

**PUBLIC EMPLOYEES' RETIREMENT SYSTEM
OF NEVADA**

**A COMPONENT UNIT of
the STATE of NEVADA**

COMPREHENSIVE ANNUAL FINANCIAL REPORT



**For the Fiscal Year Ended
June 30, 2019**

PUBLIC EMPLOYEES' RETIREMENT SYSTEM OF NEVADA

**A COMPONENT UNIT of
the STATE of NEVADA**

COMPREHENSIVE ANNUAL FINANCIAL REPORT

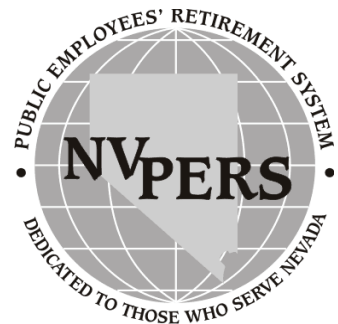
**For the Fiscal Year Ended
June 30, 2019**

**Tina Leiss
Executive Officer**

693 West Nye Lane
Carson City, Nevada 89703
(775) 687-4200

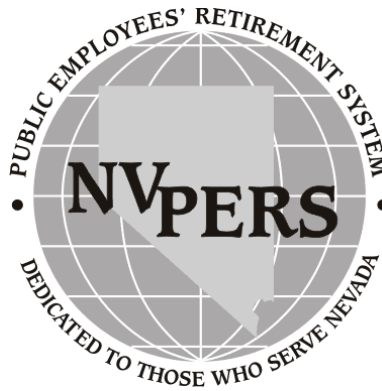
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Prepared by PERS Staff

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MISSION STATEMENT

It is the mission of the Public Employees' Retirement System to:

- ◆ Provide public workers and their dependents with a retirement program that provides a reasonable base income for retirement or for periods where a disability has removed a worker's earning capacity.
- ◆ Encourage those workers to enter into and remain in government service for such periods of time to give public employers and the people of the State of Nevada the full benefit of their training and experience.
- ◆ Provide an orderly method of promoting and maintaining a high level of service to the public through an equitable separation procedure available to employees at retirement or upon becoming disabled.

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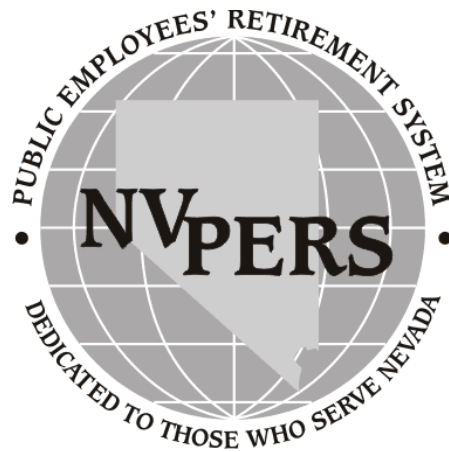
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INTRODUCTORY SECTION

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Retirement Board

Timothy M. Ross
Chair
Yolanda T. King
Vice Chair

Dawn E. Huckaby
Todd H. Ingalsbee
Mark Stevens
Brian A. Wallace



Executive Staff

Tina Leiss
Executive Officer

Timothy Coyne
Operations Officer

Steve Edmundson
Investment Officer

December 9, 2019

Dear Chair and Members of the Board:

It is a pleasure to present the Comprehensive Annual Financial Report (CAFR) of the Public Employees' Retirement System of Nevada (System or PERS), a component unit of the State of Nevada, for the fiscal year ended June 30, 2019.

The financial statements included in this report are the responsibility of the System's management and have been prepared in accordance with generally accepted accounting principles as promulgated or adopted by the Governmental Accounting Standards Board (GASB). In management's opinion, the financial statements present fairly the fiduciary net position of the System at June 30, 2019, and changes in fiduciary net position for the year then ended.

The System was established by the Nevada Legislature in 1947. By July 1, 1949, the System had approximately 3,000 members and 64 retirees. At the end of fiscal year 2019, the System had 212 participating employers, 109,167 active members, and 70,056 benefit recipients. The System is comprised of two sub-funds, Regular, consisting of members who are not police or fire employees, and Police and Firefighters (Police/Fire). The Regular sub-fund was established to provide retirement, disability, and survivor benefits for public employees with the exception of those who are police officers or firefighters. The Police/Fire sub-fund was established to segregate accounting for retirement and survivor benefits related to members who are police officers or firefighters. All services provided by staff are performed in order to meet those objectives. For more specific information on plan provisions, please refer to the Plan Summary, beginning on page 131.

Included in the Financial Section of this CAFR, beginning on page 24, is Management's Discussion and Analysis (MD&A). Users of the financial statements are encouraged to review the MD&A, which contains a statement overview, highlights for the year, and a short analysis of the financial statements comparing the current and previous year.

We hope that you and the members of the System will find this CAFR helpful in understanding your public employees' retirement system.

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INTRODUCTORY SECTION

Major Initiatives

Legislation

The Nevada Legislature convenes on a biennial basis in odd-numbered years. During the interim between legislative sessions, PERS worked with legislative staff on pension-related issues. Following the 2019 legislative session, the Public Employees' Retirement Board (Retirement Board or Board) continues to review the System's Official Policies and make necessary modifications to ensure compliance with applicable law.

The Board's adopted legislative agenda for the 2019 session was successful overall. Two bills with a direct impact on the Retirement Act passed and were signed during the 2019 legislative session. Senate Bill 224 clarifies which records and information concerning members and beneficiaries are confidential. Senate Bill 416 removed the adoption penalty for the minor child survivor benefits.

System Governance

The System's existing governance principles, policies, and charters define the role of the Retirement Board and executive management, guide the conduct and decision-making of the Retirement Board, and document and preserve the System's policies.

Managing the funding issue internally to PERS is paramount to overall success of the System. Contribution rate stability and responsible funding are key goals of the System. The System continually reviews trends in actuarial liabilities and maintains a realistic recognition of plan costs in order to govern the plan in a fiscally sound manner. Staff will work to manage expectations of stakeholders and other interested parties on funding issues and contribution rates through continued public relations outreach and education regarding the financing and management of the System.

A positive, open working relationship promotes sound fiduciary administration of the trust. All parties work together for the exclusive benefit of the members and beneficiaries of the System and Board governance practices promote this directive. Adhering to the responsibilities of the charters for the Board, Board Chair, and Executive Officer lay the framework for success, defining the objectives of each. Executive staff keeps Board members abreast of issues affecting the System both in the State and on a national level. Communication is designed to be helpful, organized and not overwhelming to assist the Board in the discharge of fiduciary duties by ensuring pertinent information is delivered in a timely and coherent fashion.

The System shall maintain effective internal controls over financial reporting and observe the highest standards in financial reporting. Staff will continue to diligently monitor and update internal controls as necessary as well as continue to evaluate enterprise-wide risk through an assessment process. The System will continue to maintain the standards necessary to receive the Public Pension Coordinating Council award in recognition of meeting professional standards for plan design and administration as set forth in the Public Pension Standards, the Government Finance Officers Award (GFOA) for excellence in financial reporting for the Comprehensive Annual Financial Report, and the Government Finance Officers Award (GFOA) for excellence in financial reporting for the Popular Annual Financial Report.

Information Technology

The IT department is dedicated to maintaining an efficient pension management system that can provide for all operational needs. Technology efforts are driven by business goals as well as statutory and pension fund industry mandates. During the last fiscal year, the System started the process for a new pension administration system. A project manager and data conditioning vendor were retained to assist with this project. The Board and legislature approved the PERS budget including this project for the 2019-2021 biennium. The Request for Proposal process is anticipated to be completed in fiscal year 2020 and the selected vendor is anticipated to begin work in fiscal year 2020 as well.

Strategic Planning

Annually, PERS' executive staff reviews the System's strategic plan for updates, including both additions and deletions. The Strategic Plan covers a five-year period and is updated annually by the Executive Officer in consultation with the Board. Strategic Plan revisions are prepared in conjunction with the Operational Yearly Plan and management plans for the individual departments. The Operational Yearly Plan supports the Strategic Plan by setting forth the business plan for the System for the year.

Summary of Financial Information

The System's management is responsible for maintaining internal controls designed to provide reasonable assurance that transactions are executed according to management's authorization, recorded to maintain accountability for assets, and to allow the preparation of financial statements in accordance with generally accepted accounting principles. The internal controls include written policies and procedures and are reviewed periodically by the System's internal audit staff and independent auditors.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Because the cost of the control should not exceed the benefits to be derived, the objective is to provide reasonable, rather than absolute assurance, that the financial statements are free of any material misstatements. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk. We believe our internal control structure considers these risks and that we maintain a system of internal controls designed to provide reasonable assurance that assets are properly safeguarded, transactions are properly executed, and financial statements are reliable. The valuation of costs and benefits requires estimates and judgments by management.

INTRODUCTORY SECTION

The Retirement Act requires a biennial financial audit of the System by a certified public accountant. The Board chooses to conduct such audits on an annual basis, rather than biennially, to ensure the System's financial statements are fairly presented, in all material respects, in accordance with generally accepted accounting principles. The System is also required by statute to submit a biennial budget proposal to the Budget Division of the State of Nevada, which must be incorporated with the State Executive Budget and approved by the Nevada Legislature.

The following schedule is a summary of the pension trust funds' additions and deductions for the years ended June 30:

| | 2019 | 2018 |
|------------------------|------------------|------------------|
| Additions | \$ 5,500,355,708 | \$ 5,210,274,352 |
| Deductions | 2,647,789,977 | 2,464,840,908 |
| Change in net position | \$ 2,852,565,731 | \$ 2,745,433,444 |

Additions increased approximately \$290.1 million compared to fiscal year 2018, due primarily to an increase in the net investment income and an increase in contributions. Deductions increased by \$182.9 million between 2018 and 2019 due to increases in benefit payouts and refunds of contributions.

Funding

The System's basic funding policy provides for periodic contributions at a level pattern of cost as a percentage of salary throughout an employee's working lifetime in order to accumulate sufficient assets to pay benefits when due. Although the System receives an annual actuarial valuation indicating the contribution rates required to fund the System on an actuarial reserve basis, contributions actually made are in accordance with the rates derived from the actuarial rates and then rounded according to statute.

The actuarial funding method used is the Entry Age Normal Cost Method. This method is used to calculate liabilities using a year-by-year closed amortization period where each amortization period is set at 20 years, in addition to using other significant actuarial assumptions detailed beginning on page 88. Plan rates in effect for fiscal year ended June 30, 2019, are presented on page 36 in the Financial Section of this report. In addition, Required Supplementary Information on pages 48-50 show changes in employers' net pension liability, related ratios, and ten-year schedules of employer contributions and the money-weighted rate of return on investments. The ten-year schedules of funding progress are on page 97 of the Actuarial Section. The actuarial funded ratio for all members is 75.3% in 2019, an increase from 75.1% in fiscal year 2018.

Investments

Investment performance plays an important role in the System's ability to provide retirement benefits to its members. The Board's investment philosophy centers on time tested investment principles and efficient, cost-effective portfolio management.

The investment portfolio is designed to meet the funding objectives of the System while taking the least possible risk. Investment of the System's assets is governed by the prudent person standard. This standard states that the Board may invest the System's funds in every type of investment which persons of prudence, discretion, and intelligence acquire or retain for their own account.

The System's investment portfolio is well diversified by asset class, investment structure, and individual security. In fact, the System's portfolio currently holds over 1,700 individual securities from 23 different countries. The Board uses these portfolio components to maintain strict control of the fund's risk/return profile.

Asset allocation is the most significant factor influencing the risk and return of the investment program. Since inception, more than 90% of the System's investment performance is explained by asset allocation. Determination of the fund's long-term asset allocation involves estimating the expected return and risk of major types of investments and blending them into a portfolio which meets the System's risk/return objectives.

The fair value of the System's investment assets at the end of fiscal year 2019 was \$43.8 billion. The portfolio return objective includes a premium over the Consumer Price Index (CPI). The System's investment return objective over calculated CPI in fiscal year 2019 was 6.4%. The System's total return (gross of fees) on investments for that same time period was 8.5%, which includes both realized and unrealized gains. Fiscal year 2019 investment performance was primarily driven by strong returns from U.S. stocks, private market assets and U.S. Treasury bonds, which were bolstered by declining interest rates.

The fund's annualized rate of return (gross of fees) is 9.4% since inception (35 years) exceeding the long-term actuarial funding objective. The fund is competitive on a risk-adjusted basis, ranking in the top 10% of large public funds for that same time frame. The investment section, beginning on page 63, addresses specific activity and results in the portfolio.

GFOA Certificate of Achievement

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the System for its comprehensive annual financial report for the fiscal year ended June 30, 2018 (see page 17). This was the 29th consecutive year the System achieved this prestigious award.

In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current report continues to meet the Certificate of Achievement Program requirements and are submitting it to the GFOA for consideration again this year.

PPCC Award

The Public Pension Coordinating Council awarded the Public Pension Standards Award to the System for the fiscal year ended June 30, 2019 (see page 18). The award is designed to commend public employee retirement systems for implementing and maintaining high professional standards. PERS has received the award every year it has been offered.

INTRODUCTORY SECTION

Professional Services

Professional consultants are hired to perform services essential to the efficient operation of the System. The Independent Auditor's Report, Consultant's Report of Investment Activity, and the actuary's certifications are included in this report. The System's consultants are listed on pages 15 and 64.

Acknowledgements

This report reflects the combined effort of the System's administrative staff. It is intended to provide both complete and reliable information as a basis for making management decisions, determining compliance with legal provisions, and determining the responsible stewardship of assets contributed by the members and their employers.

I would like to express my appreciation to the staff, consultants, Board, and other associates whose efforts ensured the successful operation of the System in 2019.

Respectfully submitted,



Tina Leiss
Executive Officer

ADMINISTRATIVE PERSONNEL
Current

PUBLIC EMPLOYEES' RETIREMENT BOARD

| | | |
|-------------------|------------|------|
| Timothy Ross | Chair | 2022 |
| Yolanda T. King | Vice Chair | 2021 |
| Dawn E. Huckaby | Member | 2022 |
| Todd H. Ingalsbee | Member | 2023 |
| Mark Stevens | Member | 2023 |
| Brian A. Wallace | Member | 2021 |
| Vacant | Member | 2021 |

Terms expire on June 30 of year noted.

RETIREMENT STAFF

| | |
|---------------------|-------------------------|
| Tina Leiss | Executive Officer |
| Steve Edmundson | Investment Officer |
| Timothy Coyne | Operations Officer |
| Lauren Larson | Chief Financial Officer |
| Christopher Nielsen | General Counsel |
| Kabrina Feser | Administrative Analyst |

Division Supervisors:

| | |
|------------------|---|
| John Van Horn | Accounting |
| Sonya Hellwinkel | Employer, Production & Pension Services |
| Charlie Park | Information Technology |
| Vacant | Internal Audit |
| Teresa Chalmers | Member & Retiree Services |
| Walter Zeron | Support Services |

MEDICAL ADVISORS

Robert Fliegler, M.D., Carson City, Nevada
Kathy Stoner, RN, CCM, Minden, Nevada

POLICE AND FIREFIGHTERS' RETIREMENT FUND ADVISORY COMMITTEE

| | | |
|----------------|---------------|------|
| Brian Wolfgram | Chairman | 2020 |
| Bill Ames | Vice Chairman | 2020 |
| Mike Ramirez | Member | 2022 |
| Scott Vivier | Member | 2023 |
| Jennifer Wyatt | Member | 2023 |

Terms expire on June 30 of year noted.

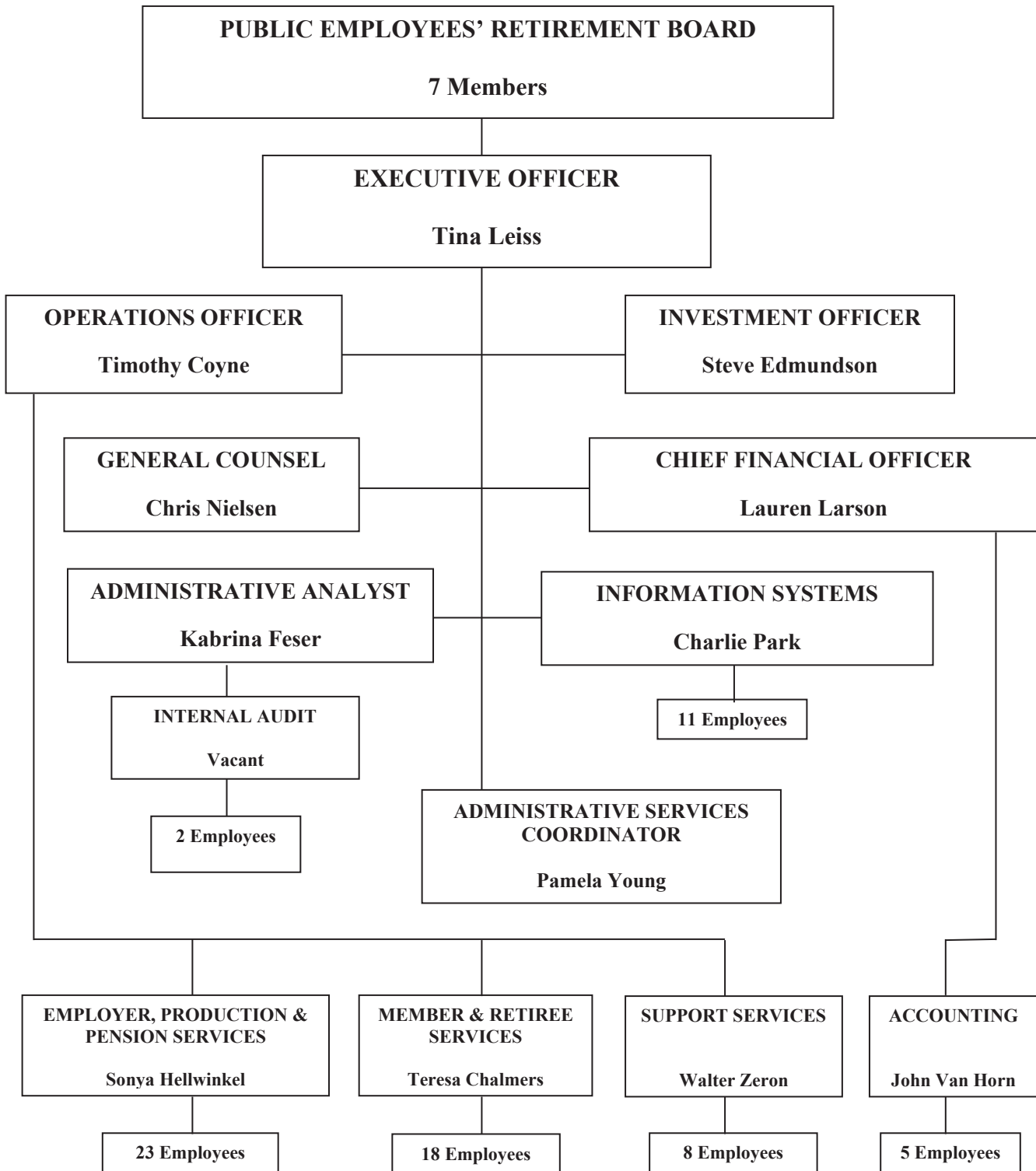
THE SYSTEM'S ADVISORS

Consulting Actuary – Segal Consulting, San Francisco, California
Independent Auditors – Macias Gini & O'Connell LLP, Sacramento, California
Investment Consultants – Callan Associates, San Francisco, California
Jobs Peak Advisors, Minden, Nevada

Note: A list of investment professionals who provide services to PERS can be found on page 64. A schedule of fees and commissions paid to investment professionals can be found beginning on page 77.

ORGANIZATIONAL CHART

Current





Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
Reporting

Presented to

**Public Employees' Retirement System
of Nevada**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2018

Christopher P. Morill

Executive Director/CEO



Public Pension Coordinating Council

***Public Pension Standards Award
For Funding and Administration
2019***

Presented to

Public Employees' Retirement System of Nevada

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

A handwritten signature in cursive script that reads "Alan H. Winkle".

Alan H. Winkle
Program Administrator



FINANCIAL SECTION

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Independent Auditor's Report

Public Employees' Retirement Board
of the State of Nevada
Carson City, Nevada

Report on the Financial Statements

We have audited the accompanying financial statements of the Public Employees' Retirement System of Nevada (the System), a component unit of the State of Nevada, as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

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

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

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the System as of June 30, 2019, and the changes in its fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 7 to the financial statements, the total pension liability for the System, based on the actuarial valuation as of June 30, 2019, exceeded the System's fiduciary net position by \$13.6 billion. The actuarial valuation is very sensitive to the underlying assumptions, including a discount rate of 7.50 percent, which represents the long-term expected rate of return. Our opinion is not modified with respect to this matter.

Other Matters

Prior-Year Comparative Information

The financial statements include partial prior-year comparative information. Such information does not include all of the information required to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the System's financial statements for the year ended June 30, 2018, from which such partial information was derived.

We have previously audited the System's 2018 financial statements, and we expressed an unmodified audit opinion on the financial statements in our report dated December 4, 2018. In our opinion, the partial comparative information presented herein as of and for the year ended June 30, 2018, is consistent, in all material respects, with the audited financial statements from which it has been derived.

Required Supplementary Information

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

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The other supplementary information, as listed in the table of contents, and the introductory, investment, actuarial, statistical and plan summary sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The other supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

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

Macias Gini & O'Connell LLP

Sacramento, California

December 9, 2019

MANAGEMENT'S DISCUSSION AND ANALYSIS

This Management's Discussion and Analysis (MD&A) of the financial performance of the Public Employees' Retirement System of Nevada (System or PERS) provides an overview of the System's financial activities for the fiscal year ended June 30, 2019. The MD&A is designed to focus on comparative analysis of the last two years, current year's activities, resulting changes, and currently known facts. Readers are encouraged to consider the information presented in conjunction with the financial statements as a whole, which follow the MD&A.

The System is responsible for administering retirement, disability, and survivor benefits for Regular members (consisting of employees within the State of Nevada and local governments which include schools, counties, cities, special districts, etc.) as well as Police/Fire members throughout the state.

Overview of Basic Financial Statements

The basic financial statements consist of: (1) the Statement of Fiduciary Net Position, (2) the Statement of Changes in Fiduciary Net Position, and (3) the Notes to the Financial Statements. Required Supplementary Information and Other Supplementary Information are also presented.

The **Statement of Fiduciary Net Position** includes all of the System's pension trust fund assets, liabilities, and the net position at the end of the fiscal year.

The **Statement of Changes in Fiduciary Net Position** reports additions to and deductions from the pension trust fund during the fiscal year presented. Over time the increase or decrease in net position serves as a useful indicator of the health of the System's financial position.

The **Notes to the Financial Statements** provide additional information that is required by generally accepted accounting principles.

The **Required Supplementary Information** following the notes to the financial statements consists of schedules and related notes pertaining to changes in employers' net pension liability, employers' contributions, investment returns, and actuarial assumptions. These schedules are intended to provide additional information useful in evaluating the condition of the defined benefit pension plan.

Other Supplementary Information details administrative expenses, investment expenses, consultant and professional service expenses, in addition to Schedules of Fiduciary Net Position and Changes in Fiduciary Net Position broken down between Regular and Police/Fire members.

MANAGEMENT'S DISCUSSION AND ANALYSIS

Financial Highlights

As of and for the Years Ended June 30
(in millions)

| | 2019 | 2018 |
|---|-------------|-------------|
| Total investments | \$ 43,815.8 | \$ 40,908.7 |
| Net investment income | 3,468.1 | 3,273.9 |
| Contributions | 2,029.4 | 1,934.1 |
| Benefit payments | 2,601.8 | 2,420.0 |
| Refunds of contributions | 34.0 | 31.4 |
| Transfers of contributions | 0.2 | 0.5 |
| Administrative expenses | 11.8 | 12.9 |
| Plan fiduciary net position | \$ 44,284.3 | \$ 41,431.7 |
| Plan fiduciary net position as % of total pension liability | 76.5% | 75.2% |

Total pension liability as of June 30, 2019, was \$57,920,215,973.

Financial Analysis

The fair value of investments for fiscal year 2019 increased by 7.1% to \$43,815.8 million from \$40,908.7 million in 2018. Investment income for 2019 was \$3,468.1 million. The PERS investment program returned 8.5% in fiscal year 2019. The 9.4% annualized return since inception (35 years) exceeds the actuarial objective.

FINANCIAL SECTION

MANAGEMENT'S DISCUSSION AND ANALYSIS

The following are summary comparative statements of the System.

CONDENSED STATEMENT OF FIDUCIARY NET POSITION

| | <u>As of</u> <u>June 30, 2019</u> | <u>As of</u> <u>June 30, 2018</u> | <u>Increase/ (Decrease)</u> <u>from 2018</u> <u>to 2019</u> | <u>Percentage</u> <u>Increase/ (Decrease)</u> <u>from 2018</u> <u>to 2019</u> |
|--|--------------------------------------|--------------------------------------|---|--|
| Cash and cash equivalents | \$ 164,703,626 | \$ 211,016,287 | \$ (46,312,661) | (21.9) % |
| Receivables | 324,553,152 | 309,760,447 | 14,792,705 | 4.8 |
| Pending trades receivable | 309,517,700 | 263,654,290 | 45,863,410 | 17.4 |
| Investments, at fair value | 43,815,798,592 | 40,908,739,776 | 2,907,058,816 | 7.1 |
| Collateral on loaned securities, at fair value | 253,210,571 | 293,807,533 | (40,596,962) | (13.8) |
| Property and equipment, net | 3,902,671 | 4,522,492 | (619,821) | (13.7) |
| Other assets | 3,532,311 | 3,396,862 | 135,449 | 4.0 |
| Total assets | <u>44,875,218,623</u> | <u>41,994,897,687</u> | <u>2,880,320,936</u> | 6.9 |
| Accounts payable and accrued expenses | 16,989,448 | 16,228,413 | 761,035 | 4.7 |
| Pending trades payable | 320,766,021 | 253,174,889 | 67,591,132 | 26.7 |
| Obligations under securities lending activities | 253,210,571 | 293,807,533 | (40,596,962) | (13.8) |
| Total liabilities | <u>590,966,040</u> | <u>563,210,835</u> | <u>27,755,205</u> | 4.9 |
| Net position restricted for pension benefits | \$ <u>44,284,252,583</u> | \$ <u>41,431,686,852</u> | \$ <u>2,852,565,731</u> | 6.9 % |

Pending trades receivable and payable increased 17.4% and 26.7%, respectively, between 2018 and 2019. Pending trades fluctuate from year to year and are unpredictable.

Investments at fair value increased \$2.9 billion and the investment income increased \$194 million from 2018 to 2019 primarily due to the 8.5% (gross of fees) investment return generated in 2019. The 2019 investment return exceeded the 7.5% assumed rate of return primarily due to strong performance in U.S. stocks and private markets. Since inception (1984) the System has generated an annualized return of 9.4% (gross of fees).

MANAGEMENT’S DISCUSSION AND ANALYSIS

**CONDENSED STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
For the Years Ended June 30,**

| | <u>2019</u> | <u>2018</u> | <u>Increase/ (Decrease) from 2018 to 2019</u> | <u>Percentage Increase/ (Decrease) from 2018 to 2019</u> |
|---------------------------------|--------------------------|--------------------------|---|--|
| Contributions | \$ 2,029,395,070 | \$ 1,934,096,658 | \$ 95,298,412 | 4.9 % |
| Net investment income | 3,468,148,453 | 3,273,869,453 | 194,279,000 | 5.9 |
| Other income | 2,812,185 | 2,308,241 | 503,944 | 21.8 |
| Total additions | <u>5,500,355,708</u> | <u>5,210,274,352</u> | <u>290,081,356</u> | 5.6 |
| Benefit payments | 2,601,770,272 | 2,420,013,618 | 181,756,654 | 7.5 |
| Refunds of contributions | 33,987,510 | 31,366,228 | 2,621,282 | 8.4 |
| Transfer of contributions | 219,889 | 515,342 | (295,453) | (57.3) |
| Administrative expenses | 11,812,306 | 12,867,447 | (1,055,141) | (8.2) |
| Other expenses | - | 78,273 | (78,273) | N/A |
| Total deductions | <u>2,647,789,977</u> | <u>2,464,840,908</u> | <u>182,949,069</u> | 7.4 |
| Change in net position | 2,852,565,731 | 2,745,433,444 | 107,132,287 | |
| Net position, beginning of year | <u>41,431,686,852</u> | <u>38,686,253,408</u> | <u>2,745,433,444</u> | 7.1 |
| Net position, end of year | <u>\$ 44,284,252,583</u> | <u>\$ 41,431,686,852</u> | <u>\$ 2,852,565,731</u> | 6.9 % |

Contributions increased between 2018 and 2019 by 4.9%. This is primarily due to the number of active members contributing to the System increasing while contribution rates remained the same.

Benefit payments increased 7.5% in 2019. This increase is primarily attributed to post retirement increases and the number of beneficiaries increasing from 67,108 to 70,056.

Refunds of contributions increased 8.4% and transfers of contributions decreased 57.3% in 2019. These numbers are unpredictable each year and depend on individual elections made by active and inactive members.

Administrative expenses decreased 8.2% in 2019 primarily due to lower IT expenditures. The System is evaluating a new Pension Administration System and has suspended major expenditures on the current system.

Contacting the System’s Financial Management

This financial report is designed to provide plan participants, employers, citizens, taxpayers, and others with a general overview of the System’s finances and to demonstrate the Board’s oversight of the System. If you have questions about this report or need additional financial information, please contact PERS at 775-687-4200.

