850,461	552,520	
CastleArk Mgmt. Global Energy Fnd	33,132,705	375,798	1.13	1,202,777	13,642	31,929,928	362,156	
CastleArk Mgmt. Global Energy Plus	101,038,651	1,264,818	1.25	3,667,885	45,915	97,370,766	1,218,903	
Pinnacle Forest Investments	84,695,862	781,151	0.92	3,074,612	28,357	81,621,250	752,794	
Heitman Real Estate Trust LP	299,929,972	2,176,754	0.73	10,887,998	79,020	289,041,974	2,097,734	
+ Heitman Value Partners	33,680,993	300,578	0.89	1,222,681	10,912	32,458,312	289,666	
+ LaSalle Inc & Growth VI LP	10,112,583	91,445	0.90	367,105	3,320	9,745,478	88,126	
+ LaSalle Inc & Growth VII LP	35,505,269	465,317	1.31	1,288,905	16,892	34,216,364	448,425	
	\$ 1,231,016,399	\$ 9,560,433		\$ 44,688,111	\$ 347,061	\$1,186,328,287	\$ 9,213,372	
Diversified Strategies								
AQR Capital	\$ 136,877,838	\$ 950,007	0.69	\$ 4,968,912	\$ 34,487	\$ 131,908,926	\$ 915,520	
Blackstone Hedge	183,287,628	1,842,729	1.01	6,653,671	66,894	176,633,957	1,775,834	
Newton Capital	125,121,572	752,991	0.60	4,542,138	27,335	120,579,433	725,656	
	\$ 445,287,037	\$ 3,545,726		\$ 16,164,721	\$ 128,716	\$ 429,122,316	\$ 3,417,010	
Other Investment Service Fees								
Bank of New York Mellon (Custodian)		\$ 516,386			\$ 18,746		\$ 497,640	
Callan Associates (Consultant)		313,128			11,367		301,761	
Total Investment Service Fees		\$ 34,902,432			\$ 1,267,021		\$33,635,411	

* Terminated manager / # terminated strategy / + management fee is base fee plus performance fee / ++ management fee accrued, new account to be funded.



Actuary's Certification Letter
Summary of Actuarial Assumptions
Single Life Retirement Values
Separations from Active Employment
Before Retirement
Probabilities of Retirement for Members
Eligible to Retire
Active Members in Actuarial Valuation
Tier One and Tier Two Participants
Short Condition Test
Derivation of Experience Gain/(Loss)
Gains and Losses by Risk Area

This Page Intentionally Left Blank

ACTUARY'S CERTIFICATION LETTER

800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

November 30, 2020

Board of Trustees
Arkansas State Police Retirement System
Little Rock, Arkansas

Dear Board Members:

The basic financial objective of the Arkansas State Police Retirement System (ASPRS) as provided in the Arkansas Code is to establish and receive contributions which, expressed as percents of active member payroll, will remain approximately level from generation to generation of Arkansas citizens and when combined with present assets and future investment return will be sufficient to meet the financial obligations of ASPRS to present and future benefit recipients. The progress towards meeting this financial objective is illustrated in the Schedule of Funding Progress and the Schedule of Employer Contributions.

We performed an actuarial valuation and issued an actuarial valuation report for ASPRS as of June 30, 2020. The purpose of the June 30, 2020 annual actuarial valuation was to determine the contribution requirement for the fiscal year ending June 30, 2021 and to measure the System's funding progress. The actuarial valuation report should not be relied upon for any other purpose. The valuation process develops contribution rates that are sufficient to fund the plan's normal cost (i.e., the cost 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 period of up to thirty years. The most recent valuations were completed based upon population data, asset data, and plan provisions as of June 30, 2020. In addition, a separate report was issued (dated November 20, 2020) to provide actuarial information for GASB Statement No. 67 and GASB Statement No. 68.

The ASPRS 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. We are not responsible for the accuracy or completeness of the data provided by staff.

The actuarial valuation report and GASB Statement Nos. 67 and 68 report contain the following supporting schedules for use in the Actuarial and Financial Sections of the Comprehensive Annual Financial Report:

Actuarial Section

- Summary of Assumptions Used
- Summary of Actuarial Methods and Assumptions
- Active Member Valuation Data
- Short Condition Test
- Analysis of Financial Experience
- Analysis of Financial Experience – Gains and Losses by Risk Area

Board of Trustees
November 30, 2020
Page 2

Financial Section

- Schedule of Funding Progress
- Schedule of Changes in Net Pension Liability and Related Ratios
- Schedule of the Net Pension Liability
- Schedule of Contributions
- Notes to Schedule of Contributions

For actuarial 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.