FINANCIAL SECTION**STATEMENT OF FIDUCIARY NET POSITION**

June 30, 2019

(With Comparative Totals for June 30, 2018)

| ASSETS | 2019 | 2018 |
|---|--------------------------|--------------------------|
| Cash and cash equivalents | \$ 164,703,626 | \$ 211,016,287 |
| Receivables: | | |
| Contributions receivable | 157,566,599 | 166,424,654 |
| Pending trades receivable | 309,517,700 | 263,654,290 |
| Accrued investment income | 166,986,553 | 143,335,793 |
| Total receivables | <u>634,070,852</u> | <u>573,414,737</u> |
| Investments, at fair value: | | |
| U.S. bonds | 11,086,165,411 | 11,916,868,196 |
| U.S. stocks | 19,486,990,092 | 17,292,074,389 |
| International stocks | 8,847,721,742 | 7,927,633,948 |
| Real estate | 2,018,660,096 | 1,808,733,104 |
| Private equity | 2,376,261,251 | 1,963,430,139 |
| Total investments | <u>43,815,798,592</u> | <u>40,908,739,776</u> |
| Collateral on loaned securities, at fair value | 253,210,571 | 293,807,533 |
| Property and equipment | 45,584,887 | 44,964,024 |
| Accumulated depreciation | (41,682,216) | (40,441,532) |
| Net property and equipment | <u>3,902,671</u> | <u>4,522,492</u> |
| Other assets | <u>3,532,311</u> | <u>3,396,862</u> |
| Total plan assets | <u>44,875,218,623</u> | <u>41,994,897,687</u> |
| LIABILITIES | | |
| Accounts payable and accrued expenses | 16,989,448 | 16,228,413 |
| Pending trades payable | 320,766,021 | 253,174,889 |
| Obligations under securities lending activities | 253,210,571 | 293,807,533 |
| Total plan liabilities | <u>590,966,040</u> | <u>563,210,835</u> |
| NET POSITION | | |
| Net position restricted for pension benefits | \$ <u>44,284,252,583</u> | \$ <u>41,431,686,852</u> |

The accompanying notes are an integral part of these financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

For the Year Ended June 30, 2019

(With Comparative Totals For the Year Ended June 30, 2018)

| | 2019 | 2018 |
|--|-------------------|-------------------|
| ADDITIONS | | |
| Contributions: | | |
| Employer | \$ 965,518,968 | \$ 930,269,427 |
| Plan members | 965,518,968 | 930,269,427 |
| Repayment and purchase of service | 98,357,134 | 73,557,804 |
| Total contributions | 2,029,395,070 | 1,934,096,658 |
| Investment income: | | |
| Net appreciation in fair value of investments | 2,456,505,905 | 2,359,397,125 |
| Interest | 278,467,354 | 246,346,876 |
| Dividends | 657,360,468 | 595,172,224 |
| Other investment income | 124,740,975 | 117,458,561 |
| | 3,517,074,702 | 3,318,374,786 |
| Less investment fees and other expenses | (53,907,186) | (50,737,942) |
| Net investment income | 3,463,167,516 | 3,267,636,844 |
| Securities lending income | 10,912,854 | 13,024,469 |
| Less securities lending expense | (5,931,917) | (6,791,860) |
| Net securities lending income | 4,980,937 | 6,232,609 |
| Total net investment income | 3,468,148,453 | 3,273,869,453 |
| Other income | 2,812,185 | 2,308,241 |
| Total additions | 5,500,355,708 | 5,210,274,352 |
| DEDUCTIONS | | |
| Benefit payments: | | |
| Retirement and survivor benefits | 2,489,516,564 | 2,312,341,217 |
| Disability | 112,253,708 | 107,672,401 |
| Refunds of contributions | 33,987,510 | 31,366,228 |
| Transfers of contributions | 219,889 | 515,342 |
| Administrative expenses | 11,812,306 | 12,867,447 |
| Other expenses | - | 78,273 |
| Total deductions | 2,647,789,977 | 2,464,840,908 |
| Change in net position | 2,852,565,731 | 2,745,433,444 |
| Net position restricted for pension benefits: | | |
| Beginning of year | 41,431,686,852 | 38,686,253,408 |
| End of year | \$ 44,284,252,583 | \$ 41,431,686,852 |

The accompanying notes are an integral part of these financial statements.

NOTES TO FINANCIAL STATEMENTS

NOTE 1 – Summary of Significant Accounting Policies

Financial Reporting Entity

The Public Employees' Retirement Board (Retirement Board or Board) is the governing body of the Public Employees' Retirement System of Nevada (System or PERS) with responsibility for administration and management. This autonomous, seven-member Retirement Board is appointed by the Governor of the State of Nevada.

The System has no relationship with another entity that meets the criteria for inclusion as a component unit and has not included any other entity as a component unit of its financial reporting entity.

The System is classified as a component unit of the State of Nevada for financial reporting purposes in accordance with the provisions of the Governmental Accounting Standards Board (GASB) because the State Legislature retains certain significant governing powers over the System.

Basis of Accounting

The accompanying financial statements of the System have been prepared in conformity with generally accepted accounting principles (GAAP) in the United States of America.

The System uses the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded in the accounting period in which they are earned and become measurable. Per statute, employee and employer contributions are recognized in the reporting period for which they are due. Expenses are recorded when the corresponding liabilities are incurred, regardless of when payment is legally made. Benefits and refunds are recognized when currently due and payable in accordance with the terms of the plan.

Actuarially determined liabilities for retirement benefits are not recorded in the financial statements.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities as of the date of the financial statements, and the reported amounts of additions and deductions during the reported period. Actual results could differ from those estimates.

NOTES TO FINANCIAL STATEMENTSOrganization

The System is comprised of two sub-funds.

Regular sub-fund – Established to provide retirement, disability, and survivor benefits for public employees with the exception of those who are police officers or firefighters.

Police/Fire sub-fund – Established to segregate accounting for benefits related to members who are police officers or firefighters.

Assets of the System can legally be used to pay both Regular and Police/Fire beneficiaries.

Cash and Cash Equivalents

Cash and cash equivalents include both operating cash on deposit with the System's commercial bank and cash on deposit with the custodial bank. Cash on deposit at the System's custodial bank includes investments in Invesco Treasury Portfolio Short-Term Investments Trust. This fund invests in short-term, high credit quality money market instruments. These instruments are direct obligations of the U.S. Treasury and repurchase agreements backed by Treasury obligations.

Contributions Receivable

No allowance for doubtful accounts has been established since the System anticipates no material collection loss with respect to contribution receivables.

Benefit Payments

Benefits are paid during the month they are due; therefore, no benefit payable is recorded each month or at year-end.

Federal Income Tax

The System is a qualified pension plan under Section 401(a) of the Internal Revenue Code (IRC) and, as such, is required to withhold federal income tax from member and benefit recipient payments in accordance with the IRC. As a public entity, the System is not required to file a federal income tax return with the Internal Revenue Service.

Investments

The Regular sub-fund and the Police/Fire sub-fund are accounted for separately, based upon actual funds contributed and an allocation of the combined investment earnings. Individual investments are not specifically identified as belonging to either the Regular sub-fund or the Police/Fire sub-fund.

NOTES TO FINANCIAL STATEMENTS

Plan investments are reported at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. It is assumed that both buyer and seller are rational and have a reasonable knowledge of relevant facts. Securities traded on national or international exchanges are valued at the last reported sales price at current exchange rates. U.S. treasuries are valued based on observable market data. The fair value of real estate investments is established by an independent third party valuation firm in conjunction with Member Appraisal Institute (MAI) independent appraisals. For private equity partnership investments, estimated fair value is determined in good faith and provided by the general partner of the respective investment partnership, based on the most recent financial information available for the underlying companies at the measurement date adjusted for subsequent cash flow activities through June 30, 2019. In addition, each partnership undergoes an independent audit on an annual basis.

Investment purchases and sales are recorded as of the trade date. Dividend income is recognized on the ex-dividend date. Investment income is recognized as earned. Net change in the fair value of investments is determined by calculating the change in fair value of investments between the beginning of the fiscal year and the end of the fiscal year, less purchases of investments at cost, plus sales of investments at fair value.

There are certain market risks, credit risks, foreign exchange currency risks, or event risks which may subject the System to economic changes occurring in certain industries, sectors, or geographies.

Property and Equipment

Property and equipment consists of furniture, equipment, computer hardware, and software at cost net of accumulated depreciation. Assets are capitalized when the expected life is greater than one year and the initial cost is \$5,000 or more per unit. Intangible assets are capitalized for the development stage only (design, configuration, installation, and testing). Depreciation is calculated using straight-line depreciation method over five years. The term “depreciation” includes amortization of intangible assets.

Administrative Expenses

The funds for administering the System are provided by the assessment of an administrative fee for each member and benefit recipient. Monthly fees at June 30, 2019, were \$3.16 for each Regular member and benefit recipient and \$3.37 for each Police/Fire member and benefit recipient. PERS is required by statute to submit a biennial budget proposal to the Budget Division of the State of Nevada, which must be incorporated with the State Executive Budget and approved by the Nevada Legislature.

Comparative Totals

The basic financial statements include a partial presentation of prior year comparative financial statements but not at the level of detail required for a presentation in conformity with the accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the System’s financial statements as of and for the year ended June 30, 2018, from which the partial information was derived.

NOTES TO FINANCIAL STATEMENTS

NOTE 2 – Plan Description

History and Purpose

PERS administers a cost-sharing, multiple-employer, defined benefit public employees’ retirement system which includes both Regular and Police/Fire members. The System was established by the Nevada Legislature in 1947, effective July 1, 1948. The System is administered to provide a reasonable base income to qualified employees who have been employed by a public employer and whose earning capacities have been removed or substantially impaired by age or disability.

Membership

At June 30, 2019, the number of participating public employers and active members was:

| <u>Entity Type</u> | <u>Number of Employers</u> | <u>Number of Members</u> |
|---|--------------------------------|------------------------------|
| State of Nevada and Related Agencies | 23 | 18,646 |
| Nevada System of Higher Education | 1 | 3,853 |
| Schools | 65 | 49,916 |
| Counties | 16 | 12,990 |
| Cities | 19 | 9,416 |
| Hospitals | 9 | 4,286 |
| Utility, Irrigation, and Sanitation Districts | 18 | 875 |
| Special Districts and Agencies | <u>61</u> | <u>9,185</u> |
| | <u>212</u> | <u>109,167</u> |

A complete list of participating employers can be found in the Statistical Section.

FINANCIAL SECTION

NOTES TO FINANCIAL STATEMENTS

Any public employer in the State of Nevada may have its Regular or Police/Fire employees covered by the System. Retired, active, and inactive membership at June 30 was as follows:

| | <u>2019</u> |
|--|-----------------------|
| Regular retired members: | |
| Service retirees | 54,678 |
| Beneficiaries and survivors | <u>6,426</u> |
| | <u>61,104</u> |
| Police/Fire retired members: | |
| Service retirees | 7,788 |
| Beneficiaries and survivors | <u>1,164</u> |
| | <u>8,952</u> |
| Total benefit recipients | <u><u>70,056</u></u> |
| Inactive members entitled to but not yet receiving benefits: | |
| Regular | 16,409 |
| Police/Fire | <u>932</u> |
| Total inactive members | <u><u>17,341</u></u> |
| Active members: | |
| Regular | 96,072 |
| Police/Fire | <u>13,095</u> |
| Total active members | <u><u>109,167</u></u> |
| Total retired, active, and inactive membership | <u><u>196,564</u></u> |

Benefits

Benefits, as required by the Nevada Revised Statutes (NRS or statute), are determined by the number of years of accredited service at time of retirement and the member's highest average compensation in any 36 consecutive months with special provisions for plan members entering the System on or after January 1, 2010. Benefit payments to which participants or their beneficiaries may be entitled under the plan include pension benefits, disability benefits, and survivor benefits.

Monthly benefit allowances for members are computed at 2.5% of average compensation for each accredited year of service prior to July 1, 2001. For service earned on and after July 1, 2001, this multiplier is 2.67% of average compensation. For plan members entering the System on or after January 1, 2010, there is a 2.5% multiplier for all years of service. Regular plan members entering the System on or after July 1, 2015, have a 2.25% multiplier. The System offers several alternatives to the unmodified service retirement allowance which, in general, allow the retired employee to accept a reduced service retirement allowance payable monthly during his or her lifetime and various optional monthly payments to a named beneficiary after his or her death.

NOTES TO FINANCIAL STATEMENTS

Post-retirement increases are provided by authority of NRS 286.575–.579. See Plan Summary for details, beginning on page 131.

Vesting

Regular members are eligible for retirement at age 65 with five years of service, at age 60 with 10 years of service, or at any age with 30 years of service. Regular members entering the System on or after January 1, 2010, are eligible for retirement at age 65 with five years of service, or age 62 with 10 years of service, or any age with 30 years of service. Regular members entering the System on or after July 1, 2015, are eligible for retirement at age 65 with five years of service, at age 62 with 10 years of service, at age 55 with 30 years of service, and at any age with 33 1/3 years of service.

Police/Fire members are eligible for retirement at age 65 with five years of service, at age 55 with 10 years of service, at age 50 with 20 years of service, or at any age with 25 years of service. Police/Fire members entering the System on or after January 1, 2010, are eligible for retirement at age 65 with five years of service, or age 60 with 10 years of service, or age 50 with 20 years of service, or at any age with 30 years of service. Police/Fire members entering the System on or after July 1, 2015, are eligible for retirement at age 65 with five years of service, at age 60 with 10 years of service, at age 50 with 20 years of service, and at any age with 33 1/3 years of service. Only service performed in a position as a police officer or firefighter may be counted towards eligibility for retirement as Police/Fire accredited service.

The normal ceiling limitation on monthly benefit allowances is 75% of average compensation. However, a member who has an effective date of membership before July 1, 1985, is entitled to a benefit of up to 90% of average compensation. Both Regular and Police/Fire members become fully vested as to benefits upon completion of five years of service.

Plan Member Contributions

The authority for establishing and amending the obligation to make contributions, and member contribution rates, is set by statute. New hires, in agencies which did not elect the Employer-Pay Contribution (EPC) plan prior to July 1, 1983, have the option of selecting one of two contribution plans. One plan provides for matching employee and employer contributions, while the other plan provides for employer-pay contributions only. Under the matching Employee/Employer Contribution plan a member may, upon termination of service for which contribution is required, withdraw employee contributions which have been credited to their account. All membership rights and active service credit in the System are canceled upon withdrawal of contributions from the member's account. If EPC was elected, the member cannot convert to the Employee/Employer Contribution plan and cannot withdraw these contributions.

NOTE 3 – Contributions Required and Contributions Made

The System's basic funding policy provides for periodic contributions at a level pattern of cost as a percentage of salary throughout an employee's working lifetime in order to accumulate sufficient assets to pay benefits when due.

FINANCIAL SECTION

NOTES TO FINANCIAL STATEMENTS

Although the System receives an actuarial valuation on an annual basis indicating the contribution rates required to fund the System on an actuarial reserve basis, contributions actually made are in accordance with the required rates established by the Nevada Legislature. These statutory rates are increased/decreased pursuant to NRS 286.421 and 286.450.

The Public Employees' Retirement Act requires an adjustment in the statutory contribution rates on July 1 of each odd-numbered year, based on the actuarially determined rates indicated in the actuarial valuation report for the immediately preceding year. Rates are only adjusted upward if the new rates are more than 0.50% higher than the existing rate for Employer-Pay and more than 0.25% higher for Employee/Employer. Rates are only adjusted downward if the new rates are more than 2.00% lower than the existing rate for Employer-Pay (and adjusted only by the amount in excess of 2.00%) and more than 1.00% lower than the existing rate for Employee/Employer (and adjusted only by the amount in excess of 1.00%). Rates are rounded to the nearest 0.25% of payroll.

Rates in effect for the year ended June 30, 2019, were as follows:

| <u>Regular Employees</u> | <u>Actuarial Determined Rate*</u> | <u>Statutory Rate</u> |
|--|---------------------------------------|-----------------------|
| Employer-pay plan | 29.34% | 28.00% |
| Employee/employer plan (matching rate) | 15.30 | 14.50 |
| <u>Police/Fire Employees</u> | | |
| Employer-pay plan | 42.57% | 40.50% |
| Employee/employer plan (matching rate) | 21.97 | 20.75 |

*From June 30, 2018, actuarial valuation

Under the Employer-Pay provisions, the contributions made by employers on behalf of employees are not credited to the plan member's account and are not refunded upon termination; however, they are reported as plan member contributions. For employees covered by the Employer-Pay provisions, average compensation is increased by half the total contributions made by the public employer and may not be less than it would have been if contributions had been made by the plan member and the employer separately.

The Judicial Retirement System (JRS) was established in 2001 to provide benefits for the retirement, disability, or death of all justices of the Supreme Court and district judges. In fiscal year 2006 justices of the peace and municipal court judges began participating in JRS on a voluntary, employer-by-employer basis. Each participating individual who has service credit in PERS may transfer, subject to statutory time frames and requirements, to JRS. At the time of transfer all of the individual's contributions and the related liability to the System for that individual are moved from PERS to JRS. PERS transferred \$219,889 to JRS in the year ended June 30, 2019.

NOTES TO FINANCIAL STATEMENTS

NOTE 4 – Retirement Fund Contributions of PERS’ Employees

Administrative employees of PERS (as a participating employer) are plan members of the System. All participating public employers make contributions to the System at the same percentage of salary rate for Regular members as required by statute. Actuarially determined contribution requirements for administrative employees of the System are the same as all other employers within the System. Employer contributions for administrative employees were \$650,361 for the year ended June 30, 2019, and were paid for by the PERS Administration Fund.

NOTE 5 – Deposit and Investment Disclosures

The investments of the System are governed primarily by the “prudent person” standard. The prudent person standard, as set forth in NRS 286.682, authorizes the Board to invest the System’s funds in “every kind of investment which persons of prudence, discretion and intelligence acquire or retain for their own account.”

Investment Policy

The System’s policies* which determine the investment portfolio target asset allocation are established by the Board. The asset allocation is reviewed annually and is designed to meet the future risk and return needs of the System. The following was the Board adopted policy target asset allocation as of June 30, 2019:

| Asset Class | Target Allocation |
|----------------------|-------------------|
| U.S. stocks | 42% |
| International stocks | 18 |
| U.S. bonds | 28 |
| Private markets** | 12 |
| Total | 100% |

*The System’s current Investment Objectives and Policies may be found on the PERS website www.nvpers.org.

**As of June 30, 2019, the Private markets allocation includes 6% Private real estate and 6% Private equity.

Rate of Return

For the year ended June 30, 2019, the annual money-weighted return on pension plan investments was 8.45%. The money-weighted rate of return expresses investment performance adjusted for cash flows.

The majority of the System’s investments are held by the Depository Trust Company (DTC) in DTC’s nominee name, and trading is conducted through DTC’s book-entry system. The holder of record for the System is The Bank of New York Mellon.

NOTES TO FINANCIAL STATEMENTS

Custodial Credit Risk – Deposits

Custodial credit risk for deposits is the risk that, in the event of the failure of its depository financial institution, the System will not be able to recover its deposits.

At June 30, 2019, the carrying amount of the System's commercial cash deposits was \$6,759,347 and the commercial bank balance was \$13,280,932. Of the bank balance, \$250,000 was insured by the Federal Deposit Insurance Corporation (FDIC). The remaining commercial bank balance is, per a depository pledge agreement between the System and the System's commercial bank, collateralized at 102% of the collected funds on deposit (increased by the amount of accrued but uncredited interest, reduced by deposits covered by FDIC). These collateral securities are held by the System's agent in the System's name.

Custodial cash is swept nightly from the custodial bank to an overnight short-term investment fund held outside the bank. Funds arriving at the bank after the overnight sweep deadline are part of the custodial bank cash reserve and are covered up to the FDIC limit, any amount in the cash reserve in excess of this limit is subject to custodial credit risk. The custodial bank carries insurance covering destruction of cash or securities on or off premises with a limit of \$850,000,000 per occurrence.

Credit Risk – Investments

Credit risk for investments is the risk that an issuer or other counterparty will not fulfill its obligations to the System and *custodial credit risk for investments* is the risk that, in the event of the failure of the counterparty to a transaction, the System will not be able to recover the value of investment or collateral securities that are in the possession of an outside party.

System policies provide protection from undue investment credit risk by requiring the following:

- Investments in direct obligations of the U.S. Treasury including bills, bonds, and repurchase agreements secured by those obligations.
- U.S. Treasury money market mutual funds must be SEC registered 2a-7 and AAA rated by at least two of Moody's, Standard & Poor's, or Fitch and whose investment guidelines are substantially equivalent to and consistent with the System's overall short-term investment criteria.
- Short selling and the use of leverage is not permitted.

There is no credit risk assigned to U.S. Treasury securities as these are explicitly guaranteed by the U.S. Government. It is important to note, however, that the value of U.S. Treasury obligations fluctuate based on non-credit-related factors, such as interest-rate movements, which could cause future price declines despite government backing.

NOTES TO FINANCIAL STATEMENTS

Cash equivalents include \$124.8 million investment in Invesco Treasury Portfolio Short-Term Investments Trust, which is not rated. The System additionally holds \$11,086.1 million in U.S. treasury securities which are explicitly guaranteed by the U.S. Government.

Concentration of credit risk is the risk of loss that may be attributed to the magnitude of an investment in a single issuer. As of June 30, 2019, the PERS portfolio has no single issuer exposure that comprises 5% or more of the overall portfolio, excluding investments issued or explicitly guaranteed by the U.S. government. Also, the System does not have an investment in any single issuer that represents 5% or more of the fiduciary net position. Therefore, there is no concentration of credit risk.

Equity portfolios shall be suitably diversified to the extent that an adversity affecting a particular sector or issuer will not impact a disproportionate share of the investment manager portfolio.

In addition, the investment policy requires that no more than 10% of the System's assets shall be managed on a permanent basis by a single investment firm in active strategies. A single firm may manage up to 30% of the System's assets on a permanent basis in index strategies. No asset manager may oversee more than 30% of the System's assets. The System's assets shall not permanently constitute more than 20% of any firm's assets within the asset class (equity, bonds, real estate, or private equity) managed for PERS.

Staff shall provide an annual report to the Board of assets under management consistent with this policy.

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment or a deposit. The System mitigates interest rate risk through portfolio diversification as discussed previously. The System's investment policy and investment portfolio counsel mandates permit investment only in bonds within the Bloomberg Barclays U.S. Treasury Index.

NOTES TO FINANCIAL STATEMENTS

The segmented time distribution method is used to determine investment maturity time horizons. The following table shows the fair value of fixed income and short-term securities and the applicable investment maturities as of June 30, 2019.

INVESTMENT MATURITIES

(in years)

| Investment Type (in millions) | Less than 1 | 1 to 5 | 6 to 10 | More than 10 | Total |
|---|------------------------|-------------------|-------------------|-------------------------|--------------------|
| Cash equivalents* | \$ 124.8 | \$ - | \$ - | \$ - | \$ 124.8 |
| U.S. treasuries | - | 7,171.5 | 1,875.3 | 2,039.3 | 11,086.1 |
| Total | \$ 124.8 | \$ 7,171.5 | \$ 1,875.3 | \$ 2,039.3 | \$ 11,210.9 |

*Cash equivalents consist of investments in Invesco Treasury Portfolio Short-Term Investments Trust.

Investment maturities above have been provided by the System’s custodial bank, The Bank of New York Mellon.

The above table does not include commercial cash of \$6.8 million, cash in custodial bank of \$32.6 million, or other cash equivalents of \$0.5 million.

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The System mitigates foreign currency risk through portfolio diversification as discussed previously, along with asset allocation policy limits on international assets. The System’s investment policy maintains a target allocation to international stocks of 18%. All international stock holdings are constituents of the MSCI World ex USA Index.

NOTES TO FINANCIAL STATEMENTS

The System's exposure to foreign currency risk in U.S. dollars as of June 30, 2019, is summarized in the following table.

CURRENCY BY INVESTMENT AND FAIR VALUE

(in millions)

| Currency Type | Equity | Private Equity | Pending Transactions | Cash | Total |
|------------------------|--------------------------|---------------------------|---------------------------------|-----------------------|--------------------------|
| Australian Dollar | \$ 521.9 | \$ - | \$ - | \$ 0.1 | \$ 522.0 |
| British Pound Sterling | 1,218.0 | 19.6 | (0.6) | 3.4 | 1,240.4 |
| Canadian Dollar | 747.1 | - | (0.3) | 0.7 | 747.5 |
| Danish Krone | 125.1 | - | - | - | 125.1 |
| Euro | 2,315.1 | 223.2 | (0.6) | 0.4 | 2,538.1 |
| Hong Kong Dollar | 269.1 | - | - | 0.6 | 269.7 |
| Israeli Shekel | 24.7 | - | - | 0.1 | 24.8 |
| Japanese Yen | 1,722.9 | - | (3.6) | 5.1 | 1,724.4 |
| New Zealand Dollar | 17.8 | - | - | 0.1 | 17.9 |
| Norwegian Krone | 48.9 | - | - | 0.1 | 49.0 |
| Singapore Dollar | 99.2 | - | - | - | 99.2 |
| Swedish Krona | 193.3 | - | - | (0.3) | 193.0 |
| Swiss Franc | 676.5 | - | (0.1) | 0.1 | 676.5 |
| South African Rand | 0.1 | - | - | - | 0.1 |
| Total | \$ <u>7,979.7</u> | \$ <u>242.8</u> | \$ <u>(5.2)</u> | \$ <u>10.4</u> | \$ <u>8,227.7</u> |

Derivatives

The System held no derivative transactions during the current fiscal year.

NOTES TO FINANCIAL STATEMENTS

Securities Lending

The System maintains a securities lending program by authorization of NRS 286.682, the “prudent person” standard previously described. Securities loaned under this program consist of U.S. Treasury Obligations, U.S. equity securities, and international equity securities. Collateral received consists of cash and securities issued by the U.S. Government, its agencies, or instrumentalities. The System has no discretionary authority to sell or pledge collateral received.

At June 30, 2019, the weighted average maturities were 7 days for loans outstanding and 1 day for collateral/reinvestments. Collateral received for the lending of U.S. securities must equal at least 102% of fair value, plus accrued interest in the case of fixed income securities. Collateral received for the lending of international securities must equal at least 105% of fair value, plus accrued interest in the case of fixed income securities. The securities lending program allows only overnight repurchase agreements collateralized by U.S. government obligations issued or guaranteed by the U.S. Government, its agencies or instrumentalities within the reinvestment portfolio. In addition, PERS’ securities lending agent provides full indemnification against losses incurred in the collateral reinvestment program.

The System has no credit risk exposure to borrowers because the associated value of the collateral held exceeds the value of the securities borrowed. At June 30, 2019, the System had collateral of 103.8%. Collateral consisted of cash and securities issued by the U.S. Government, its agencies, or instrumentalities. In addition, securities loaned may not exceed 33⅓% of the total portfolio. Loss indemnification due to borrower default is provided by PERS’ securities lending agent. There were no losses during the period resulting from borrower default.

The fair value of securities loaned at June 30, 2019, was \$2,450,700,480. Cash collateral received in securities lending arrangements is reported on the Statement of Fiduciary Net Position at fair value, as an asset with a related liability.

The following table represents the collateral received for the outstanding securities lending transactions as of June 30, 2019.

| | Cash | Non-Cash | Total |
|---------------------|----------------|------------------|------------------|
| Collateral Received | \$ 253,210,571 | \$ 2,289,420,671 | \$ 2,542,631,242 |

For fiscal year 2019, the net income from securities lending was \$4,980,937.

NOTES TO FINANCIAL STATEMENTS

NOTE 6 – Fair Value

The System holds investments that are measured at fair value on a recurring basis. The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. Investments measured and reported at fair value using Level inputs are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical investments as of the reporting date. The types of investments included in Level 1 include U.S. Treasuries and listed stocks.

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 and significant value drivers are observable.

Level 3 – Valuations derived from valuation techniques in which significant inputs or significant value drivers are unobservable.

The following table presents fair value measurements as of June 30, 2019:

| FAIR VALUE LEVELS | | | | | |
|--|--------------------|--------------------|----------------|----------------|--------------------|
| (in millions) | | | | | |
| | <u>6/30/2019</u> | <u>Level 1</u> | <u>Level 2</u> | <u>Level 3</u> | <u>Total</u> |
| U.S. treasuries | \$ 11,086.1 | \$ 11,086.1 | \$ - | \$ - | \$ 11,086.1 |
| Stocks | | | | | |
| Common stock | 28,297.0 | 28,297.0 | - | - | 28,297.0 |
| Preferred stock | 37.7 | 37.7 | - | - | 37.7 |
| Total stocks | <u>28,334.7</u> | <u>28,334.7</u> | <u>-</u> | <u>-</u> | <u>28,334.7</u> |
| Total investments by fair value level | <u>\$ 39,420.8</u> | <u>\$ 39,420.8</u> | <u>\$ -</u> | <u>\$ -</u> | <u>\$ 39,420.8</u> |
| Investments measured at the net asset value (NAV) | | | | | |
| Real estate | 2,018.7 | | | | |
| Private equity | <u>2,376.3</u> | | | | |
| Total investments measured at the NAV | 4,395.0 | | | | |
| Total investments | <u>\$ 43,815.8</u> | | | | |

Stocks and bonds securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities.

FINANCIAL SECTION

NOTES TO FINANCIAL STATEMENTS

The following table presents investments measured at the NAV as of June 30, 2019:
(in millions)

| | Fair Value | Unfunded Commitments | Redemption Frequency | Redemption Notice Period |
|--|-------------------|-------------------------|-------------------------|-----------------------------|
| Real estate separate accounts* | \$ 2,018.7 | \$ - | N/A | N/A |
| Private equity** | 2,376.3 | 1,438.8 | N/A | N/A |
| Total investments measured at the NAV | <u>\$ 4,395.0</u> | <u>\$ 1,438.8</u> | <u>N/A</u> | <u>N/A</u> |

*Real estate separate accounts. This type includes two core real estate separate accounts that invest in U.S. industrial, multi-family, office, and retail properties. The fair values of the investments in this type have been determined based on third-party appraisals net of outstanding debt. The property values are managed by the Altus Group which values the real estate assets on a quarterly basis and oversees the engagement of and management of third-party appraisers who value the properties annually. The System wholly owns the properties held in each separate account. The properties can be put up for sale at any time.

**Private equity. This type includes a single portfolio investing in and acquiring private equity investment partnerships located in the United States and Europe. The System does not have the ability to withdraw its investments from these investment partnerships. Interest in an investment partnership can be transferred or sold only upon the approval of the general partner of the respective investment partnership.

For private equity investment partnerships, fair value considers, among other factors, the reported net asset value (NAV) of the investment as determined in good faith by the general partner of the respective investment partnership. Because of the inherent uncertainty in valuing investments in investment partnerships for which no active, public market exists, or where the net realizable value may be significantly affected by a lack of liquidity or other market conditions, the fair value reported is an estimate and could significantly differ from the value that could be realized in a secondary market transaction and/or from the amounts ultimately realized.

The general partners of the investment partnerships generally report NAV based on the fair value of the underlying portfolio companies, as well as the other assets and liabilities held by the investment partnership. Investments that have a negative fair value have losses allocated to the portfolio that exceed the amounts invested. Owing to the general partners' expertise and proprietary knowledge of the portfolio company investments, the System generally utilizes the NAV as the basis for the reported investment values. The System may, in good faith, apply an appropriate adjustment to the NAV reported by the general partner of the respective investment partnership, if deemed necessary.

Due to the reporting time frame of private investment fund managers, which report performance on a one-quarter lag from the end of the performance quarter, fair values as of June 30, 2019, are based on actual March 31, 2019, fair values, adjusted for cash flows and public shares received by PERS but not yet sold as of June 30, 2019.

NOTES TO FINANCIAL STATEMENTS

NOTE 7 – Net Pension Liability

The components of the net pension liability at June 30, 2019, were as follows:

| | |
|-----------------------------|-------------------|
| Total pension liability | \$ 57,920,215,973 |
| Plan fiduciary net position | (44,284,252,583) |
| Net pension liability | \$ 13,635,963,390 |

| | |
|--|-------|
| Plan fiduciary net position as a percentage of the total pension liability | 76.5% |
|--|-------|

Actuarial Assumptions

The total pension liability was determined as part of the GASB Statement No. 67 actuarial valuation as of June 30, 2019. It is important to note that the GASB rules only redefine pension liability for financial reporting purposes. The System continues to develop and adopt funding policies under current practices. The actuarial assumptions were based on the results of an experience study for the period from July 1, 2012, through June 30, 2016.

The entry age actuarial cost method is used for actuarial valuations. The following assumptions were applied to all periods included in the measurement:

| | |
|---|--|
| Inflation | 2.75% |
| Salary increases | 4.25% to 9.15% for Regular members and 4.55% to 13.90% for Police/Fire members, vary by service, including inflation |
| Investment rate of return | 7.50%, including inflation |
| Mortality Rates (Regular and Police/Fire) | |

| | |
|-----------------|--|
| <i>Healthy:</i> | Headcount–Weighted RP-2014 Healthy Annuitant Table projected to 2020 with Scale MP-2016, set forward one year for spouses and beneficiaries. |
|-----------------|--|

For ages less than 50⁽¹⁾, mortality rates are based on the Headcount–Weighted RP-2014 Employee Mortality Tables. Those mortality rates are adjusted by the ratio of the mortality rate for members at age 50 to the mortality rate at age 50 from the Employee mortality tables listed above. The mortality rates are then projected to 2020 with Scale MP-2016.

| | |
|------------------|--|
| <i>Disabled:</i> | Headcount–Weighted RP-2014 Disabled Retiree Table, set forward four years. |
|------------------|--|

⁽¹⁾ The RP-2014 Healthy Annuitant Mortality Tables have rates only for ages 50 and later.

NOTES TO FINANCIAL STATEMENTS

Pre-Retirement: Headcount–Weighted RP-2014 Employee Table, projected to 2020 with Scale MP-2016.

The RP-2014 Headcount–Weighted Mortality Tables, set forward one year for spouses and beneficiaries, reasonably reflect the projected mortality experience of the Plan as of the measurement date. The additional projection of 6 years is a provision made for future mortality improvement.

| <u>Asset Class</u> | <u>Long-Term Geometric Expected Real Rate of Return</u> |
|---------------------|---|
| U.S. stock | 5.50% |
| International stock | 5.50% |
| U.S. bonds | 0.75% |
| Private markets | 6.65% |

Discount Rate

The discount rate used to measure the total pension liability was 7.50% as of June 30, 2019. The projection of cash flows used to determine the discount rate assumed plan contributions will be made in amounts consistent with statutory provisions and recognizing the plan’s current funding policy and cost-sharing mechanism between employers and members. For this purpose, all contributions that are intended to fund benefits for all plan members and their beneficiaries are included, except that projected contributions that are intended to fund the service costs for future plan members and their beneficiaries are not included.

Based on those assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments for 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 as of June 30, 2019.

Future Payroll Growth

In projecting plan contributions as described above, the System experience was projected to be consistent with the valuation assumptions, except that payroll was projected to grow at 5% per year. For the purpose of calculating the actuarial determined contribution rate, the total payroll growth assumption for future years is 5.5% per year for Regular and 6.5% for Police/Fire.

NOTES TO FINANCIAL STATEMENTS

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability using the discount rate of 7.50%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50%) or 1-percentage-point higher (8.50%) than the current rate:

| 1% Decrease (6.50%) | Current Discount Rate (7.50%) | 1% Increase (8.50%) |
|------------------------|-------------------------------------|------------------------|
| \$ 21,113,639,011 | \$ 13,635,963,390 | \$ 7,420,117,489 |

NOTE 8 – Risk Management

The System is exposed to various risks of loss related to theft of, damage to, and destruction of assets; injuries to employees and others; and court challenges to fiduciary decisions. To cover these risks, the System maintains commercial building and contents insurance, vehicle liability and collision/comprehensive insurance, general liability insurance, worker’s compensation insurance, and employee fidelity bonds. For coverage included within the State of Nevada’s policies, the System pays its premium directly to the State. The System’s building/contents insurance is placed with a private insurance company. There have never been any insurance settlements which exceeded insurance coverage.

NOTE 9 – Litigation

The System is involved in litigation relating to various matters. In the opinion of the management, after consulting with legal counsel, the outcome of these matters is not expected to have a material effect on the financial statements.

REQUIRED SUPPLEMENTARY INFORMATION

**SCHEDULE OF CHANGES IN NET PENSION LIABILITY
AND RELATED RATIOS**

For the Years Ended June 30,
(in millions)

| | <u>2019</u> |
|---|---------------------------|
| Total pension liability | |
| Service cost | \$ 1,169.7 |
| Interest | 4,119.1 |
| Change of plan provisions | - |
| Difference between expected and actual experience | 198.0 |
| Change of assumptions | - |
| Benefit payments, including refunds | (2,635.8) |
| Other changes | (0.2) |
| Net change in total pension liability | 2,850.8 |
| Total pension liability-beginning | <u>55,069.4</u> |
| Total pension liability-ending (a) | <u><u>\$ 57,920.2</u></u> |
| Plan fiduciary net position | |
| Contributions-employer | \$ 965.5 |
| Contributions-plan member | 1,039.9 |
| Net investment income | 3,468.1 |
| Benefit payments, including refunds | (2,635.8) |
| Administration expenses | (11.8) |
| Purchase of service | 24.0 |
| Other | 2.6 |
| Net change in plan fiduciary net position | <u>2,852.5</u> |
| Plan fiduciary net position-beginning | <u>41,431.7</u> |
| Plan fiduciary net position-ending (b) | <u><u>\$ 44,284.2</u></u> |
| Net pension liability-ending (a) - (b) | <u><u>\$ 13,636.0</u></u> |
| Plan fiduciary net position as a percentage of total pension liability | 76.46% |
| Covered payroll | \$ 6,786.9 |
| Net pension liability as a percentage of covered payroll | 200.9% |

Note: Complete data for this schedule is not available prior to 2013.

| <u>2018</u> | <u>2017</u> | <u>2016</u> | <u>2015</u> | <u>2014</u> | <u>2013</u> |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| \$ 1,134.1 | \$ 1,107.5 | \$ 1,086.5 | \$ 1,063.5 | \$ 1,058.8 | \$ 1,038.7 |
| 3,892.0 | 3,873.7 | 3,687.0 | 3,525.4 | 3,369.8 | 3,103.2 |
| - | - | - | - | 10.0 | - |
| 509.1 | (211.3) | (245.8) | (529.6) | (585.2) | (514.3) |
| - | 1,046.0 | - | - | - | 1,459.8 |
| (2,451.4) | (2,288.6) | (2,138.6) | (1,983.9) | (1,839.8) | (1,707.8) |
| (0.5) | (0.4) | - | (2.4) | (1.0) | - |
| <u>3,083.3</u> | <u>3,526.9</u> | <u>2,389.1</u> | <u>2,073.0</u> | <u>2,012.6</u> | <u>3,379.6</u> |
| <u>51,986.1</u> | <u>48,459.2</u> | <u>46,070.1</u> | <u>43,997.1</u> | <u>41,984.5</u> | <u>38,604.9</u> |
| <u>\$ 55,069.4</u> | <u>\$ 51,986.1</u> | <u>\$ 48,459.2</u> | <u>\$ 46,070.1</u> | <u>\$ 43,997.1</u> | <u>\$ 41,984.5</u> |
| \$ 930.3 | \$ 901.7 | \$ 849.8 | \$ 1,436.6 | \$ 1,405.0 | \$ 1,310.1 |
| 987.6 | 952.8 | 850.2 | 114.3 | 109.7 | 99.2 |
| 3,273.9 | 4,110.3 | 778.7 | 1,395.3 | 5,031.4 | 3,193.9 |
| (2,451.4) | (2,288.6) | (2,138.6) | (1,983.9) | (1,839.8) | (1,706.9) |
| (12.8) | (9.9) | (10.6) | (9.6) | (9.6) | (9.6) |
| 16.2 | 16.2 | 61.2 | 80.1 | 41.8 | 46.5 |
| 1.7 | 1.7 | 0.6 | 2.8 | 1.9 | 1.7 |
| <u>2,745.5</u> | <u>3,684.2</u> | <u>391.3</u> | <u>1,035.6</u> | <u>4,740.4</u> | <u>2,934.9</u> |
| <u>38,686.2</u> | <u>35,002.0</u> | <u>34,610.7</u> | <u>33,575.1</u> | <u>28,834.7</u> | <u>25,899.8</u> |
| <u>\$ 41,431.7</u> | <u>\$ 38,686.2</u> | <u>\$ 35,002.0</u> | <u>\$ 34,610.7</u> | <u>\$ 33,575.1</u> | <u>\$ 28,834.7</u> |
| <u>\$ 13,637.7</u> | <u>\$ 13,299.9</u> | <u>\$ 13,457.2</u> | <u>\$ 11,459.4</u> | <u>\$ 10,422.0</u> | <u>\$ 13,149.8</u> |
| 75.24% | 74.42% | 72.23% | 75.13% | 76.31% | 68.68% |
| \$ 6,508.9 | \$ 6,237.2 | \$ 6,081.1 | \$ 5,753.1 | \$ 5,715.3 | \$ 5,574.6 |
| 209.5% | 213.2% | 221.3% | 199.2% | 182.4% | 235.9% |

FINANCIAL SECTION**REQUIRED SUPPLEMENTARY INFORMATION****SCHEDULE OF EMPLOYER CONTRIBUTIONS**

2010 to 2019

(in millions)

| Year Ended June 30 | Actuarially Determined Contributions | Contributions in Relation to the Actuarially Determined Contributions* | Contribution Deficiency (Excess) | Covered Payroll** | Contributions as a Percentage of Covered Payroll |
|--------------------|--------------------------------------|--|----------------------------------|-------------------|--|
| 2010 | \$ 1,339.5 | \$ 1,281.7 | \$ 57.8 | \$ 5,958.9 | 21.5 % |
| 2011 | 1,326.8 | 1,264.8 | 62.0 | 5,911.9 | 21.4 |
| 2012 | 1,425.8 | 1,332.3 | 93.5 | 5,817.6 | 22.9 |
| 2013 | 1,370.0 | 1,310.1 | 59.9 | 5,574.6 | 23.5 |
| 2014 | 1,508.8 | 1,405.0 | 103.8 | 5,715.3 | 24.6 |
| 2015 | 1,499.8 | 1,436.7 | 63.1 | 5,753.1 | 25.0 |
| 2016 | 888.6 | 849.8 | 38.8 | 5,921.6 | 14.4 |
| 2017 | 912.6 | 901.7 | 10.9 | 6,081.1 | 14.8 |
| 2018 | 939.7 | 930.3 | 9.4 | 6,237.2 | 14.9 |
| 2019 | 981.8 | 965.5 | 16.3 | 6,508.9 | 14.8 |

*Includes employer contributions towards administrative expenses.

**Measurement as of beginning of year.

Notes: Beginning with the year-ended 2016, all contributions shown reflect employer-paid contributions only, and employer-paid member contributions are excluded. Actuarially Determined Contributions above are based on actuarially determined contributions rates (employer portion only) from most recent rate-setting year prior to year shown, applied to covered payroll for year shown.

Information provided by Segal Consulting, the System's actuary.

SCHEDULE OF INVESTMENT RETURNS

2010 to 2019

| For Year Ended June 30 | Annual Money-Weighted Rate of Return, Net of Investment Expenses |
|------------------------|--|
| 2010 | 11.12% |
| 2011 | 21.08 |
| 2012 | 3.05 |
| 2013 | 12.39 |
| 2014 | 17.60 |
| 2015 | 4.18 |
| 2016 | 2.27 |
| 2017 | 11.84 |
| 2018 | 8.54 |
| 2019 | 8.45 |

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2019**

Methods and Assumptions Used in Calculations of Actuarially Determined Contributions

The actuarially determined contribution rates in the schedule of contributions are calculated as of June 30. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule.

Valuation date: Actuarially determined contribution rates are calculated in annual actuarial valuations as of June 30

Actuarial Cost Method: Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of salary, with Normal Cost determined based on the plan provisions and benefit accrual rate applicable to that individual.

Amortization Policy: **For funding purposes**, the UAAL, (i.e., the difference between the Actuarial Accrued Liability and the Valuation Value of Assets), as of June 30, 2011 shall continue to be amortized over separate 30-year period amortization layers based on the valuations during which each separate layer was previously established.

Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of June 30 was amortized over a period equal to the truncated average remaining amortization period of all prior UAAL layers. This occurred until the average remaining amortization period was less than 20 years. At that point, amortization periods of 20 years are used for actuarial gains and losses.

Any new UAAL as a result of change in actuarial assumptions or methods was amortized over a period equal to the truncated average remaining amortization period of all prior UAAL layers. This occurred until the average remaining amortization period was less than 20 years.

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2019**

At that point, amortization periods of 20 years are used for assumption or method changes.

Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis:

- a. with the exception noted in b., below, the increase in UAAL as a result of any plan amendments will be amortized over a period of 15 years;
- b. the increase in UAAL that would result from a temporary retirement incentive will be pre-funded by the participating employer(s).

UAAL layers shall be amortized over “closed” amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation.

UAAL layers shall be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase.

If an overfunding exists (i.e., the total of all UAAL becomes negative so that there is a surplus), such surplus and any subsequent surpluses will be amortized over an “open” amortization period of 30 years. Any prior UAAL amortization layers will be considered fully amortized, and any subsequent UAAL will be amortized over 20 years as the first of a new series of amortization layers.

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2019**

These amortization policy components will apply separately to each of the Regular and Police/Fire UAAL cost groups.

Asset Valuation Method: Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period, further adjusted, if necessary, to be within 30% of the market value.

Actuarial Assumptions:

Assumed Inflation Rate:

FY10-FY16: 3.5% per annum
 FY17-FY19: 2.75% per annum

Projected Salary Increases:

FY10-FY13:

Salary increases*: The assumed salary increase rates are shown below:

| Regular Employees | |
|--------------------------|-------|
| Years of Service | Rate |
| 1 | 9.75% |
| 2 | 8.25% |
| 3 | 7.75% |
| 4 | 7.50% |
| 5 | 7.25% |
| 6 | 7.00% |
| 7 | 6.75% |
| 8 | 6.25% |
| 9 | 5.75% |
| 10 | 5.50% |
| 11 | 5.10% |
| 12 | 4.90% |
| 13 or more | 4.50% |

| Police/Fire Employees | |
|------------------------------|--------|
| Years of Service | Rate |
| 1 | 14.75% |
| 2 | 10.75% |
| 3 | 10.20% |
| 4 | 9.80% |
| 5 | 9.40% |
| 6 | 9.00% |
| 7 | 8.25% |
| 8 | 7.75% |
| 9 | 7.25% |
| 10 or more | 6.50% |

*Includes inflation at 3.5% per year

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2019**

FY14-FY16:

Inflation: 3.50% Plus

*Productivity pay
increases:* 0.75% Plus

*Promotional and merit
salary increases:*

| <u>Years of Service</u> | <u>Regular</u> | <u>Police/Fire</u> |
|-------------------------|----------------|--------------------|
| Less than 1 | 5.50% | 10.25% |
| 1 | 4.25 | 6.55 |
| 2 | 3.50 | 5.15 |
| 3 | 3.25 | 4.55 |
| 4 | 3.00 | 4.25 |
| 5 | 2.75 | 4.05 |
| 6 | 2.40 | 3.75 |
| 7 | 2.25 | 3.25 |
| 8 | 1.85 | 2.75 |
| 9 | 1.75 | 2.25 |
| 10 | 1.50 | 1.75 |
| 11 | 1.00 | 1.50 |
| 12 | 0.80 | 1.25 |
| 13 or more | 0.35 | 1.00 |

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2019

FY17-FY19:

Inflation: 2.75% Plus

Productivity pay increases: 0.50% Plus

Promotional and merit salary increases:

| <u>Years of Service</u> | <u>Regular</u> | <u>Police/Fire</u> |
|-------------------------|----------------|--------------------|
| Less than 1 | 5.90% | 10.65% |
| 1 | 4.80 | 7.15 |
| 2 | 4.00 | 5.20 |
| 3 | 3.60 | 4.60 |
| 4 | 3.30 | 4.30 |
| 5 | 3.00 | 4.15 |
| 6 | 2.80 | 3.90 |
| 7 | 2.70 | 3.50 |
| 8 | 2.50 | 3.15 |
| 9 | 2.35 | 2.90 |
| 10 | 2.15 | 2.50 |
| 11 | 1.75 | 1.90 |
| 12 | 1.50 | 1.50 |
| 13 | 1.25 | 1.30 |
| 14 | 1.10 | 1.30 |
| 15 or more | 1.00 | 1.30 |

Investment Rate of Return:

FY10-FY16: 8.0%

FY17-FY19: 7.5%

Retirement Age: Varies based on years of service

Mortality Rates:

FY10-FY13:
 Healthy: RP-2000 Combined Healthy Mortality Table, set forward one year for females and police/fire members (no age set forward for males)
 Disabled: RP-2000 Disabled Retiree Mortality Table, set back three years for regular members, set forward eight years for regular and police/fire female members, and set forward for ten years for male police/fire members

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2019**

FY14-FY16:

Healthy:

For non-disabled male regular members it is the RP-2000 Combined Healthy Mortality Table projected to 2013 with Scale AA. For non-disabled female regular members it is the RP-2000 Combined Healthy Mortality Table, projected to 2013 with Scale AA, set back one year. For all non-disabled police/fire members it is the RP-2000 Combined Healthy Mortality Table projected to 2013 with Scale AA, set forward one year.

Disabled:

The mortality table used in the actuarial valuation to project mortality rates for all disabled regular members and all disabled police/fire members is the RP-2000 Disabled Retiree Mortality Table projected to 2013 with Scale AA, set forward three years.

FY17-FY19:

Healthy:

Headcount-Weighted RP-2014 Healthy Annuitant Table projected to 2020 with Scale MP-2016, set forward one year for spouses and beneficiaries.

For ages less than 50⁽¹⁾, mortality rates are based on the Headcount-Weighted RP-2014 Employee Mortality Tables. Those mortality rates are adjusted by the ratio of the mortality rate for members at age 50 to the mortality rate at age 50 from the Employee mortality tables listed above. The mortality rates are then projected to 2020 with Scale MP-2016.

Disabled:

Headcount-Weighted RP-2014 Disabled Retiree Table, set forward four years.

⁽¹⁾ The RP-2014 Healthy Annuitant Mortality Tables have rates only for ages 50 and later.

**NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
FOR THE YEAR ENDED JUNE 30, 2019**

Pre-Retirement: Headcount-Weighted RP-2014 Employee
Table, projected to 2020 with Scale MP-
2016.

The RP-2014 Headcount-Weighted Mortality Tables, set forward one year for spouses and beneficiaries, reasonably reflect the projected mortality experience of the Plan as of the measurement date. The additional projection of 6 years is a provision made for future mortality improvement.

FINANCIAL SECTION

OTHER SUPPLEMENTARY INFORMATION**SCHEDULE OF ADMINISTRATIVE EXPENSES****For the Year Ended June 30, 2019**

| | | |
|-------------------------------------|--------------|----------------------|
| Personnel services: | | |
| Staff payroll and benefits | \$ 6,615,901 | |
| Board fees | 12,160 | |
| Total personnel services | | \$ 6,628,061 |
| Out-of-state travel: | | |
| Staff | 11,842 | |
| Board | 3,743 | |
| Police/Fire committee | 2,565 | |
| Total out-of-state travel | | 18,150 |
| In-state travel: | | |
| Staff | 67,407 | |
| Board | 12,146 | |
| Police/Fire committee | 4,308 | |
| Total in-state travel | | 83,861 |
| Operating: | | |
| Office supplies | 23,866 | |
| Postage and freight | 368,055 | |
| Communications | 45,533 | |
| Printing | 211,518 | |
| Publications and periodicals | 1,573 | |
| Bonds and insurance premiums | 11,908 | |
| Contract services | 842,024 | |
| Vehicle expense | 1,077 | |
| Equipment rental and repair | 14,979 | |
| Building rental | 357,257 | |
| License and fees | 1,513 | |
| Client communication | 33,258 | |
| Dues and registration | 49,729 | |
| Medical expenses | 43,269 | |
| Litigation expense | 198,429 | |
| Total operating | | 2,203,988 |
| Equipment and office furniture, net | | 6,529 |
| Information technology, net | | 2,819,614 |
| Training | | 45,402 |
| State cost allocation | | 6,701 |
| Total administrative expenses | | \$ <u>11,812,306</u> |

OTHER SUPPLEMENTARY INFORMATION

SCHEDULE OF INVESTMENT EXPENSES

For the Year Ended June 30, 2019

| | | |
|--|--------|------------------------------|
| Investment management fees | \$ | 52,641,867 |
| Investment consulting fees | | <u>712,245</u> |
| Subtotal investment management and consulting fees | | 53,354,112 |
| Administrative investment expenses | | <u>553,074</u> |
| Total investment expenses | \$ | <u><u>53,907,186</u></u> |

SCHEDULE OF PAYMENTS TO CONSULTANTS

For the Year Ended June 30, 2019

| | | | |
|-----------------------------------|--------|--|---------------------------|
| Actuary | | | |
| The Segal Company | \$ | | 468,734 |
| Independent Auditors | | | |
| Macias Gini & O'Connell LLP | | | 167,755 |
| Administrative Legal Counsel | | | |
| Groom Law Group | | | 6,400 |
| McDonald Carano | | | 152,622 |
| Medical Consultant | | | |
| B Bottenberg, D.O. | | | 41,904 |
| Kathleen Stoner, R.N. | | | <u>1,365</u> |
| Total payments to consultants | \$ | | <u><u>838,780</u></u> |

Note: Information on payments made to investment professionals can be found in the Investment Section.

FINANCIAL SECTION

OTHER SUPPLEMENTARY INFORMATION

COMBINING SCHEDULE OF FIDUCIARY NET POSITION

June 30, 2019

(With Comparative Totals for June 30, 2018)

| | <u>Regular</u> | <u>Police/Fire</u> | <u>Eliminations</u> | <u>Total Pension Trust Fund 2019</u> | <u>Total Pension Trust Fund 2018</u> |
|---|--------------------------|--------------------------|-------------------------|--|--|
| ASSETS | | | | | |
| Cash and cash equivalents | \$ 164,703,626 | \$ - | \$ - | \$ 164,703,626 | \$ 211,016,287 |
| Contributions receivable | 157,566,599 | - | - | 157,566,599 | 166,424,654 |
| Pending trades receivable | 309,517,700 | - | - | 309,517,700 | 263,654,290 |
| Accrued investment income | 166,986,553 | - | - | 166,986,553 | 143,335,793 |
| Investments, at fair value | 43,815,798,592 | - | - | 43,815,798,592 | 40,908,739,776 |
| Collateral on loaned securities, at fair value | 253,210,571 | - | - | 253,210,571 | 293,807,533 |
| Property and equipment | 45,584,887 | - | - | 45,584,887 | 44,964,024 |
| Accumulated depreciation | (41,682,216) | - | - | (41,682,216) | (40,441,532) |
| Net property and equipment | 3,902,671 | - | - | 3,902,671 | 4,522,492 |
| Other assets | 3,532,311 | - | - | 3,532,311 | 3,396,862 |
| Due from other funds- equity in investments | - | 10,042,126,886 | (10,042,126,886) | - | - |
| Total plan assets | <u>44,875,218,623</u> | <u>10,042,126,886</u> | <u>(10,042,126,886)</u> | <u>44,875,218,623</u> | <u>41,994,897,687</u> |
| LIABILITIES | | | | | |
| Accounts payable and accrued expenses | 16,989,448 | - | - | 16,989,448 | 16,228,413 |
| Pending trades payable | 320,766,021 | - | - | 320,766,021 | 253,174,889 |
| Due to other funds | 10,042,126,886 | - | (10,042,126,886) | - | - |
| Obligations under securities lending activities | 253,210,571 | - | - | 253,210,571 | 293,807,533 |
| Total plan liabilities | <u>10,633,092,926</u> | <u>-</u> | <u>(10,042,126,886)</u> | <u>590,966,040</u> | <u>563,210,835</u> |
| Net position restricted for pension benefits | <u>\$ 34,242,125,697</u> | <u>\$ 10,042,126,886</u> | <u>\$ -</u> | <u>\$ 44,284,252,583</u> | <u>\$ 41,431,686,852</u> |

OTHER SUPPLEMENTARY INFORMATION

COMBINING SCHEDULE OF CHANGES IN FIDUCIARY NET POSITION

For the Year Ended June 30, 2019

(With Comparative Totals for the Year Ended June 30, 2018)

| | Regular | Police/Fire | Total Pension Trust Fund 2019 | Total Pension Trust Fund 2018 |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| ADDITIONS | | | | |
| Contributions: | | | | |
| Employer | \$ 747,816,051 | \$ 217,702,917 | \$ 965,518,968 | \$ 930,269,427 |
| Plan members | 747,816,051 | 217,702,917 | 965,518,968 | 930,269,427 |
| Repayment and purchase of service | 59,288,077 | 39,069,057 | 98,357,134 | 73,557,804 |
| Total contributions | <u>1,554,920,179</u> | <u>474,474,891</u> | <u>2,029,395,070</u> | <u>1,934,096,658</u> |
| Investment income: | | | | |
| Net appreciation in fair value of investments | 2,456,505,905 | - | 2,456,505,905 | 2,359,397,125 |
| Interest | 278,467,354 | - | 278,467,354 | 246,346,876 |
| Dividends | 657,360,468 | - | 657,360,468 | 595,172,224 |
| Other investment income | 124,740,975 | - | 124,740,975 | 117,458,561 |
| | <u>3,517,074,702</u> | <u>-</u> | <u>3,517,074,702</u> | <u>3,318,374,786</u> |
| Less investment fees and other expenses | <u>(53,907,186)</u> | <u>-</u> | <u>(53,907,186)</u> | <u>(50,737,942)</u> |
| Net investment income | <u>3,463,167,516</u> | <u>-</u> | <u>3,463,167,516</u> | <u>3,267,636,844</u> |
| Securities lending income | 10,912,854 | - | 10,912,854 | 13,024,469 |
| Less securities lending expense | <u>(5,931,917)</u> | <u>-</u> | <u>(5,931,917)</u> | <u>(6,791,860)</u> |
| Net securities lending income | <u>4,980,937</u> | <u>-</u> | <u>4,980,937</u> | <u>6,232,609</u> |
| Total net investment income | <u>3,468,148,453</u> | <u>-</u> | <u>3,468,148,453</u> | <u>3,273,869,453</u> |
| Other income | <u>2,226,754</u> | <u>585,431</u> | <u>2,812,185</u> | <u>2,308,241</u> |
| Total additions | <u>5,025,295,386</u> | <u>475,060,322</u> | <u>5,500,355,708</u> | <u>5,210,274,352</u> |
| DEDUCTIONS | | | | |
| Benefit payments: | | | | |
| Retirement and survivor benefits | 1,981,029,360 | 508,487,204 | 2,489,516,564 | 2,312,341,217 |
| Disability | 86,303,331 | 25,950,377 | 112,253,708 | 107,672,401 |
| Refunds of contributions | 27,024,730 | 6,962,780 | 33,987,510 | 31,366,228 |
| Transfer of contributions | 219,889 | - | 219,889 | 515,342 |
| Administrative expenses | 11,812,306 | - | 11,812,306 | 12,867,447 |
| Other expenses | 1 | (1) | - | 78,273 |
| Total deductions | <u>2,106,389,617</u> | <u>541,400,360</u> | <u>2,647,789,977</u> | <u>2,464,840,908</u> |
| Increase (decrease) in net position | 2,918,905,769 | (66,340,038) | 2,852,565,731 | 2,745,433,444 |
| Transfers: | | | | |
| Interfund transfers | 2,178,527 | (2,178,527) | - | - |
| Transfer of annual investment income | (783,801,769) | 783,801,769 | - | - |
| Transfer of administrative fees | 1,069,416 | (1,069,416) | - | - |
| Total transfers | <u>(780,553,826)</u> | <u>780,553,826</u> | <u>-</u> | <u>-</u> |
| Net position restricted for pension benefits: | | | | |
| Beginning of year | <u>32,103,773,754</u> | <u>9,327,913,098</u> | <u>41,431,686,852</u> | <u>38,686,253,408</u> |
| End of year | <u>\$ 34,242,125,697</u> | <u>\$ 10,042,126,886</u> | <u>\$ 44,284,252,583</u> | <u>\$ 41,431,686,852</u> |

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INVESTMENT SECTION

CURRENT INVESTMENT ADVISORS

INVESTMENT CONSULTANTS

Callan Associates, Inc.
Jobs Peak Advisors

INVESTMENT COUNSEL

Domestic Equities:
AllianceBernstein
BlackRock

International Equities:
Mellon Capital
State Street Global Advisors

Domestic Fixed Income:
Payden & Rygel

Private Equity:
Pathway Capital Management

Private Real Estate:
AEW
Invesco Real Estate

Securities Lending:
The Bank of New York Mellon



October 4, 2019

The Public Employees' Retirement System of Nevada (PERS) investment portfolio successfully concluded its fiscal-year on June 30, 2019.