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 the Actuarial Standards of Practice. 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 June 30, 2020 valuations were based upon assumptions that were recommended in connection with a study of experience covering the period 2012-2017. The investment return assumption was changed for the June 30, 2017 valuation and the demographic assumptions were changed for the June 30, 2018 valuation.

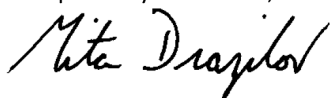
The computed employer contribution rate to satisfy the statutory funding requirements set forth in Section 24-6-209 of the Arkansas Code is 49.85% of covered payroll for the year beginning July 1, 2020. Actual revenues were greater than the statutory requirement for the last 10 years. *ASPRS' on-going ability to satisfy statutory funding requirements is dependent upon its access to sufficient annual transfers from the remainder of insurance premium taxes enumerated in A.C.A.19-6-301(27) to finance unfunded actuarial accrued liabilities over a closed period of 19 years.*

Future actuarial measurements may differ significantly from those presented in the annual valuations due to such factors as experience differing from that anticipated by actuarial assumptions, or changes in plan provisions, actuarial assumption/methods or applicable law. Due to the limited scope of the assignment, we did not perform an analysis of the potential range of future measurements.

The signing individuals are independent of the plan sponsor.

Mita D. Drazilov and Heidi G. Barry are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

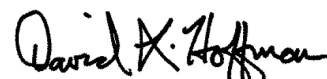
Respectfully submitted,



Mita D. Drazilov, ASA, FCA, MAAA



Heidi G. Barry, ASA, FCA, MAAA



David L. Hoffman



SUMMARY OF ACTUARIAL ASSUMPTIONS*

Economic Assumptions

The investment return rate used in making the valuation was 7.15% per year, compounded annually (net after investment expenses). The assumed real rate of return is the portion of investment return which is more than the wage inflation rate. Considering assumed wage inflation of 3.25%, the 7.15% investment return rate translates to an effective assumed real rate of return of 3.90%. The wage inflation assumption was revised for the June 30, 2015 valuation and the investment return assumption was revised for the June 30, 2017 valuation.

Pay increase assumptions for individual active members are shown on page D-5. Part of the assumption for each age is for a merit and/or seniority increase, and the other 3.25% recognizes wage inflation. The wage inflation assumption consists of 2.5% for price inflation and 0.75% for real wage growth. The pay increase assumption for individual active members was revised for the June 30, 2018 valuation.

Total active member payroll is assumed to increase 3.25% a year, which is the portion of the individual pay increase assumptions recognizing wage inflation.

The number of active members is assumed to continue at the present number.

Non-Economic Assumptions

The mortality tables used to measure retired life mortality were the RP-2006 Healthy Annuitant benefit weighted generational mortality tables for males and females. The disability post-retirement mortality tables used were the RP-2006 Disabled Retiree benefit weighted generational mortality tables for males and females. The death-in-service mortality tables used were the RP-2006 Employee benefit weighted generational mortality tables for males and females. Mortality rates are multiplied by 135% for males and 125% for females and are adjusted for fully generational mortality improvements using Scale MP-2017. This assumption was first used for the June 30, 2018 valuation.

The probabilities of retirement for members eligible to retire are shown on page D-4. The assumption was revised for the June 30, 2018 valuation.

The probabilities of death-in-service, disability and withdrawal from service are shown for sample ages on page D-5. The assumption for death-in-service was revised for the June 30, 2018 valuation.

The individual entry-age normal actuarial cost method of the valuation was used in determining liabilities and normal cost.

Differences in the past between assumed experience and actual experience ("actuarial gains and losses") become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce contribution amounts (principal and interest) which are level percent-of-payroll contributions.

*The data referenced in this section is taken from the actuary's report, *Arkansas Public Employees Retirement System Actuarial Valuation and Experience Gain/(Loss) Analysis June 30, 2020*, prepared by Gabriel Roeder Smith & Co. A PDF copy of the report is available for download at www.apers.org.

Present assets (cash & investments) were valued on a market related basis in which differences between actual and assumed returns are phased-in over a four-year period.

The data about persons now covered and about present assets was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA).