Fiscal Year 2019 was a period of pronounced volatility for global capital markets. Global stock markets experienced a sell-off in the 4th quarter of calendar year 2018 with the S&P 500 Index returning -4.4% and the MSCI World Index ex USA ending the year at -13.8%. The U.S. economy continued to grow amid slower global growth fueling a strong calendar date return for the S&P 500 Index ending June 2019 of 18.5% and a fiscal year 2019 return of 10.4%. Non-US developed stock markets returned 14.9% for calendar year-to-date, June 2019, and 1.7% for the fiscal year-end.

The U.S. bond market reversed course as 10-year yields decreased below 2% providing strong returns in the second half of fiscal year 2019. The active Treasury yield curve inverted for the first time since 2006 in December 2018 and again in March 2019. This downward shift in rates for mid- to long maturity Treasury securities delivered a fiscal year 2019 return for the Bloomberg Barclays Treasury Index of 7.2%. When stock and bond market prices rise to new highs at the same time, there is greater potential for short- to medium-term market corrections in subsequent time periods. The Nevada PERS fund is structured to meet its return objective of 7.5% over the long-term but in order to achieve this growth, it is necessary for markets to rebalance periodically.

As of fiscal year-end, net assets of the Nevada PERS portfolio were \$44.1 billion representing an increase of nearly \$3 billion. The total return for the portfolio was 8.5%, a gain of 1.0% over the long-term actuarial discount rate of 7.5%. The strong performance of the fund over 5 years (7.0%) and 10 years (9.9%) places PERS in the 14th and 30th percentile of large public defined benefit plans, respectively. Since inception, over the past 35 years, the Nevada PERS portfolio has earned 9.2%, ranking the plan higher than nearly 80% of large public plans.

In June 2018, the Board of Nevada PERS approved a new asset allocation reducing fixed income to 28% and increasing the allocation to private markets to 12% from 10%. Asset Allocation for Nevada PERS as of fiscal year-end 2019 was 46.1% in U.S. stocks, 18.4% in International stocks, 25.3% in U.S. bonds, 4.6% in Private Real Estate, and 5.4% in Private Equity. The portfolio is positioned for growth yet anchored by the large allocation to U.S. Treasury securities to diversify equity risk.

A handwritten signature in black ink, appearing to read "Julia Bonafede", is written over a white background.

Julia Bonafede, CFA
President

INVESTMENT SECTION

INVESTMENT REVIEW

Introduction

The investment program is designed to generate a long-term return that meets the System's objective while minimizing risk. The structure and administration of the portfolio is defined by the prudent person standard. The standard states that the Board may invest the System's funds in every type of investment which persons of prudence, discretion, and intelligence acquire or retain for their own account under similar circumstances. The Board's investment philosophy centers on time tested investment principles such as maintaining consistent exposure to the capital markets, buying assets at lower prices and selling them at higher prices through disciplined rebalancing, and keeping costs low by utilizing index management. Developing a sound long-term investment strategy and faithfully adhering to that strategy in both strong and weak market environments has been a key element in the fund's success.

The System's investment assets reported in the Investment Section are presented on the same basis of accounting as described in Note 1 of the Notes to Financial Statements, fair value.

The System's Investment Objectives and Policies detail the fund's long-term investment goals, management responsibilities, return/risk expectations, and monitoring requirements. These policies are subject to change at any time by the Board and are reviewed thoroughly at least annually to ensure that they continue to reflect the System's expectations.

Objective

The investment objective of the System is to:

- Generate a 7.5% long-term investment return which exceeds the rate of inflation (CPI) by 4.75% by capturing market returns within each asset class.
- Invest so that the short-term volatility of returns will not cause the System to alter its long-term strategy.
- Structure an investment program which is sufficiently uncomplicated to control the ability to consistently meet return and risk objectives.

Chart 1, on page 70, demonstrates that the investment portfolio, over the last ten years, has captured the real return (inflation) objective in seven of those years. The objective was CPI + 3.0% until September 30, 2000; CPI + 3.5% from October 1, 2000 through September 30, 2002; CPI + 3.75% from October 1, 2002 through September 30, 2003; CPI + 4.5% from October 1, 2003 through November 30, 2017; and CPI + 4.75% thereafter. Chart 2, on page 70, details annualized returns for long-term periods ended June 30, 2019. The System's 8.5% return for fiscal year 2019 was driven primarily by strong returns from U.S. stocks, U.S. Treasury Bonds, and Private Markets.

Note: Inception on Chart 2 refers to July 1, 1984, the date the System began calculating total return versus annual yield. For all other charts, inception refers to the point at which the System began including that particular investment vehicle in the portfolio.

Asset Allocation

Asset allocation is the most significant factor influencing the risk and return of the investment program. Since inception more than 90% of the System's investment performance is explained by asset allocation. Determination of the fund's long-term asset allocation involves estimating the expected return and risk of major types of investments and blending them into a portfolio which meets the System's risk/return objectives.

To establish an appropriate long-term asset allocation strategy, the Board evaluates expected return and risk for each of the major asset types (stocks, bonds, private markets). These asset classes are then combined in the most efficient manner possible to construct a portfolio that matches the risk and return needs of the fund. By diversifying the System's investments in multiple asset classes, the Board is able to reduce the volatility of annual investment earnings. In addition, the Board employs a disciplined rebalancing policy to manage market volatility and to ensure the portfolio's exposures are consistent with the System's long-term asset targets.

The target allocation for the fund was adopted by the Retirement Board in June 2018 and implemented at the beginning of the 2019 fiscal year. The newly adopted target allocation reduced the allocation to U.S. Fixed Income by 2% with a corresponding increase in Private Markets. As of June 30, 2019, the target allocation was 28% U.S. Fixed Income, 42% U.S. Equity, 18% International Equity, and 12% Private Markets. The June 30, 2019, asset class allocation by Manager Directive is shown in Chart 3, page 71.

Diversification

After the asset allocation strategy is established, the Board implements a portfolio management structure that is designed to capture the market objective in each asset class. The most efficient and cost effective way to capture market returns is by gaining market exposures through fully replicated index funds. As a result, the System employs a 100% index structure in all public market asset classes. The U.S. Stock allocation is indexed to the S&P 500 Index, which represents roughly 80% of the total U.S. stock market capitalization. Similarly, the International Stock allocation is 100% indexed to the MSCI World ex USA Index which represents 85% of the market capitalization within the 22 developed market countries included in the index. Combined, the System's total stock exposure represents more than 80% of the global public equity market.

The System's fixed income allocation has historically emphasized index management and in fiscal year 2015 the Board elected to move to a 100% Bloomberg Barclays U.S. Treasury Index structure. The transition to a 100% Treasury Index structure removed credit risk from the fixed income allocation and increased total fund diversification. The System's overall portfolio is well diversified by asset class, investment structure, and individual security. The System's portfolio currently holds over 1,700 individual securities from 23 different countries.

Chart 4, on page 72, shows the fair value of the assets under management by investment type, category, and manager. A list of the ten largest Equity and Fixed Income holdings based on fair value at June 30, 2019, is included in Chart 5 on page 73. A complete list of security holdings is available upon request.

INVESTMENT SECTION

Investment Class Objectives

In order to achieve the total fund objectives, each asset type is assigned return objectives (listed below). Progress toward those benchmarks is closely monitored.

- | | | |
|----------------------|---|---|
| U.S. Equity | – | Produce a total return that captures the Standard & Poor’s 500 Common Stock Index over rolling 10-year periods with commensurate volatility. |
| International Equity | – | Produce a total return that captures the unhedged Morgan Stanley Capital World ex USA Index over rolling 10-year periods with commensurate volatility. |
| U.S. Fixed Income | – | Produce a total return that captures the Bloomberg Barclays U.S. Treasury Index over rolling 10-year periods with commensurate volatility. |
| Private Markets | – | Produce a total return that captures the blended return (based on PERS’ actual allocation) of: the National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index -0.75%, and S&P 500 Index + 3% over rolling 10-year periods with commensurate volatility. |

Each of the System’s investment managers agrees to a performance benchmark which, when all the benchmarks in an investment class are combined, is expected to produce the class objective.

Investment Performance

The System’s custody bank calculates performance for the total fund, each asset class, and individual investment management firms employed by the Board. Performance calculations are prepared using time-weighted rate of return based on fair values. Returns in this report are gross of fees.

Chart 6, shown on page 74, shows a year-by-year comparison of how the total fund and each investment class compared with its corresponding objective.

Charts 7-9, on pages 75-76, compare 1, 3, 5, 10-year, and since-inception returns for each asset class to the corresponding objective for periods ended June 30, 2019.

Chart 10, on page 76, shows Private Markets returns for the fiscal year ended June 30, 2019, compared to since-inception returns using a blended objective.

The bull market in U.S. Equity continued through fiscal year 2019 producing strong returns from the asset class. The U.S. Equity allocation experienced a 10.4% return for the fiscal year and is up 14.7% for the ten-year period ending June 30, 2019. The System employs a 100% indexed structure in the asset class which keeps costs low and minimizes the variability of returns that is traditionally associated with active management.

International stocks underperformed U.S. stocks for the second consecutive fiscal year returning 1.8% for the period ended June 30, 2019. Country exposure in the international equity allocation is entirely in developed markets, and like the U.S. Equity portfolio, the allocation employs a 100% indexed structure. In the 2019 fiscal year the System transitioned the international stock benchmark index from the MSCI EAFE Index to the MSCI World ex USA Index, adding Canadian stocks to the allocation.

The U.S. Fixed Income allocation is 100% indexed to the Bloomberg Barclays U.S. Treasury Index. Limiting the fixed income allocation to U.S. Treasury securities eliminates credit risk from the allocation which increases diversification at the total fund level. However, despite the lack of credit risk in the allocation, the bond portfolio remains sensitive to the direction of interest rates. Following two consecutive fiscal years of rising interest rates and negative returns from the asset class, interest rates declined sharply during the 2019 fiscal year producing a 7.3% return for the year ended June 30.

The Private Markets portfolio, which is comprised of private real estate and private equity, has 15¾ years of performance history as an asset class. Propelled by strong returns from both private real estate and private equity, the allocation experienced positive absolute returns during fiscal year 2019 outperforming the objective over the fiscal year.

This report has been prepared in conjunction with the System's investment consultants, Jobs Peak Advisors and Callan Associates.

INVESTMENT PERFORMANCE VS. OBJECTIVE

CHART 1

**Individual Fiscal Year Return vs. Inflation Objective
Periods Ended June 30**

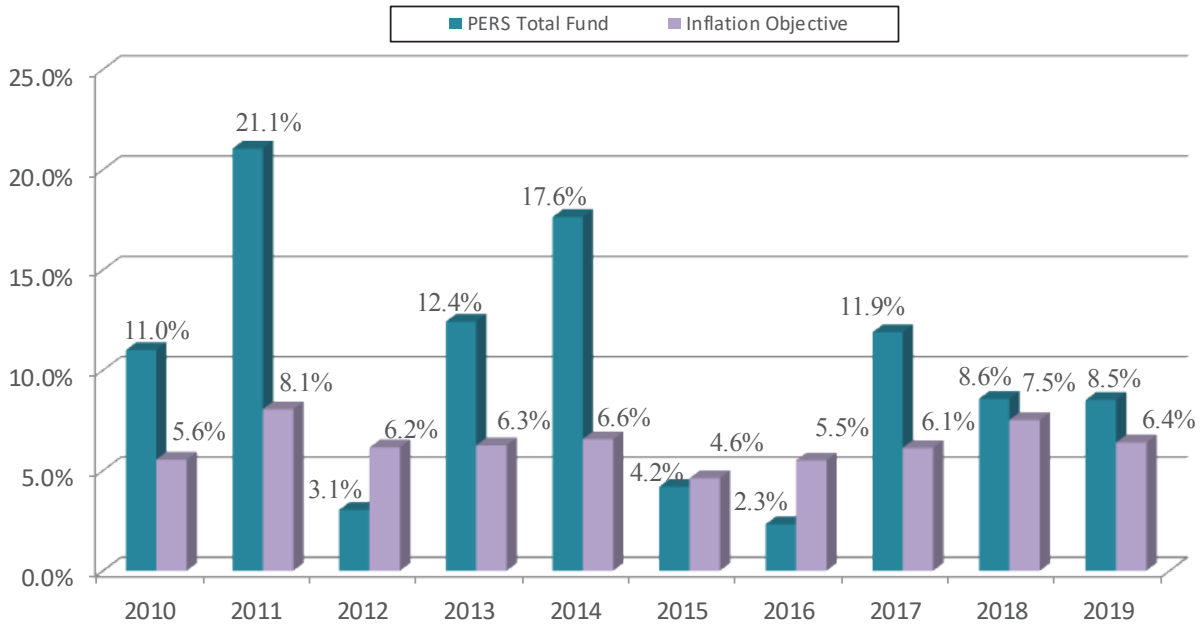
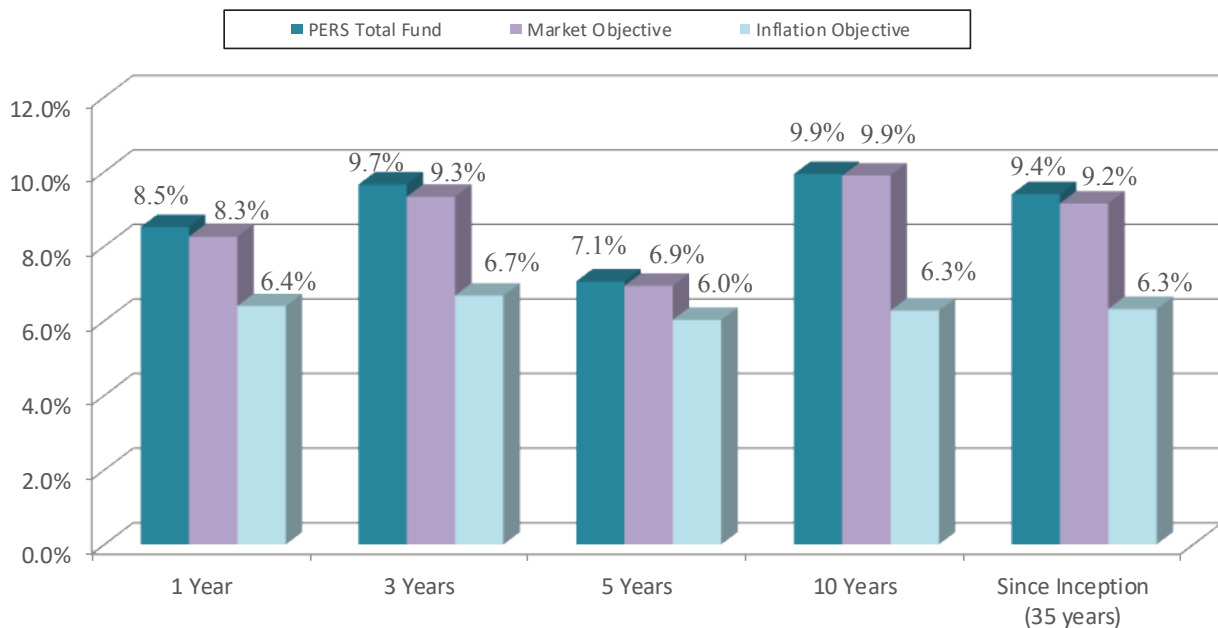


CHART 2

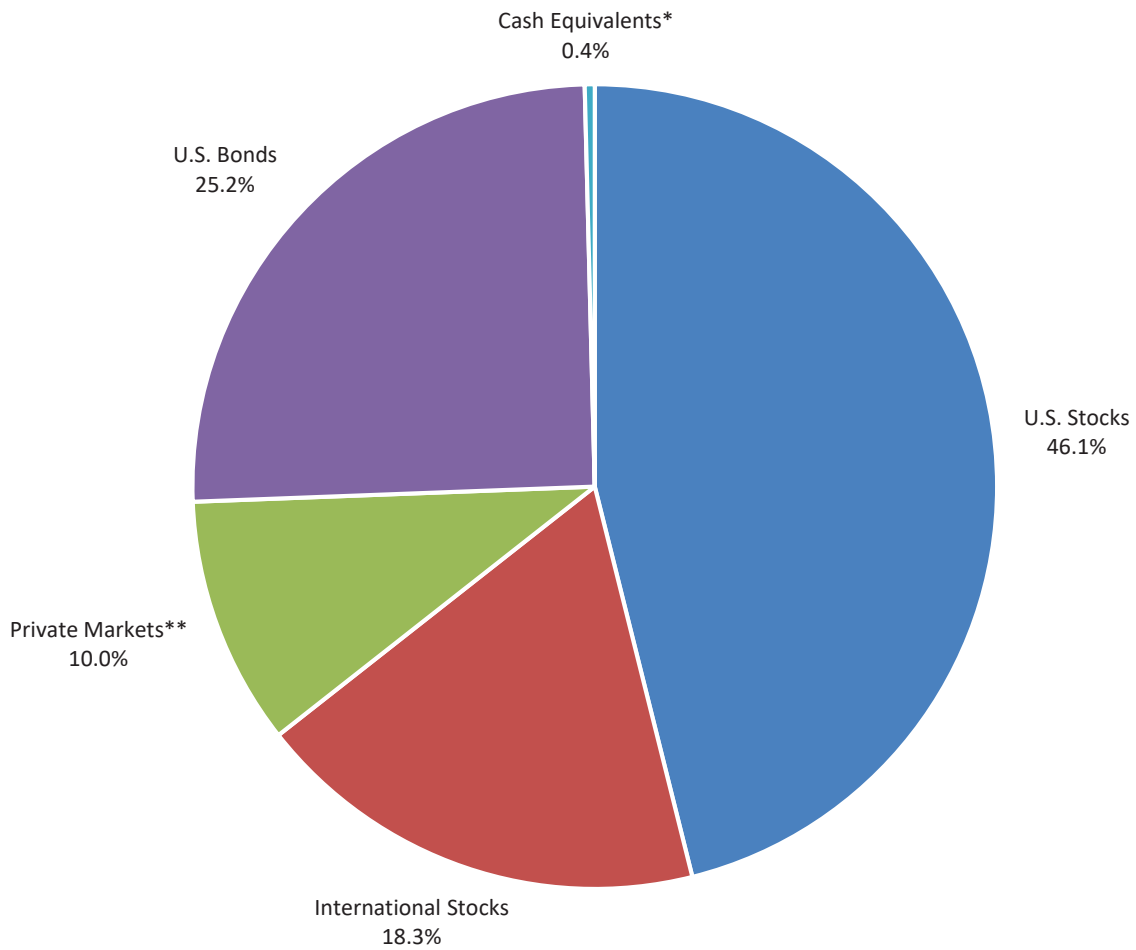
**Annualized Total Returns vs. Market Objective and Inflation Objectives *
As of June 30, 2019**



*CPI + 3.0% until September 2000, CPI + 3.5% from October 1, 2000 through September 30, 2002, CPI + 3.75% from October 1, 2002 through September 30, 2003, CPI + 4.50% from October 1, 2003 through November 30, 2017 and CPI + 4.75% thereafter.

Performance calculations are prepared using time-weighted rate of return (gross of fees) based on fair values.

CHART 3
ASSET MIX
JUNE 30, 2019



***Includes cash held by investment managers.**

****Includes 5.4% Private Equity and 4.6% Private Real Estate.**

INVESTMENT SECTION

CHART 4

Fair Value of Assets by Investment Directive June 30, 2019

| | <u>Fair Value</u> | <u>Percent of Total Fair Value</u> |
|-------------------------------------|---------------------------------|--|
| EQUITIES | | |
| <u>Domestic Index Managers</u> | | |
| AB - S&P | 10,132,379,932 | |
| BlackRock - S&P 500 | 10,151,440,258 | |
| Subtotal | <u>20,283,820,190</u> | 46.1 |
| <u>International Index Managers</u> | | |
| Mellon Capital | 4,510,106,614 | 18.3 |
| State Street Global Advisors | 3,540,785,030 | |
| Subtotal | <u>8,050,891,644</u> | |
| <u>Private Equity</u> | | |
| Pathway Capital Management | <u>2,376,261,251</u> | 5.4 |
| Total Equities | <u>\$ 30,710,973,085</u> | <u>69.8</u> |
| FIXED INCOME | | |
| <u>Domestic Index Managers</u> | | |
| Payden & Rygel - US Bond Index | 5,522,199,225 | |
| Payden & Rygel - Temp | 5,563,966,186 | |
| Subtotal | <u>11,086,165,411</u> | 25.2 |
| Total Fixed Income | <u>11,086,165,411</u> | <u>25.2</u> |
| PRIVATE REAL ESTATE | | |
| AEW Realty | 925,150,270 | |
| Invesco Realty Advisors | 1,090,364,696 | |
| Invesco Realty Advisors Takeover | <u>3,145,130</u> | |
| Total Real Estate | <u>2,018,660,096</u> | <u>4.6</u> |
| SHORT-TERM INVESTMENTS | | |
| Cash Equivalents | 157,944,079 | |
| Total Short-Term Investments | <u>157,944,079</u> | <u>0.4</u> |
| TOTAL PORTFOLIO | <u><u>\$ 43,973,742,671</u></u> | <u><u>100.0</u></u> % |

Total portfolio does not include pending trades receivable of \$309,517,700, accrued interest income of \$166,986,553, and pending trades payable of \$320,766,021.

The Statement of Fiduciary Net Position contains \$6,759,547 in administrative cash, which does not appear on this schedule.

In the basic financial statements the System accounts for securities using the "country of issue" methodology. Under this methodology, regardless of the manager's directive, if a manager invests funds and the underlying country of issue for the security is not the United States, then the securities are classified as international. In this chart however, the securities are classified by investment manager's directive.

CHART 5

LIST OF LARGEST ASSETS HELD

Largest Equity Holdings

June 30, 2019

| Ranking | Name | Fair Value |
|---------|------------------------|----------------|
| 1 | MICROSOFT CORP | \$ 848,785,296 |
| 2 | APPLE INC | 717,978,748 |
| 3 | AMAZON.COM INC | 646,354,622 |
| 4 | FACEBOOK INC | 381,721,190 |
| 5 | BERKSHIRE HATHAWAY INC | 341,943,439 |
| 6 | JOHNSON & JOHNSON | 306,045,515 |
| 7 | JP MORGAN CHASE & CO. | 301,776,485 |
| 8 | ALPHABET INC-CL C | 274,207,411 |
| 9 | EXXON MOBIL CORP | 268,045,839 |
| 10 | ALPHABET INC-CL A | 267,841,408 |

Largest Fixed Income Holdings

June 30, 2019

| Ranking | Name | | | Fair Value |
|---------|-------------------|--------|------------|----------------|
| 1 | U S TREASURY NOTE | 1.625% | 08/15/2022 | \$ 474,422,075 |
| 2 | U S TREASURY NOTE | 2.250% | 08/15/2027 | 316,693,345 |
| 3 | U S TREASURY NOTE | 2.625% | 11/15/2020 | 294,607,858 |
| 4 | U S TREASURY NOTE | 2.000% | 02/28/2021 | 289,039,770 |
| 5 | U S TREASURY NOTE | 7.125% | 02/15/2023 | 261,710,383 |
| 6 | U S TREASURY NOTE | 2.250% | 12/31/2023 | 224,746,815 |
| 7 | U S TREASURY NOTE | 2.750% | 08/15/2047 | 219,641,791 |
| 8 | U S TREASURY NOTE | 2.750% | 02/15/2024 | 191,796,879 |
| 9 | U S TREASURY NOTE | 2.500% | 05/15/2024 | 173,199,553 |
| 10 | U S TREASURY NOTE | 1.375% | 05/31/2021 | 169,531,902 |

Note: A complete list of the portfolio's holdings can be obtained upon request.

INVESTMENT SECTION

CHART 6

SUMMARY OF ACTUAL PERFORMANCE VS. OBJECTIVES (% Returns)

| | <u>U.S. EQUITY</u> | <u>INT'L EQUITY</u> | <u>U.S. FIXED INC.</u> | <u>INT'L FIXED INC.</u> | <u>PRIVATE MARKETS</u> | <u>TOTAL FUND</u> |
|-------------------------|------------------------|-------------------------|----------------------------|-----------------------------|----------------------------|-----------------------|
| <u>Fiscal Year 2010</u> | | | | | | |
| Total Return | 13.8 | 6.1 | 10.6 | 1.5 | 6.2 | 11.0 |
| Objective | 14.4 | 5.9 | 9.5 | 1.5 | 7.8 | 10.7 |
| <u>Fiscal Year 2011</u> | | | | | | |
| Total Return | 31.8 | 30.5 | 4.2 | 14.1 | 22.9 | 21.1 |
| Objective | 30.7 | 30.4 | 3.9 | 14.0 | 24.0 | 20.8 |
| <u>Fiscal Year 2012</u> | | | | | | |
| Total Return | 4.7 | -13.6 | 7.5 | 0.4 | 10.4 | 3.1 |
| Objective | 5.5 | -13.8 | 7.5 | 0.4 | 12.3 | 3.6 |
| <u>Fiscal Year 2013</u> | | | | | | |
| Total Return | 21.3 | 19.4 | -0.3 | -5.8 | 7.7 | 12.4 |
| Objective | 20.6 | 18.6 | -0.7 | -5.7 | 15.8 | 12.6 |
| <u>Fiscal Year 2014</u> | | | | | | |
| Total Return | 24.8 | 23.5 | 4.6 | N/A | 14.2 | 17.6 |
| Objective | 24.6 | 23.9 | 4.4 | N/A | 17.9 | 17.6 |
| <u>Fiscal Year 2015</u> | | | | | | |
| Total Return | 7.4 | -3.9 | 2.0 | N/A | 13.9 | 4.2 |
| Objective | 7.4 | -4.2 | 2.0 | N/A | 11.8 | 4.1 |
| <u>Fiscal Year 2016</u> | | | | | | |
| Total Return | 4.0 | -9.8 | 6.3 | N/A | 8.6 | 2.3 |
| Objective | 4.0 | -10.2 | 6.2 | N/A | 9.3 | 2.8 |
| <u>Fiscal Year 2017</u> | | | | | | |
| Total Return | 17.8 | 20.5 | -2.4 | N/A | 13.3 | 11.9 |
| Objective | 17.9 | 20.3 | -2.3 | N/A | 13.5 | 11.5 |
| <u>Fiscal Year 2018</u> | | | | | | |
| Total Return | 14.3 | 7.2 | -0.7 | N/A | 13.4 | 8.6 |
| Objective | 14.4 | 6.8 | -0.7 | N/A | 12.3 | 8.2 |
| <u>Fiscal Year 2019</u> | | | | | | |
| Total Return | 10.4 | 1.8 | 7.3 | N/A | 13.4 | 8.5 |
| Objective | 10.4 | 1.8 | 7.2 | N/A | 10.2 | 8.3 |

Current Objectives

U.S. Equity – S&P 500

Int'l Equity – MSCI-World ex USA

U.S. Fixed Income – Bloomberg Barclays U.S. Treasury Index

Private Markets – Portfolio weighted blend of NCREIF -0.75%
and S&P 500 + 3%

Total Fund:

Until September 30, 2000 – CPI + 3%

October 1, 2000 – September 30, 2002 – CPI + 3.5%

October 1, 2002 – September 30, 2003 – CPI + 3.75%

October 1, 2003 – November 30, 2017 – CPI + 4.5%

December 1, 2017 – thereafter – CPI + 4.75%

Performance calculations are prepared using time-weighted rate of return (gross of fees) based on fair values.

INVESTMENT PERFORMANCE VS. OBJECTIVE

CHART 7

U.S. Equity vs. S&P 500
As of June 30, 2019

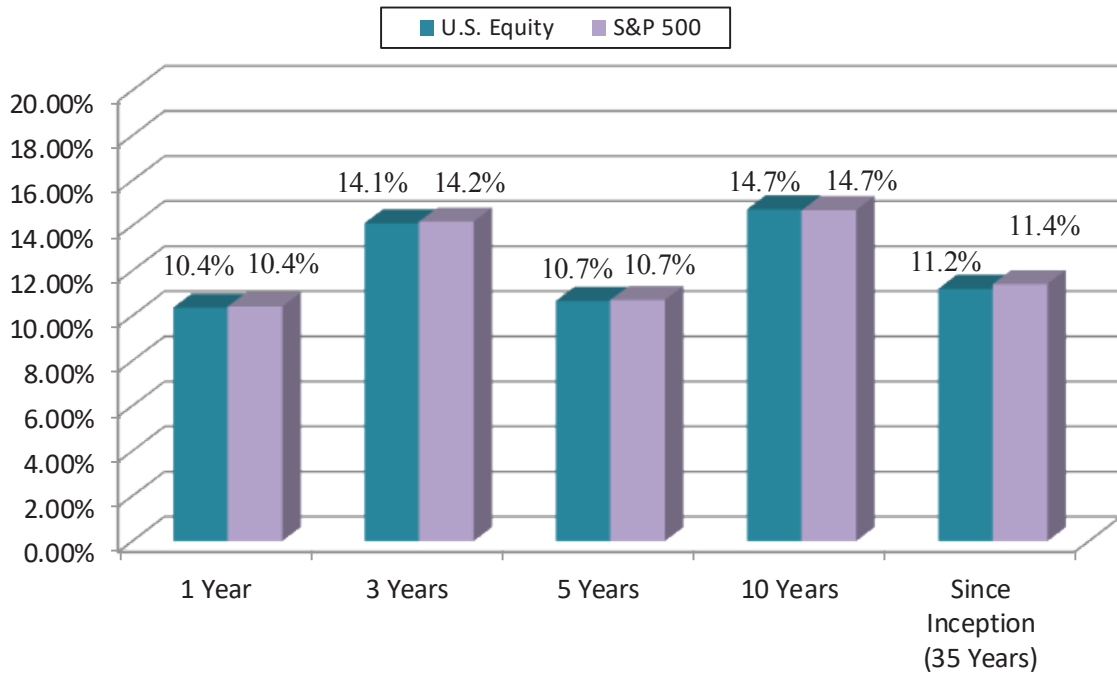
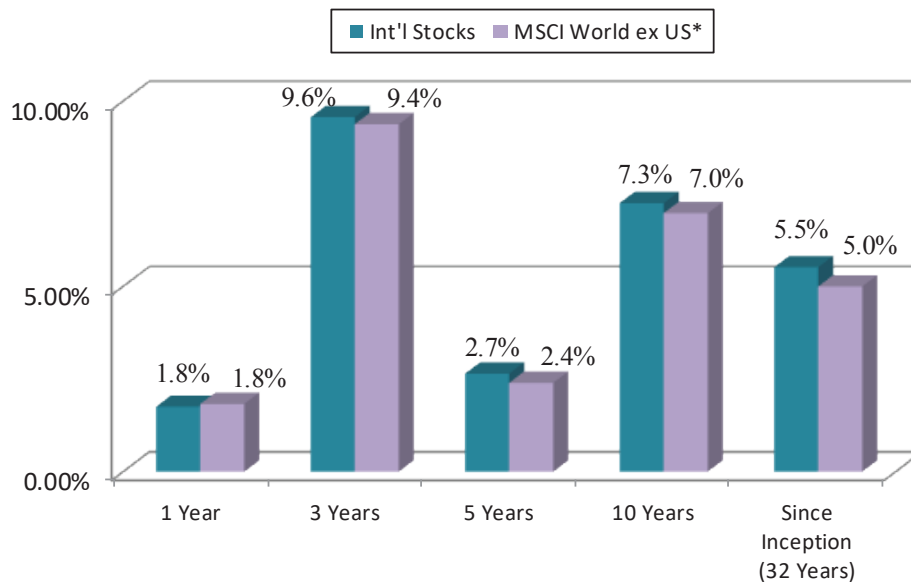


CHART 8

International Equity vs. MSCI World ex USA
As of June 30, 2019



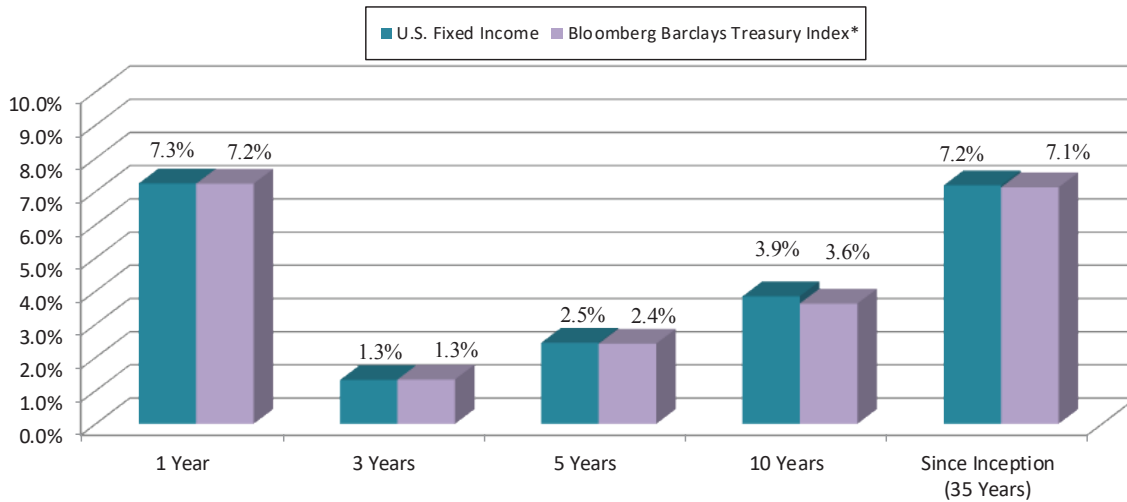
*Int'l Stocks benchmark is the MSCI EAFE Index until 8/1/2018 and the MSCI World ex USA Index thereafter.

INVESTMENT SECTION

INVESTMENT PERFORMANCE VS. OBJECTIVE

CHART 9

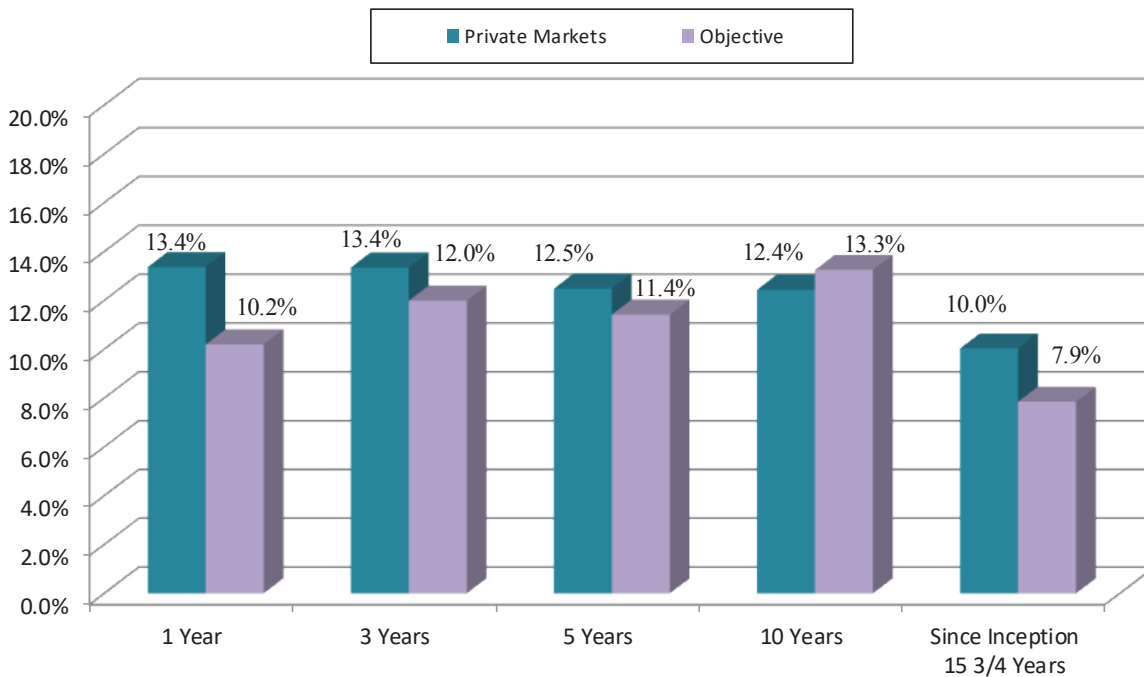
**U.S. Fixed Income vs. Bloomberg Barclays U.S. Treasury Index
As of June 30, 2019**



*US Bonds Benchmark is the Bloomberg Barclays US Aggregate Index until 3/31/2015 and the Bloomberg Barclays Treasury Index thereafter.

CHART 10

**Private Markets vs. Blended Objective*
As of June 30, 2019**



*Blended Objective:

45.7% NCREIF -0.75%
54.3% S&P 500 + 3.0%

Target adjusted quarterly, based on beginning fair values.

CHART 11

SCHEDULE OF FEES AND COMMISSIONS

For Year Ended June 30, 2019

(Page 1 of 3)

| <u>Name/Firm</u> | <u>Investment Mandate</u> | <u>Amount Under Management at June 30, 2019</u> | <u>Fees Incurred</u> |
|---|---------------------------|---|----------------------|
| Investment Management Fees | | | |
| <u>U.S. and International Stock Managers</u> | | | |
| AB S&P 500 | U.S. Index | \$ 10,161,976,979 | \$ 583,501 |
| BlackRock S&P 500 | U.S. Index | 10,160,024,617 | 587,968 |
| Mellon Capital | Int'l Index | 4,556,646,782 | 682,854 |
| State Street Global Advisors | Int'l Index | 3,572,980,284 | 568,177 |
| <u>U.S. Bond Managers</u> | | | |
| Payden & Rygel | U. S. Index | 5,566,110,535 | 521,396 |
| UBS Global Asset Management | U. S. Index | - | 486,094 |
| Payden & Rygel - Temp | U. S. Index | 5,600,629,461 | 37,212 |
| <u>Private Equity Manager</u> | | | |
| Pathway Capital Management | | 2,394,431,122 | 5,052,728 |
| Private Equity General Partner Fees | | | 35,518,633 |
| <u>Private Real Estate Managers</u> | | | |
| AEW Realty | | 924,152,160 | 3,885,147 |
| Invesco Realty Advisors | | 1,089,148,492 | 4,704,060 |
| Invesco Realty Advisors Takeover | | 3,141,597 | 14,097 |
| Subtotal investment management fees | | | 52,641,867 |
| Investment Consulting Fees | | | |
| <u>Investment Consultants</u> | | | |
| Callan Associates | | | 336,839 |
| Jobs Peak Advisors | | | 375,406 |
| Subtotal investment consulting fees | | | 712,245 |
| Total investment management and consulting fees | | | \$ <u>53,354,112</u> |

Other investment expenses of \$553,074 are not included in the fees listed above.

CHART 11

SCHEDULE OF FEES AND COMMISSIONS

For Year Ended June 30, 2019

(Page 2 of 3)

| Brokerage Firm | Number of Shares Traded | Commissions Paid | Commission Per Share (rounded) |
|-----------------------------|------------------------------------|-----------------------------|---|
| Banque Paribas | 113,018 | 359 | \$ 0.00 * |
| Barclays | 2,144,092 | 16,446 | 0.01 |
| BofA | 16,400 | 91 | 0.01 |
| BNY Convergenx | 241,442 | 1,235 | 0.01 |
| Cantor Fitzgerald | 7,153 | 36 | 0.01 |
| China International | 55,500 | 235 | 0.00 * |
| CIMB | 52,700 | 136 | 0.00 * |
| Citation Group | 71,448 | 357 | 0.01 |
| Citigroup | 12,798,460 | 36,174 | 0.00 * |
| CLSA | 1,589,825 | 5,517 | 0.00 * |
| Cowen and Co | 59,643 | 298 | 0.01 |
| Credit Lyonnais | 3,801,923 | 8,070 | 0.00 * |
| Credit Suisse | 7,520,303 | 19,226 | 0.00 * |
| Deutsche Bank | 2,263,538 | 6,606 | 0.00 * |
| Exane | 862,331 | 2,561 | 0.00 * |
| Fidelity | 180,513 | 1,057 | 0.01 |
| Goldman Sachs | 16,595,049 | 73,609 | 0.00 * |
| HSBC Bank | 6,040,280 | 33,154 | 0.01 |
| Instinet | 6,609,230 | 18,839 | 0.00 * |
| ITG | 4,943,501 | 18,210 | 0.00 * |
| JP Morgan | 6,781,305 | 30,172 | 0.00 * |
| Jefferies & Co | 663,134 | 1,972 | 0.00 * |
| Loop Capital | 89,256 | 536 | 0.01 |
| MacQuarie Bank | 11,726,457 | 26,484 | 0.00 * |
| Merrill Lynch | 25,843,078 | 144,135 | 0.01 |
| Morgan Stanley | 27,233,777 | 94,207 | 0.00 * |
| National Financial Services | 13,532 | 68 | 0.01 |
| Pershing | 1,388,756 | 10,141 | 0.01 |

CHART 11

SCHEDULE OF FEES AND COMMISSIONS

For Year Ended June 30, 2019

(Page 3 of 3)

| Brokerage Firm | Number of Shares Traded | Commissions Paid | Commission Per Share (rounded) |
|----------------------------|------------------------------------|-----------------------------|---|
| RBC | 4,531,255 | 28,492 | 0.01 |
| Sanford C Bernstein | 2,856,465 | 13,226 | 0.00 * |
| Scotia Capital | 141,800 | 782 | 0.01 |
| SG Securities | 4,587,193 | 14,334 | 0.00 * |
| Toronto Dominion | 5,531,300 | 35,140 | 0.01 |
| UBS | 11,154,211 | 36,899 | 0.00 * |
| Virtus Americas | 26,400 | 198 | 0.01 |
| Wells Fargo | 289,506 | 1,313 | 0.00 * |
| Williams Group Capital | 2,419,028 | 12,096 | 0.01 |
| Subtotal commissions | | <u>692,411</u> | |
| Total fees and commissions | | <u>\$ 54,046,523</u> | |

* Commission is less than one cent per share

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ACTUARIAL SECTION

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180 Howard Street Suite 1100 San Francisco, CA 94105-6147
T 415.263.8200 www.segalco.com

December 6, 2019

Public Employees' Retirement Board
State of Nevada
693 West Nye Lane
Carson City, Nevada 89703

**Re: Certification Letter for Actuarial Section of Financial Report for Fiscal
Year Ended June 30, 2019**

Dear Retirement Board Members:

This letter is to certify that Segal has prepared an actuarial valuation of the Public Employees' Retirement System of the State of Nevada as of June 30, 2019 and that such valuation is accurate and fairly presents the actuarial position of the Public Employees' Retirement System of Nevada.

The unfunded actuarial accrued liability is being amortized by level percentage-of-payroll payments over a year-by-year closed amortization period where each amortization period was set at the truncated average remaining period of all prior amortization layers until the average remaining amortization period was less than 20 years. At that point, amortization periods of 20 years are used. As of June 30, 2019, the funded ratios are 74.9% for Regular employees and 76.5% for Police/Fire employees.

Actuarial valuations are prepared annually by the independent actuary for the Public Employees' Retirement Board. The basic purposes of annual actuarial valuations are to determine the Retirement System's actuarial liabilities and the level percentage-of-payroll contribution rates required to fund the Retirement System on an actuarial reserve basis.

For funding purposes, to amortize the unfunded portion of actuarial accrued liability under the level percentage-of-payroll amortization method, the dollar amounts of calculated amortization payments increase in direct proportion to the assumed payroll growth rates of 5.50% per year for Regular employees and 6.50% per year for Police/Fire employees. These payroll growth rates are based on a 2.75% per year inflation assumption.

ACTUARIAL SECTION

Public Employees' Retirement Board
State of Nevada
December 6, 2019
Page 2

The payroll growth assumptions are set by the Board and affect the timing of payments toward the unfunded liabilities. Considerations for setting these assumptions include future financial conditions that are difficult for Segal to evaluate. In recent years, payroll growth has been less than assumed. This has the effect of delaying contributions toward the unfunded liabilities and could result in increases to required contributions in future years. We recommend that the Board closely monitor actual payroll growth to verify that the assumptions remain valid.

The most recent actuarial valuation prepared as of June 30, 2019 is based on the following major elements:

- Current benefit provisions (as specified in the Public Employees' Retirement Act).
- Membership data as of June 30, 2019 obtained from electronic files provided by the Retirement System. Membership data contained on the electronic files is examined and tested for reasonableness, but is not audited by the actuary.
- Assets as of June 30, 2019 obtained from the System's unaudited financial statements.
- Trend schedules for financial and actuarial sections of the Comprehensive Annual Financial Report (CAFR) as of June 30, 2019 (based upon data from the System, accepted without verification or audit, and upon results of the annual actuarial valuation).
- Actuarial assumptions and methods adopted by the Public Employees' Retirement Board.

A complete copy of the June 30, 2019 actuarial valuation is available from the System.

Each annual actuarial valuation involves a projection of the benefits expected to be paid in the future to all members of the Retirement System. The projection of expected future benefit payments is based on the benefit provisions in effect on the actuarial valuation date. (See the Plan Summary section of this Annual Financial Report for a summary of current benefit and contribution provisions.)

Public Employees' Retirement Board
State of Nevada
December 6, 2019
Page 3

LIST OF SUPPORTING SCHEDULES

The following schedules and summaries prepared by Segal are included within this Actuarial Section:

- Summary of Actuarial Assumptions and Methods
- Schedules of Funding Progress
- Schedule 1 - Retirement System Membership
- Schedule 2 - Active Member Valuation Data
- Schedule 3 - Pay Status Participants Added to and Removed from the Rolls
- Schedule 4 – Schedule of Funded Liabilities by Type
- Schedule 5 - Analysis of Actuarial Experience
- Schedule 6 – Schedule of Employer Contributions

We have also included the following two items:

- Distribution of Retired Members and Beneficiaries by Type as of June 30, 2019
- New Retired Members for Year Ended June 30, 2019

The Public Employees' Retirement Act requires an adjustment in the statutory contribution rates on July 1 of each odd-numbered year, based on the actuarially determined rates indicated in the actuarial valuation report for the immediately preceding year. Rates are only adjusted upward if the new rates are more than 0.50% higher than the existing rate for Employer-Pay and more than 0.25% higher for Employee/Employer. Rates are only adjusted downward if the new rates are more than 2.00% lower than the existing rate for Employer-Pay (and adjusted only by the amount in excess of 2.00%) and more than 1.00% lower than the existing rate for Employee/Employer (and adjusted only by the amount in excess of 1.00%). Rates are rounded to the nearest 0.25% of payroll.

Since this valuation year is an odd-numbered year, no adjustment in the statutory contribution rates is required as a result of this valuation.

ACTUARIAL SECTION

Public Employees' Retirement Board
State of Nevada
December 6, 2019
Page 4

| Employer-Pay | <u>Regular Employees</u> | <u>Police/Fire Employees</u> |
|---|-------------------------------------|---|
| Statutory Rate for Fiscal Years July 1, 2019 through June 30, 2021 | 29.25% | 42.50% |
| Actuarially Determined Contribution Rate per June 30, 2019 Actuarial Valuation | 29.65% | 43.33% |

| Employee/Employer | <u>Regular Employees</u> | <u>Police/Fire Employees</u> |
|---|-------------------------------------|---|
| Statutory Rate for Fiscal Years July 1, 2019 through June 30, 2021 | 30.50% | 44.00% |
| Actuarially Determined Contribution Rate per June 30, 2019 Actuarial Valuation | 31.01% | 44.82% |

The actuarial calculations prepared for funding purposes were made in accordance with generally accepted actuarial principles and practices. The information supplied in this letter is based on the current provisions of the Public Employees' Retirement Act and on the actuarial assumptions and methods adopted by the Public Employees' Retirement Board. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the plan. The payroll growth assumption should be closely monitored as noted above.

Public Employees' Retirement Board
State of Nevada
December 6, 2019
Page 5

We are members of the American Academy of Actuaries and we meet the Qualification Standards to the American Academy of Actuaries to render the actuarial opinion herein.

Segal Consulting, a Member of The Segal Group, Inc.



Brad Ramirez, FSA, MAAA, EA
Vice President & Consulting Actuary



Mark Hamwee, FSA, MAAA, EA
Vice President & Actuary

MAM/
Enclosures

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

The actuarial assumptions and methods used in the June 30, 2019 actuarial valuation were adopted by the Public Employees’ Retirement Board and were based on the results of the experience review issued October 16, 2017.

ECONOMIC ASSUMPTIONS

The economic assumptions for the 2019 actuarial valuation.

- Investment return* - 7.50% per year.
- Administrative expenses - 0.15% of payroll added to Normal Cost.
- Salary increases
 - Inflation:* 2.75% Plus
 - Productivity pay increases:* 0.50% Plus
 - Promotional and merit salary increases:*

| Years of Service | Regular | Police/Fire |
|------------------|---------|-------------|
| Less than 1 | 5.90% | 10.65% |
| 1 | 4.80 | 7.15 |
| 2 | 4.00 | 5.20 |
| 3 | 3.60 | 4.60 |
| 4 | 3.30 | 4.30 |
| 5 | 3.00 | 4.15 |
| 6 | 2.80 | 3.90 |
| 7 | 2.70 | 3.50 |
| 8 | 2.50 | 3.15 |
| 9 | 2.35 | 2.90 |
| 10 | 2.15 | 2.50 |
| 11 | 1.75 | 1.90 |
| 12 | 1.50 | 1.50 |
| 13 | 1.25 | 1.30 |
| 14 | 1.10 | 1.30 |
| 15 or More | 1.00 | 1.30 |

Rate Payroll - The payroll for the coming year is based on actual annualized payroll for the actives as of the valuation date and projected by the salary scale.

Payroll growth* (Funding) - 5.50% per year for Regular employees and 6.50% per year for Police/Fire employees.

* Includes inflation at 2.75% per year.

Post-retirement
Benefit increases

- For current retirees and beneficiaries, future Post-Retirement Benefit Increases reflect actual changes in historical CPI and are assumed to follow the formulas described below. For future retirees, those hired prior to 2010 are assumed to reach the cap after 16 years of retirement. Those hired in between 2010 and 2015 are also assumed to reach the cap after 16 years of retirement. Those hired after 2015 will never receive an annual increase that exceeds 2.75%. Underlying all of these assumptions is that CPI will grow over time at a rate of 2.75% per year.

For members with an effective date of membership before January 1, 2010:

The lesser of:

- (a) 2% per year following the third anniversary of the commencement of benefits, 3% per year following the sixth anniversary, 3 ½% per year following the ninth anniversary, 4% per year following the twelfth anniversary and 5% per year following the fourteenth anniversary, or
- (b) The annual benefit increase is equal to the average percentage increase in the Consumer Price Index (or other Board approved index) for the three preceding years.

In any event, a member's benefit must be increased by the percentages in paragraph (a) if the benefit of a member has not been increased at a rate greater than or equal to the average of the Consumer Price Index (All Items) (or other Board approved index) for the period between retirement and the date of increase.

For members with an effective date of membership on or after January 1, 2010 and before July 1, 2015:

Same as above, except the increases do not exceed 4% per year.

For members with an effective date of membership on or after July 1, 2015:

2% per year following the third anniversary of the commencement of benefits, 2.5% per year following the sixth anniversary, the lesser of 3% or the CPI for the preceding calendar year following the ninth anniversary.

ACTUARIAL SECTION

NON-ECONOMIC ASSUMPTIONS

The assumed retirement rates, which project the percentage of eligible employees who will retire, are shown below:

| | Regular employees with a date of membership before July 1, 2015 | | | | | |
|------------|--|----------------|----------------|----------------|----------------|-------------------|
| | Years of Service | | | | | |
| Age | 5 - 9 | 10 - 19 | 20 - 24 | 25 - 29 | 30 - 32 | 33 or More |
| 45 - 49 | -- | -- | 0.75% | 6.50% | 16.00% | 16.00% |
| 50 - 54 | 0.50% | 1.50% | 1.50% | 8.50% | 18.00% | 18.00% |
| 55 - 59 | 1.50% | 3.50% | 5.00% | 12.00% | 20.00% | 20.00% |
| 60 - 61 | 6.50% | 11.00% | 17.00% | 22.00% | 22.00% | 22.00% |
| 62 - 64 | 9.00% | 13.00% | 17.00% | 22.00% | 22.00% | 22.00% |
| 65 - 69 | 20.00% | 20.00% | 22.00% | 25.00% | 25.00% | 25.00% |
| 70 - 74 | 30.00% | 30.00% | 40.00% | 40.00% | 40.00% | 40.00% |
| 75 & older | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

| | Regular employees with a date of membership on or after July 1, 2015 | | | | | |
|------------|---|----------------|----------------|----------------|----------------|-------------------|
| | Years of Service | | | | | |
| Age | 5 - 9 | 10 - 19 | 20 - 24 | 25 - 29 | 30 - 32 | 33 or More |
| 45 - 49 | -- | -- | 0.75% | 6.50% | 6.50% | 16.00% |
| 50 - 54 | 0.50% | 1.50% | 1.50% | 8.50% | 8.50% | 18.00% |
| 55 - 59 | 1.50% | 3.50% | 5.00% | 12.00% | 20.00% | 20.00% |
| 60 - 61 | 6.50% | 11.00% | 17.00% | 22.00% | 22.00% | 22.00% |
| 62 - 64 | 9.00% | 13.00% | 17.00% | 22.00% | 22.00% | 22.00% |
| 65 - 69 | 20.00% | 20.00% | 22.00% | 25.00% | 25.00% | 25.00% |
| 70 - 74 | 30.00% | 30.00% | 40.00% | 40.00% | 40.00% | 40.00% |
| 75 & older | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |

| Police/Fire Employees | | | | | |
|------------------------------|--------------|----------------|----------------|----------------|-------------------|
| Years of Service | | | | | |
| Age | 5 - 9 | 10 - 19 | 20 - 24 | 25 - 29 | 30 or more |
| Less than 40 | -- | -- | -- | -- | -- |
| 40 - 44 | -- | 0.50% | 3.50% | -- | -- |
| 45 - 49 | -- | 1.00% | 6.50% | 18.00% | 18.00% |
| 50 - 54 | 1.50% | 4.50% | 13.00% | 20.00% | 24.00% |
| 55 - 59 | 3.50% | 10.00% | 20.00% | 25.00% | 28.00% |
| 60 - 64 | 9.00% | 18.00% | 25.00% | 35.00% | 35.00% |
| 65 - 69 | 50.00% | 50.00% | 60.00% | 60.00% | 60.00% |
| 70 & older | 100.00% | 100.00% | 100.00% | 100.00% | 100.0% |

The retirement age for inactive vested members is equal to their earliest unreduced retirement age.

ACTUARIAL SECTION

The assumed termination rates are shown below:

| Years of Service | Termination Rates | |
|------------------|-------------------|-------------|
| | Regular | Police/Fire |
| 0 – 1 | 16.00% | 15.00% |
| 1 – 2 | 12.50% | 8.00% |
| 2 – 3 | 10.25% | 7.50% |
| 3 – 4 | 8.00% | 6.00% |
| 4 – 5 | 7.50% | 5.00% |
| 5 – 6 | 6.00% | 3.75% |
| 6 – 7 | 5.25% | 3.50% |
| 7 – 8 | 4.25% | 2.50% |
| 8 – 9 | 4.00% | 2.25% |
| 9 – 10 | 3.75% | 1.90% |
| 10 – 11 | 3.25% | 1.50% |
| 11 – 12 | 3.00% | 1.30% |
| 12 – 13 | 2.75% | 1.00% |
| 13 – 14 | 2.50% | 0.90% |
| 14 – 15 | 2.25% | 0.80% |
| 15 – 16 | 2.00% | 0.70% |
| 16 – 17 | 2.00% | 0.60% |
| 17 – 18 | 1.75% | 0.50% |
| 18 – 19 | 1.75% | 0.50% |
| 19 – 20 | 1.75% | 0.50% |
| 20 & Over | 1.75% | 0.45% |

No termination is assumed after a member reaches earliest unreduced retirement age.

The assumed disability rates are shown below for selected ages:

| Age | Regular Employees | Police/Fire Employees |
|------------|--------------------------|------------------------------|
| 22 | 0.01% | 0.00% |
| 27 | 0.03% | 0.06% |
| 32 | 0.06% | 0.12% |
| 37 | 0.10% | 0.30% |
| 42 | 0.21% | 0.45% |
| 47 | 0.35% | 0.65% |
| 52 | 0.60% | 0.80% |
| 57 | 0.75% | 0.65% |
| 62 | 0.35% | 0.50% |

No disability rates are assumed after age 65.

Disability rates are applied only for members with more than 5 years of service and less than 30 years of service for Regular members with an effective date of membership before July 1, 2015, less than 33 1/3 years of service for Regular members with an effective date of membership on or after July 1, 2015, or 25 years for Police/Fire members.

ACTUARIAL SECTION

Mortality Tables:

Pre-Retirement: Headcount-Weighted RP-2014 Employee Table, projected to 2020 with Scale MP-2016.

Healthy: Headcount-Weighted RP-2014 Healthy Annuitant Table projected to 2020 with Scale MP-2016, set forward one year for spouses and beneficiaries.

For ages less than 50⁽¹⁾, mortality rates are based on the Headcount-Weighted RP-2014 Employee Mortality Tables. Those mortality rates are adjusted by the ratio of the mortality rate for members at age 50 to the mortality rate at age 50 from the Employee mortality tables listed above. The mortality rates are then projected to 2020 with Scale MP-2016.

Disabled: Headcount-Weighted RP-2014 Disabled Retiree Table, set forward four years.

⁽¹⁾ The RP-2014 Healthy Annuitant Mortality Tables have rates only for ages 50 and later.