SUPPLEMENTARY INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest valuation date follows:

Valuation Date	June 30, 2020
Actuarial Cost Method	Entry Age Normal Cost
Amortization Method	Level Percent-of-Payroll
Remaining Amortization Period	19-Year Closed
Asset Valuation Method	4-Year Smoothed Market
Actuarial Assumptions:	
Investment Rate of Return	7.15%
Projected Salary Increases	3.55% - 7.75%
Including Wage Inflation at	3.25%
Cost-of-Living Adjustments	3.0% Annual Compound Increases
Retirees and Beneficiaries Receiving Benefits	687
Terminated Plan Members Entitled to But Not Yet Receiving Benefits	108
DROP Members	59
Active Plan Members	482
Total	1,336

SINGLE LIFE RETIREMENT VALUES

Sample Attained Ages	Present Value of \$1.00 Monthly for Life		Present Value of \$1.00 Monthly for Life Increasing 3% Annually		Future Life Expectancy (Years) 2020*	
	Men	Women	Men	Women	Men	Women
40	\$ 156.04	\$ 159.90	\$ 229.33	\$ 239.04	41.05 yrs.	44.75 yrs.
45	150.92	155.90	216.34	227.64	36.15	39.77
50	144.42	150.52	201.40	214.01	31.39	34.85
55	136.40	143.37	184.56	197.93	26.82	30.01
60	126.59	134.42	165.79	179.69	22.45	25.36
65	114.88	123.53	145.33	159.53	18.36	20.96
70	101.09	110.25	123.32	137.25	14.55	16.80
75	85.16	94.51	100.11	113.27	11.06	12.94
80	67.86	76.97	76.92	88.85	8.00	9.52
85	\$ 50.77	\$ 59.12	\$ 55.66	\$ 65.87	5.48 yrs.	6.66 yrs.

Sample Attained Ages	Benefit Increasing 3.0% Yearly
55	\$ 100.00
60	115.93
65	134.39
70	155.79
75	180.60
80	\$ 209.36

*Applicable to calendar year 2020. Life expectancies and rates in future years are determined by the fully generational MP-2017 projection scale.

SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE RETIREMENT

(as of June 30, 2020)

Sample Ages	Percentage of Active Members Separating Within the Next Year				Pay Increase Assumptions For An Individual Employee		
	Death				Merit & Seniority	Base (Economic)	Increase Next Year
	Men	Women	Disability	Other			
20	0.05%	0.02%	0.06%	5.50%	4.50%	3.25%	7.75%
25	0.07	0.02	0.09	5.50	3.90	3.25	7.15
30	0.07	0.03	0.19	5.50	2.90	3.25	6.15
35	0.08	0.04	0.31	4.18	1.90	3.25	5.15
40	0.09	0.06	0.43	2.64	1.38	3.25	4.63
45	0.13	0.08	0.55	1.43	1.10	3.25	4.35
50	0.22	0.13	0.67	0.55	0.80	3.25	4.05
55	0.37%	0.22%	0.79%	0.00%	0.60%	3.25%	3.85%

PROBABILITIES OF RETIREMENT FOR MEMBERS ELIGIBLE TO RETIRE

(as of June 30, 2020)

Retirement Ages	Percentage of Eligible Active Members Retiring Within Next Year		Years of Service	Percentage of Eligible Active Members Retiring Within Next Year
	Tier One	Tier Two		Tier Two
47	1%			
48	1			
49	1			
50	6	1%	30	25%
51	6	1	31	15
52	8	1	32	15
53	8	6	33	20
54	8	6	34	35
55	10	25	35	40
56	10	20	36 & Over	100%
57	10	18		
58	25	18		
59	40	20		
60	50	25		
61	60	30		
62	80	100		
63	80	100		
64	100	100		
65	100%	100%		

A member is assumed to be eligible to retire at age 52 (55 for Tier Two) with 17 years of service, or at any age with 30 years of service (Tier Two). A member is assumed to be eligible to retire early at age 47 (50 for Tier 2) with 17 years of service. For a Tier 2 member with 30 or more years of service at the beginning of a year, the percentages shown for service based retirement (30 or more years) take precedence over the percentages associated with age based retirement.

It was assumed that members eligible to enter the DROP will do so to maximize the value of their benefits.

ACTIVE MEMBERS IN ACTUARIAL VALUATION

(for fiscal years ended June 30, 2020)

June 30	Number*	Group Averages		
		Age	Service	Pay
2011	530	42.0	14.4	\$ 52,950
2012	534	41.6	13.9	53,236
2013	525	41.6	13.9	53,344
2014	530	41.6	13.9	53,866
2015	558	41.0	13.0	53,637
2016	554	40.9	13.1	53,156
2017	528	41.7	13.8	55,070
2018	528	41.4	12.7	56,048
2019	529	41.0	12.5	57,255
2020	541	40.9	12.5	\$ 61,573

*includes DROP participants.

TIER ONE AND TIER TWO PARTICIPANTS

(as of June 30, 2020)

Plan	Number	Group Averages		
		Age	Service	Pay
Tier One	25	51.1	23.0	\$ 81,436
Tier Two	457	38.3	9.8	58,002
Tier One - DROP	58	56.5	28.4	80,953
Tier Two - DROP	1	55.6	31.3	73,170
Total	541	40.9	12.5	\$ 61,573

SHORT CONDITION TEST

The ASPRS funding objective is to meet long-term benefit promises 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 — the ultimate test of financial soundness. Testing for level contribution rates is the long-term test.