The schedules below show the assumed healthy retiree mortality rates and projected life expectancies for selected ages:

| Regular and Police/Fire Members | | | | |
|--|------------------------|----------------|---|----------------|
| | Mortality Rates | | Expected Years of Life Remaining | |
| Age | Males | Females | Males | Females |
| 40 | 0.20% | 0.14% | 40.4 | 43.6 |
| 50 | 0.49% | 0.38% | 31.4 | 34.5 |
| 60 | 0.90% | 0.59% | 23.2 | 25.9 |
| 70 | 1.81% | 1.26% | 15.6 | 17.7 |
| 80 | 4.55% | 3.42% | 9.1 | 10.5 |

The RP-2014 Headcount-Weighted Mortality Tables, set forward one year for spouses and beneficiaries, reasonably reflect the projected mortality experience of the Plan as of the measurement date. The additional projection of 6 years is a provision made for future mortality improvement.

PRESENCE AND AGE OF BENEFICIARY

It is assumed for purposes of the actuarial valuation that beneficiaries of female members are two years older than the female member. Beneficiaries of male members are assumed to be three years younger than the male member. Spouses are assumed to be of the opposite sex of the member.

Since pre-retirement death benefits are payable to a surviving beneficiary of an unmarried member, all members are assumed to have a beneficiary upon pre-retirement death.

The unmodified option is a straight life annuity except for “employer-pay” Police/Fire retirees, for whom it is a 50% joint and survivor annuity. Existing “employer-pay” Police/Fire retirees with an unmodified option who retired after June 30, 1981 and before July 1, 2011 have been valued assuming no surviving spouse, pending the results of an analysis and verification of spousal information.

70% of “employer-pay” police/fire male members and 55% of “employer-pay” police/fire female members are assumed to be married at retirement.

DEPENDENT CHILDREN

The assumption for dependent children in the actuarial valuation is one dependent child who is 28 years younger than the employee.

UNKNOWN DATA FOR MEMBERS

Same as those exhibited by members with similar known characteristics. If not specified, Regular members are assumed to be female, and Police/Fire members are assumed to be male.

FORM OF PAYMENT

All active and inactive members are assumed to elect the unmodified option at retirement (Option 1).

ACTUARIAL VALUE OF ASSETS

Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period, further adjusted, if necessary, to be within 30% of the market value.

ACTUARIAL COST METHOD

Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of salary, with Normal Cost determined based on the plan provisions and benefit accrual rate applicable to that individual.

AMORTIZATION POLICY

For funding purposes, the UAAL, (i.e., the difference between the Actuarial Accrued Liability and the Valuation Value of Assets), as of June 30, 2011 shall continue to be amortized over separate 30-year period amortization layers based on the valuations during which each separate layer was previously established.

ACTUARIAL SECTION

Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of June 30 was amortized over a period equal to the truncated average remaining amortization period of all prior UAAL layers. This occurred until the average remaining amortization period was less than 20 years. At that point, amortization periods of 20 years are used for actuarial gains and losses.

Any new UAAL as a result of change in actuarial assumptions or methods was amortized over a period equal to the truncated average remaining amortization period of all prior UAAL layers. This occurred until the average remaining amortization period was less than 20 years. At that point, amortization periods of 20 years are used for assumption or method changes.

Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis:

- a. with the exception noted in b., below, the increase in UAAL as a result of any plan amendments will be amortized over a period of 15 years;
- b. the increase in UAAL that would result from a temporary retirement incentive will be pre-funded by the participating employer(s).

UAAL layers shall be amortized over “closed” amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation.

UAAL layers shall be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase.

If an overfunding exists (i.e., the total of all UAAL becomes negative so that there is a surplus), such surplus and any subsequent surpluses will be amortized over an “open” amortization period of 30 years. Any prior UAAL amortization layers will be considered fully amortized, and any subsequent UAAL will be amortized over 20 years as the first of a new series of amortization layers.

These amortization policy components will apply separately to each of the Regular and Police/Fire UAAL cost groups.

CHANGES IN ACTUARIAL ASSUMPTIONS AND METHODS SINCE THE PREVIOUS YEAR

There were no changes in actuarial assumptions or cost methods since the preceding valuation.

**REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULES OF FUNDING PROGRESS
2010 to 2019
(dollars in millions)**

| Actuarial Valuation Date June 30 | Actuarial Value of Assets (AVA) | Accrued Liability (AAL) | Unfunded Actuarial Accrued Liability (UAAL) | Ratio of AVA to AAL | Annual Covered Payroll | UAAL as a % of Annual Covered Payroll |
|---|--|--|--|------------------------------------|---------------------------------------|--|
| 2010 | \$24,725.5 | \$35,077.7 | \$10,352.3 | 70.5% | \$5,365.5 | 192.9% |
| 2011 | 25,871.1 | 36,876.2 | 11,005.1 | 70.2 | 5,214.6 | 211.0 |
| 2012 | 27,399.0 | 38,604.9 | 11,205.9 | 71.0 | 5,087.8 | 220.3 |
| 2013 | 29,108.5 | 41,984.5 | 12,875.9 | 69.3 | 5,100.2 | 252.5 |
| 2014 | 31,465.6 | 43,997.1 | 12,531.5 | 71.5 | 5,113.5 | 245.1 |
| 2015 | 33,717.9 | 46,070.1 | 12,352.2 | 73.2 | 5,227.2 | 236.3 |
| 2016 | 35,896.2 | 48,459.2 | 12,562.9 | 74.1 | 5,346.3 | 235.0 |
| 2017 | 38,719.3 | 51,986.1 | 13,266.8 | 74.5 | 5,542.2 | 239.4 |
| 2018 | 41,342.4 | 55,069.4 | 13,727.1 | 75.1 | 5,830.4 | 235.4 |
| 2019 | 43,609.0 | 57,920.2 | 14,311.2 | 75.3 | 6,038.6 | 237.0 |

| Actuarial Valuation Date June 30 | Unfunded Actuarial Accrued Liability (millions) | | Unfunded Accrued Liability as % of Payroll | | Actuarial Value of Assets as % of Total Actuarial Accrued Liability | |
|---|--|-------------------------|---|-------------------------|--|-------------------------|
| | Regular | Police/ Fire | Regular | Police/ Fire | Regular | Police/ Fire |
| 2010 | \$7,950.5 | \$2,401.8 | 178.4% | 264.5% | 71.2% | 67.8% |
| 2011 | 8,514.1 | 2,491.0 | 196.5 | 282.4 | 70.6 | 68.4 |
| 2012 | 8,729.4 | 2,476.5 | 206.2 | 289.5 | 71.2 | 70.1 |
| 2013 | 10,331.9 | 2,544.0 | 243.7 | 295.7 | 68.9 | 71.1 |
| 2014 | 10,160.0 | 2,371.5 | 238.3 | 278.9 | 70.8 | 74.3 |
| 2015 | 10,041.1 | 2,311.1 | 230.3 | 266.3 | 72.4 | 76.3 |
| 2016 | 10,197.9 | 2,365.0 | 228.7 | 266.3 | 73.2 | 77.1 |
| 2017 | 10,590.9 | 2,675.9 | 229.4 | 289.3 | 73.9 | 76.4 |
| 2018 | 10,876.0 | 2,851.0 | 224.5 | 288.9 | 74.7 | 76.5 |
| 2019 | 11,275.0 | 3,036.2 | 225.7 | 291.3 | 74.9 | 76.5 |

ACTUARIAL SECTION**SCHEDULE 1****RETIREMENT SYSTEM MEMBERSHIP
2010 to 2019**

| <u>June 30</u> | <u>Active Members</u> | <u>Inactive Members</u> | <u>Retired and Disabled Members</u> | <u>Beneficiaries & Survivors</u> | <u>Total Membership</u> |
|-----------------------|----------------------------------|------------------------------------|--|---|------------------------------------|
| 2010 | 102,594 | 11,807 | 38,841 | 5,078 | 158,320 |
| 2011 | 99,911 | 12,632 | 41,259 | 5,319 | 159,121 |
| 2012 | 98,512 | 12,962 | 44,012 | 5,534 | 161,020 |
| 2013 | 99,038 | 13,739 | 46,653 | 5,777 | 165,207 |
| 2014 | 100,522 | 14,633 | 49,170 | 6,038 | 170,363 |
| 2015 | 103,108 | 15,032 | 51,853 | 6,306 | 176,299 |
| 2016 | 105,167 | 15,639 | 54,615 | 6,565 | 181,986 |
| 2017 | 105,801 | 16,668 | 57,199 | 6,931 | 186,599 |
| 2018 | 107,506 | 16,607 | 59,819 | 7,289 | 191,221 |
| 2019 | 109,167 | 17,341 | 62,466 | 7,590 | 196,564 |

SCHEDULE 2**ACTIVE MEMBER VALUATION DATA
2010 to 2019**

| <u>June 30</u> | <u>Number of Active Members</u> | | <u>Annual Salary (millions)</u> | | <u>Annual Average Salary</u> | | <u>Percent Increase Average Salary</u> | |
|-----------------------|--|--------------------------------|--|--------------------------------|---|--------------------------------|---|--------------------------------|
| | <u>Regular</u> | <u>Police/ Fire</u> | <u>Regular</u> | <u>Police/ Fire</u> | <u>Regular</u> | <u>Police/ Fire</u> | <u>Regular</u> | <u>Police/ Fire</u> |
| 2010 | 90,219 | 12,375 | \$4,457.5 | \$908.0 | \$49,407 | \$73,373 | 2.6% | 2.4% |
| 2011 | 87,975 | 11,936 | 4,332.6 | 882.0 | 49,248 | 73,895 | (0.3) | 0.7 |
| 2012 | 86,719 | 11,793 | 4,232.5 | 855.3 | 48,808 | 72,523 | (0.9) | (1.9) |
| 2013 | 87,193 | 11,845 | 4,239.8 | 860.4 | 48,626 | 72,637 | (0.4) | 0.2 |
| 2014 | 88,709 | 11,813 | 4,263.1 | 850.4 | 48,057 | 71,990 | (1.2) | (0.9) |
| 2015 | 91,124 | 11,984 | 4,359.4 | 867.8 | 47,840 | 72,417 | (0.5) | 0.6 |
| 2016 | 93,030 | 12,137 | 4,458.2 | 888.2 | 47,922 | 73,179 | 0.2 | 1.1 |
| 2017 | 93,276 | 12,525 | 4,617.4 | 924.9 | 49,502 | 73,841 | 3.3 | 0.9 |
| 2018 | 94,615 | 12,891 | 4,843.6 | 986.8 | 51,193 | 76,549 | 3.4 | 3.7 |
| 2019 | 96,072 | 13,095 | 4,996.4 | 1,042.2 | 52,007 | 79,586 | 1.6 | 4.0 |

SCHEDULE 3

PAY STATUS PARTICIPANTS ADDED TO AND REMOVED FROM THE ROLLS
2010 to 2019

RETIREES AND BENEFICIARIES

| June 30 | Beginning Balance | <u>Added to Rolls</u> | | <u>Removed from Rolls</u> | | <u>Rolls at End of Year</u> | | % Increase in Annual Allowances | Average Annual Allowances |
|---------|-------------------|-----------------------|-------------------|---------------------------|-------------------|-----------------------------|-------------------|---------------------------------|---------------------------|
| | | Number | Annual Allowances | Number | Annual Allowances | Number | Annual Allowances | | |
| 2010 | 37,752 | 2,717 | \$89,297,524 | (915) | (\$22,834,942) | 39,554 | \$1,265,227,334 | 7.9% | \$31,988 |
| 2011 | 39,554 | 3,443 | 114,677,405 | (1,016) | (27,214,007) | 41,981 | 1,379,326,118 | 9.0 | 32,856 |
| 2012 | 41,981 | 3,687 | 121,192,385 | (932) | (24,956,200) | 44,736 | 1,507,827,860 | 9.3 | 33,705 |
| 2013 | 44,736 | 3,665 | 115,060,841 | (1,050) | (27,984,633) | 47,351 | 1,632,417,296 | 8.3 | 34,475 |
| 2014 | 47,351 | 3,732 | 119,871,171 | (1,142) | (34,060,824) | 49,941 | 1,757,076,989 | 7.6 | 35,183 |
| 2015 | 49,941 | 4,110 | 143,218,449 | (1,250) | (37,461,678) | 52,801 | 1,901,374,760 | 8.2 | 36,010 |
| 2016 | 52,801 | 4,454 | 158,933,124 | (1,328) | (41,066,707) | 55,927 | 2,050,852,866 | 7.9 | 36,670 |
| 2017 | 55,927 | 4,431 | 162,467,577 | (1,530) | (47,186,158) | 58,828 | 2,196,500,865 | 7.1 | 37,338 |
| 2018 | 58,828 | 4,444 | 167,984,313 | (1,574) | (50,855,765) | 61,698 | 2,354,772,962 | 7.2 | 38,166 |
| 2019 | 61,698 | 4,569 | 180,857,725 | (1,624) | (53,717,527) | 64,643 | 2,537,563,136 | 7.8 | 39,255 |

DISABILITY RECIPIENTS

| June 30 | Beginning Balance | <u>Added to Rolls</u> | | <u>Removed from Rolls</u> | | <u>Rolls at End of Year</u> | | % Increase in Annual Allowances | Average Annual Allowances |
|---------|-------------------|-----------------------|-------------------|---------------------------|-------------------|-----------------------------|-------------------|---------------------------------|---------------------------|
| | | Number | Annual Allowances | Number | Annual Allowances | Number | Annual Allowances | | |
| 2010 | 2,403 | 218 | \$5,437,237 | (106) | (\$2,128,188) | 2,515 | \$55,151,437 | 8.6% | \$21,929 |
| 2011 | 2,515 | 266 | 7,149,107 | (113) | (2,423,831) | 2,668 | 61,000,876 | 10.6 | 22,864 |
| 2012 | 2,668 | 279 | 7,576,925 | (122) | (2,462,375) | 2,825 | 67,473,905 | 10.6 | 23,885 |
| 2013 | 2,825 | 323 | 8,863,323 | (117) | (2,950,968) | 3,031 | 74,890,587 | 11.0 | 24,708 |
| 2014 | 3,031 | 286 | 8,346,444 | (133) | (3,001,371) | 3,184 | 81,828,716 | 9.3 | 25,700 |
| 2015 | 3,184 | 279 | 7,843,123 | (238) | (6,031,122) | 3,225 | 85,166,914 | 4.1 | 26,408 |
| 2016 | 3,225 | 224 | 6,630,290 | (375) | (9,669,332) | 3,074 | 83,459,531 | (2.0) | 27,150 |
| 2017 | 3,074 | 238 | 7,401,370 | (242) | (6,949,748) | 3,070 | 85,154,508 | 2.0 | 27,738 |
| 2018 | 3,070 | 196 | 6,637,162 | (167) | (4,986,863) | 3,099 | 88,402,398 | 3.8 | 28,526 |
| 2019 | 3,099 | 208 | 6,969,925 | (257) | (7,072,644) | 3,050 | 90,215,475 | 2.1 | 29,579 |

SURVIVOR ANNUITANTS

| June 30 | Beginning Balance | <u>Added to Rolls</u> | | <u>Removed from Rolls</u> | | <u>Rolls at End of Year</u> | | % Increase in Annual Allowances | Average Annual Allowances |
|---------|-------------------|-----------------------|-------------------|---------------------------|-------------------|-----------------------------|-------------------|---------------------------------|---------------------------|
| | | Number | Annual Allowances | Number | Annual Allowances | Number | Annual Allowances | | |
| 2010 | 1,750 | 174 | \$1,977,291 | (74) | (\$710,074) | 1,850 | \$26,115,812 | 7.7% | \$14,117 |
| 2011 | 1,850 | 162 | 1,999,587 | (83) | (825,074) | 1,929 | 27,852,395 | 6.6 | 14,439 |
| 2012 | 1,929 | 140 | 1,764,977 | (84) | (826,587) | 1,985 | 29,436,963 | 5.7 | 14,830 |
| 2013 | 1,985 | 132 | 1,877,979 | (69) | (706,398) | 2,048 | 31,357,319 | 6.5 | 15,311 |
| 2014 | 2,048 | 139 | 1,699,773 | (104) | (935,578) | 2,083 | 32,868,928 | 4.8 | 15,780 |
| 2015 | 2,083 | 144 | 2,339,825 | (94) | (1,085,422) | 2,133 | 34,817,928 | 5.9 | 16,323 |
| 2016 | 2,133 | 161 | 2,474,940 | (115) | (1,338,740) | 2,179 | 36,659,755 | 5.3 | 16,824 |
| 2017 | 2,179 | 138 | 2,365,400 | (85) | (961,809) | 2,232 | 38,583,162 | 5.2 | 17,286 |
| 2018 | 2,232 | 160 | 2,733,806 | (81) | (1,057,591) | 2,311 | 40,927,907 | 6.1 | 17,710 |
| 2019 | 2,311 | 154 | 2,125,227 | (102) | (1,240,847) | 2,363 | 42,750,703 | 4.5 | 18,092 |

SCHEDULE 4

**SCHEDULE OF FUNDED LIABILITIES BY TYPE
(millions)**

2010 to 2019

Actuarial Accrued Liabilities

| June 30 | Active Member Contributions (1) | Inactive and Pay-Status Members* (2) | Active Members Employer Financed Portion (3) | Actuarial Value of Assets | Portion of Actuarial Accrued Liabilities Covered by Assets | | |
|----------------|--|---|---|----------------------------------|---|------------|------------|
| | | | | | (1) | (2) | (3) |
| 2010 | \$650.5 | \$17,574.5 | \$16,852.7 | \$24,725.5 | 100% | 100% | 38.6% |
| 2011 | 679.9 | 19,206.9 | 16,989.4 | 25,871.1 | 100 | 100 | 35.2 |
| 2012 | 708.5 | 20,519.7 | 17,376.7 | 27,399.0 | 100 | 100 | 35.5 |
| 2013 | 743.2 | 23,132.1 | 18,109.2 | 29,108.5 | 100 | 100 | 28.9 |
| 2014 | 775.4 | 24,781.5 | 18,440.1 | 31,465.6 | 100 | 100 | 32.0 |
| 2015 | 822.7 | 26,302.7 | 18,944.8 | 33,717.9 | 100 | 100 | 34.8 |
| 2016 | 872.8 | 28,068.7 | 19,517.7 | 35,896.2 | 100 | 100 | 35.6 |
| 2017 | 920.8 | 30,492.8 | 20,572.5 | 38,719.3 | 100 | 100 | 35.5 |
| 2018 | 996.5 | 32,736.8 | 21,336.1 | 41,342.4 | 100 | 100 | 35.7 |
| 2019 | 1,065.0 | 35,033.2 | 21,822.0 | 43,609.0 | 100 | 100 | 34.4 |

* Includes liability for post-retirement benefit increases.

SCHEDULE 5

ANALYSIS OF ACTUARIAL EXPERIENCE

Gains and Losses in Actuarial Accrued Liabilities (UAAL) During Year Ended June 30,
2019

Resulting from Unfunded Differences Between Assumed Experience and Actual
Experience

(Dollar Amounts in Millions)

| Type of Activity | Regular | | Police/Fire | |
|---|-----------|---------------|-------------|---------------|
| | Amount | As Pct of AAL | Amount | As Pct of AAL |
| Age and Service Retirements. If members retire at older ages or with lower final average pay than assumed, there is a gain. If retirements occur at younger ages with higher average pay, there is a loss. | (\$232.8) | (0.52%) | (\$57.0) | (0.45%) |
| Disability Retirements. If disability claims are less than assumed, there is a gain. If there are more claims, there is a loss. | (11.6) | (0.03%) | (3.0) | (0.02%) |
| Pre- and Post-Retirement Mortality. If retirees live longer than assumed, there is a loss. If retirees live shorter than assumed, there is a gain. | (9.6) | (0.02%) | (20.9) | (0.16%) |
| Post-Retirement Benefit Increases. If increases are more than assumed, there is a loss. If increases are less than assumed, there is a gain. | 180.7 | 0.40% | 54.0 | 0.42% |
| Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If less liabilities are released, there is a loss. | (21.3) | (0.05%) | (10.6) | (0.08%) |
| Pay Increases. If there are smaller pay increases than assumed, there is a gain. If there are greater increases, there is a loss. | 106.0 | 0.24% | (60.6) | (0.47%) |
| Active New Entrants. Cost due to new hires. | (65.1) | (0.14%) | (7.4) | (0.06%) |
| Active Rehires. Some new active members have past service credits reinstated, thereby increasing costs due to the unanticipated liabilities. | (38.0) | (0.08%) | (2.4) | (0.02%) |
| Retirees Return to Actives. | 18.2 | 0.04% | 0.0 | 0.00% |
| Inactive and Retiree Showups. Persons in inactive or pay status who are added to the valuation data during the year. | (60.8) | (0.14%) | (10.1) | (0.08%) |
| Other. Miscellaneous gains and losses result from data changes and adjustments, and other miscellaneous impacts on the valuation results. Includes actual purchase of service contributions. | 116.7 | 0.26% | 39.6 | 0.31% |
| Total Liability Experience Gain (Loss) During Year. | (17.6) | (0.04%) | (78.4) | (0.61%) |
| Investment Income. If there is a greater investment income than assumed, there is a gain. If there is less income, there is a loss. | (151.3) | (0.34%) | (41.1) | (0.32%) |
| Total Experience Gain (Loss) During the Year. | (168.9) | (0.38%) | (119.5) | (0.93%) |

SCHEDULE 6

**SCHEDULE OF EMPLOYER CONTRIBUTIONS
2010 to 2019**

| Fiscal Year Ended June 30 | REGULAR | | POLICE/FIRE | | TOTAL | |
|---------------------------------|-------------------------------------|---------------------------|-------------------------------------|---------------------------|-------------------------------------|---------------------------|
| | Annual Required Contribution* | Percentage Contributed | Annual Required Contribution* | Percentage Contributed | Annual Required Contribution* | Percentage Contributed |
| 2010 | \$1,030,796,200 | 93% | \$358,761,400 | 91% | \$1,389,557,600 | 92% |
| 2011 | 1,057,566,978 | 89 | 372,888,833 | 88 | 1,430,455,811 | 88 |
| 2012 | 1,028,518,922 | 96 | 356,627,690 | 96 | 1,385,146,612 | 96 |
| 2013 | 1,140,004,053 | 86 | 377,692,041 | 88 | 1,517,696,095 | 86 |
| 2014 | 1,223,519,948 | 87 | 354,604,416 | 96 | 1,578,124,364 | 89 |
| 2015 | 1,243,009,888 | 87 | 357,365,587 | 98 | 1,600,375,475 | 90 |
| 2016 | 1,235,466,166 | 98 | 360,063,071 | 100 | 1,595,529,237 | 98 |
| 2017 | 684,350,580 | 103 | 194,707,470 | 102 | 879,058,050 | 103 |
| 2018 | 698,761,837 | 103 | 206,915,231 | 101 | 905,677,068 | 103 |
| 2019 | 714,413,481 | 105 | 217,139,466 | 100 | 931,552,947 | 104 |

* Reflects employer contributions only. Determined using 5% assumed payroll growth and 30-year frozen period for amortizing unfunded actuarial accrued liability.

Starting in the year ended June 30, 2017, pursuant to GASB Statement No. 82, the financial statements and annual required contributions recognize half of the employer contributions made on behalf of Employer-Pay members as member contributions.

**DISTRIBUTION OF RETIRED MEMBERS
AND BENEFICIARIES BY TYPE AS OF
JUNE 30, 2019**

REGULAR

| | <u>Total</u> | <u>Service</u> | <u>Disability</u> | <u>Beneficiary</u> | <u>Survivor</u> |
|---------------|--------------|----------------|-------------------|--------------------|-----------------|
| Under \$1,000 | 12,946 | 9,826 | 560 | 1,288 | 1,272 |
| 1,000 – 1,999 | 13,721 | 11,450 | 711 | 1,274 | 286 |
| 2,000 – 2,999 | 9,969 | 8,412 | 541 | 785 | 231 |
| 3,000 – 3,999 | 7,517 | 6,600 | 341 | 418 | 158 |
| 4,000 – 4,999 | 6,529 | 5,954 | 195 | 290 | 90 |
| 5,000 – 5,999 | 5,175 | 4,925 | 74 | 132 | 44 |
| 6,000 – 6,999 | 2,435 | 2,313 | 30 | 82 | 10 |
| 7,000 – 7,999 | 1,340 | 1,293 | 16 | 26 | 5 |
| 8,000 – 8,999 | 722 | 699 | 7 | 14 | 2 |
| 9,000 – 9,999 | 349 | 334 | 1 | 14 | 0 |
| 10,000 & over | <u>401</u> | <u>396</u> | <u>0</u> | <u>4</u> | <u>1</u> |
| Total | 61,104 | 52,202 | 2,476 | 4,327 | 2,099 |

POLICE/FIRE

| | <u>Total</u> | <u>Service</u> | <u>Disability</u> | <u>Beneficiary</u> | <u>Survivor</u> |
|---------------|--------------|----------------|-------------------|--------------------|-----------------|
| Under \$1,000 | 596 | 273 | 33 | 144 | 146 |
| 1,000 – 1,999 | 985 | 602 | 107 | 245 | 31 |
| 2,000 – 2,999 | 973 | 622 | 127 | 209 | 15 |
| 3,000 – 3,999 | 1,054 | 785 | 101 | 144 | 24 |
| 4,000 – 4,999 | 1,039 | 852 | 96 | 71 | 20 |
| 5,000 – 5,999 | 1,020 | 893 | 69 | 41 | 17 |
| 6,000 – 6,999 | 943 | 893 | 27 | 18 | 5 |
| 7,000 – 7,999 | 767 | 739 | 10 | 13 | 5 |
| 8,000 – 8,999 | 557 | 546 | 2 | 8 | 1 |
| 9,000 – 9,999 | 333 | 331 | 0 | 2 | 0 |
| 10,000 & over | <u>685</u> | <u>678</u> | <u>2</u> | <u>5</u> | <u>0</u> |
| Total | 8,952 | 7,214 | 574 | 900 | 264 |

ACTUARIAL SECTION

NEW RETIRED MEMBERS FOR YEAR ENDED JUNE 30, 2019**Regular**

| | Years of Credited Service | | | | | | |
|-------------------------|---------------------------|----------|----------|----------|----------|----------|----------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ |
| Average monthly benefit | \$333 | \$687 | \$1,507 | \$2,484 | \$3,534 | \$4,653 | \$5,592 |
| Average salary | \$41,708 | \$52,045 | \$65,692 | \$74,437 | \$80,426 | \$83,649 | \$90,546 |
| Number of new retirees | 28 | 532 | 816 | 613 | 614 | 484 | 665 |

Police/Fire

| | Years of Credited Service | | | | | | |
|-------------------------|---------------------------|----------|----------|----------|-----------|-----------|-----------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ |
| Average monthly benefit | N/A | \$902 | \$2,014 | \$3,557 | \$5,361 | \$7,995 | \$8,983 |
| Average salary | N/A | \$70,786 | \$92,979 | \$99,708 | \$114,553 | \$140,658 | \$136,272 |
| Number of new retirees | 0 | 14 | 52 | 61 | 145 | 225 | 31 |



180 Howard Street Suite 1100 San Francisco, CA 94105-6147
T 415.263.8200 www.segalco.com

December 6, 2019

Public Employees' Retirement Board
693 West Nye Lane
Carson City, Nevada 89703

Dear Retirement Board Members:

We are pleased to submit this Governmental Accounting Standards Board (GASB) Statement No. 67 Actuarial Valuation as of June 30, 2019. It contains various information that will need to be disclosed in order to comply with GASB Statement No. 67.

This report was prepared in accordance with applicable Actuarial Standards of Practice at the request of the Board to assist in administering the Plan. We are not accountants, but are familiar with the GASB requirements and believe that the calculations are consistent with those requirements. The census and financial information on which our calculations were based was prepared by the Retirement Office. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

The actuarial cost method used in the calculation of the Total Pension Liability (Entry Age Method) is the same cost method used for funding purposes. All actuarial assumptions for these calculations are the same as for funding purposes, with the exception of the payroll growth assumption, which is 5% per year for GASB 67 calculations.

The assumed rate of return on assets for funding purposes is 7.50% per year, net of investment fees, and this is also the assumed rate used to discount the Total Pension Liability.

The following supporting schedules were prepared by Segal:

- Schedule of Net Pension Liability
- Schedule of Sensitivity of the Net Pension Liability to Changes in the Discount Rate
- Schedule of Changes in Net Pension Liability
- Schedule of Contributions

The actuarial calculations were completed under the supervision of Mark Hamwee, FSA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the Plan.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

Brad Ramirez, FSA, MAAA, EA
Vice President &
Consulting Actuary

Mark Hamwee, FSA, MAAA, EA
Vice President & Actuary

MAM/
Enclosures

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ACTUARIAL SECTION

Schedule of Net Pension Liability

The components of the net pension liability are as follows:

| | June 30, 2019 | June 30, 2018 |
|--|-------------------------|-------------------------|
| Total pension liability | \$57,920,215,973 | \$55,069,428,741 |
| Plan fiduciary net position | <u>\$44,284,252,583</u> | <u>\$41,431,686,852</u> |
| Net pension liability | \$13,635,963,390 | \$13,637,741,889 |
| Plan fiduciary net position as a percentage of the total pension liability | 76.46% | 75.24% |

The net pension liability was measured as of June 30, 2019 and 2018 and determined based upon the Plan fiduciary net position (plan assets) and total pension liability from actuarial valuations as of June 30, 2019 and 2018, respectively. For 2018, the plan fiduciary net position has been revised to reflect the final audited financial statement provided by the Retirement Office.

Schedule of Sensitivity of the Net Pension Liability to Changes in the Discount Rate.

The following presents the net pension liability of the NVPERS as of June 30, 2019, calculated using the discount rate of 7.50%, as well as what the NVPERS net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (6.50%) or 1 percentage point higher (8.50%) than the current rate:

| | 1% Decrease (6.50%) | Current Discount Rate (7.50%) | 1% Increase (8.50%) |
|---|--------------------------------|--|--------------------------------|
| Net pension liability as of June 30, 2019 | \$21,113,639,011 | \$13,635,963,390 | \$7,420,117,489 |

Schedule of Changes in Net Pension Liability – Last Two Fiscal Years

| | 2019 | 2018 |
|--|-------------------------|-------------------------|
| Total pension liability | | |
| Service cost | \$1,169,697,661 | \$1,134,081,523 |
| Interest | 4,119,085,317 | 3,892,067,357 |
| Change of assumptions | 0 | 0 |
| Differences between expected and actual experience* | 197,981,925 | 509,077,558 |
| Change of plan provisions | 0 | 0 |
| Benefit payments, including refunds of member contributions | -2,635,757,782 | -2,451,379,847 |
| Other changes | <u>-219,889</u> | <u>-515,342</u> |
| Net change in total pension liability | \$2,850,787,232 | \$3,083,331,249 |
| Total pension liability – beginning | <u>55,069,428,741</u> | <u>51,986,097,492</u> |
| Total pension liability – ending (a) | <u>\$57,920,215,973</u> | <u>\$55,069,428,741</u> |
| Plan fiduciary net position | | |
| Contributions – employer (including those for administrative expenses)** | \$965,518,968 | \$930,269,428 |
| Contributions – employee (including purchase of service)** | 1,063,876,102 | 1,003,827,230 |
| Net investment income*** | 3,468,148,453 | 3,273,869,454 |
| Benefit payments, including refunds of member contributions | -2,635,757,782 | -2,451,379,847 |
| Administrative expense | -11,812,306 | -12,867,447 |
| Other | <u>2,592,296</u> | <u>1,714,626</u> |
| Net change in plan fiduciary net position*** | \$2,852,565,731 | \$2,745,433,444 |
| Plan fiduciary net position – beginning | <u>41,431,686,852</u> | <u>38,686,253,408</u> |
| Plan fiduciary net position – ending (b)*** | <u>\$44,284,252,583</u> | <u>\$41,431,686,852</u> |
| Net pension liability – ending (a) – (b)*** | <u>\$13,635,963,390</u> | <u>\$13,637,741,889</u> |
| Plan fiduciary net position as a percentage of the total pension liability*** | 76.46% | 75.24% |
| Covered payroll | \$6,786,900,381 | \$6,508,871,854 |
| Plan net pension liability as percentage of covered payroll*** | 200.9% | 209.5% |

* Includes new liability resulting from purchase of service.

** Pursuant to GASB No. 82, contributions are classified as member contributions for the purposes of GASB No. 67 if they are made by an employer to satisfy what are actually deemed to be member contribution requirements.

*** The 2018 values have been revised to reflect the final audited June 30, 2018 financial statement provided by the Retirement Office.

ACTUARIAL SECTION

Schedule of Contributions – Last Ten Fiscal Years

| Year Ended June 30 | Actuarially Determined Contributions | Contributions in Relation to the Actuarially Determined Contributions* | Contribution Deficiency (Excess) | Covered Payroll** | Contributions as a Percentage of Covered Payroll |
|-----------------------|--|--|-------------------------------------|-------------------|--|
| 2010 | \$1,339,528,091 | \$1,281,714,847 | \$57,813,244 | \$5,958,931,742 | 21.51% |
| 2011 | 1,326,777,889 | 1,264,759,603 | 62,018,286 | 5,911,919,210 | 21.39% |
| 2012 | 1,425,790,188 | 1,332,320,660 | 93,469,528 | 5,817,634,985 | 22.90% |
| 2013 | 1,369,998,167 | 1,310,082,859 | 59,915,308 | 5,574,616,761 | 23.50% |
| 2014 | 1,508,752,536 | 1,405,006,553 | 103,745,983 | 5,715,259,174 | 24.58% |
| 2015 | 1,499,751,865 | 1,436,652,815 | 63,099,050 | 5,753,148,095 | 24.97% |
| 2016 | 888,592,224 | 849,748,895 | 38,843,329 | 5,921,618,314 | 14.35% |
| 2017 | 912,688,843 | 901,744,209 | 10,944,634 | 6,081,072,010 | 14.83% |
| 2018 | 939,671,590 | 930,269,428 | 9,402,162 | 6,237,158,079 | 14.91% |
| 2019 | 981,782,636 | 965,518,968 | 16,263,668 | 6,508,871,854 | 14.83% |

* Includes employer contributions towards administrative expenses.

** Measurement as of beginning of year.

Notes:

1. All contributions shown reflect employer-paid contributions only. Member contributions are excluded. Starting in 2016, pursuant to GASB No. 82, contributions are classified as member contributions for the purposes of GASB No. 67 if they are made by an employer to satisfy what are actually deemed to be member contribution requirements.
2. Actuarially Determined Contributions above are based on actuarially determined contribution rates (employer portion only) from most recent rate-setting year prior to year shown, applied to covered payroll for year shown.



STATISTICAL SECTION

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OVERVIEW

This section of the Public Employees' Retirement System of Nevada's Comprehensive Annual Financial Report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary says about the System's overall financial health.

FINANCIAL TRENDS

These schedules contain trend information to help the reader understand how the System's financial performance has changed over time.

- Schedule 1 Changes in Net Position – *Last Ten Years*
- Schedule 2 Benefit and Refund Deductions from Net Position – *Last Ten Years*

REVENUES

This schedule contains information to help the reader understand the System's funding over the last ten years.

- Schedule 3 Contribution Rates – *Last Ten Years*

OPERATIONS

These schedules contain information about the System's operations.

- Schedule 4 Retired Members by Type of Benefit
- Schedule 5 Average Benefit Payments
- Schedule 5-A New Retired Members Average Benefit Payments
- Schedule 6 Average Age at Retirement – *Last Ten Years*
- Schedule 7 Number of Active Members per Retiree – *Last Ten Years*
- Schedule 8 Schedules of Funding Progress – *Last Ten Years*
- Schedule 9 Participating Employers
- Schedule 10 Principal Participating Employers – *Current Year and Nine Years Ago*
- Schedule 11 Average Age and Service Statistics for Members – *Last Ten Years*
- Schedule 12 Average Salaries for Members – *Last Ten Years*

STATISTICAL SECTION

FINANCIAL TRENDS

SCHEDULE 1

CHANGES IN NET POSITION - LAST TEN FISCAL YEARS*

(in millions)

| | <u>2010</u> | <u>2011</u> | <u>2012</u> |
|---|-------------------|-------------------|-----------------|
| Additions | | | |
| Employer contributions | \$ 690.7 | \$ 680.9 | \$ 715.3 |
| Plan member contributions | 690.7 | 680.9 | 715.2 |
| Repayment and purchase of service | 26.9 | 31.5 | 38.0 |
| Investment income (net of expenses) | 2,059.4 | 4,402.4 | 766.1 |
| Other income | <u>1.9</u> | <u>2.2</u> | <u>2.1</u> |
| Total additions to plan net position | <u>3,469.6</u> | <u>5,797.9</u> | <u>2,236.7</u> |
| Deductions | | | |
| Benefit payments | 1,301.6 | 1,412.1 | 1,552.7 |
| Refunds | 20.3 | 24.8 | 27.8 |
| Administrative and other expenses | 11.1 | 10.6 | 10.0 |
| Transfers of contributions | <u>0.5</u> | <u>1.5</u> | <u>1.7</u> |
| Total deductions from plan net position | <u>1,333.5</u> | <u>1,449.0</u> | <u>1,592.2</u> |
| Change in net position | <u>\$ 2,136.1</u> | <u>\$ 4,348.9</u> | <u>\$ 644.5</u> |

*Information is from internal System records.

Both the employer and plan members contributions have been restated in this schedule for fiscal years 2010 through 2016 as a result of implementing GASB 82 (see below).

Statement No. 82, an amendment of GASB Statements No. 67, No. 68, and No. 73, this statement addresses classification of employer-paid contributions. This statement requires certain contribution payments made by the employer to be classified as plan member contributions.

Fiscal Year

| <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| \$ 704.7 | \$ 757.4 | \$ 775.5 | \$ 849.7 | \$ 901.8 | \$ 930.2 | \$ 965.5 |
| 704.6 | 757.3 | 775.4 | 849.8 | 901.7 | 930.2 | 965.5 |
| 46.5 | 42.8 | 82.5 | 61.7 | 67.2 | 73.6 | 98.4 |
| 3,193.9 | 5,031.4 | 1,395.3 | 778.7 | 4,110.3 | 3,273.9 | 3,468.1 |
| 2.5 | 1.9 | 2.8 | 2.0 | 2.1 | 2.3 | 2.8 |
| 4,652.2 | 6,590.8 | 3,031.5 | 2,541.9 | 5,983.1 | 5,210.2 | 5,500.3 |
| 1,680.8 | 1,816.7 | 1,958.3 | 2,111.9 | 2,258.2 | 2,420.0 | 2,601.7 |
| 26.1 | 23.1 | 25.6 | 26.8 | 30.4 | 31.4 | 34.0 |
| 9.6 | 9.6 | 9.6 | 11.9 | 9.9 | 12.9 | 11.8 |
| 0.9 | 1.0 | 2.4 | - | 0.4 | 0.5 | 0.2 |
| 1,717.4 | 1,850.4 | 1,995.9 | 2,150.6 | 2,298.9 | 2,464.8 | 2,647.7 |
| \$ 2,934.8 | \$ 4,740.4 | \$ 1,035.6 | \$ 391.3 | \$ 3,684.2 | \$ 2,745.4 | \$ 2,852.6 |

STATISTICAL SECTION

FINANCIAL TRENDS

SCHEDULE 2

BENEFIT AND REFUND DEDUCTIONS FROM NET POSITION*

(in millions)

| | <u>2010</u> | <u>2011</u> | <u>2012</u> |
|----------------------------------|-------------------|-------------------|-------------------|
| Regular Members: | | | |
| Benefits | | | |
| Retirement and survivor | \$ 1,008.3 | \$ 1,085.8 | \$ 1,187.8 |
| Disability | <u>52.9</u> | <u>58.3</u> | <u>63.6</u> |
| Total benefits | <u>\$ 1,061.2</u> | <u>\$ 1,144.1</u> | <u>\$ 1,251.4</u> |
| Refunds | | | |
| Refunds due to separation | \$ 14.6 | \$ 18.4 | \$ 19.1 |
| Refunds due to death | - | - | - |
| Mandatory employer distributions | <u>0.5</u> | <u>0.2</u> | <u>0.3</u> |
| Total refunds | <u>\$ 15.1</u> | <u>\$ 18.6</u> | <u>\$ 19.4</u> |
| Police/Fire Members: | | | |
| Benefits | | | |
| Retirement and survivor | \$ 227.9 | \$ 254.4 | \$ 286.1 |
| Disability | <u>12.5</u> | <u>13.6</u> | <u>15.2</u> |
| Total benefits | <u>\$ 240.4</u> | <u>\$ 268.0</u> | <u>\$ 301.3</u> |
| Refunds | | | |
| Refunds due to separation | \$ 5.2 | \$ 6.2 | \$ 8.4 |
| Refunds due to death | <u>-</u> | <u>-</u> | <u>-</u> |
| Total refunds | <u>\$ 5.2</u> | <u>\$ 6.2</u> | <u>\$ 8.4</u> |
| Total Members: | | | |
| Benefits | | | |
| Retirement and survivor | \$ 1,236.2 | \$ 1,340.2 | \$ 1,473.9 |
| Disability | <u>65.4</u> | <u>71.9</u> | <u>78.8</u> |
| Total benefits | <u>\$ 1,301.6</u> | <u>\$ 1,412.1</u> | <u>\$ 1,552.7</u> |
| Refunds | | | |
| Refunds due to separation | \$ 19.8 | \$ 24.6 | \$ 27.5 |
| Refunds due to death | - | - | - |
| Mandatory employer distributions | <u>0.5</u> | <u>0.2</u> | <u>0.3</u> |
| Total refunds | <u>\$ 20.3</u> | <u>\$ 24.8</u> | <u>\$ 27.8</u> |

Notes: Police/Fire received post-retirement increases each year. Amounts are immaterial for purposes of this schedule.

*Information is from internal System records.

Fiscal Year

| <u>2013</u> | <u>2014</u> | <u>2015</u> | <u>2016</u> | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| \$ 1,283.6 | \$ 1,385.3 | \$ 1,491.2 | \$ 1,609.6 | \$ 1,720.0 | \$ 1,843.3 | \$ 1,981.0 |
| 69.4 | 75.5 | 81.3 | 81.7 | 81.5 | 82.9 | 86.3 |
| <u>\$ 1,353.0</u> | <u>\$ 1,460.8</u> | <u>\$ 1,572.5</u> | <u>\$ 1,691.3</u> | <u>\$ 1,801.5</u> | <u>\$ 1,926.2</u> | <u>\$ 2,067.3</u> |
| \$ 18.2 | \$ 17.0 | \$ 18.1 | \$ 20.4 | \$ 21.9 | \$ 22.3 | \$ 25.0 |
| 0.5 | 0.4 | 0.8 | 1.3 | 1.7 | 1.1 | 1.2 |
| 0.3 | 0.1 | 0.1 | 0.3 | 0.9 | 1.0 | 0.8 |
| <u>\$ 19.0</u> | <u>\$ 17.5</u> | <u>\$ 19.0</u> | <u>\$ 22.0</u> | <u>\$ 24.5</u> | <u>\$ 24.4</u> | <u>\$ 27.0</u> |
| \$ 310.5 | \$ 336.4 | \$ 364.2 | \$ 398.1 | \$ 432.9 | \$ 469.0 | \$ 508.5 |
| 17.3 | 19.5 | 21.6 | 22.5 | 23.8 | 24.8 | 25.9 |
| <u>\$ 327.8</u> | <u>\$ 355.9</u> | <u>\$ 385.8</u> | <u>\$ 420.6</u> | <u>\$ 456.7</u> | <u>\$ 493.8</u> | <u>\$ 534.4</u> |
| \$ 7.0 | \$ 5.5 | \$ 6.6 | \$ 4.8 | \$ 5.7 | \$ 6.6 | \$ 6.6 |
| 0.1 | 0.1 | - | - | 0.2 | 0.4 | 0.4 |
| <u>\$ 7.1</u> | <u>\$ 5.6</u> | <u>\$ 6.6</u> | <u>\$ 4.8</u> | <u>\$ 5.9</u> | <u>\$ 7.0</u> | <u>\$ 7.0</u> |
| \$ 1,594.1 | \$ 1,721.7 | \$ 1,855.4 | \$ 2,007.7 | \$ 2,152.9 | \$ 2,312.3 | \$ 2,489.5 |
| 86.7 | 95.0 | 102.9 | 104.2 | 105.3 | 107.7 | 112.2 |
| <u>\$ 1,680.8</u> | <u>\$ 1,816.7</u> | <u>\$ 1,958.3</u> | <u>\$ 2,111.9</u> | <u>\$ 2,258.2</u> | <u>\$ 2,420.0</u> | <u>\$ 2,601.7</u> |
| \$ 25.2 | \$ 22.5 | \$ 24.7 | \$ 25.2 | \$ 27.6 | \$ 28.9 | \$ 31.6 |
| 0.6 | 0.5 | 0.8 | 1.3 | 1.9 | 1.5 | 1.6 |
| 0.3 | 0.1 | 0.1 | 0.3 | 0.9 | 1.0 | 0.8 |
| <u>\$ 26.1</u> | <u>\$ 23.1</u> | <u>\$ 25.6</u> | <u>\$ 26.8</u> | <u>\$ 30.4</u> | <u>\$ 31.4</u> | <u>\$ 34.0</u> |

STATISTICAL SECTION

REVENUES**SCHEDULE 3
CONTRIBUTION RATES**

| | Regular Employees | | Police/Fire Employees | |
|---------------------------------------|------------------------------|---|------------------------------|---|
| | Employer-Pay Plan | Plan Member/ Employer Plan (matching rate) | Employer-Pay Plan | Plan Member/ Employer Plan (matching rate) |
| Fiscal year ended June 30, | | | | |
| 2010 | 21.50 % | 11.25 % | 37.00 % | 19.00 % |
| 2011 | 21.50 | 11.25 | 37.00 | 19.00 |
| 2012 | 23.75 | 12.25 | 39.75 | 20.25 |
| 2013 | 23.75 | 12.25 | 39.75 | 20.25 |
| 2014 | 25.75 | 13.25 | 40.50 | 20.75 |
| 2015 | 25.75 | 13.25 | 40.50 | 20.75 |
| 2016 | 28.00 | 14.50 | 40.50 | 20.75 |
| 2017 | 28.00 | 14.50 | 40.50 | 20.75 |
| 2018 | 28.00 | 14.50 | 40.50 | 20.75 |
| 2019 | 28.00 | 14.50 | 40.50 | 20.75 |

SCHEDULE 4

RETIRED MEMBERS BY TYPE OF BENEFIT*

As of June 30, 2019

(Page 1 of 2)

Regular Retired Members

| Amount of Monthly Benefit | Number of Retired Members | Type of Retirement | | | |
|------------------------------|---------------------------------|--------------------|------------|-------------|----------|
| | | Service | Disability | Beneficiary | Survivor |
| Under \$1,000 | 12,946 | 9,826 | 560 | 1,288 | 1,272 |
| \$1,000 - \$1,999 | 13,721 | 11,450 | 711 | 1,274 | 286 |
| \$2,000 - \$2,999 | 9,969 | 8,412 | 541 | 785 | 231 |
| \$3,000 - \$3,999 | 7,517 | 6,600 | 341 | 418 | 158 |
| \$4,000 - \$4,999 | 6,529 | 5,954 | 195 | 290 | 90 |
| \$5,000 - \$5,999 | 5,175 | 4,925 | 74 | 132 | 44 |
| \$6,000 - \$6,999 | 2,435 | 2,313 | 30 | 82 | 10 |
| \$7,000 - \$7,999 | 1,340 | 1,293 | 16 | 26 | 5 |
| \$8,000 - \$8,999 | 722 | 699 | 7 | 14 | 2 |
| \$9,000 - \$9,999 | 349 | 334 | 1 | 14 | - |
| \$10,000 & Over | 401 | 396 | - | 4 | 1 |
| Total | 61,104 | 52,202 | 2,476 | 4,327 | 2,099 |

*Information provided by Segal Consulting, the System's actuary.

STATISTICAL SECTION**OPERATIONS****SCHEDULE 4****RETIRED MEMBERS BY TYPE OF BENEFIT***

As of June 30, 2019

(Page 2 of 2)

Police/Fire Retired Members

| Amount of Monthly Benefit | Number of Retired Members | Type of Retirement | | | |
|------------------------------|---------------------------------|--------------------|------------|-------------|----------|
| | | Service | Disability | Beneficiary | Survivor |
| Under \$1,000 | 596 | 273 | 33 | 144 | 146 |
| \$1,000 - \$1,999 | 985 | 602 | 107 | 245 | 31 |
| \$2,000 - \$2,999 | 973 | 622 | 127 | 209 | 15 |
| \$3,000 - \$3,999 | 1,054 | 785 | 101 | 144 | 24 |
| \$4,000 - \$4,999 | 1,039 | 852 | 96 | 71 | 20 |
| \$5,000 - \$5,999 | 1,020 | 893 | 69 | 41 | 17 |
| \$6,000 - \$6,999 | 943 | 893 | 27 | 18 | 5 |
| \$7,000 - \$7,999 | 767 | 739 | 10 | 13 | 5 |
| \$8,000 - \$8,999 | 557 | 546 | 2 | 8 | 1 |
| \$9,000 - \$9,999 | 333 | 331 | - | 2 | - |
| \$10,000 & Over | 685 | 678 | 2 | 5 | - |
| Total | 8,952 | 7,214 | 574 | 900 | 264 |

The values in these tables represent the number of individuals receiving benefit payments.

Individuals receiving service retirement are members of the System that received a benefit payment during fiscal year 2019 which was not a disability retirement.

Members with five or more years of service who become totally unable to perform their job or any comparable job because of injury or mental or physical illness are eligible to apply for disability retirement. Once approved by the Board, members receive a monthly disability retirement payment.

When a member retires there are seven retirement options. Option 1 pays the full monthly benefit but provides no income protection for a beneficiary after death for Regular members. Beneficiary retirements are paid to beneficiaries of retired members who have passed away with a retirement of Option 1 (Police/Fire members only) and Options 2 through 7 for all members.

Survivor retirements are paid when a member dies prior to retirement.

For more information regarding the various retirement types, refer to the Plan Summary starting on page 131.

*Information provided by Segal Consulting, the System's actuary.

SCHEDULE 5

AVERAGE BENEFIT PAYMENTS*

| <u>June 30</u> | | <u>Regular Members</u> | <u>Police/Fire Members</u> |
|----------------|--|----------------------------|--------------------------------|
| 2010 | Average monthly benefit | \$2,486 | \$4,141 |
| | Average monthly compensation at retirement | \$5,309 | \$8,250 |
| | Number of new retirees | 2,252 | 357 |
| | Average years of service at retirement | 18.15 | 23.01 |
| 2011 | Average monthly benefit | \$2,539 | \$4,348 |
| | Average monthly compensation at retirement | \$4,890 | \$7,343 |
| | Number of new retirees | 2,933 | 433 |
| | Average years of service at retirement | 19.38 | 22.53 |

Number of new retirees excludes survivors and beneficiaries.

The average monthly benefit and number of new retirees is from Segal Consulting, the System's actuarial firm. All other data is from internal System records.

Note: Average age at retirement is now shown on Schedule 6.

For GASB reporting purposes, beginning in 2012 Schedule 5-A is organized by years of credited service.

*Information provided by Segal Consulting, the System's actuary.

STATISTICAL SECTION

OPERATIONS

SCHEDULE 5-A

NEW RETIRED MEMBERS AVERAGE BENEFIT PAYMENTS*

(Page 1 of 4)

Regular

| | Year of Credited Service | | | | | | |
|-----------------|---------------------------------|------------|--------------|--------------|--------------|--------------|------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ |
| FY2012 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | \$ 316 | \$ 708 | \$ 1,492 | \$ 2,253 | \$ 3,133 | \$ 4,207 | \$ 5,334 |
| Average salary | \$ 31,100 | \$ 53,851 | \$ 65,168 | \$ 67,022 | \$ 73,116 | \$ 77,811 | \$ 82,864 |
| New retirees | 67 | 638 | 686 | 546 | 540 | 283 | 466 |
| FY2013 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | \$ 392 | \$ 732 | \$ 1,445 | \$ 2,302 | \$ 3,208 | \$ 4,180 | \$ 5,533 |
| Average salary | \$ 40,715 | \$ 55,919 | \$ 62,673 | \$ 67,832 | \$ 73,088 | \$ 76,158 | \$ 84,003 |
| New retirees | 63 | 742 | 729 | 563 | 517 | 274 | 353 |
| FY2014 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | \$ 307 | \$ 698 | \$ 1,433 | \$ 2,351 | \$ 3,227 | \$ 4,266 | \$ 5,361 |
| Average salary | \$ 39,526 | \$ 53,111 | \$ 63,395 | \$ 70,463 | \$ 73,299 | \$ 76,178 | \$ 82,142 |
| New retirees | 57 | 698 | 673 | 583 | 510 | 331 | 402 |
| FY2015 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | \$ 281 | \$ 762 | \$ 1,441 | \$ 2,408 | \$ 3,245 | \$ 4,287 | \$ 5,565 |
| Average salary | \$ 13,318 | \$ 52,524 | \$ 63,031 | \$ 70,500 | \$ 73,071 | \$ 77,750 | \$ 87,364 |
| New retirees | 40 | 721 | 746 | 573 | 558 | 446 | 471 |
| FY2016 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | \$ 363 | \$ 745 | \$ 1,412 | \$ 2,412 | \$ 3,332 | \$ 4,412 | \$ 5,357 |
| Average salary | \$ 36,513 | \$ 51,414 | \$ 60,663 | \$ 70,429 | \$ 74,821 | \$ 78,473 | \$ 83,261 |
| New retirees | 24 | 664 | 784 | 684 | 600 | 459 | 531 |

*Information provided by Segal Consulting, the System's actuary.

SCHEDULE 5-A

NEW RETIRED MEMBERS AVERAGE BENEFIT PAYMENTS

(Page 2 of 4)

Regular

Year of Credited Service

| | <u>0-4</u> | <u>5-9</u> | <u>10-14</u> | <u>15-19</u> | <u>20-24</u> | <u>25-29</u> | <u>30+</u> |
|-----------------|------------|------------|--------------|--------------|--------------|--------------|------------|
| FY2017 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | \$ 298 | \$ 720 | \$ 1,458 | \$ 2,367 | \$ 3,383 | \$ 4,528 | \$ 5,386 |
| Average salary | \$ 35,079 | \$ 50,398 | \$ 62,982 | \$ 68,682 | \$ 76,932 | \$ 81,449 | \$ 86,777 |
| New retirees | 28 | 611 | 806 | 598 | 539 | 518 | 530 |
| FY2018 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | \$ 459 | \$ 717 | \$ 1,486 | \$ 2,359 | \$ 3,362 | \$ 4,440 | \$ 5,539 |
| Average salary | \$ 55,724 | \$ 52,566 | \$ 62,312 | \$ 68,582 | \$ 77,136 | \$ 80,355 | \$ 90,757 |
| New retirees | 32 | 491 | 789 | 633 | 592 | 480 | 632 |
| FY2019 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | \$ 333 | \$ 687 | \$ 1,507 | \$ 2,484 | \$ 3,534 | \$ 4,653 | \$ 5,592 |
| Average salary | \$ 41,708 | \$ 52,045 | \$ 65,692 | \$ 74,437 | \$ 80,426 | \$ 83,649 | \$ 90,546 |
| New retirees | 28 | 532 | 816 | 613 | 614 | 484 | 665 |

STATISTICAL SECTION

OPERATIONS

SCHEDULE 5-A

NEW RETIRED MEMBERS AVERAGE BENEFIT PAYMENTS*

(Page 3 of 4)

Police/Fire

| | Year of Credited Service | | | | | | |
|-----------------|--------------------------|------------|--------------|--------------|--------------|--------------|------------|
| | <u>0-4</u> | <u>5-9</u> | <u>10-14</u> | <u>15-19</u> | <u>20-24</u> | <u>25-29</u> | <u>30+</u> |
| FY2012 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | N/A | \$ 894 | \$ 1,776 | \$ 3,357 | \$ 4,783 | \$ 6,809 | \$ 8,451 |
| Average salary | N/A | \$ 63,123 | \$ 79,808 | \$ 94,892 | \$ 105,111 | \$ 119,107 | \$ 128,952 |
| New retirees | 0 | 27 | 67 | 61 | 128 | 122 | 35 |
| FY2013 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | N/A | \$ 1,098 | \$ 1,836 | \$ 3,287 | \$ 5,056 | \$ 7,103 | \$ 8,677 |
| Average salary | N/A | \$ 67,352 | \$ 85,941 | \$ 92,347 | \$ 105,667 | \$ 124,569 | \$ 123,411 |
| New retirees | 0 | 25 | 54 | 72 | 107 | 123 | 28 |
| FY2014 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | N/A | \$ 791 | \$ 1,807 | \$ 3,379 | \$ 5,012 | \$ 6,710 | \$ 8,741 |
| Average salary | N/A | \$ 68,430 | \$ 77,952 | \$ 99,204 | \$ 107,261 | \$ 120,215 | \$ 130,369 |
| New retirees | 0 | 14 | 48 | 55 | 94 | 113 | 36 |
| FY2015 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | N/A | \$ 1,134 | \$ 1,762 | \$ 3,419 | \$ 5,276 | \$ 7,185 | \$ 8,815 |
| Average salary | N/A | \$ 68,715 | \$ 78,453 | \$ 93,265 | \$ 112,151 | \$ 125,093 | \$ 128,100 |
| New retirees | 0 | 13 | 47 | 53 | 128 | 149 | 47 |
| FY2016 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | N/A | \$ 797 | \$ 1,864 | \$ 3,414 | \$ 5,230 | \$ 7,117 | \$ 8,275 |
| Average salary | N/A | \$ 65,601 | \$ 80,772 | \$ 92,602 | \$ 109,171 | \$ 124,280 | \$ 125,158 |
| New retirees | 0 | 21 | 68 | 59 | 136 | 195 | 42 |

*Information provided by Segal Consulting, the System's actuary.

SCHEDULE 5-A

NEW RETIRED MEMBERS AVERAGE BENEFIT PAYMENTS

(Page 4 of 4)

Police/Fire

Year of Credited Service

| | <u>0-4</u> | <u>5-9</u> | <u>10-14</u> | <u>15-19</u> | <u>20-24</u> | <u>25-29</u> | <u>30+</u> |
|-----------------|------------|------------|--------------|--------------|--------------|--------------|------------|
| FY2017 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | N/A | \$ 945 | \$ 1,964 | \$ 3,638 | \$ 5,019 | \$ 7,263 | \$ 10,022 |
| Average salary | N/A | \$ 76,891 | \$ 84,940 | \$ 103,184 | \$ 110,221 | \$ 126,582 | \$ 144,234 |
| New retirees | 0 | 22 | 61 | 71 | 151 | 195 | 41 |
| FY2018 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | N/A | \$ 758 | \$ 1,942 | \$ 3,595 | \$ 5,388 | \$ 7,724 | \$ 8,350 |
| Average salary | N/A | \$ 55,853 | \$ 85,184 | \$ 104,130 | \$ 114,462 | \$ 134,986 | \$ 123,547 |
| New retirees | 0 | 11 | 58 | 71 | 163 | 169 | 25 |
| FY2019 | | | | | | | |
| Average | | | | | | | |
| monthly benefit | N/A | \$ 902 | \$ 2,014 | \$ 3,557 | \$ 5,361 | \$ 7,995 | \$ 8,983 |
| Average salary | N/A | \$ 70,786 | \$ 92,979 | \$ 99,708 | \$ 114,553 | \$ 140,658 | \$ 136,272 |
| New retirees | 0 | 14 | 52 | 61 | 145 | 225 | 31 |

STATISTICAL SECTION**OPERATIONS****SCHEDULE 6****AVERAGE AGE AT RETIREMENT***

| <u>June 30</u> | <u>Regular</u> | <u>Police/Fire</u> |
|----------------|----------------|--------------------|
| 2010 | 61 | 55 |
| 2011 | 64 | 58 |
| 2012 | 64 | 59 |
| 2013 | 65 | 59 |
| 2014 | 66 | 59 |
| 2015 | 66 | 60 |
| 2016 | 67 | 60 |
| 2017 | 67 | 60 |
| 2018 | 67 | 60 |
| 2019 | 68 | 61 |

*Information is from internal System records.