A short condition test is one means of checking a system's progress under its funding program. In a short condition test, the system's present assets (cash and investments) are compared with

1. Member accumulated contributions;
2. The liabilities for future benefits to present retired lives; and
3. The employer financed portion of liabilities for service already rendered by non-retired members.

In a system that has been following the discipline of level percent-of-payroll financing, active member contributions (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by valuation assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (liability 3) will be partially covered by the remainder of valuation assets. The larger the funded portion of liability 3, the stronger the condition of the system.

Ten-Year Comparative Statement (for fiscal years ended June 30)

Valuation Date: June 30	Entry Age Accrued Liability			Valuation Assets	Portion of Present Values Covered By Present Assets			
	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)	Total
2011	\$ 0.28	\$ 205.40	\$ 137.53	\$ 208.05	100%	100%	2%	61%
2012	0.31	217.64	137.35	215.01	100	99	0	61
2013@	0.53	227.80	133.13	233.15	100	100	4	65
2014@	0.50	237.17	144.19	259.46	100	100	15	68
2015*	0.37	252.79	145.80	274.83	100	100	15	69
2016	0.57	260.49	147.68	297.91	100	100	19	71
2017@	0.57	273.86	154.62	305.85	100	100	20	71
2018	0.62	284.61	157.70	319.79	100	100	22	72
2019	0.57	296.12	157.93	335.97	100	100	25	74
2020	0.65	301.96	169.31	352.08	100	100	29	75
2020#	\$ 0.65	\$ 301.96	\$ 170.31	\$ 352.08	100%	100%	29%	74%

@ After changes in actuarial assumptions and/or methods.

After legislated changes in benefit provisions.

* (1) was estimated based on reported member contribution balances on data received by the actuary from ASPRS.

DERIVATION OF EXPERIENCE (GAIN/LOSS)

Actual experience will not (except by coincidence) coincide exactly with assumed experience. Gains and losses often cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain/loss is shown below.

During the Fiscal Year Ended June 30, 2020	Total (dollars in thousands)
1. UAAL* at Beginning of Year	\$ 118,646
2. Normal Cost from Last Valuation	\$ 6,818
3. Employer Contributions	\$ 21,873
4. Interest Accrual: $(1) \times 0.0715 + ((2) - (3)) \times 0.03575$	\$ 7,945
5. Expected UAAL Before Changes: $(1) + (2) - (3) + (4)$	\$ 111,535
6. Changes for Revised Actuarial Assumptions and/or Valuation Methods	\$ 0
7. Change from Benefit Changes	\$ 998
8. Expected UAAL After Changes: $(5) + (6) + (7) + (8)$	\$ 112,533
9. Actual UAAL at End of Year	\$ 120,837
10. Gain/loss: $(8) - (9)$	\$ (8,305)
11. Gain/loss as Percentage of Actuarial Accrued (1.8%) Liabilities at Start of Year	(1.8)%

* Unfunded actuarial accrued liability.

GAINS/LOSSES BY RISK AREA (for the fiscal year ended June 30, 2020)

Type of Risk Area	Gain/Loss in Period	
	Total (\$ in millions)	% of Accrued Liabilities
Economic Risk Areas		
Pay Increases: If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	\$ (4.1)	(0.9)%
Investment Return: If there is greater recognized investment return than assumed, there is a gain. If less return, a loss.	(1.4)	(0.3)
Non-Economic Risk Areas		
Age & Service Retirements: If members retire at older ages or with lower final average pays than assumed, there is a gain. If they retire at younger ages or higher average pays, a loss.	0.3	0.1
Disability Retirements: If there are fewer disabilities than assumed, there is a gain. If more, a loss.	0.1	0.0
Death-in-Service Benefits: If there are fewer claims than assumed, there is a gain. If more, a loss.	(0.3)	(0.1)
Withdrawal: If more liabilities are released by other separations than assumed, there is a gain. If smaller releases, a loss.	(0.2)	0.0
Actuarial Gains/(Losses)	<u>\$ (5.6)</u>	<u>(1.2)</u>
Other (gains and losses resulting from group size change, data adjustments, timing of financial transactions, and retiree mortality)	<u>(2.7)</u>	<u>(0.6)</u>
Total Actuarial Gains/Losses	<u>\$ (8.3)</u>	<u>(1.8)%</u>