SCHEDULE 7**NUMBER OF ACTIVE MEMBERS PER RETIREE***

| <u>June 30</u> | <u>Number of Active Members</u> | | <u>Number of Retired Members**</u> | | <u>Active Members per Retiree</u> | |
|----------------|---------------------------------|-------------------------|------------------------------------|-------------------------|-----------------------------------|-------------------------|
| | <u>Regular</u> | <u>Police/ Fire</u> | <u>Regular</u> | <u>Police/ Fire</u> | <u>Regular</u> | <u>Police/ Fire</u> |
| 2010 | 90,219 | 12,375 | 34,047 | 4,794 | 2.6 | 2.6 |
| 2011 | 87,975 | 11,936 | 36,123 | 5,136 | 2.4 | 2.3 |
| 2012 | 86,719 | 11,793 | 38,528 | 5,484 | 2.3 | 2.2 |
| 2013 | 87,193 | 11,845 | 40,854 | 5,799 | 2.1 | 2.0 |
| 2014 | 88,709 | 11,813 | 43,136 | 6,034 | 2.1 | 2.0 |
| 2015 | 91,124 | 11,984 | 45,508 | 6,345 | 2.0 | 1.9 |
| 2016 | 93,030 | 12,137 | 47,899 | 6,716 | 1.9 | 1.8 |
| 2017 | 93,276 | 12,525 | 50,091 | 7,108 | 1.9 | 1.8 |
| 2018 | 94,615 | 12,891 | 52,377 | 7,442 | 1.8 | 1.7 |
| 2019 | 96,072 | 13,095 | 54,678 | 7,788 | 1.8 | 1.7 |

*Information provided by Segal Consulting, the System's actuary.

**Excludes survivors and beneficiaries

SCHEDULE 8

SCHEDULES OF FUNDING PROGRESS*

2010 to 2019

(in millions)

| Actuarial Valuation Date June 30 | Actuarial Value of Assets (AVA) | Actuarial Accrued Liability (AAL) | Unfunded Actuarial Accrued Liability (UAAL) | Ratio of AVA to AAL | Annual Covered Payroll | UAAL as a % of Annual Covered Payroll |
|----------------------------------|---------------------------------|-----------------------------------|---|---------------------|------------------------|---------------------------------------|
| 2010 | \$24,725.5 | \$35,077.7 | \$10,352.3 | 70.5% | \$5,365.5 | 192.9% |
| 2011 | 25,871.1 | 36,876.2 | 11,005.1 | 70.2 | 5,214.6 | 211.0 |
| 2012 | 27,399.0 | 38,604.9 | 11,205.9 | 71.0 | 5,087.8 | 220.3 |
| 2013 | 29,108.5 | 41,984.5 | 12,875.9 | 69.3 | 5,100.2 | 252.5 |
| 2014 | 31,465.6 | 43,997.1 | 12,531.5 | 71.5 | 5,113.5 | 245.1 |
| 2015 | 33,717.9 | 46,070.2 | 12,352.2 | 73.2 | 5,227.2 | 236.3 |
| 2016 | 35,896.2 | 48,459.2 | 12,562.9 | 74.1 | 5,346.3 | 235.0 |
| 2017 | 38,719.3 | 51,986.1 | 13,266.8 | 74.5 | 5,542.2 | 239.4 |
| 2018 | 41,342.4 | 55,069.4 | 13,727.1 | 75.1 | 5,830.4 | 235.4 |
| 2019 | 43,609.0 | 57,920.2 | 14,311.2 | 75.3 | 6,038.6 | 237.0 |

| Actuarial Valuation Date June 30 | Unfunded Actuarial Accrued Liability (in millions) | | Unfunded Actuarial Accrued Liability as % of Payroll | | Actuarial Value of Assets as % of Total Actuarial Accrued Liability | |
|----------------------------------|--|-------------|--|-------------|---|-------------|
| | Regular | Police/Fire | Regular | Police/Fire | Regular | Police/Fire |
| 2010 | \$7,950.5 | \$2,401.8 | 178.4% | 264.5% | 71.2% | 67.8% |
| 2011 | 8,514.1 | 2,491.0 | 196.5 | 282.4 | 70.6 | 68.4 |
| 2012 | 8,729.4 | 2,476.5 | 206.2 | 289.5 | 71.2 | 70.1 |
| 2013 | 10,331.9 | 2,544.0 | 243.7 | 295.7 | 68.9 | 71.1 |
| 2014 | 10,160.0 | 2,371.5 | 238.3 | 278.9 | 70.8 | 74.3 |
| 2015 | 10,041.1 | 2,311.1 | 230.3 | 266.3 | 72.4 | 76.3 |
| 2016 | 10,197.9 | 2,365.0 | 228.7 | 266.3 | 73.2 | 77.1 |
| 2017 | 10,590.9 | 2,675.9 | 229.4 | 289.3 | 73.9 | 76.4 |
| 2018 | 10,876.0 | 2,851.0 | 224.5 | 288.9 | 74.7 | 76.5 |
| 2019 | 11,275.0 | 3,036.2 | 225.7 | 291.3 | 74.9 | 76.5 |

*Information provided by Segal Consulting, the System's actuary.

STATISTICAL SECTION

OPERATIONS

SCHEDULE 9 PARTICIPATING EMPLOYERS

(Page 1 of 3)

State of Nevada and Related Agencies

Board of Examiners for Alcohol & Drug Abuse Counselors
Legislative Counsel Bureau
Liquefied Petroleum Gas Board
Nevada Rural Housing Authority
Public Employees' Retirement System
State Board of Accountancy
State Board of Architecture
State Board of Chiropractic Examiners
State Board of Cosmetology
State Board of Dental Examiners
State Board of Dispensing Opticians
State Board of Examiners for Marriage & Family Therapists and Clinical Professional Counselors
State Board of Examiners for Social Workers
State Board of Massage Therapy
State Board of Medical Examiners
State Board of Nursing
State Board of Optometry
State Board of Osteopathic Medicine
State Board of Pharmacy
State Board of Physical Therapy Examiners
State Board of Psychological Examiners
State Board of Veterinary Medical Examiners
State Personnel

Nevada System of Higher Education

Schools

100 Academy of Excellence
Academy for Career Education
Alpine Academy Charter School
American Leadership Academy – North Las Vegas
American Preparatory Academy of Nevada
Bailey Charter Elementary School
Beacon Academy of Nevada
Carson City School District
Carson Montessori School
Churchill County School District
Clark County School District
Coral Academy Las Vegas
Coral Academy of Science Charter School
Delta Academy
Discovery Charter School
Doral Academy of Nevada

Doral Academy of Northern Nevada
Douglas County School District
Elko County School District
Elko Institute for Academic Achievement
Esmeralda County School District
Equipo Academy
Eureka County School District
Explore Knowledge Charter School
Founders Academy of Las Vegas
Futuro Academy Inc.
High Desert Montessori Charter School
Honors Academy of Literature
Humboldt County School District
ICDA Charter High School
Imagine School at Mountain View
Innovations Charter School
Lander County School District
Leadership Academy of Nevada
Learning Bridge Charter School
Legacy Traditional Schools - Nevada
Lincoln County School District
Lyon County School District
Mater Academy of Nevada
Mater Academy of Northern Nevada
Mariposa Academy of Language and Learning
Mineral County School District
Nevada Connections Academy
Nevada Preparatory Charter
Nevada Rise Academy
Nevada State High School
Nevada State High School at Sunrise
Nevada Virtual Academy
Nye County School District
Oasis Academy
Odyssey Charter School
Pershing County School District
Pinecrest Academy of Nevada
Quest Academy
Rainbow Dreams Academy
Rainshadow Charter School
Sierra Nevada Academy
Signature Academy
Silver Sands Montessori Charter School
Silver State High School
SLAM Academy of Nevada
Somerset Academy of Las Vegas

**SCHEDULE 9
PARTICIPATING EMPLOYERS**

(Page 2 of 3)

Schools (continued)

Storey County School District
Washoe County School District
White Pine County School District

Counties

Churchill County
Clark County
Douglas County
Elko County
Esmeralda County
Eureka County
Humboldt County
Lander County
Lincoln County
Lyon County
Mineral County
Nye County
Pershing County
Storey County
Washoe County
White Pine County

Cities

City of Boulder
City of Caliente
City of Carlin
City of Carson
City of Elko
City of Ely
City of Fallon
City of Fernley
City of Henderson
City of Las Vegas
City of Lovelock
City of Mesquite
City of North Las Vegas
City of Reno
City of Sparks
City of Wells
City of West Wendover
City of Winnemucca
City of Yerington

Hospitals

Battle Mountain General Hospital
Elko General Hospital
Grover C. Dils Medical Center
Humboldt General Hospital
Mount Grant General Hospital
Pershing General Hospital
Silver Springs Stagecoach Hospital District
University Medical Center of Southern Nevada
William Bee Ririe Hospital

Utility, Irrigation, and Sanitation Districts

Alamo Sewer & Water General Improvement District
Beatty Water and Sanitation District
CC Communications
Clark County Water Reclamation District
Douglas County Sewer and Water District
Lander County Sewer and Water
Lincoln County Power District
Lovelock Meadows Water District
McGill-Ruth Consolidated Sewer and Water District
Minden-Gardnerville Sanitation District
Moapa Valley Water District
Overton Power District
Pershing County Water Conservation District
Truckee Meadows Water Authority
Truckee-Carson Irrigation District
Virgin Valley Water District
Walker River Irrigation District
Washoe County Water District

Special Districts and Agencies

Austin Volunteer Fire Department
Battle Mountain Volunteer Fire Department
Canyon General Improvement District
Carson City Airport Authority
Central Dispatch Administrative Authority
Central Lyon County Fire Protection District
Churchill County Volunteer Fire Department
Churchill Mosquito Abatement District
City of Wells Volunteer Fire Department
Conservation District of Southern Nevada
Douglas County Mosquito District
East Fork Fire Protection District
East Fork Swimming Pool District
Elko Convention and Visitors Authority

STATISTICAL SECTION

OPERATIONS

SCHEDULE 9 PARTICIPATING EMPLOYERS

(Page 3 of 3)

Special Districts and Agencies (continued)

Elko County Agricultural Association
Elko Volunteer Fire Department
Fernley Swim Pool District
Gardnerville Ranchos General Improvement District
Gerlach General Improvement District
Grass Valley Volunteer Fire Department
Henderson District Public Libraries
Incline Village Visitor's/Convention Bureau
Indian Hills Improvement District
Kingsbury General Improvement District
Lahontan Conservation District
Lander County Convention & Tourism
Las Vegas Convention/Visitors Authority
Las Vegas/Clark County Library District
Las Vegas Metropolitan Police Department
Lovelock Volunteer Fire Department
Mason Valley Fire District
Mineral County Housing Authority
Mt. Charleston Fire Protection District
Nevada Association of Counties
Nevada Tahoe Conservation District
North Lake Tahoe Fire Protection District
North Lyon County Fire District
Palomino Valley General Improvement District
Pershing County Volunteer Fire Department
Regional Transportation Commission
Reno Housing Authority
Reno/Sparks Convention and Visitors Authority
Reno-Tahoe Airport Authority
Round Hill General Improvement District
RTC of Southern Nevada
Rye Patch Volunteer Fire Department
Southern Nevada Health District
Southern Nevada Housing Authority
Stagecoach General Improvement District
Storey County Fire Protection District
Sun Valley General Improvement District
Tahoe-Douglas District
Tahoe-Douglas Fire Protection District
Town of Kingston
Truckee Meadows Fire Protection District
Truckee Meadows Regional Planning Agency

White Pine County 474 Fire Protection District
White Pine County Tourism and Recreation Board
Winnemucca Rural Volunteer Fire
Winnemucca Volunteer Fire Department
Workforce Connections

**SCHEDULE 10
PRINCIPAL PARTICIPATING EMPLOYERS**

| <u>Participating Agencies</u> | 2010 | | |
|--|--------------------------|-------------|-----------------------------------|
| | <u>Covered Employees</u> | <u>Rank</u> | <u>Percentage of Total System</u> |
| Clark County School District | 31,924 | 1 | 31.1% |
| State of Nevada | 16,946 | 2 | 16.5 |
| Clark County | 7,222 | 3 | 7.0 |
| Washoe County School District | 7,122 | 4 | 6.9 |
| Las Vegas Metropolitan Police Department | 5,164 | 5 | 5.0 |
| University Medical Center of Southern Nevada | 3,384 | 6 | 3.3 |
| Washoe County | 2,563 | 7 | 2.6 |
| City of Las Vegas | 2,514 | 8 | 2.5 |
| City of Henderson | 2,066 | 9 | 2.0 |
| University of Nevada, Reno | 1,999 | 10 | 2.0 |
| Subtotal | 80,904 | | 78.9 |
| All other | 21,690 | | 21.1 |
| Total 2010 (183 Agencies) | 102,594 | | 100.0% |

| <u>Participating Agencies</u> | 2019 | | |
|--|--------------------------|-------------|-----------------------------------|
| | <u>Covered Employees</u> | <u>Rank</u> | <u>Percentage of Total System</u> |
| Clark County School District | 32,118 | 1 | 29.4% |
| State of Nevada | 18,066 | 2 | 16.6 |
| Clark County | 7,574 | 3 | 6.9 |
| Washoe County School District | 7,347 | 4 | 6.7 |
| Las Vegas Metropolitan Police Department | 5,868 | 5 | 5.4 |
| Nevada System of Higher Education (NSHE) | 3,853 | 6 | 3.5 |
| University Medical Center of Southern Nevada | 3,481 | 7 | 3.2 |
| City of Las Vegas | 2,738 | 8 | 2.5 |
| Washoe County | 2,480 | 9 | 2.3 |
| City of Henderson | 2,316 | 10 | 2.1 |
| Subtotal | 85,841 | | 78.6 |
| All other ^a | 23,326 | | 21.4 |
| Total 2019 (212 Agencies) | 109,167 | | 100.0% |

| ^a In 2019 "All other" consisted of: | | |
|--|---------------------------|--------------------------|
| <u>Agency Type</u> | <u>Number of Agencies</u> | <u>Covered Employees</u> |
| State of Nevada and Related Agencies | 22 | 580 |
| Schools | 63 | 10,451 |
| Counties | 14 | 2,936 |
| Cities | 17 | 4,362 |
| Hospitals | 8 | 805 |
| Utility, Irrigation, and Sanitation Districts | 18 | 875 |
| Special Districts and Agencies | 60 | 3,317 |
| Subtotal | 202 | 23,326 |
| Largest Ten Participating Employers | 10 | 85,841 |
| Total | 212 | 109,167 |

STATISTICAL SECTION**OPERATIONS****SCHEDULE 11****AVERAGE AGE AND SERVICE STATISTICS FOR MEMBERS***

| As of June 30 | Regular | | Police/Fire | |
|---------------|-------------|--------------------------|-------------|--------------------------|
| | Average Age | Average Years of Service | Average Age | Average Years of Service |
| 2010 | 45.8 | 9.2 | 39.8 | 10.3 |
| 2011 | 46.1 | 9.6 | 40.1 | 10.7 |
| 2012 | 46.4 | 10.0 | 40.4 | 11.1 |
| 2013 | 46.5 | 10.1 | 40.6 | 11.3 |
| 2014 | 46.4 | 10.1 | 40.8 | 11.5 |
| 2015 | 46.2 | 10.0 | 40.8 | 11.6 |
| 2016 | 46.0 | 9.9 | 40.7 | 11.5 |
| 2017 | 45.9 | 9.8 | 40.2 | 11.2 |
| 2018 | 45.8 | 9.9 | 39.9 | 11.1 |
| 2019 | 45.7 | 9.7 | 39.8 | 11.0 |

SCHEDULE 12**AVERAGE SALARIES FOR MEMBERS***

| As of June 30 | Regular | Increase (Decrease) | Police/Fire | Increase (Decrease) |
|-------------------------------------|-----------|---------------------|-------------|---------------------|
| 2010 | \$ 49,407 | | \$ 73,373 | |
| 2011 | 49,248 | (0.3) % | 73,895 | 0.7 % |
| 2012 | 48,808 | (0.9) | 72,523 | (1.9) |
| 2013 | 48,626 | (0.4) | 72,637 | 0.2 |
| 2014 | 48,057 | (1.2) | 71,990 | (0.9) |
| 2015 | 47,840 | (0.5) | 72,417 | 0.6 |
| 2016 | 47,922 | 0.2 | 73,179 | 1.1 |
| 2017 | 49,502 | 3.3 | 73,841 | 0.9 |
| 2018 | 51,193 | 3.4 | 76,549 | 3.7 |
| 2019 | 52,007 | 1.6 | 79,586 | 4.0 |
| Average annual increase 2010 – 2019 | | 0.5 % | 0.4 % | |

*Information provided by Segal Consulting, the System's actuary.



PLAN SUMMARY

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Administration

PERS provides retirement, disability, and death benefits to long-term public employees. The System includes the employees of Nevada counties, cities, schools, state government, and other local public employers.

The governing authority of the System is a 7-member board appointed by the Governor. Day-to-day operations are managed by the Executive Officer. Operating funds are provided by transfer of an administrative fee assigned to each member and benefit recipient. Monthly fees at June 30, 2019, were \$3.16 for each Regular member and benefit recipient and \$3.37 for each Police/Fire member and benefit recipient.

Membership

An employee of a participating public employer is required to be a member of the System from the first day of service if he or she is employed in a position which is normally considered to be half-time or more according to the full-time work schedule established by the public employer. Persons employed in an approved police or fire position are covered under the Police/Fire sub-fund. Persons who are not police or fire employees are covered under the Regular sub-fund. Membership is canceled upon refund, retirement, or death. Membership is not canceled automatically upon termination of employment. A member must apply for a refund, distribution, or retirement to cancel membership.

Types of Contribution Plans

All pay that meets the definition of compensation as defined in NRS 286.025(2) is subject to retirement contribution. New hires (in agencies which did not elect the Employer-Pay Contribution Plan (EPC) prior to July 1, 1983) have the option of selecting EPC or the Employee/Employer Contribution Plan. Each plan is described below.

Employer-Pay Contribution Plan (EPC)

Under EPC, contributions are paid on the employee's behalf by their public employer. However, the employee shares equally in the cost of the contribution rate either through salary reduction or in lieu of a promised pay increase. EPC contributions are not deposited to the individual member's account and are not available for refund upon termination of employment. Effective July 1, 2017, the EPC contribution rates are 28.00% for Regular members and 40.50% for Police/Fire members.

Employee/Employer Contribution Plan

Effective July 1, 2017, under this plan, the Regular member and the employer each contribute 14.50% of compensation to the System. Police/Fire members and their employers each contributed 20.75% of compensation. Employee contributions made under this plan are refundable upon termination of employment. Employer contributions are not refundable.

Service

Public employees, other than school employees, earn service credit for years, months, and days actually worked. School employees, who are not regular 12-month employees, receive service credit on the basis of a full year if they work full-time for the entire school year. For these same school employees, service for a part of the school year is credited on a ratio of one and one-third days for each day worked.

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Purchase of Service

Members with five years of creditable service may purchase up to five years of service credit. The member must pay the full actuarial cost associated with age and average compensation at the time of purchase. Members entering the System on or after July 1, 2015, may purchase service; however, the service will not count towards retirement eligibility unless the member has a family medical emergency.

Refund of Contributions

Members who have contributed under the Employee/Employer Contribution plan may withdraw employee contributions if terminating all employment for which contribution is required or if employed in a position ineligible for membership for at least 90 days. A refund cancels all rights of membership.

Repayment of Refunded Contributions

Members who receive a refund of employee contributions and later return to work and re-establish active membership for a period of at least six months may repay the refunded contributions and restore service credit. Repayment, including interest at the actuarially determined rate, may be in the form of a lump-sum payment or by monthly installments. Service will not be restored until repayment is complete.

Benefits

The 2009 Legislature passed Senate Bill 427 which provided for various changes to the System and members newly hired into the System on or after January 1, 2010. The 2015 Legislature passed Senate Bill 406 which applies to members newly hired on or after July 1, 2015. Such changes are noted within each subject area below.

Service Retirement Vesting

Contributing members of the System earn the right to receive a retirement benefit after five years of service.

Service Retirement

Requirements for Regular members to retire with an unreduced benefit – age 65 with five years of service, **or** age 60 with ten years of service, **or** any age with thirty years of service.

For Regular members who enter the System on or after January 1, 2010, to retire with an unreduced benefit – age 65 with five years of service, **or** age 62 with ten years of service, **or** any age with thirty years of service.

For Regular members who enter the System on or after July 1, 2015, to retire with an unreduced benefit – age 65 with five years of service, or age 62 with ten years of service, or age 55 with 30 years of service, or at any age with 33 1/3 years of service.

Requirements for Police/Fire members to retire with an unreduced benefit – age 65 with five years of service, **or** age 55 with ten years of Police/Fire service, **or** age 50 with twenty years of Police/Fire service, **or** at any age with twenty-five years of Police/Fire service.

For Police/Fire members who enter the System on or after January 1, 2010, to retire with an unreduced benefit – age 65 with five years of service, **or** age 60 with ten years of Police/Fire service, **or** age 50 with twenty years of Police/Fire service **or** any age with thirty years of total service.

Only service performed in a position as a police officer or firefighter may be counted towards eligibility for retirement as Police/Fire accredited service.

Early Retirement Penalty

Members with the years of service necessary to receive a retirement benefit but who have not reached the age for an unreduced benefit may retire at any age with the benefit reduced by 4% for each full year they are under the required age.

Members entering the System on or after January 1, 2010, with the years of service necessary to receive a retirement benefit but who have not reached the age for an unreduced benefit may retire at any age with the benefit reduced by 6% for each full year they are under the required age.

Important Factors for Determining Retirement Benefits

Benefit amounts are based on three factors:

1. Average compensation – defined as the average of 36 highest consecutive months of compensation and, for members entering the system on or after January 1, 2010, the average of 36 highest consecutive months of compensation with a provision that each 12-month period of salary may not increase greater than 10% of the prior 12 months of salary reported. Salary increases due to promotion and assignment-related compensation are excluded from the salary cap calculation.
2. Service credit – years, months, and days worked.
3. Selection of retirement plan – prospective retirees may elect one of seven retirement options.

Option 1 – (the unmodified plan) for Regular members – Pays the full monthly benefit earned but provides no income protection for beneficiary after death.

Option 1 – (the unmodified plan) for Police/Fire members – Pays the full monthly benefit earned for the retiree’s lifetime. A person who was the spouse or registered domestic partner at time of retirement shall be entitled, at the time of the retired employee’s death or upon the attainment of age 50, whichever is later, to a benefit of 50% of the deceased retired employee’s benefit earned at the time of his/her death in an eligible police/fire position. This benefit is available only if you are contributing under the Employer Pay contribution plan (EPC) at the time of retirement. Otherwise, no beneficiary allowance is available under this option.

Option 2 – Provides an actuarially reduced lifetime benefit. Upon the death of the retiree, the same benefit continues for the lifetime of the beneficiary.

Option 3 – Provides an actuarially reduced lifetime benefit. Upon the death of the retiree, 50% of the benefit continues for the lifetime of the beneficiary.

Option 4 – Provides an actuarially reduced lifetime benefit. Upon the death of the retiree and upon the beneficiary reaching age 60, the same benefit continues for the lifetime of the beneficiary.

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Option 5 – Provides an actuarially reduced lifetime benefit to retiree. Upon the death of the retiree and upon beneficiary reaching age 60, 50% of the benefit continues for the lifetime of the beneficiary.

Option 6 – Provides an actuarially reduced lifetime benefit to retiree. Upon death of the retiree, this option provides to the beneficiary a specific sum per month, which cannot exceed the monthly benefit paid to retiree.

Option 7 – Provides an actuarially reduced lifetime benefit to retiree. Upon the death of the retiree this option provides that upon the beneficiary reaching age 60, a specific sum per month, which cannot exceed the monthly benefit paid to retiree.

Post-Retirement Benefit Increases

Retirees are eligible for annual benefit increases starting the fourth year of initially receiving benefits. Benefits are increased annually on the first day of the month following the anniversary of the commencement of benefits. The increases begin at 2% in years four, five, and six; increase to 3% in years seven, eight, and nine; 3.5% in years ten, eleven, and twelve; 4% for years thirteen and fourteen; and 5% in year fifteen and each year thereafter. If the benefit outpaces inflation in the period since retirement, the increase may be capped by a rolling three-year average of the Consumer Price Index (all items).

Retirees who enter the System on or after January 1, 2010, are eligible for annual benefit increases starting the fourth year of initially receiving benefits. Benefits are increased annually on the first day of the month following the anniversary of the commencement of benefits. The increases begin at 2% in years four, five, and six; increase to 3% in years seven, eight, and nine; 3.5% in years ten, eleven, and twelve; and 4% in year thirteen and each year thereafter. If the benefit outpaces inflation in the period since retirement, the increase may be capped by a rolling three-year average of the Consumer Price Index (all items).

Retirees who enter the System on or after July 1, 2015, are eligible for annual benefit increases starting the fourth year of initially receiving benefits. Benefits are increased annually on the first day of the month following the anniversary of the commencement of benefits. The increases begin at 2% in years four, five, and six; increase to 2.5% in years seven, eight, and nine; then adjust to the lesser of 3% or the increase, if any, in the Consumer Price Index (all items) for the preceding calendar year following the tenth year and every year thereafter.

Benefit Formula

The formula used for calculating retirement benefits is as follows:

- Total Service Credit Earned (or purchased) before July 1, 2001 X 2.5% = Service Time Factor
- Total Service Credit Earned (or purchased) on and after July 1, 2001 X 2.67% = Service Time Factor
- Total Service Time Factors X Average Monthly Compensation (36 Highest Consecutive Months of Salary) = Unmodified benefit (Option 1).

For members entering the System on or after January 1, 2010, the formula for calculating retirement benefits is as follows:

- Total Service Credit Earned (or purchased) X 2.5% = Service Time Factor
- Total Service Time Factor X Average Monthly Compensation (36 Highest Consecutive Months of Salary with applicable limits*) = Unmodified benefit (Option 1).

For Regular members entering the System on or after July 1, 2015, the formula for calculating retirement benefits is as follows:

- Total Service Credit Earned X 2.25% = Service Time Factor
- Total Service Time Factor X Average Monthly Compensation (36 Highest Consecutive Months of Salary with applicable limits*) = Unmodified benefit (Option 1).

*Each 12-month period of salary may not increase greater than 10% unless promotion or assignment related.

Maximum benefits are 90% of average compensation for individuals who became members before July 1, 1985, and 75% of average compensation for individuals who became members after June 30, 1985.

Actuarial reductions are based on the member's age and the beneficiary's age at the time of retirement, determined from tables supplied by the System's actuary.

Disability Retirement

Members with five or more years of service who become totally unable to perform their current or any comparable job because of an injury or mental or physical illness of a permanent nature are eligible to apply for disability retirement. The application must be filed with the System prior to termination of employment. Disability retirement benefits are calculated in the same manner as service retirement without reduction for age.

Survivor Benefits

Eligibility

Eligible survivors of a member who dies prior to retirement are entitled to a benefit if:

1. The member had two years of service in the two and one-half years immediately preceding death, or
2. The member had more than ten years of accredited service, or
3. The member's death was caused by an occupational disease or an accident arising out of or in the course of employment, regardless of service credit.

An additional benefit is available for a surviving spouse/registered domestic partner of an active member killed in the line of duty or in the course of employment regardless of service credit. See SB 406 below.

Eligible survivors:

1. Spouse or registered domestic partner
2. Each unmarried dependent child under age 18, or up to age 23 if a full-time student.

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3. Dependent parents, provided there are no other eligible survivors at the time of member's death.
4. If the member is unmarried at the time of death, one designated survivor beneficiary. Additional payees may also be designated to receive direct payment of a portion of the survivor beneficiary benefit.

Amount of Survivor Benefits

Generally, if a member dies with less than ten years of service, the spouse, registered domestic partner, or survivor beneficiary would receive \$450 per month and each dependent child would receive \$400 per month. The spouse, registered domestic partner, or survivor beneficiary would receive survivor benefits for his or her lifetime. Each unmarried dependent child would receive monthly benefits until age 18, or age 23 if he or she is a full-time student.

If a member dies with more than ten years of service credit, the spouse, registered domestic partner, or survivor beneficiary is entitled to a lifetime benefit. The amount of the benefit is based on the member's age, years of service, and average compensation at the time of death. A dependent child would receive the same benefits as previously described.

A member is able to designate one survivor beneficiary to receive benefits (as described above) to be paid if the member is unmarried at the time of death. A member may also designate additional payees to receive direct payment of a portion of the survivor beneficiary benefit.

SB 406

If a member is killed in the line of duty or the course of employment, the spouse of the member has additional benefit options pursuant to Senate Bill 406 of the 2015 Legislative session. The new benefit entitles the spouse to receive 50% of the salary of the member on the date of death, 100% of the retirement allowance that the member was eligible to receive based on the member's years of service obtained prior to death, or benefits in place prior to July 1, 2015, at the election of the spouse. This benefit is effective for benefits paid on or after July 1, 2015, on account of members killed in the line of duty or course of employment on or after July 1, 2013.