Schedule of Revenues by Source

Schedule of Expenses by Type

Schedule of Benefit Expenses by Type

Schedule of Retired Members by Type of Benefit

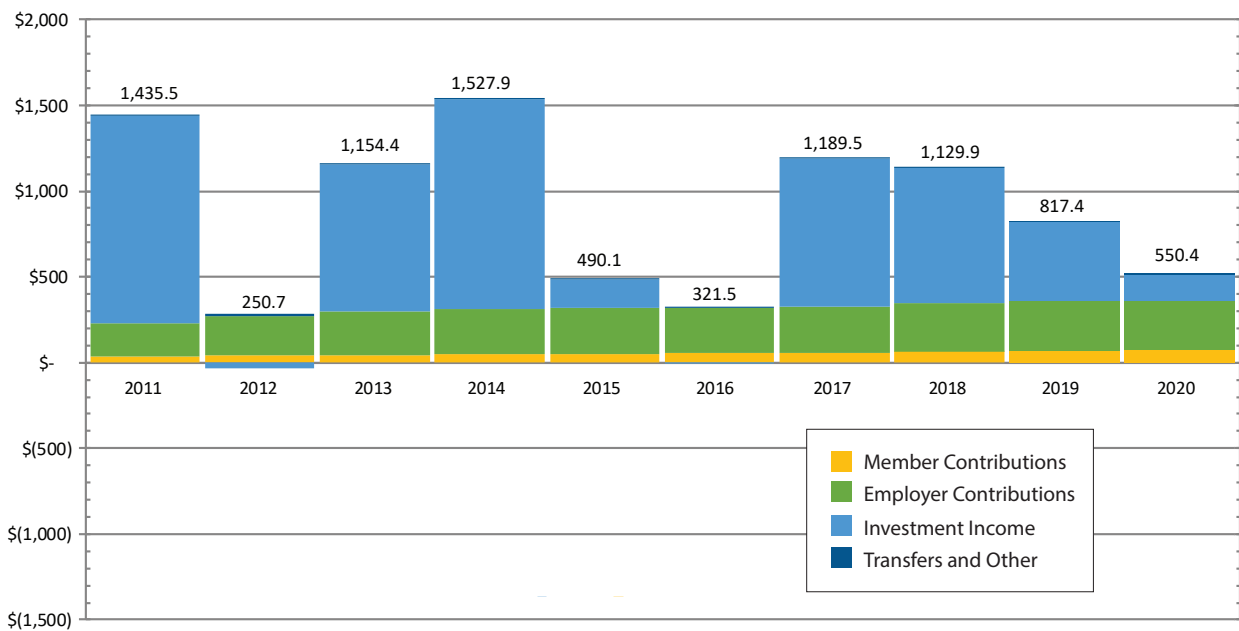
Statistical Graphs: Membership

This Page Intentionally Left Blank

SCHEDULE OF REVENUES BY SOURCE (for fiscal years ended June 30)

	Employer Contributions	Court & Driver's License Reinst. Fees	Insurance Premium Tax	Motor Vehicle Title Fees	Investment Income	Other Income	Total
2011	\$ 11,434,257	\$ 2,675,335	\$ 5,232,634	\$ 0	\$ 43,395,542	\$ 18,470	\$ 57,523,604
2012	6,525,196	2,525,594	6,250,117	4,246,637	(1,302,063)	118,334	18,363,815
2013	6,183,721	2,111,570	6,697,200	4,356,659	30,531,555	124,067	50,004,772
2014	6,405,887	2,657,952	5,957,541	4,442,806	43,307,745	37,499	62,809,430
2015	6,409,752	2,234,350	6,574,376	4,565,652	6,131,684	94,820	26,010,634
2016	6,581,580	2,206,082	6,233,769	4,661,683	(210,045)	30,181	19,503,250
2017	6,416,736	2,139,475	6,693,915	4,667,895	31,484,250	43,045	51,445,316
2018	6,515,063	2,580,695	7,109,703	4,664,315	28,823,333	133,871	49,826,982
2019	6,727,409	1,864,132	8,035,962	4,598,976	17,031,466	27,532	38,285,476
2020	\$ 7,205,047	\$ 2,114,797	\$ 7,705,096	\$ 4,754,635	\$ 6,700,847	\$ 93,849	\$ 28,574,271

Chart of Revenues for Fiscal Years Ended June 30

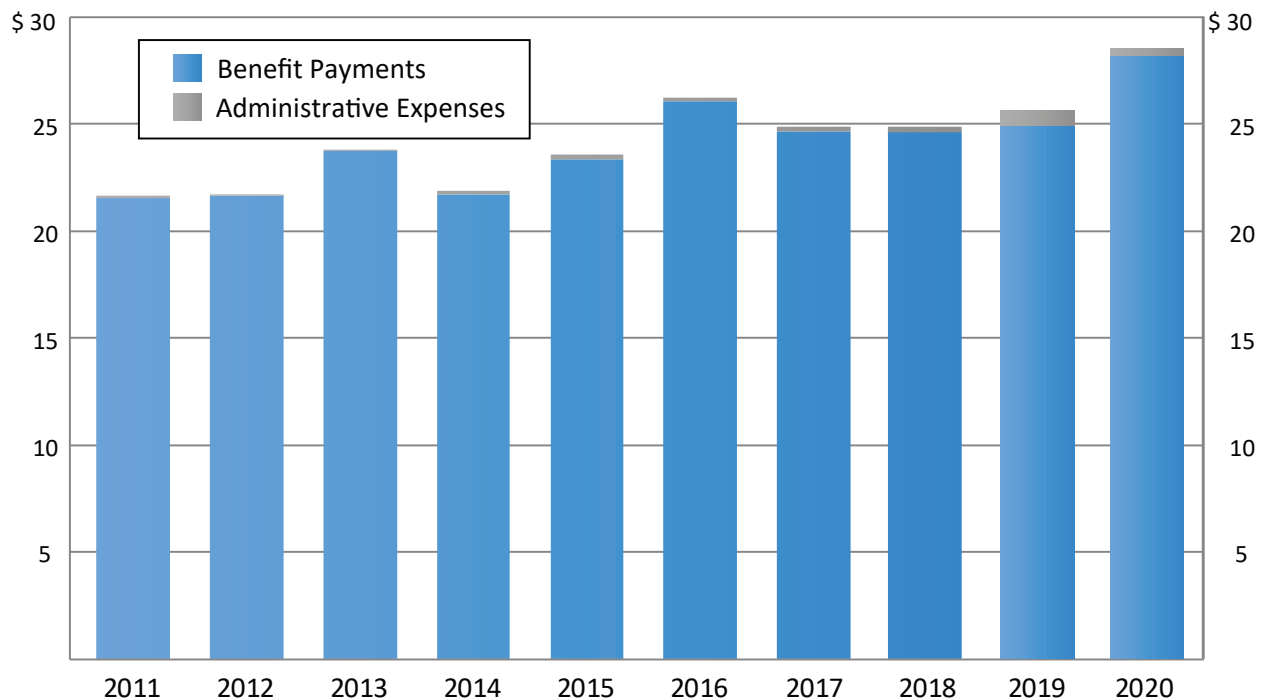


SCHEDULE OF EXPENSES BY TYPE (for fiscal years ended June 30)

Year Ended June 30	Benefit Payments*	Administrative Expenses	Total
2011	\$ 21,560,127	\$ 83,234	\$ 21,643,361
2012	21,649,158	80,842	21,730,000
2013	23,717,503	97,181	23,814,684
2014	21,688,239	189,658	21,877,896
2015	23,358,801	196,231	23,555,032
2016	26,035,466	205,342	26,240,808
2017	24,631,787	208,424	24,840,211
2018	24,185,419	228,430	24,413,849
2019	24,930,274	554,441	25,484,715
2020	\$ 27,934,142	\$ 195,463	\$ 28,129,605

*Includes DROP and PAW distribution.

Chart of Expenses by Type for the Fiscal Year Ended June 30, 2020



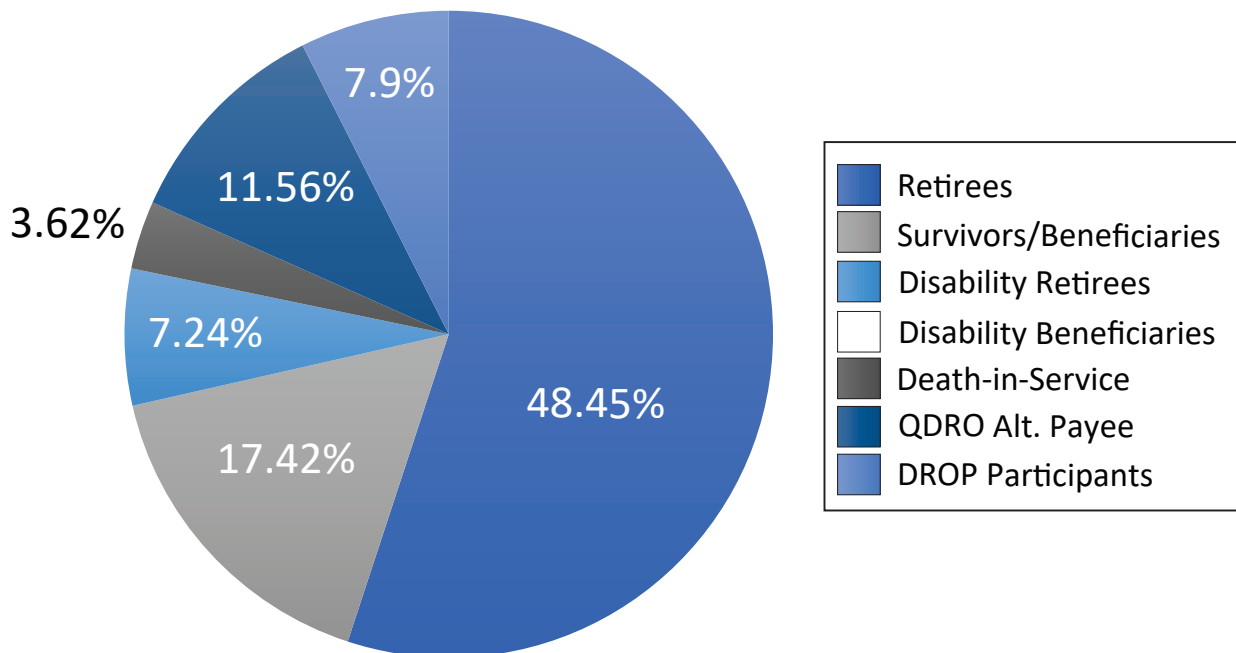
SCHEDULE OF BENEFIT EXPENSES BY TYPE* (for fiscal years ended June 30)

	Age and Service		Disability		Death in Service**	QDRO Alternative Payees	DROP Participants
	Retirees	Beneficiaries	Retirees	Beneficiaries**			
2011	\$ 14,905,638	\$ 1,708,748	\$ 20,302,152	\$	\$ 93,024		\$
2012	16,106,010	1,803,169	21,950,568		91,092		
2013	16,901,590	1,950,945	26,158,872		93,828		
2014	17,368,858	2,034,215	27,648,624		74,640		
2015	17,963,207	2,325,900	1,016,556	13,944	76,872	471,880	3,126,156
2016	18,805,319	2,355,686	1,064,772	14,364	79,188	532,792	3,434,940
2017	18,769,461	2,320,702	1,350,504	7,140	491,004	607,318	3,281,616
2018	19,037,338	2,702,300	1,400,784	7,368	508,092	634,167	3,630,132
2019	19,922,625	2,942,626	1,413,720	0	510,120	637,202	3,334,908
2020	\$ 20,318,260	\$ 3,229,236	\$ 1,442,208	\$ 0	\$ 527,664	\$ 687,097	\$ 3,477,012

*Expenses are based on annualized June 30 benefits amounts.

**Prior to 2015, disability beneficiaries were reported in the same category as death-in-service beneficiaries.

Percentage of Benefit Expenses by Type for the Fiscal Year Ended June 30, 2020

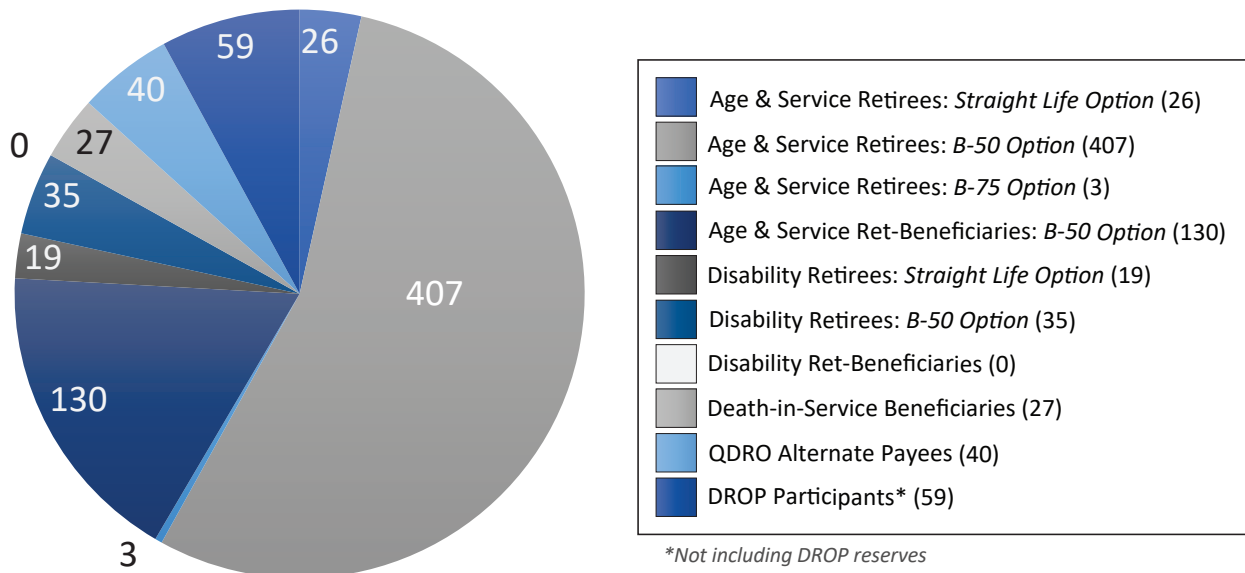


SCHEDULE OF RETIRED MEMBERS BY TYPE OF BENEFIT

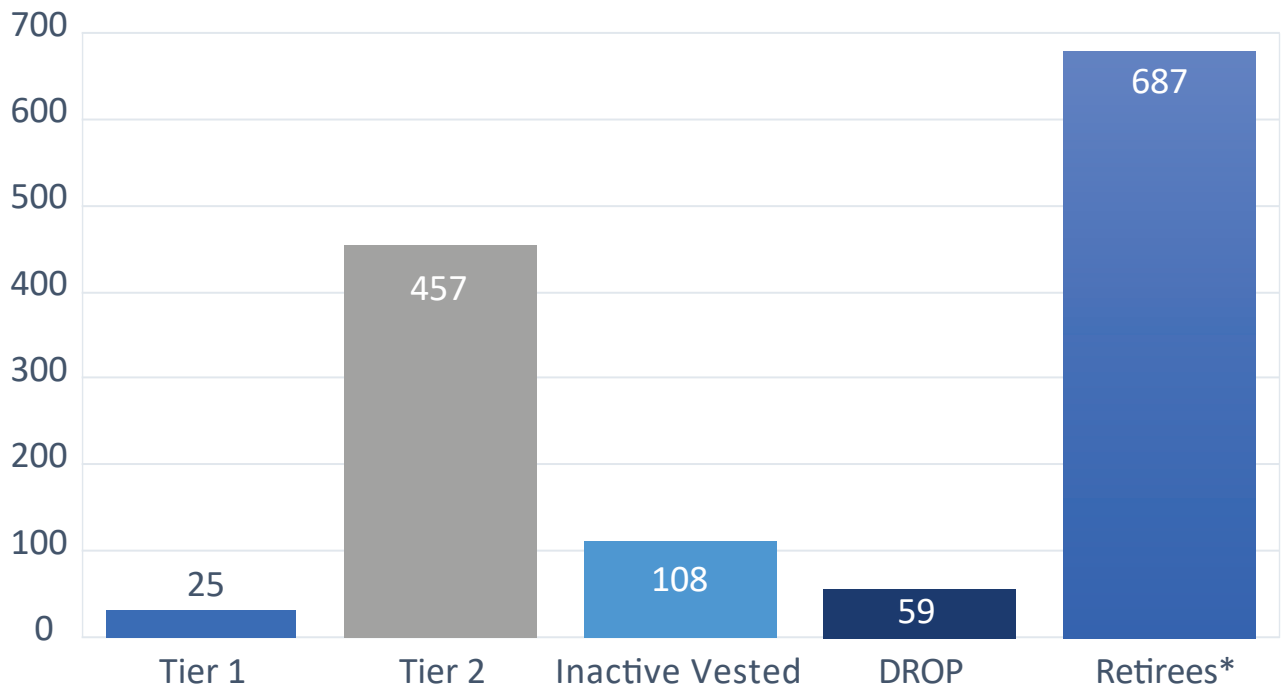
(for fiscal year ended June 30)

Type of Benefit Being Paid	Number	Annual Pensions	Actuarial Accrued Liability
Age & Service Retirees			
Life	26	\$ 654,600	\$ 9,094,694
B-50	407	19,644,328	233,260,324
B-75	3	19,332	286,726
Totals	436	20,318,260	242,641,744
Beneficiaries of Age & Service Retirees			
B-50	130	3,229,236	28,101,877
Total Age & Service Retirees	566	23,547,496	270,743,621
Disability Retirees			
Life	19	376,632	4,596,283
B-50	35	1,065,576	12,399,793
Total Disability Retirees	54	1,442,208	16,996,076
Beneficiaries of Disability Retirees	0	0	0
Total Disability Retirees & Beneficiaries	54	1,442,208	16,996,076
Death-in-Service Beneficiaries	27	527,664	5,508,082
QDRO Alternate Payees	40	687,097	8,710,014
Total Retirees & Beneficiaries	687	26,204,465	301,957,793
DROP Participants (excluding DROP reserve)	59	3,477,012	55,801,239
Total Retirees, Beneficiaries and DROP Participants	746	\$ 29,681,477	\$ 357,759,032

Chart of Retired Members by Type of Benefit (for the fiscal year ended June 30, 2020)



STATISTICAL GRAPHS: MEMBERSHIP



**Including Disability Recipients and Death-in-Service Beneficiaries*

124 West Capitol Ave., Suite 400
Little Rock, AR 72201
www.apers.org/asprs